CRITICAL ECOSYSTEM PARTNERSHIP FUND

Ecosystem Profile

Cerrado Biodiversity Hotspot

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Prepared by the ecosystem profiling team:

Donald Sawyer	ISPN, Team Leader
Bruno Coutinho	CI-Brazil
Beto Mesquita	CI-Brazil
Fábio Vaz de Almeida	ISPN
Isabel Figueiredo	ISPN
Ivana Lamas	CI-Brazil
Ludivine Eloy Pereira	Independent consultant
Luiz Paulo Pinto	Valor Natural
Mauro Oliveira Pires	Independent consultant
Thaís Kasecker	CI-Brazil

With the assistance of:

João Guilherme Cruz	ISPN
Juliana Napolitano	ISPN
Renata Ceolin	ISPN
Renato Araújo	ISPN
Silvana Bastos	ISPN
Ivana Lamas	CI-Brazil
David Hathaway	Independent consultant
Maria Isabel Martínez	Independent consultant
Andréa Zimmermann	Matres Socioambiental
Elise Dalmaso	Matres Socioambiental
Marina Palhares	Matres Socioambiental
Renata Navega	Matres Socioambiental

Senior Advisory Group:

Adriana Moreira	Global Leader on Biodiversity, World Bank
Ana Cristina Barros	National Secretary of Biodiversity, Ministry of Environment
André Nassar*	National Secretary of Agricultural Policies, Ministry of Agriculture, Livestock and Supply
Debora Castellani	Director of Research, Natura
Edite Lopes de Souza	Agência 10envolvimento
Elaine Barbosa Silva	Federal University of Goiás, Laboratory of Image Processing and Geoprocessing (LAPIG)
Fábio Scarano	Federal University of Rio de Janeiro and Brazilian Foundation for Sustainable Development (FBDS)
Fátima A. G. de Moura	Federation of Organizations for Social and Educational Assistance (FASE)
Jean-François Timmers	WWF International
Júlio Cesar Sampaio	WWF Brazil, Coordinator of Cerrado Program
Laerte Ferreira*	Federal University of Goiás, Laboratory of Image Processing and Geoprocessing (LAPIG)
Luiz Fernando Merico	National Coordinator of IUCN
Marcelo de Paula*	Brazil’s GEF Focal Point, Ministry of Planning, Budget and Management (MP)
Mercedes Bustamante*	Department of Ecology, University of Brasília (UnB)

Selma Yuki Ishii*	Alternativas para a Pequena Agricultura do Tocantins (APATO)
Valmir Soares de Macedo	Centro de Agricultura Alternativa Vicente Nica (CAV)

* Advisors who accepted or expressed interest in participating but had little or no opportunity to collaborate with preparation of the ecosystem profile.

In preparing the Cerrado ecosystem profile, a large number of experts, contributors and stakeholders generously participated in at least one of the consultation workshops, the Advisory Group meeting or personal interviews.However, the concepts and proposals presented in this Ecosystem Profile do not necessarily reflect their views.

Conservation International and ISPN are very grateful to the professionals listed below:

Aldicir Scariot	Genetic Resources and Biotechnology Center (CENARGEN), Brazilian Agriculture and Livestock Research Enterprise (EMBRAPA)
Adolfo Dalla Pria Pereira	Center for Sustainable Development (CDS), University of Brasília (UnB)
Adriana Moreira	World Bank
Adriano Ferreira da Silva	Movimento dos Trabalhadores Camponeses (MTC)
Alessandra Chaves	Associação de Agricultores e Irrigantes da Bahia(AIBA)
Álvaro Alves Carrara	Centro de Agricultura Alternativa do Norte de Minas Gerais (CAA/NM)
Ana Cristina Barros	Secretária de Biodiversidade do Ministério do Meio Ambiente (MMA)
Analise Cristoldo Romero	Fundação Mais Cerrado
André Ramalho	Conselho Empresarial Brasileiro para o Desenvolvimento Sustentavel (CEBDS)
Andrew Miccolis	International Center of Research in Agroforestry (ICRAF
Aneliza Miranda Melo	Instituto Estadual de Florestas (IEF), Minas Gerais
Asier Santellan	Comissão Europeia
Beatriz Secaf	Associação Brasileira do Agronegócio (ABAG)
Bruno Lopes Rocha Mello	Fundação Mais Cerrado
Caio Cescir Gomes Fonseca	Movimento dos Pequenos Agricultores (MPA)
Carlos Eduardo Negres Victorio	Coordenação das Comunidades Quilombolas do Tocantins (COEQTO)
Cesar Victor de Espírito Santo	Fundação Pró-Natureza (FUNATURA)
Claudia Calório	Centro de Agricultura Alternativa do Norte de Minas (CAA-NM), Dedicated Grant Mechanism (DGM)
Cleidionice Pereira dos Santos	Movimento dos Trabalhadores Camponeses (MTC)
Cristiane Moura	Secretaria de Políticas de Promoção da Igualdade Racial (SEPPIR)
Cristiane Peres da Silva	Secretaria do Meio Ambiente, Tocantins (SEMA/TO)
Cristina Carvalho	Comissão Européia
Dalci José de Carvalho	Associação de Promoção ao Lavrador e Assistência ao Menor de Turmalina (APLAMT)
Daniel Pereira Lobo	Bonsucro
Débora Cristina Castellani	Natura
Denise Daleva Costa	Secretaria de Meio Ambiente e Cidades, Goiás (SECIMA/GO)
Edite Lopes de Souza	Agência 10envolvimento
Eduardo Barroso de Souza	Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio)

Eduardo Safons Soares	Secretariat of Extractivism and Sustainable Rural Development (SEDR),Ministry of Environment (MMA)
Elaine Barbosa da Silva	Universidade Federal de Goiás (UFG), Laboratório de Processamento de Imagens e Geoprocessamento (LAPIG)
Eldo Moreira Barreto	Associação Comunitária dos Pequenos Criadores do Fecho de Pasto de Clemente (ACCFC)
Eliane Braga Ribeiro	Secretaria do Meio Ambiente, Maranhão (SEMA/MA)
Eline Matos Martins	Centro Nacional de Conservação da Flora (CNC Flora)
Elizabeth Turini	Companhia Nacional de Abastecimento (CONAB)
Elton Antonio Silveira	Secretaria de Meio Ambiente, Mato Grosso (SEMA/MT)
Eric Vieira da Silva	Cooperativa Regional de Produtores Agrossilviextrativistas Sertão Veredas (COOPSERTÃO)
Estevão Bororo Taukane	Articulação dos Povos Indígenas do Brazil (APIB)
Eulinda de Campos Lopes	Secretaria de Meio Ambiente, Mato Grosso (SEMA/MT)
Fábio Matsumoto Ricarte	Ministry of Environment (MMA)
Fábio Scarano	Fundação Brasileira para o Desenvolvimento Sustentável (FBDS)
Fátima Aparecida Garcia de Moura	Federação de Assistência Social e Educacional (FASE)
Fernando Antonio Rodrigues Lima	Fundação Pro-Natureza (FUNATURA)
Fernando Tatagiba	Secretariat of Biodiversity, Ministry of Environment (MMA)
Flamarion Luiz Soares	Movimento dos Trabalhadores Camponeses (MTC)
Flavia Costa Bandeira	Movimento dos Pequenos Agricultores (MPA)
Francisca da Silva Nascimento	Movimento Interestadual das Quebradeiras de Coco Babaçu (MIQCB)
Gabriela Gonçalves	Serviço Florestal Brasileiro (SFB), Ministry of Environment (MMA)
Gabriela Grisolia	Serviço Florestal Brasileiro (SFB), Ministry of Environment (MMA)
Gislano Oliveira	Ministério do Meio Ambiente (MMA)
Glaciana Araujo	Associação de Agricultores Irrigantes da Bahia (AIBA)
Guilherme Eidt	German Technical Cooperation Agency (GIZ)
Gustavo Luedemann	Instituto de Pesquisa Econômica Aplicada (IPEA)
Gustavo Martinelli	Jardim Botânico do Rio de Janeiro (JBRJ)
Gustavo Oliveira	Ministério do Meio Ambiente (MMA)
Helena Maria Maltez	Secretaria do Meio Ambiente, Distrito Federal (SEMA/DF)
Helena Pavese	Programa das Nações Unidades para o Meio Ambiente – PNUMA
Hudson Coimbra Felix	Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Ministério do Meio Ambiente (MMA)
Iran Magno Xavier de Oliveira Filho	California Environmental Associates (CEA)
Irene dos Santos	Instituto Brasil Central (IBRACE)
Isabel Belloni Schmidt	Departamento de Ecologia, Universidade de Brasília (UnB)
Isis Freitas	Ministério do Meio Ambiente (MMA)
Isolete Wichinieski	Comissão Pastoral da Terra – CPT
Ítalo Veras Eduardo	Instituto Internacional de Cooperação Agrícola (IICA)
Jackson Luís da Silva	Suzano Papel e Celulose S.A.
Janaína Gomes Dantas	Secretaria Estadual de Meio Ambiente, Maranhão (SEMA/MA)

Jean-François Timmers	WWF International
João da Mata Nunes Rocha	Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Ministério do Meio Ambiente (MMA)
John Landers O.B.E.	Associação Plantio Direto no Cerrado (APDC)
Júlio Cesar Sampaio da Silva	WWF Brasil
Jussara Pinto	Centro de Agricultura Alternativa do Norte de Minas (CAA-NM), Dedicated Grant Mechanism (DGM)
Juvana Evarista dos Santos	Movimento dos Povos Indígenas do Cerrado (MOPIC)
Kátia Torres Ribeiro	Consultor independente
Keila Juarez	Ministério da Ciência, Tecnologia e Inovação (MCTI)
Kolbe Soares	WWF Brasil
Laercio Machado de Sousa	Confederação Nacional de Reservas Particulares do Patrimônio Natural (CNRPPN)
Letícia Campos	WWF Brasil
Lourdes Cardozo Laureano	Associação Pacari
Luciana Brandão	Federação Brasileira de Plantio Direto e Irrigação
Luciano Andra	Prefeitura Municipal de Valparaíso de Goiás
Luiz Fernando Krieger Merico	União Internacional para a Conservação da Natureza (IUCN)
Márcia Andaluza Xavier	Instituto Lina Galvani
Márcio Macedo Costa	Banco Nacional de Desenvolvimento Econômico e Social (BNDES)
Maria Faria do Amaral	Ministério do Meio Ambiente (MMA)
Mariana de Alencar Ramos Fernandes	Instituto Internacional de Cooperação Agrícola (IICA)
Mário Augusto de Campos Cardoso	Confederação Nacional da Indústria (CNI)
Martha Gilka Gutierrez Carrijo	Instituto de Meio Ambiente, Mato Grosso do Sul
Matheus Campos Fonseca	Movimento dos Pequenos Agricultores (MPA)
Mauro Terena	Movimento dos Povos Indígenas do Cerrado (MOPIC)
Miguel D'Avila de Morais	União Internacional para a Conservação da Natureza (IUCN)
Nina Paula Laranjeira	Universidade de Brasília (UnB), Centro Cerrado
Olympio Barbanti Junior	Consultor independente
Onildo Marini	Centro Nacional de Pesquisa e Conservação da Biodiversidade do Cerrado e Caatinga (CECAT), InstititUto Chico Mendes de Conservação da Biodiversidade (ICMBio), Ministério do Meio Ambiente (MMA)
Patrícia de Lucena Mourão	Secretaria de Agricultura Familiar (SAF), Ministério do Desenvolvimento Agrário (MDA)
Paulo Fiúza	Fundação Mais Cerrado
Paulo Roberto Neil Magalhães	Fundação Banco do Brazil (FBB)
Pedro Gasparinetti	Fundação Mais Cerrado
Rafael de Oliveira Poubel	Centro de Excelência e Estudos do Cerrado (CEEX), Cerratenses, Jardim Botânico de Brasília (JBB),
Rafael Dias Loyola	Universidade Federal de Goiás (UFG)
Rafael Pereira	Secretaria de Mudanças Climáticas e Qualidade Ambiental (SMCQ), Ministério do Meio Ambiente (MMA)
Raíssa Ribeiro Pereira Silva	Instituto Socioambiental (ISA)
Raul Xavier de Oliveira	Secretaria de Mudanças Climáticas e Qualidade Ambiental (SMCQ), Ministério do Meio Ambiente (MMA)

Renato Flit	Secretaria de Políticas de Promoção da Igualdade Racial (SEPPIR)
Roberta Holmes	Secretaria de Biodiversidade, Ministério do Meio Ambiente (MMA)
Samantha Ro'otsitsina de Carvalho Juruna	Rede de Juventude Indígena (REJUIND)
Samir Gomes Tannus	Fundação Mais Cerrado
Sandra Regina Afonso	Serviço Florestal Brasileiro (SFB), Ministério do Meio Ambiente (MMA)
Sara Pitombo	Ministério do Meio Ambiente (MMA)
Sarah Alves de Melo	Núcleo Gestor da Cadeia Produtiva do Pequi e Outros Frutos do Cerrado, Conselho Estadual Pró-Pequi
Silvia Torrecilha	Instituto de Meio Ambiente do Mato Grosso do Sul
Srewê da Mata de Brito	Movimento dos Povos Indígenas do Cerrado (MOPIC), União Indígena Xerente
Stéphane Guéneau	Universidade de Brasília (UnB)
Sueli Gomes Fernandes	Centro de Agricultura Alternativa Vicente Nica (CAV)
Sueli Matiko Sano	Empresa Brasileira de Pesquisa Agopecuária (EMBRAPA)
Suelma Silva	Centro Nacional de Pesquisa e Conservação da Biodiversidade do Cerrado e Caatinga (CECAT), Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Ministério do Meio Ambiente (MMA)
Talia Manceira Bonfante	Natura
Tania M. Caldeira Jardim	Agência Brasileira de Cooperação (ABC)
Tiago Jordão Porto Santos	Secretaria Estadual de Meio Ambiente, Bahia (SEMA/BA)
Ugo Todde	Fundação Mais Cerrado
Valmir Macedo	Centro de Agricultura Alternativa Vicente Nica (CAV)
Valney Dias Rigonato	Universidade Federal do Oeste da Bahia
Vinicius de Araujo Klier	Consultor independente
Wilson Miguel	Cooperativa Regional de Produtores Agrossilviextrativistas Sertão Veredas

In addition to the workshops and personal meetings, representatives of 42 community organizations responded to a survey carried out in July of 2014, during the NationalMeeting of Cerrado Peoples. The results of this survey contributed to enhance the knowledge about the concerns of these stakeholders as well to define priorities for KBAs and corridors, providing to the authors relevant information on the current status of civil society organizations in the Cerrado Hotspot.

TABLE OF CONTENTS

GLOSSARY

1) Adaptation – adjustment in natural or human systems in response to actual or expected climatic stimuli or to their effects, which moderates harm or exploits beneficial opportunities.

2) Agrobiodiversity – part of biodiversity used in agriculture or related activities, be it in nature or under domestication or semi-domestication.

3) Agroextractivism – family farming that combines production of crops and livestock with use of native biodiversity.

4) Area of Permanent Preservation (APP) – untouchable set-asides along rivers and streams and on hilltops and steep slopes as required by the Forest Law on all rural properties in Brazil.

5) Benefit sharing – channeling some kind of returns, whether monetary or non-monetary, back to affected communities, source communities or source nations, among others.

6) Best practice – technique or methodology that, through experience and research, has been proven to reliably lead to a desired result. In the context of this document, the desired result is a lower environmental and social negative impact.

7) Biome –continental contiguous and identifiable complexes of plant and animal life with similar geoclimatic conditions and shared history, with characteristic biological diversity (in Brazil, there are six biomes: Amazon, Cerrado, Caatinga, Atlantic Forest, Pampa and Pantanal).

8) Caatinga – semi-arid biome in Northeastern Brazil, bordering on the Amazon, Cerrado and Atlantic Forest.

9) Cerrado – wooded savanna including 12 vegetation types in Central Brazil and parts of Bolivia and Paraguay, bordering on the Amazon, Caatinga, Atlantic Forest and Pantanal biomes.

10) Chaco – sparsely populated, hot and semi-arid lowland natural region of the Río de la Plata basin, divided among eastern Bolivia, Paraguay, northern Argentina and a portion of the Brazilian states of Mato Grosso and Mato Grosso do Sul.

11) Chiquitano – dry forests of Bolivia and Brazil with trees that lose their leaves during the dry season and are generally resistant to flooding and fire.

12) Civil Society Organization (CSO) – defined by CEPF as nongovernmental and private sector organizations, community groups, individuals, universities and foundations, including government organizations provided they can establish their legal personality independent of any government agency, their authority to apply for and receive private funds and that they may not assert a claim of sovereign immunity.

13) Conservation mainstreaming – making conservation an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres.

14) Conservation outcome – defined by CEPF as the full set of quantitative and justifiable conservation targets in a hotspot that should be achieved to prevent biodiversity loss. These targets are defined at three hierarchical levels: species (extinctions avoided); sites (areas protected); and landscapes (corridors created), corresponding to recognizable units of biodiversity along an ecological continuum.

15) Conservation units – 12 types of official protected areas included in Brazil's National System of Nature Conservation Units (SNUC) in two categories, Integral Protection and Sustainable Use.

16) Corridor – defined by CEPF as inter-connected landscape of sites important for the conservation of broad-scale ecological and evolutionary processes and little-changed ('intact') ecological communities.

17) Developmentalism – economic theory that developing countries should foster strong and varied internal markets, promote domestic industry and impose high tariffs on imported goods, often as opposed to environmentalism.

18) Ecosystem – interactive system consisting in all living organisms and their abiotic (physical and chemical) environment within a given area, covering various spatial scales.

19) Ecosystem Profile – for CEPF, rapid assessment of a biodiversity hotspot or priority area within a hotspot, providing an overview of biodiversity importance, overall conservation targets or outcomes, major threats and the policy, civil society and socioeconomic contexts, as well as funding gaps and opportunities.

20) Ecosystem service – benefits provided by ecosystems that contribute to making human life both possible and worth living.

21) Endemic – ecological state of a species being unique to a defined geographic location, such as an island, nation, country or other defined zone or habitat type; organisms that are indigenous to a place are not *endemic* to it if they are also found elsewhere.

22) Environmental service – nature's capacity to provide quality of life and comfort, *i.e.*, to ensure that life exists in a quality form for everyone (pure air, clean and accessible water, fertile soils, forests rich in biodiversity, nutritious and abundant foods etc.).

23) Environmentalism – a broad philosophy, ideology and social movement regarding concerns for environmental protection and improvement of the health of the environment, particularly its non-human elements, often as opposed to developmentalism.

24) Extinction - global disappearance of an entire species.

25) Extractivism – in Brazil, wild collection or harvesting of native biodiversity products, not including mining and oil.

26) Family farmer – for official purposes in Brazil, rural producers who: a) use the land as owners, squatters, tenants or land reform settlers; b) reside on or near the property; c) have no more than four fiscal modules (varying in size according to location) for farming or six fiscal modules for livestock; and d) primarily use family labor.

27) Free, prior, informed consent (FPIC) – principle that communities (particulary of Indigenous People) have the right to give or withhold their consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use.

28) *Fundo de pasto/fecho de pasto* – traditional rural livelihood in parts of the Caatinga and Cerrado in which family plots are combined with commons in which goats and sheep feed on native pasture in free range.

29) Geraizeiro – traditional communities living in the Cerrado on the southern side of the São Francisco River in northern Minas Gerais.

30) Hotspot –the 35 most biologically rich yet threatened areas on Earth, defined as holding at least 1,500 plant species as endemics and having lost more than 70 percent of their primary native vegetation.

31) Important Bird Area (IBA) – site of international importance for the conservation of birds and other biodiversity.

32) Indigenist – individual or organization that works to defend indigenous peoples.

33) Indigenous and Conserved Community Area (ICCA) – natural and/or modified ecosystem containing significant biodiversity values and ecological services, voluntarily conserved by (sedentary and mobile) indigenous and local communities, through customary laws or other effective means.

34) Indigenous land – part of Brazil's national territory, belonging to the federal government, home to one or more indigenous peoples, used by them for their productive activities necessary for preservation of environmental resources needed for their well-being and for their physical and cultural reproduction, according to their uses, customs and traditions.

35) Indigenous people – group of people recognized as having specific rights under national or international law, based upon: residence within or attachment to geographically distinct traditional habitats, ancestral territories, and their natural resources; maintenance of cultural and social identities, and social, economic, cultural and political institutions separate from mainstream or dominant societies and cultures; descent from population groups present in a given area, most frequently before modern states or territories were created and current borders defined; and/or self-identification as being part of a distinct indigenous cultural group, and the desire to preserve that cultural identity.

36) Integral Protection – category of protected areas (conservation units) in Brazil, formerly known as Indirect Use, which only allows activities such as visitation and research, as opposed to Sustainable Use protected areas.

37) Investment niche – –the specific geographic and thematic areas in which CEPF's investments can be most effective, considering conservation needs and the pattern of other investments.

38) Investment Priority – one of a set of thematic priorities for CEPF investment.

39) Key Biodiversity Area (KBA) – site of international importance for the conservation of biodiversity defined according to standard criteria based in principles of irreplaceability and vulnerability.

40) Leakage – geographical displacement of negative environmental impacts caused by environmental protection in certain areas.

41) Legal Amazon – the states of Rondônia, Acre, Amazonas, Roraima, Pará, Amapá, Tocantins and Mato Grosso and Maranhão west of 44º W.

42) Legal Reserve – according to Brazil's Forest Law, set-asides in all rural properties in which forest cover must be maintained or restored, with percentages of 80% in the Amazon biome, 35% in the Cerrado biome within the Legal Amazon region and 20% in the rest of Brazil.

43) Mitigation – anthropogenic intervention to reduce the anthropogenic forcing of the climate system, including strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.

44) Pantanal – wetlands biome in Mato Grosso and Mato Grosso do Sul, bordering on Cerrado, Atlantic Forest, Chaco and Chiquitano.

45) Preservation – conservation without any kind of direct use of natural resources.

46) Private Natural Heritage Reserve (RPPN) – protected area in Brazil's National System of Nature Conservation Units (SNUC) on private property, in the category of sustainable use.

47) Protected area – in Brazil, areas within the National System of Nature Conservation Units (SNUC), in the categories of Integral Protection (strict conservation) or Sustainable Use, which correspond to various categories of IUCN protected areas, as well as indigenous and *quilombola* lands, mosaics and ecological corridors.

48) *Quilombola* – traditional community constituted by descendants of enslaved Africans.

49) Regional Implementation Team (RIT) – organization selected by CEPF to provide strategic leadership in implementation of its investment strategy in a hotspot.

50) Resilience – ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, including the capacity for self-organization and the capacity to adapt to stress and change.

51) Restoration – renewing degraded, damaged or destroyed ecosystems and habitats in the environment by active human intervention and action.

52) *Retireiro* – traditional communities living along the Araguaia River in Tocantins and Mato Grosso.

53) Satoyama – a global initiative with the purpose of realizing "societies in harmony with nature" through the conservation and advancement of "socio-ecological production landscapes and seascapes".

54) Savanna – tropical grassland scattered with shrubs and isolated trees, due to limited rainfall, which can be found between rainforest and desert biomes.

55) *Sertanejo* – traditional inhabitant of the *sertão*, the backlands of Brazil.

56) Sociobiodiversity – goods and services based on use of natural resources by traditional peoples and communities and family farmers.

57) Socioenvironmental – environmental but taking into account synergies with traditional social organization and culture.

58) Stakeholder – person, group or organization that has stake (interest or concern) in an organization.

59) Stepping stone – patch of habitat that allows for ecological connectivity among larger fragments where continuous strips (ecological corridors) are not possible.

60) Strategic Direction – a grouping of several investment priorities within the CEPF investment strategy for a hotspot.

61) Sustainable use – category of protected areas (conservation units) in Brazil, formerly known as Direct Use, which allows sustainable productive activities, as opposed to Integral Protection (strict conservation) protected areas.

62) Traditional peoples and communities – groups that have cultures different from those that predominate in society, possess their own identity, distinct social organization, use of territories and natural resources to maintain their culture regarding social organization, religion, economy and ancestry.

63) *Vazanteiro* – member of a traditional community living on islands in or banks along the São Francisco, Tocantins and Araguaia rivers.

LIST OF ACRONYMS

ABA	Brazilian Anthropological Association
ABAG	Brazilian Association of Agribusiness
ABC	Brazilian Cooperation Agency
ABC	Low-Carbon Agriculture
ABEMA	Brazilian Association of State Environmental Agencies
ABI	Brazilian Press Association
ABIP	Brazilian Indigenous Peoples Network
ABIOVE	Brazilian Association of Vegetable Oil Industries
ABONG	Brazilian Association of Non-governmental Organizations
ABRAS	Brazilian Association of Supermarkets
ABRH	Brazilian Association of Water Resources
AECID	Spanish Agency for International Development Cooperation
AFD	French Development Agency (Agence Française de Développement)
AHP	Analytical Hierarchical Process
AMAVIDA	Maranhão Association for Nature Conservation
ANA	National Water Agency
ANAMMA	National Association of Municipal Environmental Agencies
ANATER	National Rural Extension Agency
ANPEC	National Association of Graduate Study and Research in Economics
ANPOCS	National Association of Graduate Study and Research in Social Sciences
ANPPAS	National Association of Research and Graduate Study on Environment and Society
ANVISA	National Agency for Sanitary Surveillance and Inspection
APA	Environmental Protection Area
APDC	Association for Direct Seed Cropping in the Cerrado
APOINME	Network of Indigenous Peoples and Organizations of the Northeast, Minas Gerais and Espírito Santo
APP	Area of Permanent Preservation
APROSOJA	Brazilian Soybean Producer Association
ASCEMA	National Association of Environment Experts Servers
ASIBAMA	Association of Environment Civil Servants of the Brazilian Institute of Environment and Renewable Natural Resources and Chico Mendes Institute for Biodiversity Conservation
ASMUPIB	Regional Association of Women Rural Workers in the Bico do Papagaio
ASPTA	Advisory and Services for Alternative Agriculture Projects
ASSEMA	Association of Ministry of Environment Servers
AZE	Alliance for Zero Extinction
BASA	Bank of the Amazon
BASIC	Brazil, South Africa, India and China
BB	Bank of Brazil
BNB	Bank of the Northeast
BNDES	National Economic and Social Development Bank
BRB	Regional Bank of Brasília
BRIICS	Brazil, Russia, India, Indonesia, China and South Africa
BVRio	Rio de Janeiro Environmental Stock Exchange
CAN	National Confederation of Agriculture and Livestock
CAR	Rural Environmental Registry
CAPES	Coordination for the Improvement of Higher Education

CBH	Watershed Committees
CBD	Convention on Biological Diversity
CEBDS	Brazilian Business Council for Sustainable Development
CECAT	National Center for Research and Conservation of the Biodiversity of the Cerrado and Caatinga
CEDAC	Cerrado Agroecological Development Center
CENARGEN	Genetic Resources and Biotechnology Center
CEPF	Critical Ecosystem Partnership Fund
CESE	Ecumenical Coordination of Service
CFRs	Rural Family Houses (schools)
CGTB	General Central of Brazilian Workers
CI	Conservation International
CIF	Climate Investment Fund
CIMI	Missionary Indigenist Council
CIRAD	Center of Agronomy Research for Development (*Centre de Recherche Agronomique pour le Développement*)
CIRAT	International Reference Center on Water and Transdisciplinarity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLUA	Climate and Land Use Alliance
CMADS	Commission on Environment and Sustainable Development
CMBBC	Conservation and Management of the Plant Biodiversity of the Cerrado Biome
CNAPO	National Commission of Agroecology and Organic Production
CNC	National Confederation of Commerce
CNC Flora	National Center for Plant Conservation
CNEA	National Registry of Environmental Organizations
CNI	National Confederation of Industry
CNJI	National Commission of Indigenous Youth
CNMP	National Council of Public Attorneys
CNPJ	National Register of Legal Entities
CNPq	National Research and Technological Development Council
CNRH	National Water Resources Council
CNS	National Council of Extractivist Populations
CODEVASF	Company for Development of the São Francisco Valley
COIAB	Coordination of Indigenous Organizations of the Brazilian Amazon
COMCERRADO	Science and Technology Cooperation Network for Conservation and Sustainable Use of the Cerrado
CONAB	National Supply Company
CONABIO	National Biodiversity Commission
CONACER	National Cerrado Commission
CONAMA	National Environment Council
CONDRAF	National Sustainable Rural Development Commission
COPALJ	Cooperative of Agro-extractivist Producers of Lago de Junco
CONTAG	National Confederation of Workers in Agriculture
COP	Conference of the Parties
CPAC	Center for Cerrado Agricultural Research (at EMBRAPA)
CPT	Pastoral Land Commission
CSO	Civil Society Organization
CSTT	Civil Society Tracking Tool
CTB	Confederation of Brazilian Workers

CTC	Countryside Workers Central
CTI	Center of Indigenous Work
CUT	Unified Workers Central
DAP	Declaration of Aptitude for PRONAF
DEFRA	Department of Environment, Food and Rural Affairs (United Kingdom)
DETER	System to Detect Deforestation in Real Time
DfID	Department for International Development
EBC	Brazilian Communication Company
ECODATA	Brazilian Agency for Environment and Information Technology
EFR	Family Rural School
EMBRAPA	Brazilian Agriculture and Livestock Research Enterprise
FAMATO	Federation of Agriculture and Livestock of the State of Mato Grosso
FAO	Food and Agriculture Organization of the United Nations
FAP	Research Support Foundations
FAPESP	State Research Support Foundation in São Paulo
FASE	Federation of Organizations for Social and Educational Assistance
FBB	Bank of Brazil Foundation
FBDS	Brazilian Foundation for Sustainable Development
FBES	Brazilian Solidary Economy Forum
FBMC	Brazilian Forum on Climate Change
FBOMS	Brazilian Forum of NGOs and Social Movements for Environment and Development
FCO	Constitutional Fund of the Center-West
FEBRABAN	Brazilian Federation of Banks
FGTS	Guarantee Fund for Employees
FIP	Forest Investment Program
FNDF	National Education Development Fund
FNE	Constitutional Fund of the Northeast
FNO	Constitutional Fund of the North
FOIRN	Federation of Indigenous Organizations of the Rio Negro
FORMAD	Mato Grosso Forum for Environment and Development
FUNATURA	Pro-Nature Foundation
GAPAN	Supporting Groups to National Action Plans
GCC	Global Climate Change
GCF	Global Conservation Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GENPAC	Network for Geographic Genetics and Regional Planning for Conservation of the Cerrado
GHG	Greenhouse Gas
GIZ	German Technical Cooperation Agency
GMO	Genetically Modified Organism
GTA	Amazon Working Group
HDI	Human Development Index
IABS	Brazilian Institute of Development and Sustainability
IADB	Inter-American Development Bank
IBÁ	Brazilian Tree Institute
IBA	Important Bird Area
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources
IBAS	India, Brazil and South Africa

IBRACE	Central Brazil Institute
IBGE	Brazilian Institute of Geography and Statistics
ICCA	Indigenous and Community Conserved Areas
ICMBio	Chico Mendes Institute for Biodiversity Conservation
ICMS	Value-added tax
ICRAF	World Agroforestry Center
ICV	Life Center Institute
IDB	Inter-American Development Bank
IESB	Institute for Socio-Environmental Studies of Southern Bahia
IICA	Inter-American Institute for Agricultural Cooperation
IIEB	Brazililan International Institute for Education
ILUC	Indirect Land Use Change
IMAFLORA	Institute for Forestry and Agriculture Management and Certification
IMAZON	Institute of Man and the Environment in the Amazon
IMS	Marista Solidarity Institute
INCRA	National Institute of Colonization and Agrarian Reform
INDC	Intended Nationally Determined Contribution
INPA	Amazon National Research Institute
INPE	National Space Research Agency
INSA	National Semi-Arid Institute
IPA	Anthropic Pressure Index
IPAM	Institute for Amazon Research
IPCC	Intergovernmental Panel on Climate Change
IPÊ	Ecological Research Institute
IPEC	Cerrado Permaculture Institute
IPHAN	National Institute of Historical and Artistic Heritages
IRD	Research Institute for Development (Institut de Recherche pour le Développement)
ISA	Socioenvironmental Institute
ISPN	Institute for Society, Population and Nature
IUCN	International Union for Conservation of Nature
JBB	Botanical Garden of Brasília
JBRJ	Rio de Janeiro Botanical Garden
JICA	Japan International Cooperation Agency
LAPIG	Laboratory of Image Processing and Geoprocessing
LULUCF	Land Use, Land Use Change and Forestry
KBA	Key Biodiversity Area
MAPA	Ministry of Agriculture, Livestock and Supply
MATOPIBA	Maranhão, Tocantins, Piauí and Bahia
MCTI	Ministry of Science, Technology and Innovation
MDA	Ministry of Agrarian Development
MDB	Multilateral Development Banks
MDG	Millennium Development Goals
MDS	Ministry of Social Development and the Fight against Hunger
MEC	Ministry of Education
MI	Ministry of National Integration
MIQCB	Interstate Movement of Women Babassu Crackers
MMA	Ministry of Environment
MME	Ministry of Mines and Energy
MRE	Ministry of External Relations

MOPIC	Cerrado Indigenous Peoples Mobilization
MPA	Small Farmers Movement
MPEG	Emilio Goeldi Museum of Pará
MROSC	Framework for Civil Society Organizations
MSI	Multi-Stakeholder Initiatives
MST	Landless Workers Movement
MTC	Rural Workers Movement
NGO	non-governmental organization
NCP	Cerrado and Pantanal Center
NTFP	Non-Timber Forest Product
OAS	Organization of American States
OCB	Brazilian Cooperative Organization
ONS	National System Operator
OPAN	Native Amazon Operation
OS	Social Organizations
OSCIPs	Public Interest Civil Society Organizations
OTCA	Amazon Cooperation Treaty Organization
PA	Protected Area
PAA	Food Acquisition Program
PAE	Agro-Extractive Settlement Project
PAC	Plan to Accelerate Growth
PAN	National Action Plan
PBMC	Brazilian Panel on Climate Change
PCS	Sustainable Cerrado Program
PES	Payment for Environmental Services
PGPM	Minimum Price Guarantee Policy
PGPM-Bio	Minimum Price Guarantee Policy for Socio-Biodiversity Products
PESACRE	Acre Agroforestry Research and Extension Group
PN	National Park
PNAE	National School Lunch Program
PNAP	National Strategic Plan for Protected Areas
PNAPO	National Policy for Agro-Ecology and Organic Production
POP	Persistent Organic Pollutants
PPG7	Pilot Program to Conserve the Brazilian Rain Forest
PPCerrado	Action Plan for Prevention and Control of Deforestation and Fires in the Cerrado
PLANAVEG	National Plan to Recover Native Vegetation
PNGATI	National Policy for Environmental Management in Indigenous Lands
PNPCT	National Policy for Sustainable Development of Traditional Peoples and Communities
PNPSB	National Plan for Promotion of Socio-Biodiversity Value Chains
PRA	Environmental Regularization Program
PROBIO	National Program for Biodiversity Protection
PRONAF	National Program to Strengthen Family Agriculture
RAPPAM	Rapid Assessment and Prioritization of Protected Area Management
RBJA	Brazilian Network of Environmental Journalism
RDS	Sustainable Development Reserve
REBAL	Brazilian Network of Local Agendas 21
REBEA	Environmental Education Network
REBIA	Brazilian Network of Environmental Information

RECO	Eco-social Region
REDD+	Reduction of Emissions from Deforestation and Forest Degradation
REDEPROUC	Pro-Conservation Unit Network
RESEX	Extractive Reserve
RIDE	Integrated Development Region of the Federal District and surrounding areas
RL	Legal Reserve
RMA	Atlantic Forest Network
RPPN	Private Natural Heritage Reserve
RTRS	Round Table on Sustainable Soy
RTS	Social Technology Network
SAE	Secretariat of Strategic Affairs
SAF	Department of Family Farming
SAIC	Secretariat of Institutional Coordination and Environmental Citizenship
SBPC	Society for the Advancement of Science
SDG	Sustainable Development Goals
SEDR	Secretariat of Extractivism and Sustainable Rural Development
SESI	Social Service of Industry
SEPPIR	Secretary for the Promotion of Policies for Racial Equity
SFB	Brazilian Forest Service
SGP	Small Grants Program
SIN	National Integrated System
SISNAMA	National Environment System
SMCQ	Secretariat of Climate Change and Environmental Quality
SNA	National Agriculture Society
SNUC	National System of Nature Conservation Units
SOSMA	SOS Atlantic Forest Foundation
SPM	Specific Federal Ministry for Policies for Women
SPVS	Society for Research on Wildlife and Environmental Education
SRB	Brazilian Rural Society
SRHU	Secretariat of Water Resources and Urban Environment
STRLRV	Rural Workers Union of Lucas do Rio Verde
SUASA	Single System of Care for Agricultural Sanitation
SUDAM	Superintendency for Development of the Amazon
SUDECO	Superintendency for Development of the Center-West
SUDENE	Superintendency for Development of the Northeast
SUNY	State University of New York
SUS	Single Health System
TFCA	Tropical Forest Conservation Act
TFF	Tropical Forest Foundation
TNC	The Nature Conservancy
UC	Conservation Unit
UF	Federative Unit
UFG	Federal University of Goiás
UGT	General Workers' Union
UHE	Hydroelectric Power Plant
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNEMAT	Mato Grosso State University
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNI	Union of Indigenous Nations
UNICA	Sugarcane Industry Union
UNICAFES	National Union of Family Farmer Cooperatives and Solidary Economy
UNICAMP	State University of Campinas
UNIMONTES	Montes Claros State University
USAID	United States Agency for International Development
WBCSD	World Business Council for Sustainable Development
WLT	World Land Trust
WRI	World Resources Institute
WWF	World-Wide Fund for Nature
ZEE	Ecological-Economic Zoning

EXECUTIVE SUMMARY

Biodiversity and the threats to it are not distributed evenly over the face of the globe. Conservation organizations seek to maximize the effectiveness of their limited funds by focusing on the most important places, where action is most urgent and effective. One of the most influential priority-setting analyses was the identification of biodiversity "hotspots" (Myers *et al.* 2000; Mittermeier *et al.* 2004), defined as regions that have at least 1,500 endemic plants species and have lost at least 70 percent of their natural habitat. There are 35 hotspots globally, covering 15.7% of the earth's surface. The natural habitats within these hotspots cover only 2.3% of the world's surface, but contain half of all plants and 77% of all terrestrial vertebrates. There are two hotspots in Brazil: the Atlantic Forest and the Cerrado. The CEPF invested in the Atlantic Forest Hotspot between 2001 and 2010.

According to the original definition, the Cerrado Hotspot, located in central South America, has a total land area of 2,024,838 km^2, 99,30% in Brazil and the remainder divided between Paraguay (0,41%) and Bolivia (0,29%). These numbers have been updated to 2,039,386 km^2 just for the Cerrado biome in Brazil but no agreement has been reached for the extent of Cerrado in Paraguay and Bolivia. For the purposes of the ecosystem profile, the Cerrado Hotspot was taken to comprise the Cerrado biome recognized by the Brazilian government plus four Important Bird Areas (IBAs) in neighboring Bolivia and Paraguay, which contain examples of Cerrado ecosystems. The total area considered for the Cerrado Hotspot in this ecosystem profile is thus 2,064,301 km^2.

The Cerrado is one of the largest and biologically richest tropical savanna regions in the world (Mittermeier *et al*. 2004) and supports highly diverse biological communities with many unique species and varieties. Many of these species and varieties are endemic not only to the hotspot, but also to single sites within it. They are unique and useful, as well as constituting an ecosystem that is vital regarding national supplies of water and energy, control of erosion and reduction of greenhouse gas emissions. Such species are highly vulnerable to habitat loss, hunting, poaching, pollution and other pressures.

The development of an ecosystem profile to guide investments in each hotspot is a fundamental part of CEPF's approach prior to the award of grants. The process is led by civil society groups and includes diverse stakeholders to develop a shared strategy from the outset. This ecosystem profile includes overall conservation outcomes, major threats, policy, civil society and socioeconomic contexts, funding gaps and opportunities, as well as the CEPF niche, strategies and sustainability.

The ecosystem profile lists 1,629 terrestrial and freshwater species classified by the International Union for Conservation of Nature (IUCN) as globally threatened and by Brazilian environmental authorities as nationally threatened, as well as rare fish and rare plant species. There are many more species for which data is inadequate to allow full assessment of their status. For many species, the key to conservation is protection of adequate areas of appropriate habitat. The profile therefore identifies important sites, known as key biodiversity areas (KBAs), where these threatened species are known to survive. In Brazil, 761 KBAs have been identified using records of the presence of threatened and vulnerable species. In Bolivia and Paraguay, four Important Bird Areas (IBAs) were used.

In some cases, the protection of discrete areas of habitat within a KBA may not ensure the survival of a species, especially where the species ranges widely over the landscape or occurs at a very low density. These large areas play a vital role in ensuring connectivity among KBAs. In doing so, they also play an important role in maintaining ecosystem functions important for nature and for human livelihoods in the Cerrado, other biomes and neighboring countries, or even the whole planet, in the case of climate change.

Fragmentation of the region has had a defining influence on social, political and economic landscapes. The majority of the region’s 43 million people live in urban areas, but around 12.5 million still derive their living from farms, forests and wetlands. However, the region is changing rapidly. The construction of the new capital at Brasília in the late 1950s intensified a process of frontier settlement in the heart of Cerrado. In the 1980s, with technological innovation, agribusiness boomed in the hotspot.

The major threats to the Cerrado now and in the near future are cattle-raising, annual crops (mainly soybeans, corn and cotton), biofuel (sugar cane), charcoal, fire and mono-species tree plantations. Erosion, invasive species, permanent crops, swine, transportation and warming (both local and global) are also relevant. This leads to deforestation at the rate of 6,000 km^2 per year; with the actual knowledge, the hotspot lost approximately 50% of its natural coverage.

Despite these problems, national and local governments have recognized the importance of the region’s natural resources and biodiversity. Brazil has created official terrestrial protected areas in 8.3% of the Cerrado. It has set a goal of 17% of the biome in protected areas in order to meet the Aichi target, as well as ambitious goals to reduce deforestation and emissions. In order to significantly reduce greenhouse gas emissions and maintain hydrological cycles, larger areas are needed. The ideal would be to keep at least 50% of the Cerrado, about a million square kilometers, with native vegetation coverage, through a combination of conservation, sustainable use and restoration. Creation of public protected areas on private land is very costly in cases that imply land expropriation, especially with the government facing budget restrictions. The Forest Law also requires Legal Reserves of at least 35% in the hotspot zone declared as ‘Legal Amazon’ and 20% in the remaining area, and Areas of Permanent Protection on hilltops and steep slopes and along the edges of streams and rivers. Indigenous and traditional communities have developed a variety of mechanisms for controlling and managing their natural resources. Indigenous lands, which are the most intact parts of the Cerrado, are located mostly on the fringes of the Amazon.

Many other types of traditional communities and family farmers are omnipresent wherever native vegetation remains, mostly in the northern portion of the hotspot. The nature of resource use, however, has changed to use of land for large-scale crop and livestock production. Formal mechanisms for the planning and enforcement of rules on the exploitation of natural resources have generally failed to deliver efficient or sustainable outcomes. Limited capacity, lack of political will, poor monitoring and conflicts between customary and formal resource management regimes have conspired to create a situation in which opportunistic, short-term and often illegal natural resource exploitation by companies and individuals predominates, while carefully planned and managed sustainable use is the exception.

To increase the chance of success, it is important that actions supported by CEPF complement existing strategies and programs of national governments, donors and other stakeholders. To this end, before starting a grant-making program, CEPF works with local stakeholders to develop an ecosystem profile for each hotspot. The profile describes the important species and sites, as well as the threats, opportunities and actions that are already being taken for conservation in the region, enabling CEPF to identify priority sites, species and themes to support.

The ecosystem profile for the Cerrado was developed between October 2014 and October 2015, through a process that involved the participation of more than 170 people representing 130 private or public institutions and companies. It also involved extensive literature review, analysis of various kinds of data and use of experience in support for local communities all over the region through the GEF-UNDP Small Grants Program. A group of senior experts with different skills and profiles – composed by specialists from universities, government, civil society organizations, multilateral institutions and private sector – was invited to join an Advisory Group to provide strategic guidelines to the ecosystem profile preparation and to review the approach, the methods and the document as well.

Criteria, including government priority, urgency, opportunity, remaining native vegetation coverage area, protected areas and strength of civil society organization, were used to select four priority corridors out of the 13 identified. CEPF investment will focus on the northern and eastern part of the hotspot, from Maranhão in the north to Minas Gerais in the south with Mirador-Mesas, Central of Matopiba, Veadeiros-Pouso Alto-Kalungas and Sertão Veredas-Peruaçu priority corridors. Within these four priority corridors, certain site-level investments will target 62 priority sites, based upon a prioritization of KBAs according to biological, socioeconomic and ecosystem services criteria.

Increasingly, funding from abroad will mostly be directed at addressing climate change, which can be mitigated by keeping native vegetation standing. Funding from within Brazil, on the other hand, could be mobilized by showing how the native flora and fauna of the Cerrado maintain flows of rivers and atmospheric moisture to other regions to the south, as well as parts of Bolivia, Paraguay, Argentina and Uruguay. Awareness of the interdependent ecosystem and socioeconomic functions of biodiversity in the Cerrado can be one of CEPF's major contributions.

In addition, it would be fundamental to invest in the strengthening of civil society and changes in norms and regulations at the federal and state levels so as to mainstream biodiversity conservation into public policies and private practices. CEPF investments in Cerrado will produce a relevant impact on the ability of civil society to positively influence public policies and private initiatives towards conservation and sustainable development of the hotspot. By also supporting the practices of non-timber forest products supply chains carried out by rural communities, indigenous people and '*quilombolas'* (Afro-Brazilian descendants of slaves), CEPF funds will enable a better insertion in the market of the so-called 'socio-biodiversity products' thus creating economic incentives for biodiversity conservation. By investing in one of the most important regions for agricultural commodities in the world, CEPF will help to increase the effectiveness and the scale of agribusiness' sustainable practices.

CEPF's support to the establishment of new public and private protected areas and the management effectiveness of already existing ones will also enhance the status of legal protection for the critically endangered species in the hotspot. Altogether, this strategy, in targeted priority areas, will leverage a remarkable contribution to the conservation of Cerrado, as has been the case for the protection of other hotspots around the world.

1. INTRODUCTION

1.1 Cerrado Hotspot

The Cerrado is the largest hotspot in the Western Hemisphere, covering more than 2 million km^2 in Brazil and extending marginally (about 1%) into Bolivia and Paraguay. The Brazilian Cerrado biome is the second largest biome in South America, covering an area[1] of 2,039,386 km^2, 24% of Brazil's territory.

Recognized as a global biodiversity hotspot, the Cerrado presents an extreme abundance of endemic species, being home to 12,070 catalogued native plants species. The great diversity of habitats gives rise to remarkable transitions among different vegetation typologies. A total of 251 species of mammals live in the Cerrado, along with a rich avifauna comprising 856 species. Fish (800 species), reptile (262 species) and amphibian (204 species) diversities are also high. For those reasons, the Cerrado is considered to be one of the biologically richest tropical savanna regions in the world (Mittermeier *et al.* 2004). This hotspot also includes the headwaters of three of South America's major river basins (Amazon/Tocantins, São Francisco and Plata), thus highlighting its importance for both water security and biodiversity.

During the preparation of this ecosystem profile, one challenge faced by the team was to reconcile the Cerrado Hotspot limits (Figure 1.1) proposed in a publication by Mittermeier *et al.* (2004) and the official boundaries of the Cerrado biome set by the Brazilian government.

The original hotspot boundaries in Bolivia and Paraguay cover significant natural areas, whose biological importance is highlighted by classifying them as Important Bird Areas (IBAs). However, when analyzing these IBAs – one in Bolivia and three in Paraguay – it appears that only a small part of them is included in the original hotspot boundary. Other differences between the boundaries of the hotspot and the Brazilian biome were noticed along the northern and southern boundaries of the hotspot (Figure 1.2 highlights the differences between the Brazilian biome boundaries and the hotspot boundaries).

Therefore, in order to include a larger area of analysis, encompassing the entire hotspot as well as the entire Cerrado biome, plus the IBAs in Bolivia and Paraguay, an initial proposal for a new delimitation of the hotspot boundary was made for the profiling exercise. This initial redefinition of the hotspot boundary combined the Cerrado biome in Brazil with the four IBAs in Bolivia and Paraguay (Figure 1.3).

[1] Brazilian official sources differ about this figure. The figure presented in this document is used by both the Brazilian Institute of Geography and Statistics (IBGE) and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA).

Figure 1.1: Cerrado Hotspot boundaries (Source: Mittermeier *et al.* 2004)

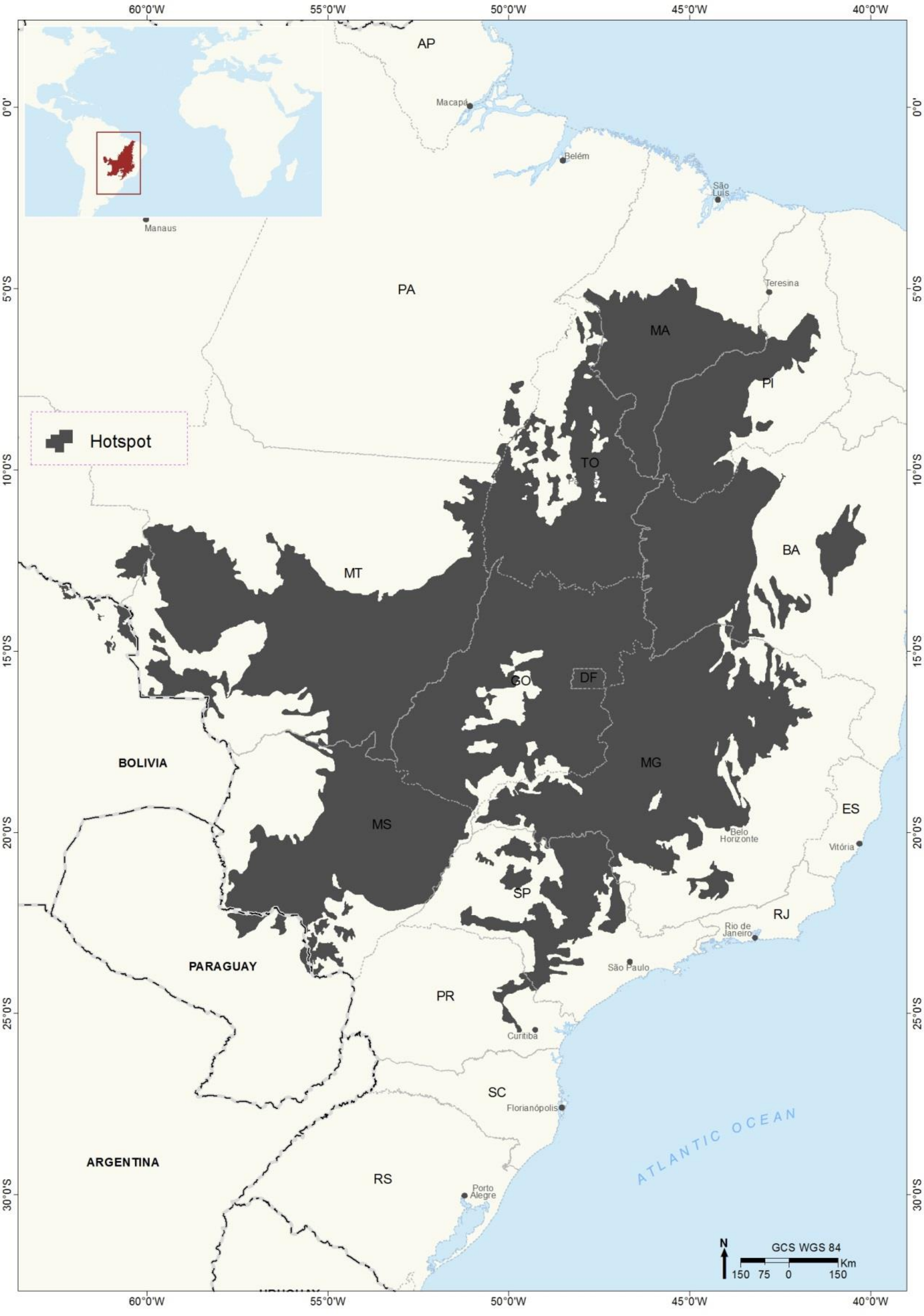
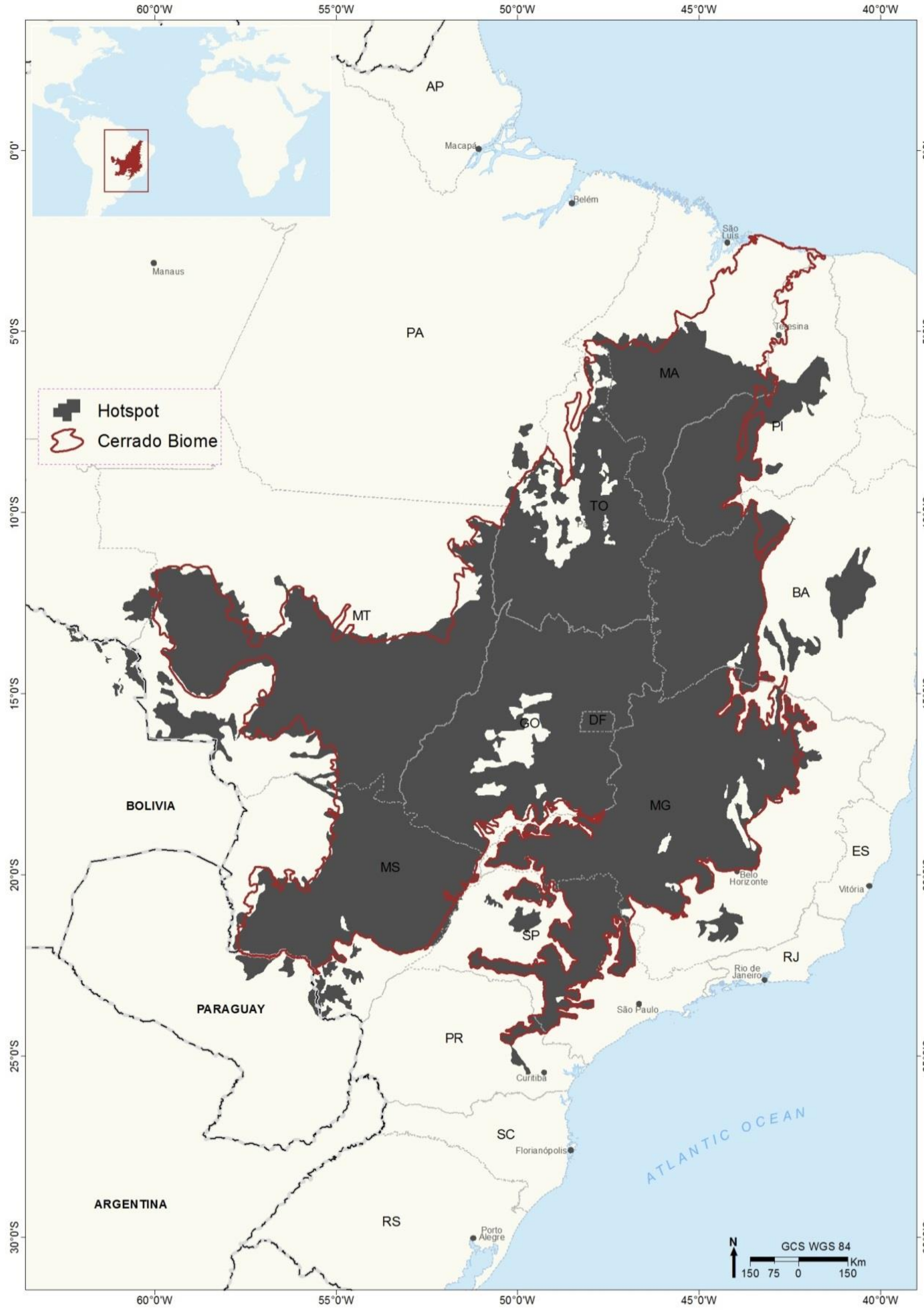
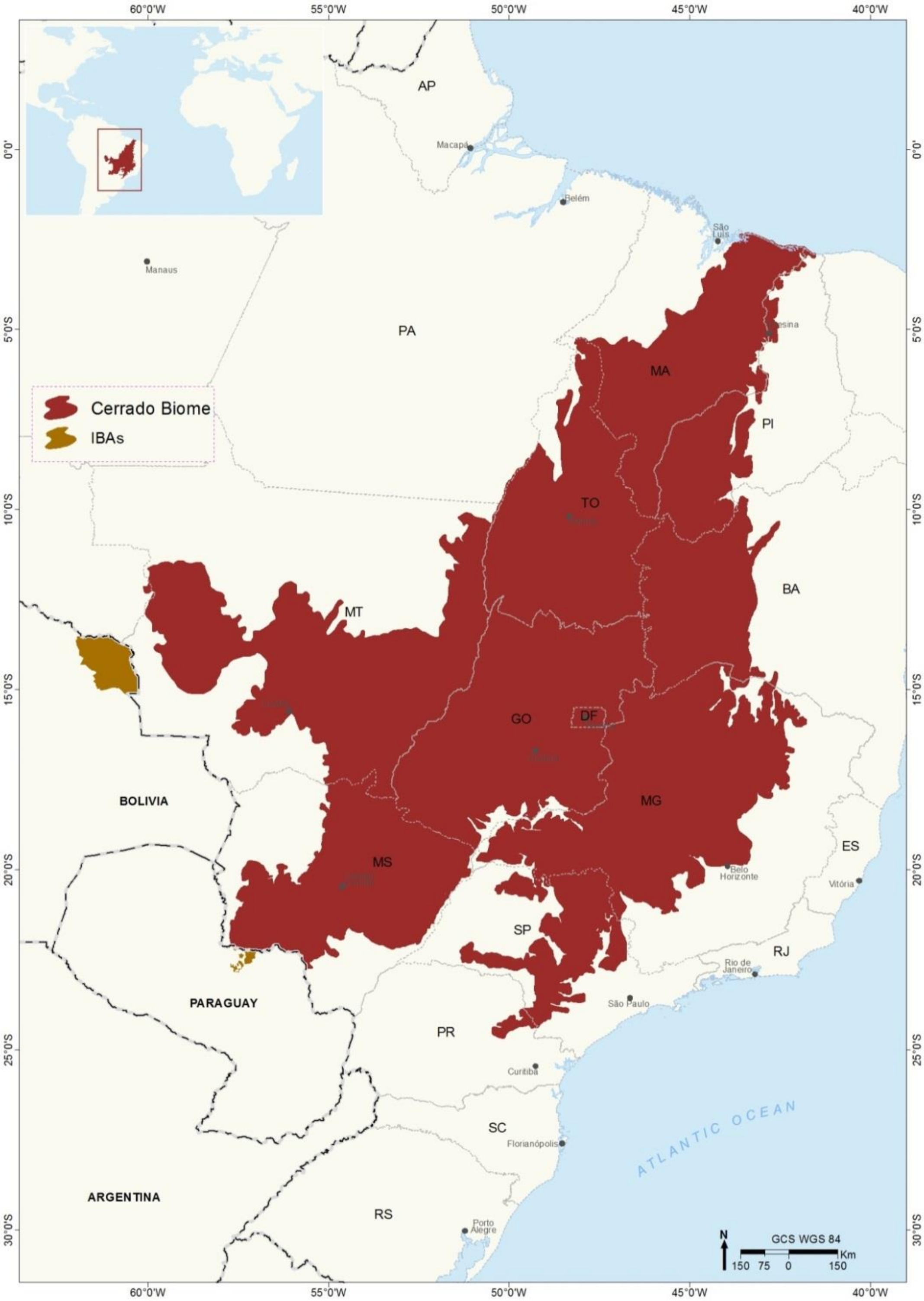


Figure 1.2: Cerrado Biome boundaries (Source: Ministry of Environment and IBGE 2004) and Cerrado Hotspot boundaries (Source: Mittermeier *et al.* 2004).



This proposal could certainly be further analyzed in the future after more information is gathered and consultation with experts in the three countries. This is one of the initiatives that the CEPF investments could support, as part of the exchange of experiences among the three countries.

Figure 1.3: Cerrado biome boundaries (Source: Ministry of Environment) and Important Bird Areas that contain Cerrado ecosystems (Source: Birdlife International).



The dimensions of the original hotspot boundaries and of the newly proposed ones, including those in Paraguay and Bolivia, are shown in Table 1.1 below.

Table 1.1. Distribution of Hotspot Areas per Country (Original and New Proposal)

	Area (hectares)[a]	%
Cerrado Hotspot (original)	**202,483,809.57**	**100%**
Hotspot in Brazil	201,068,328.90	99.30%
Hotspot in Bolivia	594,558.27	0.29%
Hotspot in Paraguay	820,922.13	0.41%
New proposed area for the Cerrado Hotspot	**206,430,056.84**	**100%**
Cerrado Biome (by Brazilian Law)	204,006,553.92	98.83%
IBAs – Bolivia (BirdLife)	2,246,778.53	1.09%
IBAs – Paraguay (BirdLife)	176,724.39	0.09%

[a] These figures may differ on the basis of the type of projection used. Here figures reflect a shapefile calculation based on a SIRGAS 2000 projection.

Besides its environmental aspects, the Cerrado has great social importance. Many people depend on its natural resources to survive and thrive, including indigenous groups, *quilombolas*[2], *geraizeiros*[3], *ribeirinhos*[4] and babassu crackers[5], which are all part of Brazil's historical and cultural heritage, and who share traditional knowledge of biodiversity. More than 220 species have known medicinal use, and a wide variety of native fruits are regularly consumed by local people and sold in urban centers, particularly *pequi* (*Caryocar braziliense*), *buriti* (*Mauritia flexuosa*), *mangaba* (*Hancornia speciosa*), *cagaita* (*Eugenia dysenterica*), *bacupari* (*Salacia crassifolia*), *araticum* (*Annona crassifolia*) and the nuts of *baru* (*Dipteryx alata*).

However, numerous species of plants and animals are threatened or at risk of extinction. It is estimated that 20% of native and endemic species are not protected by any legal protected areas and at least 345 species of animals occurring in the Cerrado are threatened with extinction (see Section 5.2), according to official lists.

After the Atlantic Forest, the Cerrado is the Brazilian biome that has suffered most from human occupation. It is this combination of conditions – high biodiversity and high degree of threat to and loss of habitat – that makes these two biomes priorities for investment in biodiversity conservation and ecosystem services.

Despite the recognition of its biological importance, the Cerrado has a low percentage of areas under full protection. This biome has 8.3% of its territory legally protected. Of this total, 3.1% are fully protected conservation units and 5.2% are sustainable-use protected areas, including private reserves (0.09%).

[2] ***Quilombola*** is a common name for descendants of slaves who, during the period of slavery, fled the sugarcane mills,farms and mines. They are similar to "Maroons."

[3] ***Geraizeiros*** are traditional people living in savannas of northern Minas Gerais. This term derives from the fact that local Cerrado regions are known as "Gerais."

[4] ***Ribeirinhos*** make up a traditional population living along rivers whose main livelihood is artisanal fishing. They cultivate small clearings for themselves and sometimes also practice extractive activities.

[5] **Babassu crackers** are groups almost exclusively made up of women in extractive communities in the states of Maranhão, Tocantins, Pará and Piauí. Located around areas of babassu palm trees, the crackers developed original forms of land management and have their own code of organization.

Currently, the Cerrado is one of the planet's leading areas for agricultural and livestock production. Although this is a cause of pride for many, frontier expansion also takes its toll: half of the biome has already been cleared, placing the rich, unique and useful biodiversity and all the ecosystem services it provides at risk. The pressure continues to be intense because of the agricultural expansion of soy, beef, sugarcane, eucalyptus and cotton, which are essential for the national economy and world markets. As a consequence, yearly deforestation rates in the Cerrado are higher than in the Amazon, where rates have dropped and the total area already cleared is smaller. At the same time, the socioeconomic situation in the Cerrado is far from equitable, inclusive or respectful of nature. For instance, the Cerrado currently produces 30% of Brazil's Gross Domestic Product (GDP), but its Human Development Index (HDI) is lower than the national average. Although it has the largest intact areas with indigenous lands, indigenous and traditional communities are under intense pressure from crop and cattle expansion. This hotspot thus needs urgent action to ensure environmental sustainability and the well-being of its population.

1.2 The Cerrado Ecosystem Profile

Between October 2014 and October 2015, Conservation International Brazil (CI-Brazil) and the Institute for Society, Population and Nature (ISPN) joined efforts to develop this ecosystem profile. The process to prepare this document featured contributions, critical analyses and recommendations from more than 170 people, including researchers, community and indigenous leaders, private sector representatives and members of nongovernmental organizations, government authorities and universities or research centers.

Four workshops were held with different stakeholders, three in Brasilia and one in Sao Paulo. During these workshops the profiling team presented CEPF to a wide range of institutions in the three sectors – government, business and civil society – and gathered recommendations for the production of this document. The first workshop was attended by 55 representatives of the civil society. A total of 22 leading private sector representatives were subsequently consulted during two other workshops. The last workshop, attended by about 50 people from different segments, was crucial to revise the methodology for systematizing and prioritizing Key Biodiversity Areas (KBAs) and strategic corridors, as well as to set strategic directions and investment priorities for CEPF.

In addition to these consultation and strategic planning workshops, the preparation of the ecosystem profile involved a broad, detailed bibliographical and documentary survey, which resulted in the compilation of information found in the first chapters. Given the peculiarities of this hotspot, innovations in the methodologies for prioritizing KBAs and targeting corridors for CEPF investment were proposed and applied.

This ecosystem profile of the Cerrado Hotspot was draftedand revised by taking into account comments by reviewers, including the CEPF Secretariat and Working Group, specialists, donors and government authorities. The Advisory Group with representatives from different sectors (civil society, private companies, government, academia and multilateral institutions, as presented in the preface) also provided its support.

As a final stepping stone to the elaboration of this ecosystem profile, a fifth and last consultation workshop was held in mid-October 2015 to validate the strategic directions and the priority investments with key senior stakeholders.

It is important to emphasize that this ecosystem profile is a public document. Although its main objective is to guide CEPF's investments in biodiversity conservation and recovery for the Cerrado, it also aims to inform best practices for public and private initiatives. Therefore, the diagnosis and the strategic directions and investment priorities listed in this document can and should inspire and guide other programs and donors as well.

2. BACKGROUND

This chapter describes the ecosystem profile process, including the compilation of this document, the literature review and the stakeholder consultations.

The purpose of the ecosystem profile is to provide an overview of biodiversity conservation in the Cerrado Hotspot, to analyze priorities for action and to identify ways to strengthen the constituency for conservation in the Cerrado. In doing so, it lays out a strategic framework for the implementation of CEPF's conservation grant-making program in the hotspot, which will span five years beginning in 2016. It also sets out a broader conservation agenda in the region and aims to encourage more stakeholders to engage with and support this agenda.

Although the Cerrado was selected as one of the original 25 global hotspots (Myers 1988, 1990; Mittermeier *et al.* 2000), until recently it received very little attention from the Brazilian government and the international community. The other global hotspot in Brazil, the Atlantic Forest, was included in the Pilot Program to Conserve the Brazilian Rain Forest (PPG7) between 1993 and 2009 and received support from CEPF between 2001 and 2011. Now that there has been significant reduction in deforestation in the Atlantic Forest and the Amazon, the Cerrado has begun to receive more international attention. Yet it still receives much lower levels of funding (see Chapter 11).

The ecosystem profile describes biodiversity conservation actions needed in the Cerrado by defining conservation outcomes. As described in detail in Chapter 5, these outcomes are defined at three levels: species, sites and corridors (*i.e.*, landscapes). The basic unit of analysis for defining conservation outcomes, therefore, is information on sites where populations of threatened species can be found, called Key Biodiversity Areas (KBAs). To collate this information, the profiling team at CI-Brazil reviewed existing analyses, including the International Union for Conservation of Nature (IUCN) Red List of globally threatened species and the updated Red List for Brazil published in December 2014. The team also reviewed published books, reports and papers describing species and habitats in the Cerrado, as well as unpublished reports and information available on the Internet or from stakeholders consulted during the process.

CEPF makes grants to civil society organizations, which are defined as non-governmental organizations (NGOs), community groups, individuals, universities, foundations and private sector organizations. Government organizations are eligible for the CEPF funds provided they can establish their legal status as being independent of any government agency, their authority to apply for and receive private funds, and their inability to assert a claim of sovereign immunity. For CEPF, understanding the interests, capacity and needs of civil society in Brazil is as important as understanding the Cerrado biodiversity. ISPN has extensive hands-on experience in working with civil society in the Cerrado, especially as Technical-Administrative Coordination of the Global Environment Facility-United Nations Development Program (GEF-UNDP) Small Grants Program (SGP) in the Cerrado since 1995, called the "Program of Ecosocial Small Projects" or PPP-ECOS by its Portuguese acronym. The PPP-ECOS has been the only such program in Brazil with a geographical focus on the Cerrado and its transitions to the Amazon, Pantanal, Caatinga and Atlantic Forest. The strategy has been to promote conservation through sustainable biodiversity use within sustainable production landscapes that combine native vegetation and agriculture. The initiative has been important to systematize knowledge and lessons learned so far about the empowerment of local communities, the sustainability of their organizations over time (ability to avoid dependence of communities on the program, their participation in public policy dialogues and actual policy making), the establishment of appropriate controls, etc. The experience of the Pilot Program and the SGP of the GEF-UNDP, which have supported more than 400 projects in the Cerrado since 1995, makes it possible to take advantage of lessons learned and to undertake effective action to fulfill expectations about combining conservation and development. This is also true of other experiences such as government plans, programs and policies for conservation and international efforts such as the CEPF over the years, including support for the Atlantic Forest within Brazil. Chapter 8 greatly benefited from this analysis.

During 2014 and 2015, consultations were carried out with a wide range of stakeholders in civil society, government, the private sector and academia. Representatives of community organizations responded to a survey carried out in July 2014, during the National Meeting of Cerrado Peoples. In 2015, specific workshops were organized with civil society (March 31-April 1), the private sector (April 15 and June 16) and government, conservationists and researchers (June 10-11 and October 14-15), as well as a final workshop on October 14-15. Other meetings were also held with individual stakeholders, with a total participation of around 170 people. Although CEPF makes grants to civil society, government plays a critical role in conservation and is always a partner in its efforts. Representatives participated in the workshops and in many one-on-one meetings. The national GEF focal point for Brazil was consulted, as were representatives of the CEPF global donors, federal and state environmental authorities and conservation, development, indigenous peoples and private-sector organizations.

The profile is based to a large extent on published and unpublished literature about the Cerrado, especially in the ISPN library. Part of the vast bibliography is listed in the reference section. The documentation also includes the results of various participatory processes, such as: the Cerrado Treaty (1992), the conservation priority-setting workshop held by the National Program for Biodiversity Protection (PROBIO) (1998); reports of the project on Conservation and Management of the Plant Biodiversity of the Cerrado Biome (1996-1999); Cerrado Network Principles (1999); Sustainable Cerrado Program (2004); first revision of Priority Areas for Conservation of the Cerrado (2006); Science and Technology Cooperation Network for Conservation and Sustainable Use of the Cerrado (COMCERRADO) Scientific Plan for 2008-2011 (2007); Seminar on Cerrado Sociobiodiversity Value Chains (2007); COMCERRADO Planning Seminar (2008); IX National Cerrado Symposium (2008); Analyses of Regulatory Barriers (2010); second revision of Priority Areas for Conservation of the Cerrado (2011); Brazilian Forest Service Seminar on the Cerrado (2014); Action Plan for Prevention and Control of Deforestation and Fires in the Cerrado (PPCerrado) (2014) and results of the National Meetings and Fairs of Cerrado Peoples (2000-2014). The results of participatory processes regarding the Cerrado were compiled for discussion in the first workshop (Sawyer 2015).

The Sustainable Cerrado Program's National Commission (CONACER) is part of the governance system and the main forum consulted by PPCerrado in implementing its strategy. The CONACER has representatives from different sectors of society – the production sector, governments, indigenous groups, organized civil society and social movements. Civil society, under the leadership of the Cerrado Network of NGOs, has seats on the CONACER.

One of the important lessons from the process is that, while there are many gaps in data on biodiversity in the region, there is also a great deal of data, published and unpublished, in the files of conservation organizations, universities, individual scientists, companies, government departments and amateur observers. This ecosystem profile is one of the first attempts to collate the data into one place and make it available to conservationists, decision makers and other stakeholders in the region. There is a need to regularly update the analysis of priority conservation sites as new information comes to light, as shown in Chapters 5 and 13.

The consultation process for the ecosystem profile has demonstrated that this hotspot enjoys important, ongoing public policies, a complex network of institutions, and a wide variety of field projects and programs in different contexts, working with various scales and categories of grants. The Cerrado also has groups of researchers producing high-quality scientific information. It has a strong private sector, including small- and large-scale ranchers and farmers, cooperatives, and agribusiness companies, many of which are interested in partnerships and alliances to find and implement new approaches and actions to promote sustainable landscapes. These institutions, which complement each other, have the potential to provide an efficient means for turning site-based and regional conservation actions into policies and practices. The results of the ecosystem profile consultation process provided a strong base on which to build a long-term, comprehensive strategy for conservation and sustainable use of the Cerrado, as described in detail in the next chapters.

3. BIOLOGICAL IMPORTANCE OF THE HOTSPOT

The Cerrado, on top of being one of the richest tropical savannas in the world in terms of biodiversity (Mittermeier *et al.* 2004), is also one of the most unique in terms of biological heritage, agricultural production and water resources (Scariot, Sousa-Silva & Felfili 2005). The Cerrado is similar to savanna woodlands in other South American countries, such as the *Chaco* and *Chiquitania* in Bolivia and Paraguay, the *llanos* in Colombia and Ecuador and the *pampas* in Uruguay and Argentina, as well as to savannas in parts of Africa, Asia and Australia. Covering an area the size of Mexico, it is located in the center of the South American continent.

The biological importance of the region became more evident when, along with 34 other regions in the world, it was named one of the 35 biodiversity hotspots, *i.e.* one of the regions with the greatest diversity of endemic plant species, associated with a high rate of natural habitat degradation (Myers 2000; Mittermeier *et al.* 2004). The Cerrado is home to complex landscapes and biodiversity, slowly unveiled and documented by researchers and traditional communities.

The biological importance of the Cerrado and the various positive and negative environmental impacts can only be understood in the context of Brazil and neighboring countries in South America (Bolivia, Paraguay, Argentina and Uruguay). With an area of 8.5 million km^2, Brazil is the world's fifth largest country, the largest in South America and the third largest of the Americas, after Canada and United States. The country has a variety of landscapes, including coastal mountain ranges, central highlands, a large semi-arid region, the Amazon rain forest, wetlands and grasslands, which are divided into the country’s six biomes: Atlantic Forest, Cerrado, Caatinga, Amazon, Pantanal and Southern Grasslands (Pampas). The Caatinga and Cerrado, both of which are sub-humid, are ecologically similar in that they have long dry seasons, few dense forests and much herbaceous plant cover. The Cerrado is contiguous with and closely related to the Pantanal and to the Chaco and Chiquitania areas of Bolivia and Paraguay.

3.1 History and Geography

The Cerrado is the largest tropical savanna region in South America, including a large part of central Brazil and small parts of northeastern Paraguay and eastern Bolivia (Silva & Bates 2002). The Cerrado shares boundaries with four other Brazilian biomes: to the north, it meets the Amazon; to the east and northeast with the Caatinga; to the east and southeast with the Atlantic Forest; and to the southwest with the Pantanal. The Cerrado is at the center of a wide range of “open” formations, from the Caatinga to the Pantanal and the Chaco, separating South American dense tropical rainforests, *i.e.* the Amazon and the Atlantic Forest. No other South American biome has such distinct penetrations and biogeographical contact zones, enabling exchanges of fauna and flora with other hotspots and large natural regions.

With a total area of approximately 2.06 million km^2, the Cerrado Hotspot is mostly in Brazil, where it covers an area of 2.04 million km^2, or 24% of the Brazilian territory. The Cerrado in Paraguay (1,767 km^2 of the hotspot) occupies the northeast of the eastern region of the country, on the border with Brazil, and the northern end of the western region, on the border with Bolivia (Spichiger *et al.* 2011). In Bolivia (with 22,478 km^2 of the hotspot), the Cerrado is expressed to a greater extent and diversity especially in areas east of the country, in the

Department of Santa Cruz, in the region called Cerrado Chiquitano, which borders in places with Brazil's states of Mato Grosso and Mato Grosso do Sul (Wood 2011).

In Brazil, the nuclear area of the Cerrado covers the Federal District (Brasília) and ten states: Goiás, Mato Grosso, Mato Grosso do Sul, Tocantins, Maranhão, Bahia, Piauí, Minas Gerais, São Paulo and Paraná, for a total of 1,408 municipalities. There are also isolated Cerrado enclaves in other regions of the country, such as in Roraima, Amapá, southern Amazonas, western Pará, parts of São Paulo and northern Paraná. There are islands of Cerrado plant life in other biomes.

The more extensive distribution of the Cerrado is seen as a result of dryer climates in the past that could have favored distribution of this type of plant cover (Henriques 2005). The hypothesis of Pleistocene distribution for separate Cerrado areas is based on floristic similarities found in non-adjacent Cerrado areas and the low levels of endemism of species in non-adjacent areas, especially to the Amazon.

Studies by Salgado-Labouriau (2005) reveal a time series of plant types and their relative extension, as well as signs of past climates and the age of the Cerrado, using paleo-ecological analyses, including those of pollen, fungus spores and microalgae from sediments in central Brazil and others outside the core area of the Cerrado. The results of those studies indicate the presence of Cerrado ecosystems in central Brazil dating longer than 36,000 years. A dry period began 22,000 years ago, peaked between 14,000 and 10,500 years ago, and lasted until 7,000 years ago. Climate returned to a semi-humid state only 5,000 years ago. Biogeographical studies of the Cerrado's fauna, mainly birds (Silva & Bates 2002) and lizards (Werneck *et al.* 2009), confirm Salgado-Labouriau's analysis, *i.e.*, geographical differentiation in this hotspot is older than originally imagined.

The soils of the Cerrado are relatively flat, deep and well-drained, but they have low fertility and high acidity and aluminum saturation. They can be made suitable for agriculture by using lime to adjust their acidity and applying fertilizers, especially nitrogen and phosphorous, to make them more fertile.

The contrast between lower altitudes, under 300 meters, and vast plateaus between 900 and 1,600 meters, combined with the extensive latitudinal distribution, results in a wide range of environments. The tropical climate of the Cerrado is characterized by a long dry season, with little or no precipitation between May and October. Annual average temperatures range from 22°C to 27°C. Average yearly rainfall varies between 600 and 2,000 millimeters, in a climate classified as rainy tropical (Ribeiro & Dias 2007). Recently, the rainy season has started later, and rains have become more torrential (see Chapter 10). Rainfall varies between 600 and 800 millimeters in areas adjoining the Caatinga and between 2,000 and 2,200 millimeters closer to the Amazon.

In addition to climate aspects and contacts with neighboring ecosystems, Cerrado biodiversity is associated with altitude and topography (Silva & Bates 2002; Nogueira *et al.* 2010a; Valdujo 2011). Currently, the core area of the Cerrado consists of vast plateaus with complex structures between 300 and 1,600 meters of altitude, separated by a network of peripheral or inter-plain depressions (Ab'Saber 2003). This geomorphological variation helps explain the plant cover gradients in the region. The top of the plateaus (500 to 1,600 meters) is generally flat and covered by Cerrado *sensu stricto* . Peripheral depressions (100 to 500 meters), albeit flat with residual elevations, are far more heterogeneous, with different types of plant life, such as cerrado, mesophytical forests and lengthy riparian woods forming narrow strips with fine texture along waterways (Silva & Santos 2005).

In the Cerrado, fauna and flora from neighboring biomes are found mainly in riparian woods, which cover less than 10% of the hotspot, and Seasonal Forests (Dry Forests) that are limited to depressions between plateaus (Silva & Santos 2005). Oliveira-Filho and Ratter (1995) indicate that various plant species from forest environments in the Cerrado are distributed along a northwest-southeast arch, from the Amazon Rainforest to the Atlantic Forest, crossing the network of forests associated with waterways. Swamps and gallery forests share floristic traits with the Atlantic Forest and Dry Forests. Decidual Seasonal Forests have common floristic traits with Caatinga trees and semidecidual forests in the Atlantic Forest of the Southeast. Felfili *et al.* (2005) point out that seasonal forests on limestone formations spread throughout the Cerrado, especially in the Paranã Valley, Goiás, are home to flora and fauna also found in the Caatinga, Chiquitania and Chaco.

Biotic exchanges played an important role in establishing the regional diversity of Cerrado fauna (Silva & Santos 2005; Valdujo 2011). Bird fauna from other biomes, such as the Atlantic Forest, are mainly found in gallery and dry forests. In the Cerrado, riparian corridors are thus essential for the permanent flow of populations and species among adjacent biomes. As in the case of birds, the amphibian species composition in the Cerrado is also largely influenced by contacts with the largest South American biomes: Amazon, Atlantic Forest, Caatinga and Chaco (Valdujo 2011). Amphibian species that share populations with other biomes do not coexist with species from other neighboring biomes, *i.e.,* a species found both in the Cerrado and the Atlantic Forest does not coexist with species found both in the Cerrado and the Amazon.

3.2 Ecosystems and Vegetation Coverage

Although there are many gradations and fine-grained interpenetration of small areas with different kinds of vegetation in the Cerrado, the terrestrial habitats and ecosystems in this hotspot can be divided into three broad categories: forests, savannas and grasslands (as described below). In addition, there are many freshwater streams, rivers, lakes and ponds, with wide seasonal variation in the volume of water.

The Cerrado is made up of a large variety of vegetation forms, which confer great environmental heterogeneity. Henriques (2005) believes that the form, dynamics and occurrence of phytophysiognomies (*i.e.,* general forms or appearances of plants) in the Cerrado are determined by the area's history, its soil (depth and water availability) and the presence or absence of fire. Each physiognomy type is developed in accordance with interactions among edaphic factors (soil, water, nutrients), resulting in different final succession stages. The influence of fire in phytophysiognomy dynamics in the Cerrado is also an important historical factor for the landscape, as studies in the region show a series of modifications in the structure of plant life undergoing this type of interference (Dias 1998; Henriques 2005; Lima *et al.* 2009). Currently the Cerrado has a higher frequency of fires than in the past due to anthropic activities, which may alter the phytophysiognomical gradient.

Cerrado plant life has physiognomies that include a group of savannas ranging from sparse plant formations with few trees and shrubs, such as clean fields, to forest formations such as the Cerradão, with thick plant cover and predominant arboreal strata (Ribeiro & Dias 2007). Cerrado *sensu stricto* , with typical savanna plant cover, is the most abundant phytophysiognomy in this hotspot (Eiten 1972). Grasses, in turn, are present in all phytophysiognomies, especially field formations.

Ribeiro and Dias (2007) propose 11 phytophysiognomical types for the Cerrado: (a) Forest Formations (Riparian Woods, Gallery Forests, Dry Forests and Cerradão), (b) Savanna Formations (Cerrado *sensu stricto* , Cerrado Parks, Palm Groves and Veredas) and (c) Grassland Formations (Dirty Fields, Rocky Fields and Clean Fields). Criteria to differentiate phytophysiognomical types in the Cerrado are based on structure, dominant forms of growth and seasonal and environmental changes, particularly edaphic changes, in addition to floristic composition.

3.2.1 Forest Formations

Forest formations in the Cerrado include plant types with predominantly tree species and canopy formation. Riparian Forests (with open canopy along streams and rivers) and Gallery Forests (riparian forests with closed canopy over the water) may occur on well or poorly drained terrain. Dry Forests and Cerradão appear in interflows, on well-drained terrain. Cerrado trees are typically twisted and have thick bark and leaves in order to survive the dry season and frequent fire. Altogether, woodlands cover 32% of the natural areas of the hotspot.

3.2.2 Savanna Formations

Savanna formations in the Cerrado include mainly Cerrado *sensu stricto* , Cerrado Park lands (Parque de Cerrado), Palm Groves (Palmeiral) and Vereda. Cerrado *sensu stricto* is characterized by defined tree and shrub-herb strata, with trees randomly distributed over the terrain under different densities. In Cerrado Park lands, trees are concentrated in specific locations called “murundus”, with 0,1-5,0 meters high and 0,2-2,0 meters diameter. . The Veredas have marked presence of a single palm species, *buriti* (*Mauritia flexuosa*) surrounded by a characteristic shrub-herb, permanently flooded terrain, often with a waterway flowing through them. In Palm Groves, which may be in either well or poorly drained areas, there is highest density and predominance of palm species (ex.: *Acrocomia, Attalea* and *Syagrus*). The savanna formations cover 61% of the natural areas of the hotspot.

3.2.3 Grassland Formations

Dirty Fields are characterized by shrubs and sub-shrubs scattered in the herbaceous stratum. Clean Fields have an insignificant occurrence of shrubs and sub-shrubs. Rocky Fields or Rupestrian Grasslands, is a complex mosaic of vegetation influenced by relief and ancient geological history, showing different grassy and shrubby vegetation types on rock outcrops, stony to sandly soils, peat bogs, and other transitional physiognomies (Fernandes *et al*. 2014). These field formations cover 7% of the natural areas of the hotspot. The native grasses are typically about 30 cm high. They survive the dry season, but become too dry for forage. In many cases, old pastures undergo regeneration that makes them new scrubland (*capoeira, juquira*).

The evaluation of Cerrado flora in its different phytophysiognomies by Walter (2006) shows that savanna formations are richest in species, followed by forest and grassland formations, respectively. This study also shows that most flora interpenetrations take place between savannas and fields, followed by forests and savannas, and, less significantly, forests and fields. The greatest similarities in the composition of flora species are between *stricto sensu* Cerrado and Dirty Fields and between the latter and Clean Fields.

Based on flora studies since the 1990s, Ratter *et al.* (2011) identified patterns in species distribution and indicated at least seven floristic geographic subdivisions for the hotspot:

- (i) Southeast, a distinct group composed of parts of São Paulo, Paraná and southern Minas Gerais;
- (ii) Center-southeast, with parts of Brasilia, neighboring parts of Goiás, southeastern and central Minas Gerais;
- (iii) North-northeast, with parts of far northern Minas Gerais, Bahia, Ceará, Maranhão, Piauí and Tocantins and a part of Pará next to the border with Tocantins;
- (iv) Center-west, with areas distributed over an extensive strip crossing the states of Mato Grosso do Sul, Mato Grosso, Goiás, Tocantins and Pará;
- (v) Widely dispersed areas with strong mesotrophic traits (soils of intermediate fertility in the Cerrado landscape) – a particularly ubiquitous group in Mato Grosso do Sul;
- (vi) Mesotrophic areas in the far western edge, forming a group in Rondônia, Mato Grosso do Sul and Mato Grosso; and
- (vii) Amazon Savanna in Roraima and Amapá.

The greatest floristic similarity was identified between the Center-Southeast and Center-West. The Amazon savanna group showed the greatest floristic differentiation from the others. The analysis showed that more than half of the 951 species registered in the study occur only in one of the floristic groups, while only 37 species are common to all groups. The evaluation by Ratter and collaborators also showed that peripheral Cerrado areas have rates of plant species diversity equal to or higher than, in some areas, those in core hotspot locations.

The high degree of heterogeneity in the Cerrado is also found in the diversity of landscapes in this hotspot. Barroso *et al.* (2012) identified 214 landscapes in the Cerrado. Each landscape was cross-analyzed with the physiognomy map (seasonal, savanna and steppe forest formations or *chaqueña* plant cover) defined in accordance with the Brazilian Technical Plant Cover Manual, resulting in 495 ecosystems.

3.3 Diversity of Species and Endemism

Knowledge about the Cerrado's biodiversity has evolved significantly in the past decade. Nevertheless, many remaining gaps suggest that more investments are necessary in inventories and studies for different biological groups (Marinho-Filho *et al.* 2010). A recent survey showed that between 1998 and 2008, a total of 1,300 new vertebrate species were described by scientists in Brazil (Cavalcanti *et al.* 2012). Of these, 347 vertebrate species were found in Cerrado sites, 222 of which are new fish species, 40 amphibians, 57 reptiles, 27 mammals and one bird. These numbers are revealing and reinforce the colossal biological relevance of the Cerrado.

A few iconic large mammals occur in the Cerrado. The superorder Xenarthra is a group of placental mammals only found in the Americas and represented by anteaters (Myrmecophagidae), three-toed sloths (Bradypodidae) and armadillos (Dasypodidae) (Redford 1994). Xenarthrans are an important part of the mammalian fauna of the Cerrado. The Dasypodidae is the most widespread family of the superorder Xenarthra, occurring from the United States of America to Argentina (Emmons 1999). In Brazil, 10 armadillo species have been recorded, while the Cerrado has been predicted to harbor 8 armadillo species (Anacleto 2007).

Giant armadillo (*Priodontes maximus*) is the most impressive member of the Cerrado armadillo fauna. The species has a wide area of distribution, but it is rare over its entire range and is very patchily distributed (Anacleto *et al.* 2014). It is classified as "vulnerable" in the Brazilian Red List and in the IUCN Red List. It is an extremely powerful digger and highly fossorial (adapted to life underground) and it is probably the most myrmecophagous (feeding behavior defined by the consumption of said insect types) of the armadillos: it has been recorded as eating virtually nothing other than ants and termites. It is largely nocturnal, which combined with its fossorial habits make it difficult to encounter (Redford 1994).

In central Brazil anteaters seem to be dependent on gallery forests, entering them either to drink or sleep. Anteaters sleep in the forest or out in the grassland. Giant anteater (*Myrmecophaga tridactyla)* is widespread geographically (Miranda *et al.* 2014) and could be found in many different habitat types, from tropical forest to grasslands but probably reaches its greatest densities in the Cerrado and grassland vegetation. There have been many records of population extirpation. Outside Cerrado, this species seems to be regionally extinct or at least critically endangered in several southeastern states of Brazil (Bergallo *et al*. 2000; Chiarello *et al*. 2007; Cherem *et al.* 2004; Mikich and Bérnils 2004; Fontana *et al.* 2003). The dietary specificity, low reproductive rates, large body size, along with threats to habitat degradation in many parts of its range, have proved to be significant factors in its decline. Because of the real threats to this species and the noticeable declines, a precautionary assessment of "vulnerable" is given in the Brazilian and IUCN Red Lists. More data and population monitoring are required for this species, and a reassessment is recommended as soon as additional information becomes available.

Another iconic large mammal found in the Cerrado is maned wolf (*Chrysocyon brachyurus*), or lobo-guará. It is the largest South American canid, weighting between 20 and 30 kg (Rodrigues *et al.* 2014; Rodden *et al.* 2004). It is broadly distributed in the open vegetation of South America, mainly in the Cerrado of Central Brazil (Rodden *et al.* 2004). The current population of maned wolves is estimated at approximately 17,000 mature individuals (≥ 2 years of age), with the majority of the population (>90%) in Brazil (Cunha de Paula and DeMatteo 2015). The maned wolf is listed as "near threatened" on the IUCN Red List (Cunha de Paula and DeMatteo 2015) but is classified as "vulnerable" on the Brazilian Red List, mainly due to habitat fragmentation, the highest risk to the species conservation. In addition to the estimated population reduction from deforestation, the species is also subject to other threats, including road kills, direct persecution by humans, and disease due to contact with domestic animals. In other range countries (Argentina, Paraguay and Bolivia), the species' status is even more precarious with small isolated populations and declining numbers due to the low quality of habitat and hunting. Maned wolves are generalist canids, with a broad diet, and consume most of the food items according to its availability in the habitat. This diet flexibility allows maned wolves to adapt well to some human altered habitats, where they consume large amounts of cultivated fruits (Rodrigues *et al.* 2014). Nonetheless, maned wolves can be selective with regard to some food items, mainly in the dry season, probably a key element in the maintenance of their populations in the Cerrado in Brazil.

In the last century, jaguar (*Panthera onca*) could be found from the southern United States of America to the south-central Argentina and Uruguay (Hoogesteijn and Mondolfi, 1992). Since then, its geographical distribution has been reduced dramatically, and it is estimated that about 50% of its original distribution was lost (Sanderson *et al.* 2002). Despite this wide distribution, it is estimated that the effective population size is less than 10,000 individuals, with less than 250 individuals in the Cerrado biome (Morato *et al*. 2013). The jaguar occupies approximately 32% of the Cerrado, but this subpopulation is fragmented, without being necessarily isolated individuals (Morato *et al.* 2013). The main threats are habitat loss and fragmentation, associated mainly to agricultural expansion, elimination of individuals by hunting and retaliation, and decreased prey abundance as a result of human activities. The jaguar is classified as "vulnerable" in the Brazilian Red List and "near threatened" in the IUCN Red List.

The Cerrado is also estimated to contain approximately 12,000 plant species, 34.9% (4,208) of which are endemic (Forzza *et al.* 2012; Table 3.1). The Cerrado contains 13.4% of all plant species in the neotropical region and 1.5% of all plant species in the world. Felfili and Silva Júnior (2005) draw attention to the differentiated size of flora species populations across the Cerrado. Common species in many areas are, generally, abundant in one area and rare in others. Thus, the density of species is also an important variable for decision making on Cerrado conservation and management.

Table 3.1. Diversity, endemism and threats to extinction of plant and vertebrate species in the Cerrado.

Biological Group	Species	Endemic Species	% Endemism
Plants	12,070	4,208	34.9
Vertebrates	2,373	433	18.2
Fish	800	200	25.0
Amphibians	204	72	35.3
Squamata reptiles	262	99	37.8
Birds	856	30	3.5
Mammals	251	32	12.7
Total	14,443	4,641	32.2

Sources: Mittermeier *et al*. (2004); Nogueira *et al*. (2010); Valdujo (2011); Cavalcanti *et al*. (2012); Forzza *et al*. (2012); Paglia *et al*. (2012).

In addition to plants, 2,373 species of terrestrial and aquatic vertebrates have been registered to the Cerrado, 433 (18.2%) of which are restricted (endemic) to the region (Table 3.1). Squamata reptiles (lizards, serpents and amphisbaenia or "worm lizards") stand out, with 38% of their species endemic to this hotspot (Nogueira *et al.* 2010a). Eight-hundred-fifty-six bird species have been registered, corresponding to approximately half of the bird fauna in Brazil. Good information on invertebrates is lacking. However, regarding bees, 7,000 species are estimated to live in the neotropical region, 820 of which are known to exist in the Cerrado (Raw 2007). According to the author, considering areas still lacking in inventories and studies about Cerrado bees, this group may actually possess from 1,200 to 1,500 species, which would account for 20% of all neotropical bee species.

Contrary to what was believed up to the 1990s, the Cerrado is home to a large number of endemic species. Approximately 32% of all plants and vertebrates are endemic. This characteristic is reinforced as more biologically specific groups, including some invertebrates, and areas are analyzed (Table 3.2). Two examples are bee and amphisbaenia groups, in which over 50% of all species are limited to the hotspot (Raw 2007; Nogueira *et al.* 2010a). The Espinhaço mountain range, in the states of Bahia and Minas Gerais, also well illustrates this high endemism. It has a wealth of species and high rates of flora endemism, especially in rocky fields. Endemism stands out more in the Eriocaulaceae family, well known for the *Paepalanthus* genus, popularly known as "*sempre vivas*". The Espinhaço range has 70% of all known species in Brazil, and 85% are endemic to that area (Costa *et al.* 2008). The Espinhaço chain also has important endemism for the Bromeliaceae family. Of the 244 species recorded in the area, 111 (49.5%) are limited to the Espinhaço.

Considering the concept of rare species, *i.e.*, species with areas of occurrence of up to 10,000 km^2, the Cerrado is Brazil's second most important biome with regards to key areas (176) for rare plants, and the largest area (30%) considering all key areas for all rare plant species in

Brazil (Kasecker *et al.* 2009). According to Martinelli *et al.* (2014), the Cerrado is home to 578 rare plant species of 176 genera and 65 families.

Similar results were found for the analysis of key areas for rare freshwater fish (Nogueira *et al.* 2010b). Like rare plants, the analysis considered species with areas of occurrence of up to 10,000 km^2. In Brazil, 819 rare fish species were identified, most of which (530 or 65%) are found in Cerrado and Atlantic Forest river basins. Both hotspots also have most of the threatened basins in Brazil, considering hydroelectric plants, lack of conservation units and loss of habitat.

Table 3.2. Diversity and endemism of species in specific Cerrado fauna and flora groups.

Biological Group	Species	Endemic Species	% Endemism	Region
Eriocaulaceae	379	322	85	Espinhaço Range
Bromeliaceae	224	111	49,5	Espinhaço Range
Termites	151 (140)*	56	40	Cerrado
Bees	820	417	51	Cerrado
Amphisbaenia	30	18	60	Cerrado
Lizards	74	33	44,6	Cerrado

* There are doubts regarding 11 morpho species with taxonomical uncertainties (Constantino & Schmidt, 2010).
Sources: Raw (2007); Nogueira *et al*. (2010a); Versieux *et al*. (2008); Constantino and Schmidt (2010); Cavalcanti *et al*. (2012).

The Cerrado in Paraguay and Bolivia is still little known by the scientific community. However, some areas are recognized for their biological importance to conservation in these countries.

The Cerrado in Paraguay receives many influences from neighboring ecoregions, such as Chaco and Atlantic Forest. The Laguna Blanca, with 2,500 hectares, is located in the transition between the Cerrado and Atlantic Forest in Paraguay, being recognized by BirdLife International as a key area for bird conservation (Important Bird Area - IBA) due to the occurrence of 18 globally endangered bird species (A. Yanosky, pers. comm.). The area is one of three known sites with Caprimulgiforme populations known as white-winged nightjar (*Eleothreptus candicans*), and is the only place outside of Brazil with the lesser nothura (*Nothura minor*). Studies with fauna of reptiles in that location also reveal many common elements with the Brazilian Cerrado biome, such as the serpent *Philodryas livida*, which is vulnerable according to the IUCN Red List (Smith *et al.* 2011; 2014). Another important area is the Zona de Aguara, with about 6,000 hectares, a part of the Mbaracayú Biosphere Reserve. With typical Cerrado vegetation, the area has a high diversity of plant endemism and some typical vegetation in Paraguay such as *Alternathera hirtula*, *Bidens chodatii* and *Viguiera linearifolia* (Céspedes and Mereles 2006).

In Bolivia, the Chiquitano Cerrado forms a mosaic of habitats with the Chaco forest in the south and the dry Chiquitano forest in the core area of Chiquitania region (Wood 2011). The heterogeneity of plant formations is similar to that of the Brazilian Cerrado biome (Villarroel *et al.* 2009; Wood 2011). At least 80 species of endemic plants from the Chiquitano Cerrado are known, and this number may be even higher, according to Darwin Project projections for the Conservation of the Cerrado of the Bolivian East, a partnership between the Museo de Historia Natural Noel Kempff, the Universidad Autónoma Gabriel René Moreno and the

Department of Plant Sciences, University of Oxford (Wood 2011). According to Segarra (2011), the Chapada Huanchaca in northern Santa Cruz Department and Sierra Chiquitana in the Southeast are the areas of greatest richness and endemism of the flora species in the Bolivian Cerrado.

Almost half of the Bolivian Cerrado (272,281 hectares) is protected by Noel Kempff Mercado National Park (1,523,000 hectares), which contains the most significant areas with high plant diversity and the greatest degree of conservation anywhere in Bolivia (Wood 2011). The exceptional biodiversity and ecosystems in this area were recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Natural Heritage Site, using the criteria of ecological and evolutionary processes. These sites present natural habitats with relevant and significant species for *in situ* conservation of biological diversity of Outstanding Universal Value, from the point of view of science and conservation. The area of the park includes a large section of the Huanchaca mesa, with heights ranging from 500 to 600 m above surrounding plains and 150 km long by 50 km wide. The cerrado habitats found on the Huanchaca Meseta have been isolated for millions of years, providing an ideal living laboratory for the study of the evolution of these ecosystems. This area has at least 100 endemic plant species of the region and several threatened species (Torres *et al.* 1999; Wood 2011).

3.4 Social Importance

Knowledge about potential uses of native biodiversity in the Cerrado has also grown. Seeds, flowers, fruits, leaves, roots, bark, latex, oils and resins have countless uses for family farmers and traditional communities for income generation, food, medicine, utensils and tools. Many Cerrado flora species are already known, used and traded by traditional communities and many family farmer cooperatives in the region (Carvalho 2007). Examples of native species that are well known and widely used include: (a) *pequi* (*Caryocar braziliense*), part of traditional recipes for sweets, creams, liqueurs and ice cream, in addition to phytotherapeutical uses; (b) *baru* (*Dipteryx alata*), with edible pulp and seeds, in addition to endocarp that can be turned into charcoal for industrial use; and (c) golden grass (*Syngonanthus nitens*), which is ubiquitous in nearly all of the Cerrado and is one of the main products used in regional handicrafts.

Studies, particularly since the last decade, by the Brazilian Agriculture and Livestock Research Enterprise (EMBRAPA), the University of Brasilia and the University of Campinas have shown the wealth of fruit and other Non-Timber Forest Products (NTFP) from the Cerrado (UnB 2010; Marin 2006; Roesler *et al.* 2007). Many native species are being analyzed and identified with high levels of B-complex vitamins, which are recommended for deactivation of free radicals, such as *ingá* (*Inga laurina*), *jatobá* (*Hymenaea courbaril*), *araticum* (*Annona crassiflora*), *buriti* (*Mauritia flexuosa*), *mangaba* (*Hancornia speciosa*) and *pequi* (*Caryocar braziliense*). Additionally, some species contain bioactive substances of great nutritional value, such as passion fruit, *baru* (*Dipteryx alata*), *macaúba* (*Acrocomia aculeata*), *jatobá, pequi, cagaita* (*Eugenia dysenterica)* and *gabiroba* (*Campomanesia cambessedeana*). This is just a sample of the vast potential for use of the Cerrado's rich biodiversity, which is capable of improving food security and well-being for the population.

3.5 Hydrological Systems and Biological Values

The Cerrado contains a large variety of natural aquatic ecosystems and specific systems associated with floodplains. The predominance of highlands in the core of the hotspot area provides conditions for superficial waters to be drained to the country's major water basins. The region also plays a key role as a watershed, home to countless water replenishing areas and large volumes of both superficial and underground waters (Fonseca 2005).

It is in the Cerrado that mostof the main Brazilian rivers have their headwaters, such as the Xingu, São Francisco, Tocantins-Araguaia, Parnaíba, Tapajós, tributaries to the right margin of the Paraná River and all rivers forming the Pantanal. Additionally, six of the eight large water basins in Brazil have sources in this hotspot: the Amazon Basin (Xingu, Madeira and Trombetas rivers), the Tocantins Basin (Araguaia and Tocantins rivers), the Atlantic North/Northeast Basin (Parnaíba and Itapecuru rivers), the São Francisco Basin (São Francisco, Pará, Paraopeba, das Velhas, Jequitaí, Paracatu, Urucuia, Carinhanha, Corrente and Grande rivers), the East Atlantic Basin (Pardo and Jequitinhonha rivers) and the Paraná/Paraguai Basin (Paranaíba, Grande, Sucuriú, Verde, Pardo, Cuiabá, São Lourenço, Taquari and Aquidauana rivers). Of the 12 Brazilian hydrographic regions, as defined by the National Water Agency (ANA), eight are in the Cerrado (Lima 2011).

Lima and Silva (2005) also reinforce the importance of the Cerrado with regard to flow of water basins in the region. Over 70% of the outflow in the Araguaia/Tocantins, São Francisco and Paraná/Paraguay basins is generated in the Cerrado. The São Francisco Basin is hydrologically dependent on the Cerrado, which generates 94% of the basin's surface water. The Paraná/Paraguay Basin is another recipient of important hydrological contributions from the Cerrado, since, covering 48% of its total area, it generates 71% of the average outflow for this basin. This water network provides approximately 14% of Brazil's surface water production, but when the Amazon Basin is removed from the analysis, the Cerrado covers 40% of the area and is responsible for 43% of the total remaining surface water production for the entire country (Lima & Silva 2005).

The broad range of aquatic environments in the Cerrado - rivers, lakes, swamps - is remarkable but little explored. Scientific knowledge is more focused on major rivers and a few groups of organisms such as fish (Fonseca 2005; Lambert & Ribeiro 2007). The 800 species of fresh-water fish registered for the Cerrado represent 27% of nearly 3,000 species of fish in South America (Mittermeier *et al.* 2004; Fonseca 2005; Lambert & Ribeiro 2007). This number may be much higher considering that between 30 and 40% of freshwater fish species in Brazil are still unknown or have unpublished records (Fonseca 2005).

An important aspect is the peculiarity of the fish fauna of the river basins. Among the 298 fish genera recorded for the Cerrado, 148 (50%) are unique to a particular watershed (Lambert & Ribeiro 2007). At the species level, 84% can be considered exclusive of any watershed. The basins of the Tocantins and San Francisco rivers (12) are those with greater richness of genera of fish with 74 and 12 genera, respectively (Lambert & Ribeiro 2007). The Araguaia-Tocantins system has the highest fish species richness of the Cerrado. For the Araguaia River basin alone, 360 species of fish have been recorded (Amaral 2013). This is equivalent to 68% of all freshwater fish species known to the European continent. Fish such as São Francisco River catfish (*Pseudoplatystoma corruscans*), Araguaia River surubim (*Pseudoplatystoma fasciatum*), Curimatã-pacu (*Prochilodus argenteus*) and Dourado (*Salmius franciscanus*), endemic species of the São Francisco river, are characteristic of these basins and appreciated by thousands of artisanal fishermen as a source of protein and for the local market.

3.6 Conclusions

Strong arguments in terms of biodiversity, endemism and hydrology were provided in this chapter to confirm the biological importance of the Cerrado. The size of this hotspot, the complexity of its environmental heterogeneity,the high levels of endemism of species and the imminent threats (see chapters 9 and 10), constitute a great challenge regarding conservation of its biodiversity and ecosystem services as well as to promotion of more sustainable development in the region, including the residents who live in close contact with nature.

4. ECOSYSTEM SERVICES IN THE HOTSPOT

According to the Millennium Ecosystem Assessment (2005), ecosystem services include provisioning, regulating, supporting and cultural services for human well-being and poverty reduction. For purposes of this Cerrado ecosystem profile, a different classification is used, covering the same services but using different categories. The specific ecosystem services provided by the Cerrado Hotspot also refer to the well-being of elements of its own and other ecosystems, which in turn make important contributions to human well-being. The scope of the ecosystem services is not limited to their origin, benefits within the Cerrado or only to human well-being, but also includes benefits shared among ecosystem elements at all geographic levels, including the continent, in the case of water, and the global level, in the case of greenhouse gases.

The services selected for analysis in this chapter have to do with biodiversity as such (Section 4.1); water security for humans and nature (4.2); storage of carbon that would otherwise be emitted as greenhouse gases (4.3); services related to rural livelihoods (4.4); and services related to culture, tourism and recreation (4.5).

4.1 Biodiversity

The biodiversity of the Cerrado, as that of any ecosystem, has intrinsic value, but conservation efforts should also take into account that the biome has a very high level of richness, in absolute terms, actually the greatest among the world’s tropical savannas, due to its size, internal diversity and the fact that it links four other biomes (Myers 1988; Souza 2006). Although many species remain unknown, it may well be as rich in biological terms as tropical forests like the Amazon and the Atlantic Forest (Castro *et al.* 1999). Because of high levels of endemism, much of the biodiversity is also unique, being found nowhere else on earth (Brandão 2015; Machado 2015; Pivello 2015). The species and varieties of the Cerrado and other tropical savannas are no less valuable than those of other ecosystems. They are just as likely to contain substances that can cure diseases, thus providing a vital service to all of mankind.

The biodiversity of the Cerrado, both native and agro-extractive, can also provide vital services in terms of food production. The biome is the center of origin for pineapples and of dispersion for other established commercial crops like peanuts, beans and manioc (Hathaway 2015). The grasses, legumes, tubers and bromeliads of its tropical savannas are wild relatives of various crops that have genetic characteristics of resistance to heat and drought (Strassburg et al. 2014). The same is true of its agrobiodiversity, including crops and managed species of indigenous and traditional communities. Wild relatives of crops that are grains, tubers or legumes do not occur in pure forests of any kind, much less in rainforests. Their genetic characteristics are increasingly important for direct use, breeding and genetic modification in the context of global warming and changes in rainfall patterns, with less total annual precipitation and more frequent or longer dry spells and droughts (Assad 2007; Carvalho *et al.* 2013). In this case, the rest of native biodiversity in the ecosystem would not be subjected to risks from introduction of alien genes, as might happen with genetically modified organisms (IUCN 2007). Rather, native biodiversity itself could be used for purposes of breeding, especially when climate change becomes more severe. Genetic engineering using new breeding techniques to recover the genetic properties of ancestors is conceived as distinct from genetic modification of organisms and has been called “rewilding” (Andersen 2015).

The same importance of adapted genetic characteristics of species and varieties holds for both agricultural and agro-extractive biodiversity. It is the case for many varieties of staple foods such as rice, corn, beans, manioc and squash that have been used for centuries by traditional communities. Contemporary family farmers survive well in environmental conditions that are adverse in terms of soil fertility, temperature, humidity, weeds, pests and diseases. These existing and potential environmental services are provided by intra-specific variation recognized as "agrobiodiversity" (Santilli 2009). The same holds true for products of sustainable use of biodiversity, as described in more detail in Section 4.4. In addition to crops, fungi and micro-organisms in the soil or used for processing, as in the case of cheese, may also be important.

The Cerrado's native plants are the basis of the entire food chain of its flora and fauna. Insects, bats and hummingbirds of the Cerrado are important for pollination of native plant species and therefore for their reproduction and survival as well as their ecological functions or services. There is a wide variety of native stingless bees that may be threatened by clearing, burning, pollution and competition from exotic species (*Apis mellifera*). Native species of bees such as *A. jataí*, *mandaçaia*, *jandaíra*, *tiúba*, *uruçu* and *canudo* are useful for pollination and for production of honey (Pinheiro-Machado *et al.* 2002; Villas-Boas 2012). These bees require nesting places like hollow trees, while the bats and birds require specific habitats, although they can also fly from one fragment to another. It should be noted that both native and exotic species of bees co-exist in the Cerrado. The native species are not necessarily displaced by competition for nectar, destruction of small native flowers by large exotic bees or attacks of aliens on their colonies. Keeping pollinator populations and their habitats throughout landscapes is essential to maintaining native biodiversity as well as crops.

At the same time, fauna such as native owls, hawks, snakes, anteaters, peccaries, canines and felines are predators that help control populations of rodents, termites, leaf-cutting ants, other insects and various enemies of native flora and fauna as well as crops and livestock. Feral dogs and cats can reduce populations of valuable fauna as well as control invasive species like rats, replacing important natural predators such as jaguar (*Panthera onca*), that previously played this role. Some ants also protect plants against herbivore predators (Leal 2006).

As described in the following sections on water and carbon, the main indirect ecosystem services provided by conservation of the biodiversity of the Cerrado depend on maintenance of hydrological cycles and carbon stocks, since both of these functions in turn depend on biodiversity, *i.e.*, flora and fauna. The flora store carbon, while flying insects and vertebrates are necessary for pollination of flowers and the mammals and birds are necessary for the dispersal of seeds and maintenance of gene flows. Predators help keep environmental balance and curb diseases such as hantavirus transmitted by wild rats. The interdependence of all kinds of species is key to maintaining biodiversity and its ecological functions in landscapes.

4.2 Water

The water in the Cerrado, falling as rain from clouds or flowing in rivers, is essential for the survival of all of its biodiversity, as well as for the well-being of its human inhabitants and the functioning of its economy. The water downriver from the Cerrado is also essential for the ecology of all of the Pantanal wetlands on the borders of Bolivia and Paraguay (Lima 2015). Other ecosystems along the São Francisco, Parnaíba, Paranaíba, Paraguay and Paraná rivers also depend on water coming from sources in the central plateau (Lima 2015).

Furthermore, all of the southern tributaries of the Amazon except the Juruá and Purus (Guaporé-Madeira, Teles Pires-Tapajós, Xingu and Araguaia-Tocantins) also have their sources in the Cerrado, as do various rivers in Maranhão and Piauí (Grajaú, Mearim and Parnaíba). They return the moisture received from the Atlantic Ocean via the Amazon. Soon, by means of an ambitious transposition project to "integrate" the various river basins, the semi-arid region of the Northeast outside the São Francisco basin (Ceará, Rio Grande do Norte, Paraíba and Pernambuco) will receive water transferred from that major river (Stolf *et al.* 2012). Altogether, about 70% of Brazil receives or will receive surface water originating in the Cerrado. The waters of the São Francisco are 90% from the Cerrado, while the Plata waters are 73% from the Cerrado (Lima, 2015). The river basins that have their origin in the Cerrado are home to approximately 40% of Brazil's population and part of the population of Bolivia, Paraguay, Argentina and Uruguay.

Furthermore, the Guarani Aquifer, the second largest underground reservoir of water in the world, covering 1,200,000 km^2 in densely populated areas of southwestern Brazil and extending into Paraguay, Argentina and Uruguay, is fed by water from the Cerrado that infiltrates down to levels between 150 and 1,800 m and is tapped by artesian wells (Ribeiro 2008). It is essential for water supply in large parts of Southeastern Brazil.

The seasonality of water flow in all the rivers and aquifers is affected by the rates of surface runoff and evapotranspiration. When the native vegetation is removed, runoff is accelerated and water flows back to the sea rather than infiltrating and feeding springs or aquifers or being absorbed by roots, rising to leaves and returning to the atmosphere through evapotranspiration. Thus, the consequences of clearing are more flooding, erosion and sedimentation during the rainy season and lower volumes of water in rivers and reservoirs during the dry season. More intense seasonal variation in surface water causes damage to nature, especially fish, turtles and mammals, and to humans, who cannot make full use of rivers for water supply, transportation, fishing or generation of electricity. Biodiversity thus provides a key indirect environmental service through its role in the hydrology of surface stocks and flows of water. In addition to the quantity of water over time, plant cover is also essential for the quality of water.

In addition to providing surface and underground water for neighboring regions to the north, east and south, the Cerrado also supplies aboveground water to southeastern and southern Brazil and neighboring countries (Bolivia, Paraguay, Argentina and Uruguay) through atmospheric flows of water vapor. The moisture from the Amazon travels southward after moving westward from the Atlantic and approaching the Andes (Salati 1978; Arraut 2012; Marengo 2009; Nobre 2014). The names "water pump," "flying rivers," "aerial rivers" or "rivers in the sky" may not be appropriate, but they do provide metaphors. What is not recognized is that the rivers do not "fly" thousands of kilometers without landing, but are a result of reiterated cycles back and forth, up and down, between land and air. They are fed by successive cycles of precipitation and evapotranspiration on their way southward, as also happens during the journey from east to west. Without the native vegetation of the Cerrado, *i.e.* its biodiversity, they would not reach the southern part of the Cerrado, much less other regions or countries. The largest metropolitan areas in Brazil (São Paulo, Rio de Janeiro and Belo Horizonte, with some 40 million people) depend on rain coming from the Cerrado, as do industries in Brazil's most developed region. Increased runoff and reduced evapotranspiration interrupt part of the flow. In 2015, São Paulo was hard hit by a water shortage, a true crisis. This irreplaceable environmental service is one of the strongest justifications for large-scale conservation of biodiversity in the Cerrado.

In economic and social terms, regularity of water supply is vital for human consumption and hygiene in both rural and urban areas (ANA 2015), as well as industries, most of which depend on water. Both population and industry in Brazil are heavily concentrated to the south of the Cerrado but rely on what happens in the northern and central parts.

In 2015, the shortage of water in the Southeast, most notably in São Paulo, but also in other cities and states, caused rationing of water, blackouts due to the shortage of electricity from hydropower and movement of industries to areas with better supplies of water. The impact of the water and energy crises on the GDP for 2015 is estimated at 1% or more (Fraga, 2015). The shortage even contributed to an epidemic of dengue ("break-bone fever") because residents created breeding places for *Aedes aegypti* mosquitoes by storing water at home.

Agriculture, both rain-fed and irrigated, in the Cerrado as well as downwind and downriver, also depends on water from the central highlands. In recent years, there have been shortages of rainwater for crops in Bolivia, Paraguay, Argentina and Uruguay. In the Cerrado, central pivot technology is widespread to provide irrigation by dispersion and ensure production during the dry season (Lima 2015). In places like Petrolina, Pernambuco, water from the São Francisco River sustains a rich cluster of irrigated fruit farming, much of which is for export, generating income of tens of millions of USD per year (Sawyer 2001; Nóbrega 2004). There is now fear of the farms' collapse because of the record low water level in 2015 (Cruz 2015).

River transportation of commodities, especially soybeans from the Cerrado, is important on the Tietê, Paranaíba, Paraná, São Francisco and Madeira rivers, but has been interrupted in 2015 by low water levels and sand bars. The Tietê River in São Paulo is a central transportation artery. The cost of dredging the Madeira River has led to its privatization. Waterways are planned as alternatives to roads, but their use would be interrupted by low water levels. Thus, maintenance of river flow and reduction of sedimentation are important indirect environment services provided by the Cerrado's biodiversity. Furthermore, new roads require and induce clearing, as was shown in the Amazon (Alves 1999) but more use of waterways might help reduce deforestation.

Above all, water within the Cerrado or coming from it is vital for generation of hydropower in Brazil. More than 200 million people in Brazil, except for the few that live off the power grid of the National Integrated System (SIN) in remote parts of the Amazon, depend at least in part on electricity generated by hydroelectric projects installed along the various rivers that flow north, east and south from the central plateau. The Itaipu hydroelectric plant, on the Paraná River, is one of the largest in the world. According to the National System Operator (ONS), the SIN is responsible for 98.7% of the electricity generated in Brazil. Availability of water in the dry season is vital, especially for hydroelectric plants that do not have large reservoirs, but depend on the flow of the river, using technology that has been adopted in the last three decades to reduce the environmental impacts of large reservoirs, but which should now be changed (Goldemberg 2015).

Avoidance of sedimentation of reservoirs above hydroelectric power plants is also important (Cabral 2005). This environmental service can be provided by reduced clearing and by keeping or restoring native plant cover on hilltops, on steep slopes and along the edges of streams and rivers, as provided by the Forest Law, as well as use of contour plowing and strips of native vegetation in fields.

Greater productivity with sustainability on land already cleared could reduce erosion, runoff, sedimentation and pollution, which in turn have negative impacts on biodiversity. Pollution of water sources by improper use of agricultural chemicals (fertilizers, herbicides, insecticides and fungicides) can also have negative impacts on human health (Lima 2011).

In addition to well-known urban heat islands (UHI), there are also rural heat islands, rarely recognized in the literature, which require urgent attention. Pastures have temperatures that are higher than areas in cities (Carvajal & Pabón 2014). Vast heat islands range over a million square kilometers of cleared rural areas, where temperatures are several degrees Celsius higher than in woodlands, as anyone familiar with the countryside knows. These rural heat islands create turbulence and cumulonimbus clouds that result in storms with torrential rains, lightning discharges and strong winds that damage crops, knock down trees, flood lowlands, cause wildfires and impact human settlements. Now there are even tornadoes in Brazil, unheard of before (G1 2015).

The Cerrado also provides indirect ecosystem services related to global warming. As described in Chapter 9, sugar cane, production of which has been concentrated in São Paulo, is expanding into the Cerrado and neighboring states. Sugar cane requires annual precipitation of 1,200 mm (Castro 2010). The annual average in the northern part of the state of São Paulo, where there are areas of Cerrado and transitions to Atlantic Forest, is 1,427 mm (Nascimento and Nery 2005). Thus, a reduction of only 20% would mean insufficient water (1,142 mm) for this crop, which is the main source of biofuel (ethanol) in Brazil and one of the main strategies to reduce greenhouse gas emissions, as well as to improve human health in cities by reducing air pollution (Sawyer 2015).

It is important to note that the ecosystem services provided by water from the Cerrado benefit nearly all of Brazil and parts of neighboring countries, including the most developed regions of Brazil, in the Southeast, responsible for most of the country's GDP. Only one relatively small part of Brazil, north of the Amazon River, does not depend on the Cerrado. It is self-evident that without sufficient flows of rain and rivers from the Cerrado, and therefore without sufficient water for agriculture and hydropower, not to mention human consumption, there would be catastrophic consequences, some of which are already on the horizon (Madeiro 2015). Catastrophe in a country as large and important as Brazil, with the world's seventh largest GDP, would have global economic impacts.

4.3 Carbon

It is probable that the Cerrado now has greater emissions of greenhouse gases than the Amazon (Sawyer 2009). Per hectare, stocks of carbon in the Cerrado are much greater than meets the eye, since the deep roots that trees, shrubs and herbaceous plants need to survive the long dry season, hold most of the biomass. The roots in rainforests are shallow in order to capture the water that reaches the forest floor, where nutrients are also concentrated, during the entire year. In contrast, the proportion of biomass that is underground in the Cerrado is as high as 70% (Lenti 2015; Bustamante 2015).

There is considerable variation in the density of carbon in biomass from one type of vegetation to another. Considering a conservative overall average of 37.4 tons of carbon per hectare (Table 4.1), including the above-ground biomass and part of the below-ground biomass, but not soil carbon, this corresponds to 137.3 tons of CO_2 per hectare, using the factor of 3.67 tons of CO_2 per ton of carbon. Clearing releases this much CO_2 per hectare.

The 100 million hectares of natural vegetation in the remaining half of the Cerrado hold carbon corresponding to approximately 13.7 billion tons of CO_2.

Table 4.1: Carbon in Cerrado biomass, by main vegetation type.

Vegetation type	Tons of carbon/ha. in biomass (a)	Reference	Estimated ha. in intact Cerrado
Cerrado sensu stricto	29.5	Miranda (2013)	40,000,000
Riparian forest	73.0	Delitti & Burger (2000)	10,000,000
Savanna	18.8	Miranda (2003)	30,000,000
Seasonal forest	113.4	Scolforo *et al.* (2015)	20,000,000
Average (c)	37.4		100,000,000

Source: Based on Lenti, 2015. Bustamante (2015) shows 80 tons of carbon per hectare, not counting biomass in soil.
Notes: (a) Includes part of underground biomass.
(c) Weighted according to estimated area of each vegetation type.

Underground carbon in pastures and cropland is concentrated in the first meter or less (Mello *et al.* 2014), but needs to be measured at greater depths where the Cerrado is still standing or is being restored and there are trees, bushes and scrub. In woodlands, in contrast to pastures and cropland, there is also wide variation from one point to another, depending on the exact location of individual trees and roots, the distribution of which is very uneven. Compared to pasture or crops like sugar cane, large samples are necessary. Despite practical difficulties of measuring carbon at depths up to 20 m or more, by digging deep holes, more research is needed on this important topic, at least to establish proportions according to depth.

Less frequent burning, be it intentional or accidental, would allow trees to survive and grow to adulthood, when they become resistant to grass fires because of their size and thick bark, and thus store more carbon. Although fire caused by lightning every two decades or so is part of the natural Cerrado ecosystem, burning is common as a traditional means of pasture management, in addition to frequent accidental wildfires, made more intense by the spread of tall invasive species of pasture grass.

The new federal government program to promote expansion of the agricultural frontier into a total area of 73 million hectares in the states of Maranhão, Tocantins, Piaui and Bahia, a region now known as MATOPIBA, is bound to cause vast new emissions due to clearing and burning. If 10% of the area is cleared, the emissions from 7.3 million hectares would amount to more than a billion tons of CO_2. This increase would cancel one third of the emissions avoided by reduction in deforestation in the Amazon since 2004, which according to Nepstad *et al.* (2014) amounts to 3.2 billion tons. It should be noted that the MATOPIBA program does not include any environmental component, at least as part of its initial formulation in 2015 (Miranda 2015). There are no benefits foreseen for family farmers or traditional communities such as women babassu palmnut crackers, and babassu stands are considered as already “cleared.”

There is potential for reducing emissions from clearing natural vegetation by, instead, intensification of production on land already cleared, thus leading to “land-sparing” and “land-sharing” (Egan & Mortensen 2012).

In addition to CO_2, the Cerrado’s greenhouse gas emissions include methane from some 100 million head of cattle (Schlesinger 2010) as well as nitrous oxide (N_2O) from crops other than soybeans, mainly corn, that use water-soluble, synthetic nitrogen fertilizers (Bustamante 2015). Both methane and nitrous oxide are very powerful greenhouse gases, although their residence time in the atmosphere is shorter than that of CO_2. These emissions are exacerbated by the CO_2 emitted by industry and transportation, both upstream and downstream in global supply chains. Upstream, fertilizers are imported from Russia, Canada and Norway, while machines and fuels come from other regions or countries. Downstream, soy and beef are exported to China, Europe and the Middle East (Sawyer 2009).

There is also enormous potential for carbon sequestration through recovery of the Cerrado’s degraded pastures, which cover 32 million hectares in the biome (EMBRAPA 2014). Both stocking (density of head per hectare) and take-off rates (tons of beef per year) for cattle are very low, and many pastures are degraded (Peron & Evangelista 2004; Schlesinger 2010). The area to be recovered to comply with the new Forest Law’s provisions on Legal Reserves and Areas of Permanent Preservation is 2,098,988 hectares. It is thus important to add restoration to conservation strategies, if only to relieve part of the pressure from the surrounding matrix on protected areas, which are and will continue to be few and far between. Restoration also provides “conservation connectivity” among remnants (Crooks and Sanjayan 2006). It can be a way to promote the forest transition now under way in many countries (Rudel, Schneider and Uriarte 2010).

4.4 Rural Livelihoods

Biodiversity is essential for the sustainable livelihoods of virtually all the family farmers, traditional communities and indigenous peoples in the Cerrado,In addition, residents of small towns, who are formally urban, consume biodiversity directly for their own subsistence or barter products locally and sell them in urban markets to generate supplemental income.

Among local communities, wood from Cerrado trees has traditionally been important for fuel, charcoal, construction, fence posts, oxcarts, furniture and household utensils such as bowls and spoons used by the rural population. It has been and can be harvested sustainably (FAO 2010). Some species such as *aroeira* (*Myracroduon urundeuva*) are resistant to rotting and do not require frequent replacement. Gnarled trunks and branches from fallen or dead Cerrado trees are now used to make rustic furniture for sale in urban areas.

All indigenous peoples and traditional communities in the hotspot use or manage dozens of native species of fruits and nuts for their own consumption, providing low-cost and nutritious food security with carbohydrates, proteins, fats, fiber, vitamins and minerals. The number of species used by the communities varies from one Cerrado region to another. For example, in the Água Boa traditional community of *geraizeiros* in Northern Minas Gerais, 69 trees are used (Lima 2008). The wide array of resources consumed is a strategy to deal with short harvest seasons for native fruit species. Some indigenous groups have their own varieties, such as the spineless pequi (*Caryocar brasiliensis*) bred and used by the Kuikuro in the Xingu Indigenous Park (Smith 2013).

In addition to being consumed, fruits and nuts are also marketed. The most important native species in commercial terms is the babassu palmnut (*Attalea speciosa*), which involves 450,000 women collectors and breakers in Maranhão, Tocantins and Piauí. They are organized in about 50 associations and five cooperatives producing oil, soap, flour and charcoal. The Cooperative of Agro-extractivist Producers of Lago de Junco (COPALJ), with 400 families, sold 160 tons of babassu oil in 2014, generating US$324,000. *Pequi* (*Caryocar brasiliensis*), *baru* or *cumbaru* (*Dipteryx alata*) and *buriti* (*Mauritia flexuosa*) are important in economic terms in various states. *Baru* is sold for prices reaching USD 15 per kilogram. *Coquinho azedo* (*Butia capitata*) is locally important in northern Minas Gerais, where local markets take everything collectors can provide. Pulp for juice is made from *cajá* (*Spondius mombim*), *bacuri* (*Platonia esculenta*), *araçá* (*Psidium firmum*), *mangaba* (*Hancornia speciosa*), *murici* (*Byrsonima crassifolia*) and *cagaita* (*Eugenia dysenterica*), as well as many other native fruits, which are also used to make ice cream, popsicles, jams and jellies. The FrutaSã industry in Carolina, Maranhão, owned by the Vyty-Cate indigenous association, with technical support from the Center of Indigenous Work (CTI), produces more than 50 tons of fruit pulp per year, from 13 different fruit species (Carvalho & Silveira 2006). *Bacuri* is sold for USD 5 per kilogram. The Grande Sertão Cooperative in Montes Altos, Minas Gerais, produces fruit pulp, marmalades, meal and oil from ten Cerrado species collected by 2000 families (Carvalho 2007; ISPN files). Other fruits and leaves are dried or made into liqueurs, teas, condiments, oils and soaps (Carrazza and Figueiredo 2010). Plans are being made for an industrial-scale plant in Brasília to do the final processing of products from the central part of the Cerrado.

Flowers such as *sempre-vivas* (*Comanthera veronoioides*, *Syngonanthus elegans*) had been collected by local communities and dried and sold for decoration in the Espinhaço mountains, in the southeastern part of the Cerrado, since the 1970s, until a new national park became an obstacle (Monteiro *et al.* 2012). In the Jalapão region of Tocantins, golden grass (*capim dourado*, *Syngonanthus nitens*) is turned into attractive handicrafts and bio-jewelry sold in the region and the Southeast. One sous-plat is sold for USD 16. These handicrafts are one of the Jalapão's main income sources, providing between USD 65 and USD 365 per artisan per month. There are 11 associations involving about 600 *quilombolas* (Schmidt *et al.* 2007). Plants are also used for fiber and as sources of dye for textiles.

Honey of native stingless bees (*Meliponia spp.*) is produced on a small scale but brings high prices, up to USD 22 per liter. Honey from exotic bees (*Apis mellifera*) also depends of the flowering of various native plant species, thus involving indirect use of Cerrado biodiversity. Seventy people from five ethnic groups in the Xingu Indigenous Park produce two tons of certified organic honey, sold to Pão-de-Açúcar supermarkets in São Paulo for USD 12 per liter, twice the price they can get locally (ISPN files).

Hunting is now illegal, except on a small scale for subsistence on indigenous lands. There are some initiatives to carry out semi-confined wildlife management with native species such as capybara (*Hydrochaeris hydrochaeris*), peccaries (*Tayassu tajacu* and *Tayassu pecari*), greater rhea (*Rhea americana*) and river turtles. Their meat can be sold for prices two or three times higher than prices for beef (Sawyer 1999). According to the Ministry of Agriculture's sanitary regulations, however, slaughter requires the presence of veterinarians and sale requires expensive certification, so there are now very few such projects left. Some indigenous groups, such as Krikati, Xavante, Karajás and Apinayé, have projects to manage wildlife for their own protein provision.

Medicinal plants are important mainly for consumption by families and local communities, for example among the members of the Pacari Articulation, a regional network promoting the use of medicinal plants and cosmetics named after an emblematic Cerrado tree (Dias & Laureano 2009; Dias 2014). Larger industries use plants such as fava d'anta (*Dimorphandra mollis* and *Dimorphandra gardneriana*), to extract rutin (*quercetina-3-rutinosídio*), a bioflavonoid used in many medicines (Ribeiro-Silva 2013; Filizola 2013). Attempts to process phytotherapeutic products at small-scale laboratories such as AGROTEC, in Diorama, Goiás, have run into technical barriers raised by health authorities; some have even been closed by armed police. If the legal framework is made more suitable, the collection of medicinal plants for phytotherapy could generate income that is orders of magnitude greater than for fruits and nuts, as well as reduce public health spending on treatments and imported pharmaceuticals (Sawyer 2009). While fruit is sold for cents or dollars per kilogram (Teixeira 2015), medicinal plants are sold for tens or hundreds of dollars per kilogram. The medical and pharmaceutical establishment is opposed to any such competition.

4.5 Other Cultural Services

Some anthropologists report that indigenous communities consider their lands to include sacred places (Andrade 2010), a notable aspect of Brazil's rich cultural diversity. Although the Cerrado was considered a barren wasteland by the first settlers and continues to be treated as essentially worthless by developmentalists who are concerned primarily with profit and economic growth, those who have lived there appreciate and value its beauty and its specificity. Nowadays, the Cerrado is becoming "chic" in food, clothing and music. Some people, both traditional and modern, are proud of the Cerrado.

Non-indigenous rural communities often place value on the land where their ancestors lived for generations before them. Rivers, wetlands and canyons in the Cerrado itself and those located downstream from the central plateau in neighboring biomes have esthetic, cultural and spiritual importance for local communities. The countryside, called *roça*, is part of their cultural identity as *sertanejos*. The Center of Excellence of Cerrado Studies (*Cerratenses*) at the Brasília Botanical Garden (JBB) stresses cultural dimensions. The Lais Aderne Ecomuseum of the Cerrado emphasizes the cultural aspects of life in the Cerrado (Encinas and Nóbrega 2006). As one backlands *chapadeiro* emotionally put it at the National Congress on September 18, 2015, "This is where I belong."

Cerrado landscapes also provide tourism and recreation services for many urban and some foreign visitors. The urban population of large cities in the Cerrado and other regions, especially in the Southeast, seeks the cool waterfalls and the hot thermal waters of the Cerrado, which have become tourist attractions. The main thermal waters, adjacent to the Serra de Caldas Novas State Park, in southern Goiás, are visited by a million tourists per year, who probably spend a total of USD 200 million. Waterfalls are abundant, the most well-known of them being located in and around the Chapada dos Veadeiros in Goiás and the Chapada dos Guimarães in Mato Grosso. The rivers and lakes in the Araguaia region attract fishermen from elsewhere in Brazil and around the world to catch fish weighing up to 70 kg. Birdwatchers flock to the Pantanal wetlands, to the southwest of the Cerrado. There are magnificent caves in Terra Ronca, in northeastern Goiás. To the northeast, the canyons of the São Francisco River are another major tourist attraction that depends on water from the Cerrado. Indigenous tourism is now legal and has been regulated. It can provide income, especially from once-in-a-lifetime visits by foreign tourists, but requires investment and organization to avoid negative impacts.

4.6 Conclusions

The main ecosystem services provided by the Cerrado within and beyond its boundaries are summarized in Table 4.2.

Ecosystem services provided by Cerrado biodiversity are far greater than is generally recognized by specialists, policy makers or the public at large. Unprotected areas provide services for protected areas and vice versa. The services reach far beyond specific sites or corridors or even the entire hotspot, extending as far as neighboring countries to the west and south. The protected areas for the ecosystem and the unprotected remnants, most of which are home to local communities, keep the entire ecosystem functioning, a necessary condition for conservation at specific sites. The various ecosystem services provide strong justifications for the conservation of biodiversity and for investments from national sources, primarily for water, as well as international sources, primarily for mitigation of climate change through global warming, as further discussed in Chapter 11.

Table 4.2. Ecosystem Services of the Cerrado.

Type	Services
Provisioning	Rivers in the Cerrado and downstream (north, east and south)
	Medications (existing and potential)
	Wood
	Food security
	Livelihood supplementary income
	Less need for clearing and for social protection (cash transfers etc.)
	Genetic resources (potential)
	Hydroelectricity for all of Brazil, through the nationally integrated power grid
	River transportation, especially of commodities
Regulating	Rain in the Cerrado and neighboring regions and countries (hydrological cycles)
	Storage and sequestration of carbon
	Avoided carbon emissions
Supporting	Biodiversity intrinsic value
	Species protection
	Pollination
Cultural	Sacred indigenous lands
	Backlands (*sertanejo*) cultural values
	Tourism and recreation (thermal waters, waterfalls, birdwatching, fishing, camping, hiking etc.)

Source: Authors and stakeholders.

5. CONSERVATION OUTCOMES

Selection of conservation outcomes relies on the understanding that biodiversity is not measured in any single unit. Rather, it is distributed across a hierarchical continuum of ecological scales that can be categorized into three levels: (i) species; (ii) sites; and (iii) broad landscapes (or ecosystem-level units) termed corridors. These levels interlock geographically through the occurrence of species at sites and of species and sites within corridors. Given the threats to biodiversity at each of these three levels, targets for conservation can be set in terms of "extinctions avoided" (species outcomes), "areas protected" (site outcomes) and "corridors consolidated" (corridor outcomes). Species are selected as those classified as threatened according to the IUCN Red List, or the National Red List for Brazil (recognizing that the IUCN Red List is incomplete with regard to coverage of certain taxonomic groups in Brazil, especially plants, freshwater fishes and invertebrates, and that national threat assessments can act as a proxy for global assessments). Sites are identified as Key Biodiversity Areas (KBAs): places that "contribute significantly to the global persistence of biodiversity," for example by supporting threatened species and species with severely restricted global distributions. Corridors are delineated to link KBAs (in particular to support landscape connectivity and maintain ecosystem function and services for long-term persistence of species). Following this approach, quantifiable measures of progress in the conservation of threatened biodiversity can be tracked across the Cerrado Hotspot, allowing the limited resources available for conservation to be targeted more effectively.

5.1 Sites of Importance to Conservation and Environmental Management Instruments

At least ten key initiatives provided breakthroughs in knowledge about the Cerrado Hotspot: biodiversity workshops with their revisions and detailing (1998, 2007, 2011 and 2014); definition of the world's biodiversity hotspots (2000 and 2004); preparation of national red lists of endangered species of flora and fauna (2008 and 2014); identification of key areas for biodiversity conservation (KBAs, 2007); identification of rare species of plants and fish (2009 and 2010); and identification of irreplaceable areas taking into account species of flora and fauna of the Cerrado or specific areas of the hotspot (2007 and 2008).

The first exercise, carried out in 1998, was based on the model of biodiversity workshops to identify priority areas and actions for conservation, mainly considering the occurrence and distribution of endemic and endangered species in the Cerrado. Richness was most important, while singularity, usefulness and other criteria were not considered. Biodiversity workshops were part of the Project for Conservation and Sustainable Use of Brazilian Biological Diversity (PROBIO) under the National Biodiversity Program. Additional studies were carried out in all Brazilian biomes until the mid-2000s for the identification of priority areas and actions for conservation, in compliance with the country's obligations under the Convention on Biological Diversity. The best available information was used to produce new analyses for the Cerrado, with the identification of 87 priority areas for biodiversity conservation, also including areas in the Pantanal, published in 2007 (MMA 1999; 2007). Recently (2012), the Ministry of the Environment (MMA) assumed the review of priority areas in all biomes, one by one. The Cerrado was reviewed together with the Pantanal biome, under the leadership of World Wide Fund for Nature (WWF) Brazil, and the report was issued in 2012. It recommended the creation of protected areas in 42 polygons, in three different classes of priorities. In addition, the exercise also provides several recommendations of conservation actions: 1) Rural Environmental Registry (CAR) and Good Practice;

2) Recovery; 3) Compensation of Legal Reserve; 4) Promotion of Sustainable Use; and 5) Creation of Corridors or Mosaics in 48 polygons, also in three different priority classes.

In the early 2000s, new analyses and proposals were enabled by greater scientific knowledge about the Cerrado's biodiversity (Marinho-Filho *et al.* 2010), and the emergence of analytical methods involving systematic conservation planning (Margules and Pressey 2000). They were also stimulated by new proposals for large-scale conservation in biodiversity corridors or ecological corridors (Sanderson *et al.* 2003). As a result of a broad effort to make systematic use of biological databases, new approaches used information on the occurrence of endangered species or relevance to conservation, such as key areas for biodiversity conservation based on the distribution of endangered, rare and/or endemic species (Eken *et al.* 2004; Langhammer *et al.* 2007). Identification of key areas for conservation in the Cerrado included vertebrates, plants and rare fish (Kasecker *et al.* 2009; Nogueira *et al*. 2010) and areas of the Alliance for Zero Extinction (AZE 2010).

The Cerrado has some sites identified by the AZE, which aims to create a line of defense against the extinction of species by eliminating threats and restoring habitats, in order to recover natural populations. The international initiative seeks to prevent extinctions by identifying key sites for local protection, each of which is considered the last refuge of one or more species categorized as "Endangered" or "Critically Endangered" according to IUCN criteria. The first AZE site identified in the Cerrado was the Serra das Araras Ecological Station, in Mato Grosso, which has populations of blue-eyed ground doves (*Columbina cyanopis*), a species which is critically endangered (AZE 2010). The Brazilian Alliance for Zero Extinction was created to contribute to the identification of global AZE sites in the country. AZE-Brazil identified an additional seven AZE sites for the Cerrado, considering only the national red list. The sites are:

1. Brasília Zoo (Brasilia) for the *Candango* mouse (*Juscelinomys candango*)
2. Emas National Park (Goiás) for the white-winged nightjar bird (*Eleothreptus candicans*)
3. Brejinho de Nazaré (Tocantins) for a fish (*Simpsonichthys multiradiatus*)
4. Catu River (Bahia) for the Barrigudinho fish (Phalloptychus eigenmanni)
5. Patos River (Goiás) for a fish (*Simpsonichthys marginatus*)
6. Tabocas River (Minas Gerais) for a fish (*Simpsonichthy sauratus*)
7. Urucuia River (Minas Gerais) for a fish (*Simpsonichthys zonatus*)

More recently, the National Center for Conservation of Flora (CNCFlora) of the Botanical Garden Research Institute in Rio de Janeiro coordinated a broad effort to update the list of Brazilian threatened flora and to identify priority areas for biodiversity conservation (Martinelli and Moraes 2013; Martinelli *et al.* 2014). The Chico Mendes Institute for Biodiversity Conservation (ICMBio) coordinated the review of Brazilian fauna threatened with extinction that led to the new list published in December 2014. The results reinforce the urgent need for new, integrated actions to conserve the Cerrado. All these initiatives helped to understand the current situation and highlighted critical areas for conservation in the Cerrado Hotspot, as described below.

5.2 Species Outcomes

Brazil is a signatory to important international agreements and conventions regarding the conservation of endangered species, like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Biological

Diversity (CBD). Based on these international commitments and its own National Biodiversity Policy, the Brazilian government, with support from dozens of experts, has expanded and upgraded red lists for fauna and flora (Machado *et al.* 2008; Martinelli and Moraes 2014).

Significant anthropic pressure on natural habitats in the Cerrado is jeopardizing the long-term maintenance of its biodiversity. Analyses of red lists in Brazil show that at least 901 Cerrado species are threatened with extinction, including 266 species of fauna and 635 species of flora. Only the Atlantic Forest biome has more endangered species.

These numbers are certainly higher, since only 10% of the Cerrado flora species have been evaluated. Only 119 of these 266 threatened fauna species have been recognized and incorporated in the list of globally threatened species of the International Union for Conservation of Nature (IUCN) as of 2015, as shown in Table 5.2, since the taxonomic evaluation working groups of IUCN do not meet annually to incorporate these updates. Of the plant species on the national red list, only 41 also have some degree of threat on the IUCN list. (See Table 5.1 for the Brazilian National Red List, Table 5.2 for the IUCN Red List, and 5.3 for comparison of both.

Table 5.1. Nationally Threatened Species in the Cerrado Hotspot, by Taxonomic Group.

Taxonomic groups	Critically Endangered	Extinct in the Wild	Endangered	Vulnerable	Total
Plants	109	--	356	170	635
Birds	2	1	10	21	34
Amphibians	2	--	2	--	4
Reptiles	1	--	10	6	17
Mammals	--	1	14	26	41
Fish	22	--	34	47	103
Invertebrates	26	--	26	15	67
Total	**162**	**2**	**452**	**285**	**901**

One very representative endangered species in the Cerrado is the Brazilian merganser (*Mergus octosetaceus*), which occurs in low density in waterway regions of subtropical forest and savanna with gallery forest. It is the only species representative of the Mergini family (Order Anseriformes) in the Southern Hemisphere, and little is known about its biology. The species is one of the most threatened birds in the Americas, and it is classified as critically endangered on both the Brazilian National Red List and the IUCN Red List, due to the decline of its already small populations (BirdLife International 2000). The total Brazilian merganser population estimate is 175 to 225 individuals in the disjunct distribution areas in Minas Gerais, Goiás and Tocantins states (WPE, 2015) and there are four individuals in captivity. There are confirmed sightings in four water basins (São Francisco, Tocantins, Paraná and Doce Rivers) and three countries (Paraguay, Argentina and Brazil). The latest sighting in Paraguay, however, was in 1984, while in Argentina there have only been two sightings since 1993. All records in both countries refer to isolated birds, indicating an abrupt reduction or even disappearance of the species in the investigated areas. It is a sedentary and monogamous bird. It is believed that couples pair for life and remain in the same stretch of river. This makes it extremely susceptible to habitat loss and degradation.

Table 5.2. Globally Threatened Species in the Cerrado Hotspot, by Taxonomic Group.

Taxonomic groups	Critically Endangered	Extinct in the Wild	Endangered	Vulnerable	Total
Plants	4	--	17	20	41
Birds	6	--	8	27	41*
Amphibians	4	--	--	--	4
Reptiles	--	--	2	5	7
Mammals	1	1	9	10	21
Fish	--	--	--	5	5
Invertebrates	10	4	12	15	41
Total	**25**	**5**	**48**	**82**	**160**

*Including 3 endangered birds from KBAs in Bolivia and Paraguay.

Table 5.3. Nationally and Globally Threatened Species in the Cerrado Hotspot, by Taxonomic Group.

Taxonomic groups	Brazilian National Red List	IUCN Global Red List	Total Threatened Species**
Plants	635	41	635
Birds	34	41*	55
Amphibians	4	4	7
Reptiles	17	7	22
Mammals	41	21	47
Fishes	103	5	108
Invertebrates	67	41	106
Cerrado	**901**	**160**	**980**

*Including endangered birds from Bolivia and Paraguay ** Species evaluated as threatened nationally and/or globally.

Another important group of endangered Cerrado species, very important to extractive communities, are the species from Eriocaulaceae family, popularly known as "evergreens" because their inflorescences keep the same look they had before being detached from the plants. The evergreens inhabit open fields exposed to the sun, on land ranging from dry to very flooded, in areas of high-altitude grasslands, savannas, Amazon fields called *campinaranas*, dunes and salt marshes in the Atlantic Forest and *vereda* wetlands. . Despite their apparent plasticity, these plants do not easily survive outside their range.

The Eriocaulaceae family has ten genera and about 1,200 species distributed throughout the tropical regions of the planet. This is one of the largest families of endemism (*i.e.*, exclusive occurrence) in Brazil. Often a species occurs on a single mountain or in a very restricted area, with a very limited geographical distribution. This makes many of them seriously threatened. In addition to threats due to habitat loss from agricultural activities and urban sprawl, a serious threat to these species is their own indiscriminate extraction, especially when this takes place with the premature collection of inflorescences, prior to production or the complete maturation of seeds. The removal of many entire plants at the time of collection and the frequent use of fire as a flowering stimulator are factors that contribute to the reduction of populations of these species in their native areas. It is important to note that several human communities depend on the extraction of evergreens for their survival. Therefore, the quest for sustainable alternatives for these communities is more than a challenge; it is a necessity.

The rarity of species can be defined by limiting geographical distribution, habitat affinity and specificity, or according to their local density (Kruckerberg and Rabinowitz 1985). Especially when associated with environmental impacts, the rarity implies in a concrete risk of extinction. In this sense, rare species should be frequently treated as conservation targets, since their high vulnerability characteristics give them a higher vulnerability status.

In Brazil, one of the most comprehensive studies on rare plants was published by Giulietti *et al.* (2009), considering geographical distribution as a rarity parameter (species with a distribution area smaller than 10,000 km^2) and covering 2,291 species, 687 of which occur within the Cerrado Biome. In 2014, the CNC Flora led an extinction risk assessment only on the Cerrado species mentioned in this study, reviewing and updating the occurrence data of these species. They evaluated nearly 5,000 points of occurrence of 577 species of rare plants, of which 366 (67%) were categorized as threatened with extinction risk, reinforcing the vulnerable status of these species. Due to a lack of consistent spatial data of some species, it was possible to have occurrence points for only 439 rare plants, which were incorporated into the KBA analysis.

The same rarity parameter was used in a study (Nogueira *et al.* 2010) that found 819 rare fish in Brazil. Most (65%) species considered rare can be found in small water basins in the Cerrado (210 species) and Atlantic Forest (322 species) biomes, identified as global hotspots for conservation due to their high degree of endemism and habitat loss. The species identified in both studies were also considered conservation targets within the framework of the CEPF. All the target species are summarized in Table 5.4.

Table 5.4. Cerrado Conservation Targets: species level

		Number of species	**Total number of species**
Irreplaceable species	Rare plants	439	649
	Rare fish	210	
Vulnerable species	Threatened flora	635	980
	Threatened fauna	345	
		Total Cerrado	**1,629**

The Cerrado is estimated to contain approximately 12,000 plant species, 34.9% (4,208) of which are endemic (Forzza *et al.* 2012; Chapter 3, Table 3.1) and 5.3% (635) are threatened. This means that the Cerrado contains 13.4% of all plant species in the neotropical region and 1.5% of all plant species in the world are present only in this hotspot. A total of 2,373 species of terrestrial and aquatic vertebrates have been registered in the Cerrado, 433 (18.2%) of which are restricted (endemic) to the region (Chapter 3, Table 3.1) and 10% are threatened (239 species). Squamata reptiles (lizards, serpents and amphisbaenia or “worm lizards”) stand out, with 38% of their species endemic to this hotspot (Nogueira *et al.* 2010). Mammals are the taxonomic group with the highest proportion of threatened species: 18.7% (47 of 251 species). The full list of trigger species can be found in Appendix 1.

5.3 Sites Outcomes: Key Biodiversity Areas

Efforts to identify strategic locations for the conservation of globally important biodiversity in the Cerrado have been conducted since the mid-2000s. The Cerrado Hotspot in Brasilia already had a list of KBAs (CI-Brazil 2009) based on vulnerability criteria (Langhammer *et al.* 2007) from older assessments of national and international red lists for plants and vertebrates, which had been used in biodiversity conservation strategies in this hotspot. Bolivia and Paraguay also have their own assessments, but the identification of sites important to biodiversity conservation was focused on threatened birds alone, led by BirdLife International. The important bird areas (IBAs) follow the same conceptual and methodological principles as KBAs and are intended to identify exceptionally important places and outline conservation strategies for birds. Studies of rare fish (2010) and rare plants (2014) done by researchers in Brazil also identified KBAs, using the irreplaceability criteria (Langhammer *et al.* 2007) for these species, and were also included in this analysis.

The Brazilian endangered species KBAs have been updated with new fauna and flora species records, and also with the inclusion or removal of species following the revision of the recently published Brazilian list of endangered species. Both Brazilian national (IBAMA, published in December 2014) and international (IUCN, accessed January 2015) lists were considered, as well as species occurrence records found in scientific literature, herbaria and museums over the last ten years. This update has generated a database with more than 10,000 occurrence points for species of threatened flora and fauna on the Brazilian side of the Cerrado Hotspot.

The KBAs in Bolivia and Paraguay, with an IBA assessment that used 42 and 15 species, respectively, identified only one Bolivian IBA, and three in Paraguay. Of these, however, only two species are considered to be endangered birds according to IUCN criteria, and ten vulnerable, all part of the Cerrado species outcomes. The rest belong to the “least concern,” “near threatened” and “not recognized” categories.

The review of Brazilian sites produced a total of 773 KBAs for Brazilian threatened species (Table 5.5). Added to KBAs for Brazilian irreplaceable species and KBAs for Bolivia and Paraguay, the total is 1,270 important sites for conservation of the biome. However, since the Brazilian KBAs from different groups presented spatial overlap, a grouping analysis of these areas resulted in a final figure of 761 Brazilian KBAs plus one in Bolivia and three in Paraguay (Figure 5.1).

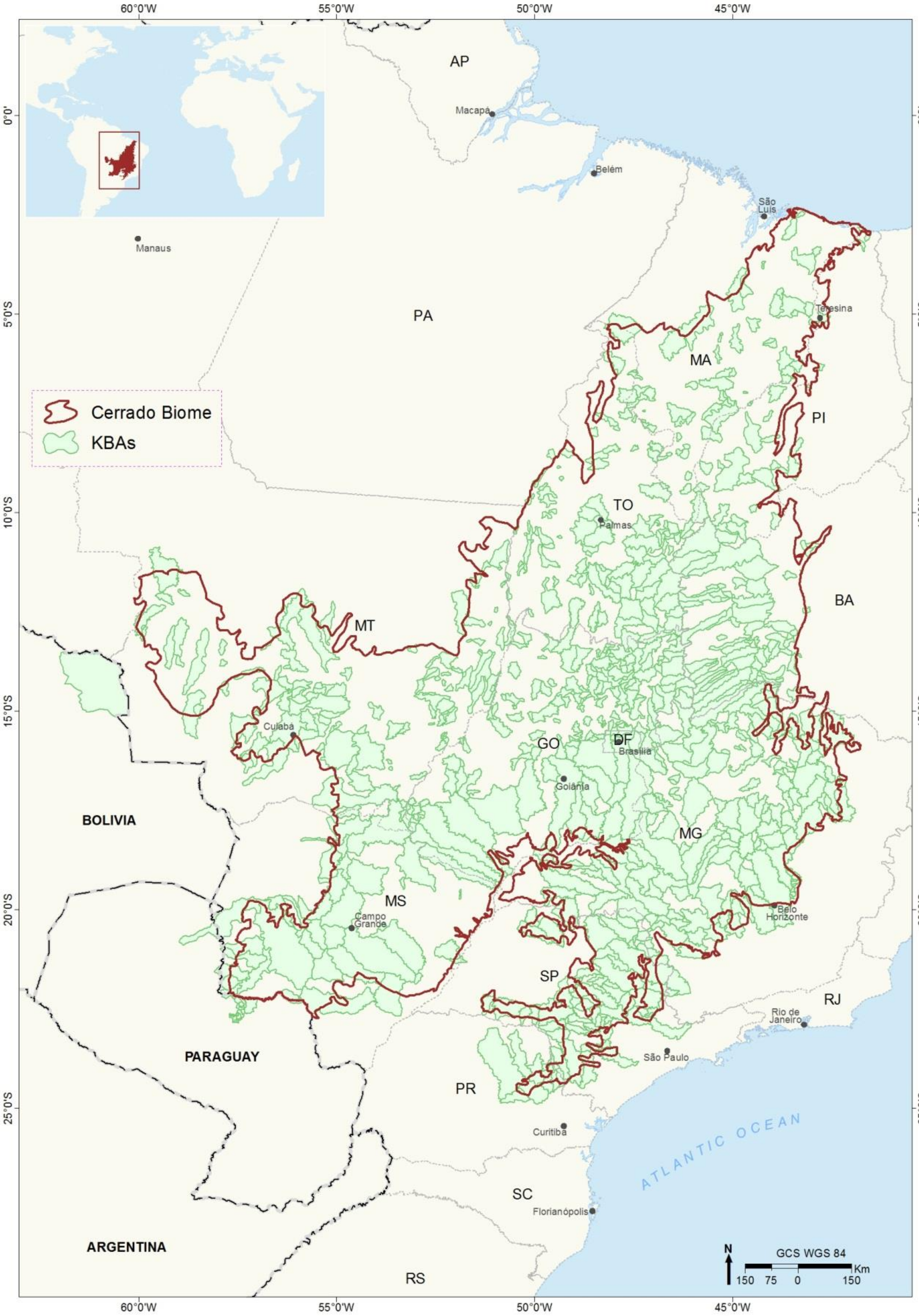
Table 5.5. Key Areas for biodiversity conservation of different biological groups in the Cerrado.

Langhammer criteria	Taxonomic groups	Number of species analyzed	Total KBAs
Irreplaceability	Rare plants	439	344
	Rare fish	210	149
Vulnerability	Threatened flora	635	392
	Threatened fauna	345	385
	Total Cerrado	1,629	765*

* Because many KBAs qualify under multiple criteria and thus overlapping, this figure is not equal to the sum of all criteria (1,270).

These 765 sites encompass an area of about 1.2 million km^2, out of which 1.18 million km^2 is in Brazilian territory, representing approximately 60% of the Brazilian biome. The full list of 765 KBAs, their identifier codes and names can be found in Appendix 2.

Figure 5.1: 765 Key Biodiversity Areas of the Cerrado Biome.



Brazil's KBAs in the Cerrado have 474,000 km^2 of remaining original vegetation cover (24% of the biome), and 117,000 km^2 inside Protected Areas, including Indigenous Lands, *quilombola* Territories and both federal and state Protected Areas (~10% of the biome) (Figure 5.2).

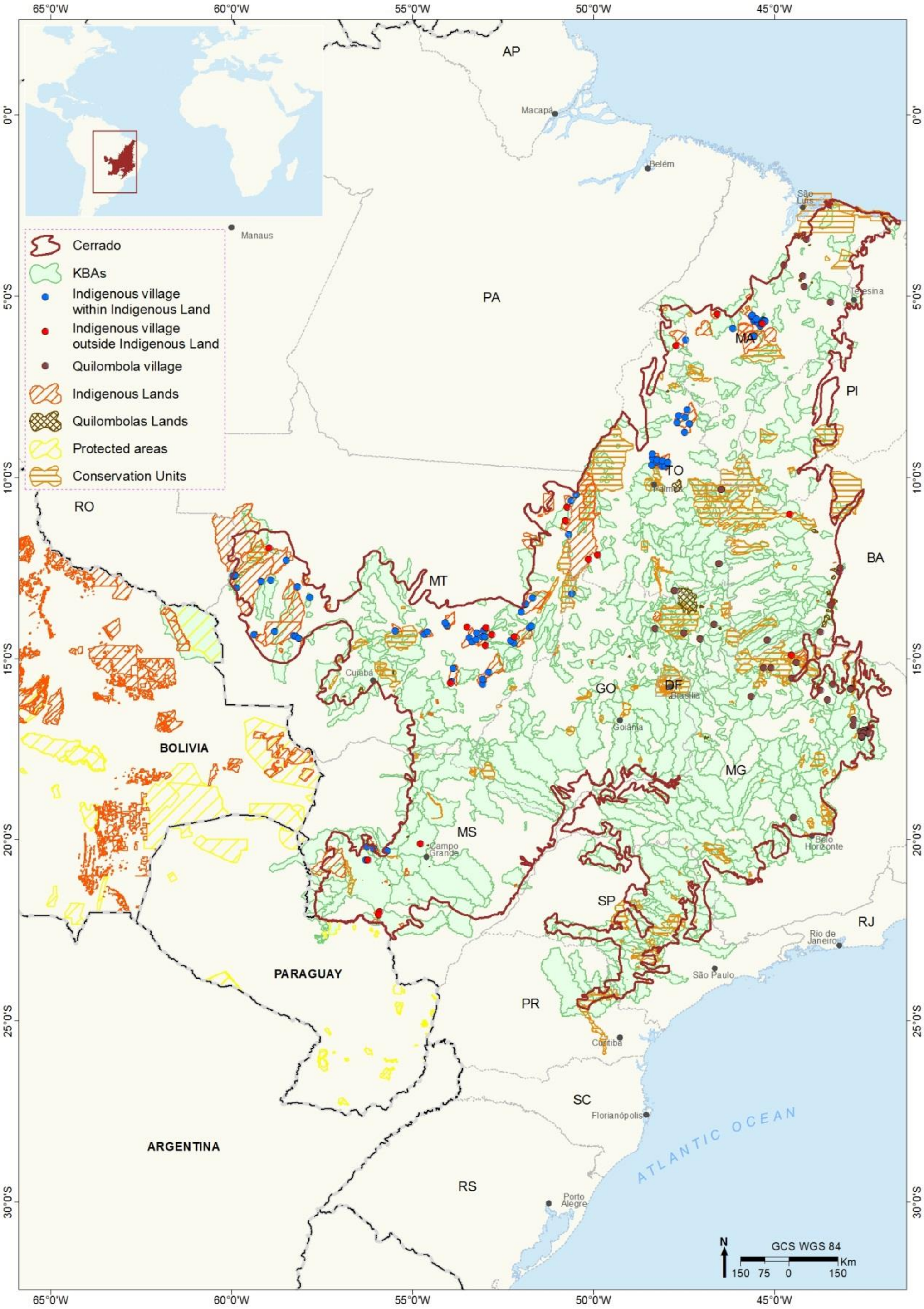


Figure 5.2: Key Biodiversity Areas and Protected Areas in the Cerrado.

There is an apparent discrepancy between the area of KBAs (1.18 million km^2) and the area of remaining vegetation cover within them (0.47 million km^2). Since the last database of Cerrado remnants is outdated (from 2009), the KBA delineation did not consider the remnants' limits, and the conservation strategy for these areas definitely needs to consider natural vegetation restoration programs. Besides that, the landscape strategy must consider actions to connect fragments through corridors. The states with the highest number of KBAs are Goiás, Minas Gerais and Mato Grosso.

The KBAs in Bolivia and Paraguay include areas notably in transition, with multiple landscapes and varied vegetation. There are humid and gallery forests, pampas, wetlands and savannas in their various configurations (*cerradões, campos limpos, campos sujos*). Half of the KBAs are currently protected by national parks (San Luis and Paso Bravo in Paraguay and Noel Kempff in Bolivia) (Figure 5.2), as well as one private reserve (Cerrado del Tagatija). Another area within a KBA in Paraguay is awaiting recognition as a private scientific reserve. The Noel Kempff National Park in Bolivia (totally contained by the KBA site) was also declared a World Heritage Site by UNESCO in 2000.

5.3.1 KBA for the Provision of Ecosystem Services: KBA+

In the past, identification of KBAs has not included an assessment of ecosystem services. However, the importance of ecosystem services (ES) has been recognized in the most recent version of the KBA guidelines (IUCN 2012). The guidance states that when possible, ecosystem service values of KBAs should be documented, communicated, and incorporated into subsequent decision making.

The understanding of the role that KBAs play in the provision of services that are important to people, particularly to the poor, is called KBA+. The framework was developed by CI's Betty and Gordon Moore Center for Science and Oceans (MCSO) with the support and partnership of CEPF and CI-Madagascar.

The KBA+ methodology includes the following seven steps:

(1) Scope key ecosystem service values within and around KBAs
(2) Develop narrative description of ecosystem service values
(3) Identify criteria for assessing important areas
(4) Apply criteria to identify and map important areas within and around KBAs
(5) Summarize ecosystem services values for KBAs
(6) Review and refine results
(7) Develop recommendations and integrate into CEPF profile

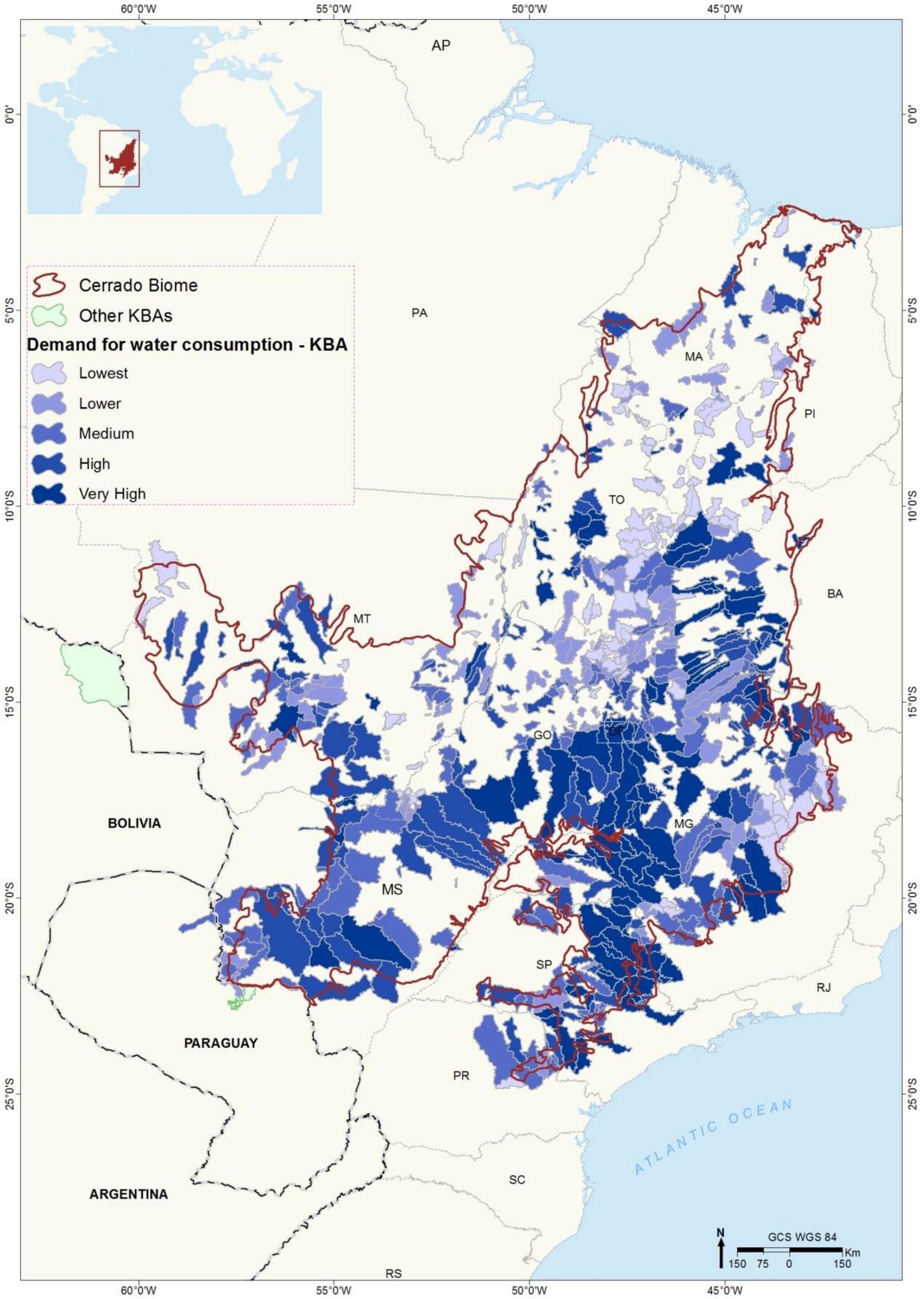
These steps were followed by CI-Brazil and ISPN in this study, including engagement with different stakeholders, a cross-cutting component of this methodology. For the Cerrado ecosystem profile, the main adjustment to the methodology was to focus on specific ecosystem services regarding water (especially provision for hydropower generation, irrigation and urban supply). Some approaches used for the KBA+ in Madagascar were discussed and found not to be applicable to the Cerrado biome (*e.g.*, available data sources or surrogates for fisheries, hunting, risk of disasters) or had severe database bias problems, despite being important ES indicators (*e.g.*, food supply, based on non-timber and timber forest products; and tourism).

As in the framework used in Madagascar, ecosystem services identified in KBA+ are not "valued" in economic terms, but ranked as to their relative importance for water supply.

The data was provided by the National Water Agency (ANA) and includes demand for water use in five categories: animal, industrial, irrigation, rural and urban (all at a small basin scale). It was performed by using a weighted average for each KBA, and the results were ranked in five categories (Figure 5.3), regarding the relative importance of ecosystem services in providing water for each type of use.

One-hundred-fifty-two KBAs were considered to be of very high importance for ecosystem services of water, all located close to big cities and agricultural activities, where demand for water consumption is higher.

Figure 5.3: KBA+ in the five categories of relative importance for water provisioning.



5.4 Corridor Outcomes

Corridors, under the CEPF proposal, were defined as large-scale spatial units required for maintenance processes on ecological and evolutionary scales, considering landscape scale. The corridors were delimited and defined from KBA clusters of great importance to the Cerrado biome (after the KBA prioritization process), according to three main criteria:

1. Clusters of KBAs found in the High Importance category (see Chapter 13 for KBA rank);
2. Connectivity of natural vegetation and remnants;
3. Protected areas, including conservation units and indigenous and *quilombola* lands.

The corridors already established in the Cerrado region were also incorporated into this analysis, to reinforce the instrument and because they already had ownership from stakeholders.

A first approach to the corridor definition was discussed and presented to stakeholders for inputs and improvement. Using socioeconomic dynamics and some previously defined environmental landscape strategies, ten strategic corridors were designed: Cerrado Maranhense, Cerrado na Amazonia Legal, Jalapão, Araguaia, APA Pouso Alto-Veadeiros-Kalungas, RIDE Brasília, Mosaico Grande Sertão-Peruaçu, Serra do Espinhaço, Emas-Taquari and Miranda-Bodoquena.

The Cerrado Maranhense and Cerrado in the Legal Amazon were both considered too large to define a good strategy, and the recommendation was to split them into smaller parts, focusing on the core protection components. The first one gave rise to the Lençóis Maranhenses and Mirador-Mesas corridor, and the second corridor was split in Alto Juruena and Chapada dos Guimarães, both of them with important protected areas in the core, connected by surrounding fragments. Part of the Cerrado in the Legal Amazon corridor also contributed to the increase in the Araguaia corridor.

The Jalapão corridor was renamed as Central de Matopiba, since it encompasses an area larger than the Jalapão Biodiversity Corridor (from the government initiative). Four corridors: Veadeiros-Pouso Alto-Kalungas, Emas-Taquari, Miranda-Bodoquena and Serra do Espinhaço kept almost the same area throughout the process, with minor adjustments according to the stakeholders' recommendations and priority KBA final results.

It was recommended that the western portion of Bahia state be incorporated into a landscape strategy, because of its unique ecosystems, the opportunity to connect fragments and the urgency of conservation actions. The *Sertão-Veredas-Peruaçu* Corridor therefore incorporated this area due to its similar environmental dynamics and nearly doubled in size. The RIDE Brasília also incorporated an important area in the middle of Minas Gerais state due to an important, priority cluster area of KBAs and was renamed *RIDE DF-Parnaiba-Abaeté*.

And finally, after the KBA prioritization, another important corridor was identified: *Serra da Canastra*, with important protected areas and fragments in a matrix of other land uses, including pastures and urban areas.

The final proposal presents 13 strategic conservation corridors for the biome, with different historical, socioeconomic, conservation and land use characteristics. Table 5.6 summarizes some of the basic indicators for each of them, while their position and areas can be visualized in Figure 5.4. A detailed description of the main features and importance of each corridor for the biome's conservation follows.

Figure 5.4: Conservation Corridors in the Cerrado Hotspot

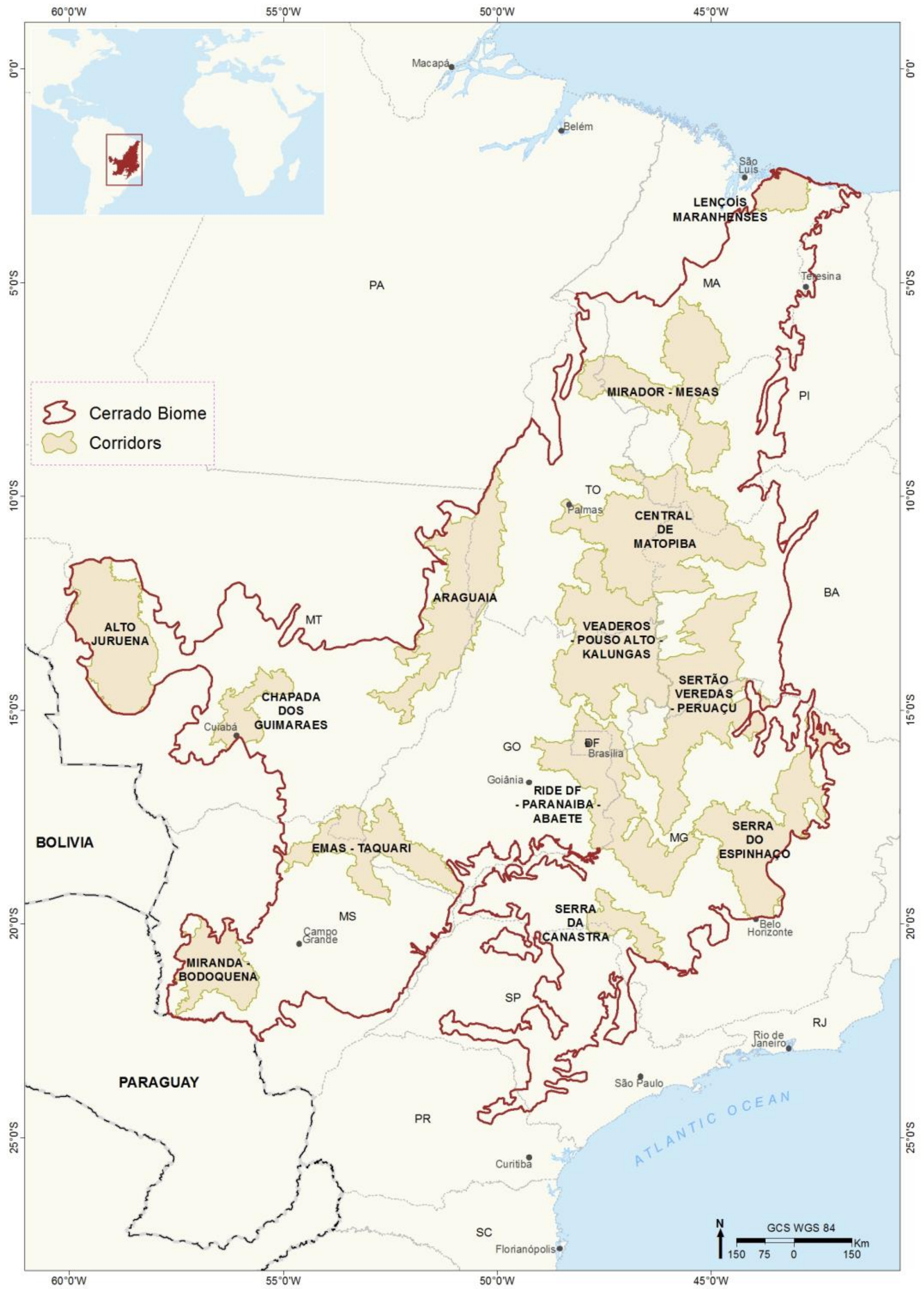


Table 5.6: Cerrado Corridors and some environmental and socioeconomic indicators

Corridors	No. Muni-cipali-ties	Population 2011	Average GDP (R$)	Average HDI	Average Threat Level (IPA index)*	Area (Km^2) inside Cerrado	% Original Vegetation Cover within Cerrado	% Legal Protec-tion	% Indi-genous Lands	% Quilom-bola Lands	% UC Strict Protection	% UCSustainable Use
Alto Juruena	17	400,321	34,674	0.70	5.59	60,289.59	80	55	55	0	4	0
Araguaia	27	338,564	18,736	0.66	5.26	68,259.63	84	50	38	0	13	8
Chapada dos Guimarães	17	1,020,611	28,275	0.68	5.59	17,732.47	61	38	2	0.14	2	36
Emas-Taquari	27	408,026	30,800	0.70	6.15	42,972.58	30	4	0	0	4	0
Central of MATOPIBA	42	844,577	11,809	0.62	4.95	99,096.07	81	34	0	0.13	16	19
Lençois Maranhenses	18	455,472	4,276	0.56	5.83	12,101.15	88	90	0	0.10	12	78
Mirador-Mesas	38	901,360	11,117	0.57	5.45	64,237.86	85	23	11	0.03	12	0
Miranda-Bodoquena	15	454,437	16,692	0.68	5.80	29,678.55	44	16	14	0.01	3	0
RIDE DF-Paranaiba- Abaeté	55	4,771,838	20,478	0.70	7.09	64,670.95	41	11	0	0.13	1	10
Serra da Canastra	29	791,769	31,071	0.72	6.28	13,854.46	37	13	0	0	13	0
Serra do Espinhaco	102	5,433,500	13,724	0.66	5.25	57,688.63	60	7	0	0	5	3
Sertao Veredas-Peruacu	45	703,335	10,577	0.62	5.58	80,995.30	70	18	1	0	6	12
Veadeiros-Pouso Alto- Kalungas	39	335,345	12,599	0.65	5.49	78,124.37	75	20	1	4.20	2	15

HDI: Human Development Index. The HDI is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. It is the geometric mean of normalized indices for each of the three dimensions. Variation: 0-1.

* IPA index: Anthropic Pressure Index. IPA is a synthetic index of economic and demographic pressures under environment. It is a combination between agriculture and pasture pressure, population growth, stock and flow, at the municipal level. Methodology detailed in the Appendixes. Variation: 2-10 (with 10 being the highest pressure).

UC: *Unidades de Conservação*- Conservation Units in Portuguese, or Protected Areas, as commonly used.

5.4.1 Alto Juruena

The Alto Juruena Corridor consists of 16 municipalities in Mato Grosso state and one in Rondônia state and has one of the smallest resident populations. Nevertheless, its average GDP is the largest of the identified corridors, reaching almost R$ 35,000, and its average HDI is also relatively high (0.7). Its area still has a high proportion of remaining vegetation cover within the Cerrado biome (80%), much of which is in protected areas (55%), with indigenous lands of the Paresi, Memku, Nambikwara, Manoki, and Enauwenê-Nawê peoples and only one protected area, the Iquê Ecological Station, with 200,000 hectares. The region has little organization of civil society, while some indigenous support organizations work there.

5.4.2 Araguaia

The Araguaia River is the third longest river in Brazil outside the Amazon Basin, with great cultural and socioeconomic wealth and a high potential for tourism. This river runs through the two largest Brazilian biomes and connects many protected areas. The corridor covers the middle portion of the Araguaia River, with Bananal Island at its northern tip. It runs from Registro do Araguaia to Santa Isabel do Araguaia, a distance of 1505 km. The corridor has 27 municipalities in Goiás, Mato Grosso, Pará and Tocantins states, with the second smallest resident population according to Brazil's official census (IBGE 2010): 338,000 people.

The plant cover is characterized by different Cerrado vegetation types, with significant variation in composition and with some influence of Amazonian species and flooding dynamics, resulting in a marked heterogeneity of environments. Eighty-four percent of the corridor's expanse is still intact, covered by remnants of original vegetation. The Bananal plains have aquatic and terrestrial ecosystems in good condition due to the adoption of conservation and indigenous policies, with the implementation of protected areas and indigenous lands, especially the Araguaia National Park (555,517 hectares), Araguaia Park (1.3 million hectares) and the Cantão State Park (90,000 hectares), as well as the Avá-Canoeiro, Javaé, Karajá and Tapirapé indigenous lands. This is one of the most extensive areas with official protection status in the hotspot.

This region has a strong presence of civil society organizations whose actions focus on technical assistance to agrarian reform settlers, mainly to support agroextractivism and agroecology, as well as a Xavante indigenous group that is reoccupying the Marãwaitsédé Indigenous Land, over 60% of which had been overrun by monocultures and livestock.

5.4.3 Chapada dos Guimarães

The Chapada dos Guimarães Corridor consists of 17 municipalities in the state of Mato Grosso, including the state capital (Cuiabá), and is the corridor with the third largest resident population: just over 1 million inhabitants. The area of the corridor has a good share of remaining Cerrado vegetation cover (60%) and protected areas (38%), highlighting the Chapada dos Guimarães National Park and the Águas de Cuiabá State Park. The corridor follows the Upper Paraguay River Basin, connecting the Cerrado to the Pantanal.

Agriculture, especially extensive livestock raising, is the main force replacing native vegetation in the region. Among the municipalities that make up the Upper Paraguay River Basin, Chapada dos Guimarães has the greatest floristic diversity (MMA 1997). Ecotourism is growing in the corridor region, with the main attractions being the Chapada dos Guimarães National Park and the Pantanal region.

5.4.4 Emas-Taquari

The Emas-Taquari Corridor was one of the biodiversity corridors identified by the Workshop on Priority Areas and Actions for Conservation of the Cerrado and Pantanal Biodiversity in 1988. The corridor stretches from southwestern Goiás to north-central Mato Grosso do Sul and has the highest rate of clearing in the entire cerrado (70% of the area already cleared), as well as the least protected areas, only 4%. The corridor contains the headwaters of three river basins – the Paraguay River Basin, with the Taquari River; the Parnaíba Basin; and the Araguaia-Tocantins Basin. The corridor is anchored by one of the most important protected areas of the Cerrado, Emas National Park.

The process of agricultural exploitation is the strongest landscape change in the Emas-Taquari Corridor. Traditionally an area for beef cattle, the region has undergone a major transformation since the second half of the 1970s, with the conversion of highland plateaus to plant grain crops. Thus the highlands have large grain farming extensions, with high technology and mechanization. In the lowlands still dominates a matrix formed by planted pastures, almost entirely made up of African grasses. The remnants of natural Cerrado vegetation are for the most part fragmented and heavily pressured by production areas. Ecological restoration projects to provide ecological connectivity among fragments, expansion of private reserves and consolidation of public protected areas are actions in progress and need strengthening.

5.4.5 Central Corridor of MATOPIBA

The MATOPIBA is a region known as the new agricultural frontier in the Brazilian north-northeast, which includes the southern part of Maranhão, southwestern Piauí, the entire state of Tocantins and western Bahia. The region is characterized by favorable conditions for high-precision technology in agricultural commodities such as soybeans, corn and cotton. Because of the importance of this region for the development of Brazilian agriculture, in 2015 the federal government launched the MATOPIBA Regional Development Agency. Besides its exceptional conditions for agricultural expansion, the region also is notable for the presence of extensive and continuous native Cerrado vegetation. While the low-lying areas and isolated mountains of Jalapão are conserved and increasingly known for their scenic beauty and ecotourism alternatives, the highlands are suffering intensely from deforestation. According to 2009 satellite images, 82% of this region was still covered by natural remnants, which are certainly under severe threat by agriculture and recent land use changes.

In its central portion, MATOPIBA encompasses 42 municipalities in all four states. The Jalapão region has the largest continuous Cerrado in this hotspot within protected areas, made up by the Parnaíba River Headlands National Park, with an area of 729,813 hectares; the Serra Geral do Tocantins Ecological Station, with an area of 716,316 hectares; and the Jalapão State Park with 160,000 hectares. Beyond its great ecotourism potential, extractive products and handicrafts are also important alternative income sources and are key to the sustainable development of local communities, which maintain traditional lifestyles and make beautiful handicrafts and biojewelry from stems of *capim dourado* (*Singonanthus nitens*) and fiber from a palm called *buriti* (*Mauritia flexuosa*).

Aside from this continuum of protected areas, the region is seen as the next frontier for expansion by agribusiness, which is a major threat to people living there, to biodiversity and to the maintenance of water resources.

5.4.6 Lençóis Maranhenses

The Lençóis Maranhenses corridor is made up of 18 municipalities in northeastern Maranhão. It is the smallest corridor in terms of area and also has the lowest per capita GDP and HDI (0.56). However, the corridor has the highest proportion of land within the Cerrado biome (88%), 90% of it within protected areas: the Lençóis Maranhenses National Park (~12%) and the Upaon-Açu/Miritiba/Alto Preguiças Environmental Protection Area (~78%).

This corridor is in the eastern coastal region of Maranhão, having most of its length covered by a vast area of sand dunes. The landscape consists of dunes and sandbanks in the north and west. There are also patches of forest savanna and scrub in complex transition vegetation that extends to the south and southeast.

5.4.7 Mirador-Mesas

The Mirador-Mesas Corridor is in the northern part of the Cerrado, near both the Amazon and the Caatinga. This geographical position favors the existence of a wide variety of environments, as seen in the variety of fauna and flora. The corridor is part of the Parnaíba River Basin, the main river in the region, along with its tributary, the Uruçuí-Una River.

Connecting Piaui, Maranhao and a small region of Tocantins, this corridor has the municipalities with one of the lowest HDI in the biome. However, the region is very rich in natural resources such as babassu palm nuts and native fruits such as cashew, *buriti*, *bacuri* and *cajá*. It is a reference region for native Cerrado fruits processed by local communities.

The region’s biodiversity has been poorly studied, and 85% of its area is still covered by remnants of native vegetation. The main protected areas within the corridor are the Chapada das Mesas National Park, with 160,000 hectares, the Mirador State Park, with 500,000 hectares in the state of Maranhão, the Árvores Fossilizadas Natural Monument, with 32,000 hectares in the state of Tocantins and the Urucuí-Una Ecological Station in Piaui, with 135,000 hectares.

Due to its high vegetation cover and good areas for the establishment of monocrops, this region is part of the federal government’s new plans for expansion of agribusiness to the MATOPIBA region. For this reason, the region is under heavy pressure, particularly in areas outside the 23% of the land that is now legally protected.

5.4.8 Miranda-Bodoquena

The Miranda-Bodoquena Corridor has only 15 municipalities in Mato Grosso do Sul, some of which are important, like Bodoquena, Bonito, Garden, Miranda, Nioaque and Porto Murtinho. It occupies a strategic position in the South American continent as a contact area between the Cerrado, Atlantic Forest, Pantanal and humid Chaco biomes, giving it high relevance for the biogeographic patterns of fauna and flora. Other regional features also contribute to its environmental relevance, such as the presence of the Serra da Bodoquena, an important aquifer recharge zone and watershed that supplies the region's major river basins, which is home to the largest remaining deciduous forest in Mato Grosso do Sul. The region is internationally known as one of Brazil's leading ecotourism destinations, especially Bonito and surrounding areas. Despite its importance, the corridor has less than 45% of its natural plant cover, only 16% of which is now protected.

5.4.9 RIDE DF-Paranaíba-Abaeté

With the second highest HDI of the corridors, the Integrated Development Region of the Federal District and surrounding areas (RIDE DF-Parnaíba-Abaeté) encompasses the Federal District and also includes 55 municipalities in eastern Goiás and western Minas Gerais. The area has the largest anthropogenic pressure index of these selected corridors, due to the presence of agribusiness and major cities such as Brasília and Anápolis.

Only 41% of its plant cover is intact, and only 10% of it is legally protected. Most of the Federal District is protected by the Environmental Protection Areas (APAs) and the Brasiíia National Park, the Contagem Biological Reserve and the Águas Emendadas Ecological Station. However, there is no other protected area in the other municipalities in the states of Goiás and Minas Gerais.

The corridor has long been settled, and municipalities known for their high volume of agricultural production (mainly soybean, eucalyptus, and cotton) include Cristalina, Catalão and Ipameri in Goiás and Unaí and Paracatu in Minas Gerais. There is also a strong presence of mining companies, mainly in Catalão, Goiás.

5.4.10 Serra da Canastra

The Serra da Canastra corridor is located predominantly in southwestern Minas Gerais and covers 23 municipalities from Minas and six from São Paulo. Their average GDP is the second largest of the identified corridors, and their average HDI is also considered high (0.72). It has a variety of Cerrado-biome vegetation types, with some influence of the Atlantic Forest, especially in its southern portion. The Serra da Canastra National Park, with about 200,000 hectares, is its core and the most important region for biodiversity conservation.

The entire region has a dense drainage network with numerous tributaries and springs feeding the various waterways. The park is a natural watershed of two important Brazilian river basins – San Francisco and Paraná. Another component of its landscape are four hydroelectric power plants (UHE) such as UHE Furnas, UHE Mascarenhas de Morais, UHE Estreito and UHE Jaguara.

The area is high on the human pressure index (IPA), despite its old and consolidated human activities. The predominance of pastures is absolute, demonstrating the importance of livestock in the economy of the municipalities. In agriculture, coffee occupies the largest area of perennial crops; while soy beans and corn are the most important temporary crops. Much of the milk production goes into Canastra cheese production, recognized as a Brazilian intangible cultural heritage by the National Historical and Artistic Heritage Institute (IPHAN).

5.4.11 Serra do Espinhaço

The Serra do Espinhaço range is one of Brazil's major mountain formations, stretching over 1000 km, from mid-southern Minas Gerais to the Chapada Diamantina in Bahia. The Serra do Espinhaço corridor recognized here refers to an approximate 550-km portion of that range located in Minas Gerais. The region was recognized in 2005 as a Biosphere Reserve by UNESCO's "Man and the Biosphere" program. With altitudes reaching 2000 m, alpine pastures are the corridor's most notable vegetation. They display high rates of endemic biodiversity and are centers of diversity for various plant groups (Rapini *et al.* 2008). Its microendemic species are often only represented by small populations, which are therefore more susceptible to natural stochastic or anthropogenic episodes. The specificity of habitats provides a great number of unique plant species in stony fields, this being a special condition of this flora, requiring conservation actions on a larger scale. Despite the specificity of its ecosystems and biodiversity, the corridor has an extremely low proportion of land inside protected areas (7%), highlighting the Serra do Cipó and Sempre-Vivas National Parks, and many small Ecological Stations, Natural Monuments and state parks.

The extraction of evergreen flowers ("*sempre-vivas*") has been one of the main economic activities for many traditional communities and *quilombola*s in the region. However, their uncontrolled extraction has led some species close to extinction. Today, the Sempre-Vivas National Park, with 124,000 hectares, aims to protect the rocky fields where these species occur, but this protection has also led to conflicts with local residents, who have been excluded from the areas they have used for generations (see for example, http://vimeo.com//116962413).

5.4.12 Sertão Veredas-Peruaçu

The southern portion of the Sertão Veredas-Peruaçu corridor is located in north-western Cerrado areas in upstate Minas Gerais – in the municipalities of Formoso, Arinos, Chapada Gaúcha, Urucuia, Cônego Marinho, Januária, Itacarambi, Bonito de Minas, São João das Missões and Manga – and in a small portion of southwestern Bahia, in the Cocos municipality. The corridor consists of a Protected Areas Mosaic, formally recognized by the federal government as the Sertão Veredas-Peruaçu Mosaic, consisting of the Xacriabá indigenous land(and 14 public and private protected areas in different management categories, particularly the Grande Sertão Veredas National Park (230,671 hectares). The mosaic has more than 1,500,000 hectares, containing all the Cerrado's different types of vegetation, as well as small to large farms ranging from family farming to agribusiness. The rural population includes traditional and extractive communities, family farmers, land-reform settlers and indigenous peoples. The region displays a great wealth of cultural expression, as portrayed by the famous writer João Guimarães Rosa, after whose most famous novel, *Grande Sertão Veredas* (translated as

The Devil to Pay in the Backlands), the national park based in Chapada Gaúcha was named.

The northern portion of the corridor reaches into western Bahia, where agribusiness has intensified since the mid-1980s, with the arrival of farmers from southern Brazil. Finding a favorable climate, land available at modicum prices and government support, they pioneered modern grain crops, mainly soy and eucalyptus. The region is formed by the municipalities of Correntina, Jaborandi, and São Desidério, among others. Agribusiness has yielded high rates of deforestation, as much as 3% per year from 2008 to 2011, one of the highest in the Cerrado and a major concern. One typical feature of the area is the large number of springs that supply *vereda* waterholes and some of the largest affluents to the left bank of the São Francisco River. Effective environmental adaptation measures are urgently needed on farms in the area, to reduce impacts, as well as the adoption of more sustainable farming practices and projects to protect the remnants of native vegetation and restore ecologically degraded areas.

5.4.13 Veadeiros-Pouso Alto-Kalungas

The corridor encompasses all of northeastern Goiás and southeastern Tocantins in 39 municipalities. Seventy-five percent of the area is covered by native vegetation. The Goias portion consists of the Paranã Valley, the poorest region of the state, with the presence of dry forests, the most threatened vegetation type of the Cerrado biome. Tourism is very important in this region, due to its numerous waterfalls and beautiful, conserved landscapes. Also a region of high biological importance, it is, for example, one of the rare habitats of the threatened Brazilian merganser. In addition to Chapada dos Veadeiros National Park, the Goiás part of the corridor has about 20 private reserves, Pouso Alto Environmental Protection Area (APA) and Recanto das Araras de Terra Ronca Extractive Reserve. The Tocantins section of the corridor has no protected areas.

The region is rich in maroon communities, such as the Forte, Muquém and Kalunga in the Chapada dos Veadeiros region, and other communities in the municipalities of Arraias and Natividade, in Tocantins. The Kalunga *quilombola* territory, home to 5,000 people, preserves about 260 hectares that are sustainably managed by local residents with agriculture, cattle and small-scale extraction.

5.5 Conclusions

The 13 conservation corridors encompass an area of 723,000 km^2, 95% of which (689,700 km^2) is within the Cerrado biome boundaries. This means that around one-third of the hotspot is located within conservation corridors considered highly important for biodiversity conservation and provision of ecosystem services (water). The corridors have an average natural vegetation cover of almost 70% and include the last large, pristine areas of the original Cerrado ecosystem. The 13 corridors all have unique characteristics, with different vegetation formations and areas of transition, different level of species endemism and specific socioeconomic dynamics. Each corridor requires, therefore, a specific strategy and a differentiated conservation action to achieve the goal of sustainable landscapes. All these corridors are important for the conservation of the hotspot.

6. SOCIOECONOMIC CONTEXT OF THE HOTSPOT

This chapter provides an overview of the socioeconomic context of the Cerrado Hotspot, analyzing how it affects conservation outcomes and how it could influence the priorities for conservation actions. Section 6.1 provides information and analysis on population, including demographics, migration and distribution trends, traditional communities and indigenous peoples. Section 6.2 deals with social and demographic trends while Section 6.3 deals specifically with gender. Economic trends are the subject of Section 6.4, which also discusses how these trends relate to natural resource use and how the major actors may be either threats to or partners in conservation.

6.1 Eco-Social Regions

In order to map and analyze socioeconomic and demographic data, which in Brazil are collected and published according to the political-administrative division in municipalities, the hotspot was divided into 21 Cerrado Eco-social Regions (RECOS) of approximately the same size (Table 6.1 and Figure 6.1). Table 6.1 lists the RECOS in geographical order, from north to south and west to east, with the respective Meso-Regions, groups of municipalities defined by the Brazilian Institute of Geography and Statistics (IBGE), and, when appropriate, additional IBGE Micro-Regions, which are a subdivision of Meso-Regions, as needed to cover the Cerrado area.

Table 6.1: Cerrado Eco-Social Regions, Main Cities and Area, by State.

No.	State	Eco-Social Region	IBGE Meso-Regions	+ IBGE Micro-Regions	Main City	Area (km^2)
1	MA	West Maranhão	Sul Maranhense	Imperatriz	Balsas	149,900
2	MA	East Maranhão	Centro Maranhense, Leste Maranhense	Itapecuru-Mirim, Lençois Maranhenses, Rosário	Caxias	98,610
3	PI	West Piauí	Sudoeste Piauiense	Teresina, Médio Parnaíba Piauiense	Floriano	148,400
4	TO	North Tocantins		Bico do Papagaio, Araguaína	Araguaína	42,880
5	TO	West Tocantins		Miracema, Rio Formoso, Gurupi	Gurupi	117,800
6	TO	East Tocantins	Oriental do Tocantins		Palmas	126,100
7	BA	West Bahia	Extremo Oeste Baiano	Barra, Bom Jesus da Lapa, Guanambi	Barreiras	196,700
8	GO	Northwest Goiás	Norte Goiano, Leste Goiano		Goiânia	406,600
9	GO	Northeast Goiás	Nordeste Goiano, Centro Goiano		Alto Paraíso de Goiás	186,400
10	GO	South Goiás	Sul Goiano		Rio Verde	183,400
11	DF	Federal District	Distrito Federal		Brasília	78,030

No.	State	Eco-Social Region	IBGE Meso-Regions	+ IBGE Micro-Regions	Main City	Area (km^2)
12	MT	Northwest Mato Grosso		Aripuanã, Parecis, Arinos, Alto Teles Pires, Sinop, Paranatinga	Lucas do Rio Verde	119,600
13	MT	Northeast Mato Grosso	Nordeste Mato-Grossense		Canarana	103,800
14	MT	Southwest Mato Grosso		Alto Guaporé, Jauru, Tangará da Serra, Alto Paraguai, Rosário Oeste, Cuiabá, Alto Pantanal	Cuiabá	145,000
15	MT	Southeast Mato Grosso		Primavera do Leste, Tesouro, Rondonópolis, Alto Araguaia	Rondo-nópolis	6,262
16	MS	West Mato Grosso do Sul		Aquidauana, Bodoquena, Campo Grande, Dourados, Baixo Pantanal	Campo Grande	169,600
17	MS	East Mato Grosso do Sul		Alto Taquari, Cassilândia, Paranaíba, Três Lagoas, Nova Andradina	Três Lagoas	193,900
18	MG	North Minas Gerais	Norte de Minas, Jequitinhonha		Montes Claros	107,300
19	MG	West Minas Gerais	Noroeste de Minas, Triângulo Mineiro/Alto Paranaíba		Uberlândia	226,300
20	MG	Central Minas Gerais	Central Mineira, Metropolitana de Belo Horizonte, Oeste de Minas		Belo Horizonte	153,300
21	SP	São Paulo Cerrado	Ribeirão Preto, Araraquara, Piracicaba, Bauru, Assis, Marilia, Pres. Prudente, Araçatuba, S. José do Rio Preto		Campinas	229,000

Source: ISPN.

The average size of these aggregates is about 125,000 km^2, which would be a square approximately 350 km x 350 km. The regions are relatively homogeneous in bio-geophysical terms, even though they generally contain most if not all the forms of vegetation mentioned in Chapter 3, except for the altitudinal grasslands (*campos rupestres*), which are limited to parts of Minas Gerais, Goiás and Bahia.

The 21 RECOS were defined so as to include nearly all of the official Cerrado biome and some of the transitions to the Amazon, Caatinga, Atlantic Forest and Pantanal biomes. They include the entire Federal District and parts of nine of the 26 states of

Brazil. This corresponds to most of the Center-West region and parts of all of the other regions except the South, since Paraná is not included in the RECOS, although there is a small extension of Cerrado in the northeastern part of the state. The RECOS do not include isolated areas of Cerrado in Amazonas, Roraima and Amapá or in the Northeast of Brazil, which are off the official map of the biome.

Figure 6.1: Cerrado Eco-social Regions.

The outer limits of the RECOS extend beyond the boundaries of the official Cerrado biome as defined in 2004, especially to the northwest and west. The reasons for the extension are: (1) the need to include all of the official areas, except small strips in the states of Paraná and Rondônia; (2) the existence of transitions, ecotones and isolated fragments that do not have clear boundaries; (3) many maps that indicate larger boundaries of the core area of the Cerrado (e.g., WWF n.d.; EMBRAPA CPAC n.d.; Rodrigues 2003; IGA 2012; AIBA n.d.; Evaristo 2015); (4) literature (e.g., Fiori & Fioravante 2001); (5) stakeholder consultations; and (6) field observations by ISPN in all of the areas.

This division of RECOS following official boundaries makes it possible to tabulate socioeconomic and demographic data for Brazil. No such tabulations were possible for the very small areas of Cerrado in Bolivia and Paraguay, although some data are available for the broader context in these countries. Such regions respecting the political-administrative division are also important for management at a regional scale. For purposes of management, the criteria for defining the RECOS include the involvement of only one state government, although the Federal District, with only 5,788 km^2, interacts closely with the Integrated Development Region of the Federal District and Surrounding Area (RIDE-DF), including nearby municipalities in Goiás, Bahia and Minas Gerais. Another practical criterion for regions of this limited size was the possibility, for the future, of organizing meetings that do not require overnight or air travel and per diems for participants, so that civil society participation in regional management can be effective, even when funds for these purposes are scarce and difficult to access and report on, as is the case with government regulations about travel.

6.2 Social and Demographic Trends

Current and future social and demographic trends in the Cerrado Hotspot are conditioned by the past history of the region and its place in the national context of the three countries. The main points of this history are summarized here.

The Cerrado was first occupied by indigenous peoples about 12,000 years ago (Barbosa 2002). They may be the ancestors of the Gê groups that are now spread throughout the region (Maybury-Lewis 1971). They built some earthworks that suggest dense settlement (Mann 2005; 2012), but the first Europeans to arrive found hunters and gatherers living in small villages with garden plots (shifting cultivation) who often moved to new sites.

The Portuguese first reached the coast of Brazil in 1500. During the 16th and 17th centuries, Portuguese, Dutch and French colonizers stayed near the Atlantic coast in the Northeast, Southeast and South, without penetrating the interior. Brazil wood (*Caesalpinia echinata*) and sugar cane were the main exports (Furtado 1963). The Portuguese prevailed, and the Dutch and French did not stay. The Guarani peoples living in the southern part of the region were incorporated in Jesuit missions. In their language, Paraguay means “a place with a great river”. Many other groups were displaced farther inland (Martins 2015). In the early 18th century, gold, diamonds and emeralds were discovered in the interior of Brazil by *bandeirante* explorers from São Paulo (Bruno 1967; Bertran 1988). They gave the Cerrado this name because the savanna grasslands were closed (*cerrados*) by scattered trees and woodlands. Since indigenous slavery did not function well, African slaves were brought to work in the mines. Extensive cattle raising moved up the São Francisco River into the interior (Furtado 1963).

Paraguay and Bolivia won their independence in 1811 and 1825, respectively, from Spain and Peru, and became republics. Brazil became independent in 1822, without war, but was an empire until 1889. Bolivia's economy was based on mining for silver in the Andes, in the west, while Paraguay's economy remained based on cattle raising.

In the 19th and early 20th centuries, after the mining cycle ended, the main activity in the Cerrado was extensive cattle raising, combined with some extractive activities (Castro 2001). Between 1864 and 1870, during the Paraguay War, troops of the Triple Alliance of Brazil, Argentina and Uruguay killed so many Paraguayan men that there were long-lasting negative economic and demographic effects (Warren 1949). Between 1879 and 1883, during the Pacific War, Bolivia lost its access to the Pacific. After the disastrous Chaco War, Bolivian officers took power and attempted to implement reforms (Klein 1982).

In the 1950s, a new capital city of Brazil was built at Brasília and roads were opened to the north and northwest. This favored more intense migration from the South, Southeast and Northeast to the new frontier, although the process was already under way due to rapid population growth and concentrated land tenure in more densely settled regions (Mandell 1969).

Settlement of small farmers from other regions, mainly Minas Gerais and the Northeast, began in the 1940s, including both government-sponsored colonization and spontaneous migration (Neiva 1984). It continued in the following decades, including private colonization in Mato Grosso (Kinzo 1986). Thus, in addition to large properties, there are also many settlements of small farmers. There are practically no foreigners among the landowners. Many of the large landowners are absentee, especially the owners of large cattle ranches, which are managed by one cowboy per thousand head.

During this period, frontier settlement in Bolivia was concentrated at the foot of the Andes, around the city of Santa Cruz de la Sierra, but not near the Brazilian border (Klein 1982). In Paraguay, under the Stroessner regime (1954-1989), settlement was concentrated in the southeastern part of the country, not in Alto Paraguay, Presidente Hayes e Concepción, where there are transitions to the Cerrado. Settlers included migrants from Brazil, known as *brasiguaios* seeking land (Albuquerque 2009).

Until the 1980s, fertility and mortality levels in the Cerrado were both high, with high rates of natural increase and migration from the Northeast, Southeast and South regions to rural areas, resulting in high rates of population growth. Urbanization was intense. Recently, there has been more intra-regional rural-urban migration, and the urbanization level varies between 63.1% and 96.6%. The rural population is densest in the southern half of the Cerrado, although rural population growth is now negative. Table 6.2 shows population data for the 21 RECOS, an area larger than the hotspot, including transitions. There is now a vast and relatively dense urban network that links small towns and cities in the interior with large cities with millions of inhabitants. The average maximum distance to a city is only 10.6 km, although there is wide variation from north to south. There is no longer such a strong urban/rural dichotomy, and the rural population has more access to urban services and markets (Sawyer 2002).

Table 6.2. Rural, Urban and Total Population and % Urban, by RECOS, 2010.

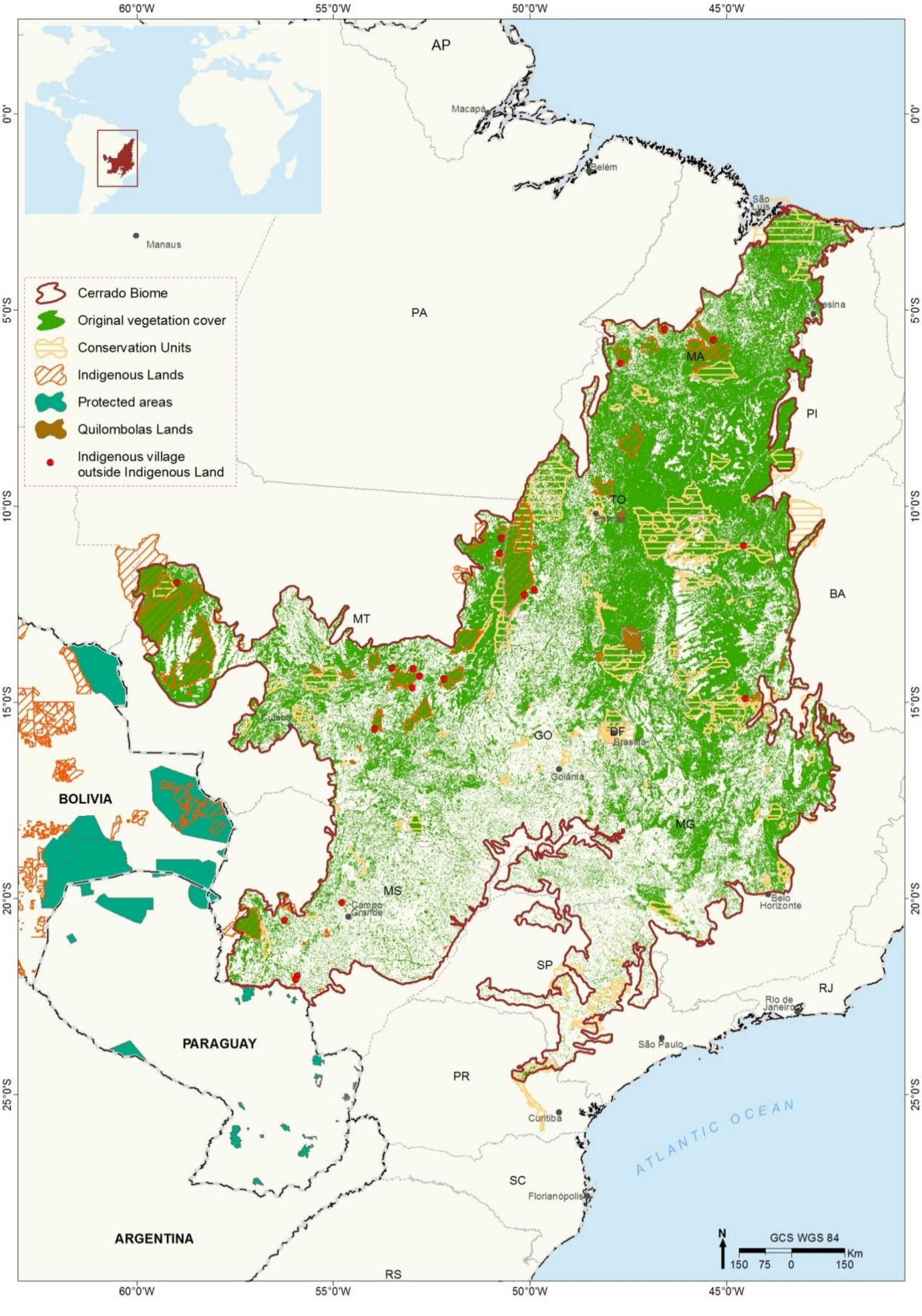
	RECOS	Rural	Urban	Total	% Urban
1	East Maranhão	2,322,982	3,973,958	6,296,940	63
2	West Maranhão	2,376,443	4,085,298	6,461,741	63
3	West Piauí	1,045,931	2,042,934	30,88,865	66
4	North Tocantins	292,424	1,088,630	1,381,054	79
5	East Tocantins	277,653	1,043,813	1,321,466	79
6	West Tocantins	2,578,099	5,079.560	7,657,659	66
7	West Bahia	3,784,910	9,846,100	13,631,010	72
8	Northwest Mato Grosso	518,777	2,344,819	2,863,596	82
9	Northeast Mato Grosso	538,457	2,468,583	3,007,040	82
10	Southwest Mato Grosso	545,032	2,475,407	3,020,439	82
11	Southeast Mato Grosso	509,955	2,136,040	2,645,995	81
12	Northeast Goiás	581,279	5,415,633	5,996,912	90
13	Northwest Goiás	571,444	5,262,830	5,834,274	90
14	South Goiás	571,426	5,399,849	5,971,275	90
15	Federal District	87,950	2,482,210	2,570,160	97
16	West Minas Gerais	2,844,975	16,479,781	19,324,756	85
17	North Minas Gerais	2,828,790	16,601,468	19,430,258	85
18	Central Minas Gerais	2,845,297	16,581,971	19,427,268	85
19	West Mato Grosso do Sul	207, 969	1,516,154	1,724,123	88
20	East Mato Grosso do Sul	81,389	417,179	498,568	84
21	São Paulo Cerrado	1,672,091	39,534,153	41,206,244	96

Source: IBGE.

Some estimates are possible of the population and the number of communities that play a relevant role in ecosystem functions at the landscape level in the hotspot. In a total rural population of 28 million in the Brazilian Cerrado biome within the RECOS,there are an estimated 25 million engaged in family farming (rice, beans, manioc, chickens etc.) and extraction (fruits, nuts, fish, flowers etc.) in agricultural settlements and traditional communities of various kinds. Assuming an average of 1,000 people and 250 families per rural community, there are approximately 25,000 local communities and 6,250,000 families in the RECOS. They are a key to ecosystem conservation, since their landscapes, albeit fragmented, contain considerable biodiversity, without mechanized monocultures. They do raise some cattle, but could increase their stocking and take-off rates and productivity of milk (Imbach 2015).

The relevant demographic trends at the present time include lower fertility and longer life expectancy, leading to aging of the demographic pyramid. There are increasing rates of female participation in labor markets as well as separation, divorce and informal unions (see Section 6.3, on gender). Out-migration is strong among rural youth. Multiple residences and temporary mobility are common. These demographic trends present challenges to small-scale farming, which requires large amounts of family labor and close kinship ties.

Figure 6.2 : Cerrado Protected Areas, Indigenous and *Quilombola* Lands.



Source: FUNAI (2014), SEPPIR (2014), IBAMA (2009), WDPA (2015).
Note: The data on Quilombola lands are incomplete.
Although there is strong racial mixing and many indigenous people live in urban areas, the social and demographic analysis should take into account that there are various indigenous groups and communities of descendants of African slaves (*quilombolas* or maroons) on land provided by the government. Since 1988, both have constitutional

rights to land. The largest intact areas of natural vegetation in the Cerrado are in its 95 indigenous lands, covering 96,000 km^2, 4.8% of the biome, primarily near the Amazon region to the north and west (Table 6.3 and Figure 6.2). The indigenous lands in Brazil have less deforestation than official protected areas, even those of integral protection (Paiva *et al.* 2015). The 44 *quilombola* lands cover 21,345 km^2, with wide variation in size.

Table 6.3. Indigenous Lands in the Brazilian Cerrado

Indigenous Land	Group	Area (ha)	Municipality	State	Situation
São Marcos	Xavante	188,478	Barra do Garças	MT	Registered
TI Isou´pa	Xavante	nd	Água Boa, Capinápolis, Nova Xavantina	MT	TBI
Norotsurã	Xavante	nd	Água Boa, Campinápolis, Nova Xavantina	MT	TBI
Eterairebere	Xavante	nd	Campinápolis, N.S. Joaquim, S.A. Leste	MT	TBI
Hu´uhi	Xavante	nd	Paranatinga	MT	TBI
Ubawawe	Xavante	52,234	Novo São Joaquim	MT	Registered
Chão Preto	Xavante	12,741	Campinápolis	MT	Registered
Sangradouro/ Volta Grande	Xavante	100,280	N.S. Joaquim, Gal. Gomes Carneiro, Poxoréu	MT	Registered
Pimentel Barbosa	Xavante	328,966	Ribeirão Cascalheira, Canarana	MT	Registered
Pimentel Barbosa I, II	Xavante	nd	Ribeirão Cascalheira, Canarana	MT	Pending
Areões	Xavante	218,515	Água Boa	MT	Registered
Areões I	Xavante	24,450	Água Boa	MT	TBI
Areões II	Xavante	16,650	Água Boa, Cocalinho	MT	TBI
Parabubure	Xavante	224,447	Campinápolis, Água Boa	MT	Registered
Parabubure II, III, IV, V	Xavante	nd	Campinápolis, Nova Xavantina	MT	Pending
Marechal Rondon	Xavante	98,500	Paranatinga	MT	Registered
Merure	Bororo	82,301	Barra do Garças, General Carneiro	MT	Registered
Jarudore	Bororo	4,706	Poxoréu	MT	Registered
Tadarimana	Bororo	9,785	Rondonópolis	MT	Registered
Tereza Cristina	Bororo	34,149	Santo Antônio Leverger	MT	Declared
São Domingos	Karajá	5,705	Luciara, São Félix do Araguaia	MT	Registered
Cacique Fontoura	Karajá	32,069	Luciara, São Félix do Araguaia	MT	Identified
Karajá de	Karajá	893,26	Cocalinho	MT	Registered

Indigenous Land	Group	Area (ha)	Municipality	State	Situation
Aruanã II					
Urubu Branco	Tapirapé	167,533	Santa Terezinha, Confresa, Porto Alegre do Norte	MT	Registered
Tapirapé/ Karajá	Tapirapé	66,166	Luciara, Santa Terezinha	MT	Registered
Pareci	Pareci	563,586	Tangará da Serra	MT	Registered
Utiariti	Pareci	412,304	Campo Novo do Pareci, Sapezal	MT	Registered
Juininha	Pareci	70,538	Pontes e Lacerda	MT	Registered
Estivadinho	Pareci	2,032	Tangará da Serra	MT	Registered
Rio Formoso	Pareci	19,749	Tangará da Serra	MT	Registered
Figueiras	Pareci	9,859	Tangará da Serra, Pontes e Lacerda	MT	Registered
Ponte de Pedra	Pareci	17,000	Campo Novo dos Parecis, Diamantino, Nova Maringá	MT	Declared
Taihantesu	Wuasusu	5,362	Comodoro	MT	Registered
Pequizal	Nambikwara	9,887	Vila Bela de S. Trindade	MT	Registered
Vale do Guaporé	Nambikwara	242,593	Vila Bela de S. Trindade, Comodoro	MT	Registered
Nambikwara	Nambikwara	1,011,961	Comodoro	MT	Registered
Pirineus de Souza	Nambikwara	28,212	Comodoro	MT	Registered
Tirecatinga	Holotesu, Irantxe, Morcego, Pareci	130,575	Sapezal	MT	Registered
Irantxe/ Manoki	Irantxe	252,000	Brasnorte	MT	Identified
Menku	Menku	47,094	Brasnorte	MT	Registered
Enawenê Nawê	Enawenê Nawê	742,089	Juína, Comodoro, C. N. dos Pareci	MT	Registered
Santana	Bakairi	35,471	Nobres	MT	Registered
Bakairi	Bakairi	61,405	Paranatinga	MT	Registered
Avá Canoeiro	Avá-Canoeiro	38000	Colinas do Sul, Minaçu	GO	Declared
Karajá de Aruanã I	Karajá	14	Aruanã	GO	Registered
Karajá de Aruanã III	Karajá	705	Aruanã	GO	Registered
TI Carretão I	Tapuia	1,666	Nova América, Rubiataba	GO	Registered
Carretão II	Tapuia	78	Nova América	GO	Registered
Funil	Xerente	15,704	Tocantínia	TO	Registered
Xerente	Xerente	167,542	Tocantínia, Aparecida do Rio Negro	TO	Registered
Apinajé	Apinajé	141,904	Tocantinópolis,	TO	Registered

Indigenous Land	Group	Area (ha)	Municipality	State	Situation
			Maurilândia, São Bento		
Kraholândia	Krahô	302,533	Itacajá, Goiatins	TO	Registered
Boto Velho	Javaé, Karajá, Avá Canoeiro	377,113	Pium, Lagoa da Confusão	TO	Approved
Parque do Araguaia	Javaé, Karajá,Avá Canoeiro, Tapirapé	1,358,499	Pium, Formoso do Araguaia, Cristalândia	TO	Registered
Utaria Wyhyna Hirari	Karajá, Javaé	nd	Pium, Lagoa da Confusão	TO	TBI
Xambioá	Karajá, Guarani	3,326	Araguaina	TO	Registered
Krahô/ Kanela	Krahô/ Kanela	nd	Cristalândia	TO	TBI
Governador	Gavião-Pykobjê	41,644	Amarante	MA	Registered
Bacurizinho	Guajajara	82,432	Grajaú	MA	Registered
Cana Brava	Guajajara	137,329	Barra do Corda, Grajaú	MA	Registered
Rodeador	Guajajara	2,319	Barra do Corda	MA	Dominial Indígena
Lagoa Comprida	Guajajara	13,198	Jenipapo dos Vieiras	MA	Regularized
Urucu/Juruá	Guajajara	12,697	Itaipava do Grajaú	MA	Regularized
Porquinhos	Canela-Apãnjekra	79,520	Barra do Corda	MA	Registered
Kanela	Canela-Ramkoka-mekra	125,212	Barra do Corda	MA	Registered
Krikati	Krikati	144,775	Montes Altos, Lageado Novo, Amarante	MA	Approved
Amambai	Guarani Kaiowá	2,429	Amambai	MS	Registered
Javaitari	Guarani Kaiowá	8,800	Ponta Porã	MS	Identified
Lima Campo	Guarani Kaiowá	9,300	Ponta Porá	MS	TBI
Nande Ru Marangatu	Guarani Kaiowá	9,317	Antônio João	MS	Approved
Panambi/ Lagoa Rica	Guarani Kaiowá	12,196	Douradina, Itaporã	MS	Delimited
Pirakuá	Guarani Kaiowá	2,384	Bela Vista	MS	Registered
Sucuriy	Guarani Kaiowá	535	Maracaju	MS	Registered
Aldeia Campestre	Guarani Kaiowá	9	Antônio João	MS	Pending
Cabeceira Comprida	Guarani Kaiowá	nd	Antônio João	MS	Pending
Kamba	Guarani Kaiowá	nd	Corumbá	MS	Pending
Suvirando	Guarani Kaiowá	nd	Antônio João	MS	Pending

Indigenous Land	Group	Area (ha)	Municipality	State	Situation
Yvyrapyraka	Guarani Kaiowá	nd	Antônio João	MS	Pending
Buriti	Terena	17,200	Dois Irmãos do Buriti, Sidrolândia	MS	Identified
Buritizinho	Terena	10	Sidrolândia	MS	Registered
Cachoeirinha	Terena	36,288	Miranda	MS	Identificada
Limão Verde	Terena	5,370	Aquidauana	MS	Approved
Nioaque	Terena	3,029	Nioaque	MS	Registered
N.S. Fátima	Terena	100	Miranda	MS	TBI
Pilad Rebua	Terena	208	Miranda	MS	Registered
Taunay/ Ipegue	Terena	33,900	Aquidauana	MS	Delimited
Kadiwéu	Kadiwéu, Kinikinaua, Terana	538,536	Porto Murtinho	MS	Registered
Kinikinaua	Kininkinaua	nd	nd	MS	Pending
Lalima	Terena, Kinikinaua	3,000	Miranda	MS	Registered
Ofayé-Xavante	Ofayé-Xavante	1937	Brasilândia	MS	Declared
Kaxixó	Kaxixó	nd	Martinho Campos	MG	TBI
Xakriabá	Xakriabá	46,415	São João das Missões	MG	Registered
Xakriabá Rancharia	Xakriabá	6,798	São João das Missões	MG	Registered
Araribá	Guarani, Terena	1,930	Avai	SP	Registered

TBI = to be identified
Source: CTI. 2012. O Cerrado nos territórios indígenas: levantamento preliminar sobre os povos indígenas do Cerrado. Brasília: Centro de Trabalho Indigenista.

Table 6.4. Cerrado *Quilombola* Lands, Locations, Years of Creation and Areas.

Quilombola Land	State	Year of creation	Km^2 in Cerrado biome
Árvores Verdes e Estreito	MA	2005	26
Machadinho	MG	2009	22
São Domingos	MG	2009	7
Ipiranga do Carmina	MA	2005	14
Santa Joana	MA	2005	12
Santa Rosa - Itapecuru Mirim	MA	2008	73
Santa Maria dos Pinheiros	MA	2005	10
São Francisco Malaquias	MA	2007	11
Família Magalhães	GO	2010	55
Mata de São Benedito	MA	2005	11
Baco Pari	GO	2009	31
Da Volta	BA	2009	189
Mangueiras	MG	2009	0,2
Brejo dos Crioulos	MG	2007	173

Quilombola Land	State	Year of creation	Km² in Cerrado biome
Família dos Amaros	MG	2009	10
Kalunga do Mimoso	TO	2006	575
Riacho da Sacutiaba e Sacutiaba	BA	2011	123
Lagoa do Peixe	BA	2006	67
Santa Maria dos Pretos	MA	2006	56
Barra do Aroeira	TO	2011	623
Matões dos Moreira	MA	2006	53
Kalungas	GO	2000	15,267
Nova Batalhinha	BA	2008	74
Mangal e Barro Vermelho	BA	2009	90
Parateca e Pau D'arco	BA	2006	418
Jatobá	BA	2007	145
Usina Velha	MA	2006	12
Mocorongo	MA	1999	2
Cipó	MA	2006	24
Jenipapo	MA	2002	6
Rio das Rãs	BA	2000	2,720
Mesquita	GO	2011	43
Tomás Cardoso	GO	2011	18
Grotão	TO	2011	21
Colônia de São Miguel	MS	2008	4
Lagoinha de Baixo	MT	2007	25
Chácara do Buriti	MS	2008	0,43
Campina de Pedra	MT	2010	18
Mata Cavalo	MT	2006	147
Furnas do Dionísio	MS	2008	10
Furnas da Boa Sorte	MS	2006	15
Lagoa das Piranhas	BA	2011	100
Pitoro dos Pretos	MA	2010	43
Família Cardoso	MS	2014	2
TOTAL			**21,345**

Source: SEPPIR2014.

In addition to indigenous peoples and maroons, there are also at least five kinds of traditional communities that live off the land, without legal demarcation of their territories, in a large part of the natural vegetation remnants (Table 6.5). They are difficult to count, but constitute a majority of the rural population.

Table 6.5. Cerrado Traditional Communities and Main Locations.

Traditional Community	Main Locations
Babassu palmnut crackers	Northern Tocantins, Maranhão, Piaui
Geraizeiros	Northern Minas Gerais, west Bahia, northeast Goiás
Vazanteiros	Northern Minas Gerais, São Francisco River

Retireiros	Araguaia River, Mato Grosso, Tocantins
Fundo de pasto/fecho de pasto	Western Bahia
Sertanejos	All Cerrado states

Source: ISPN.

The social and demographic trends in Bolivia and Paraguay are quite different from Brazil and from each other, although the Human Development Index (HDI), which reflects income, health and education, and other indicators are similar, except for urbanization and income. In the Center-West of Brazil, the HDI is 0.731, in Bolivia it is 0.667 and in Paraguay it is 0.669 (Table 6.6).

Table 6.6. Social and Demographic Indicators for the Cerrado Hotspot in Brasil, Bolivia and Paraguay.

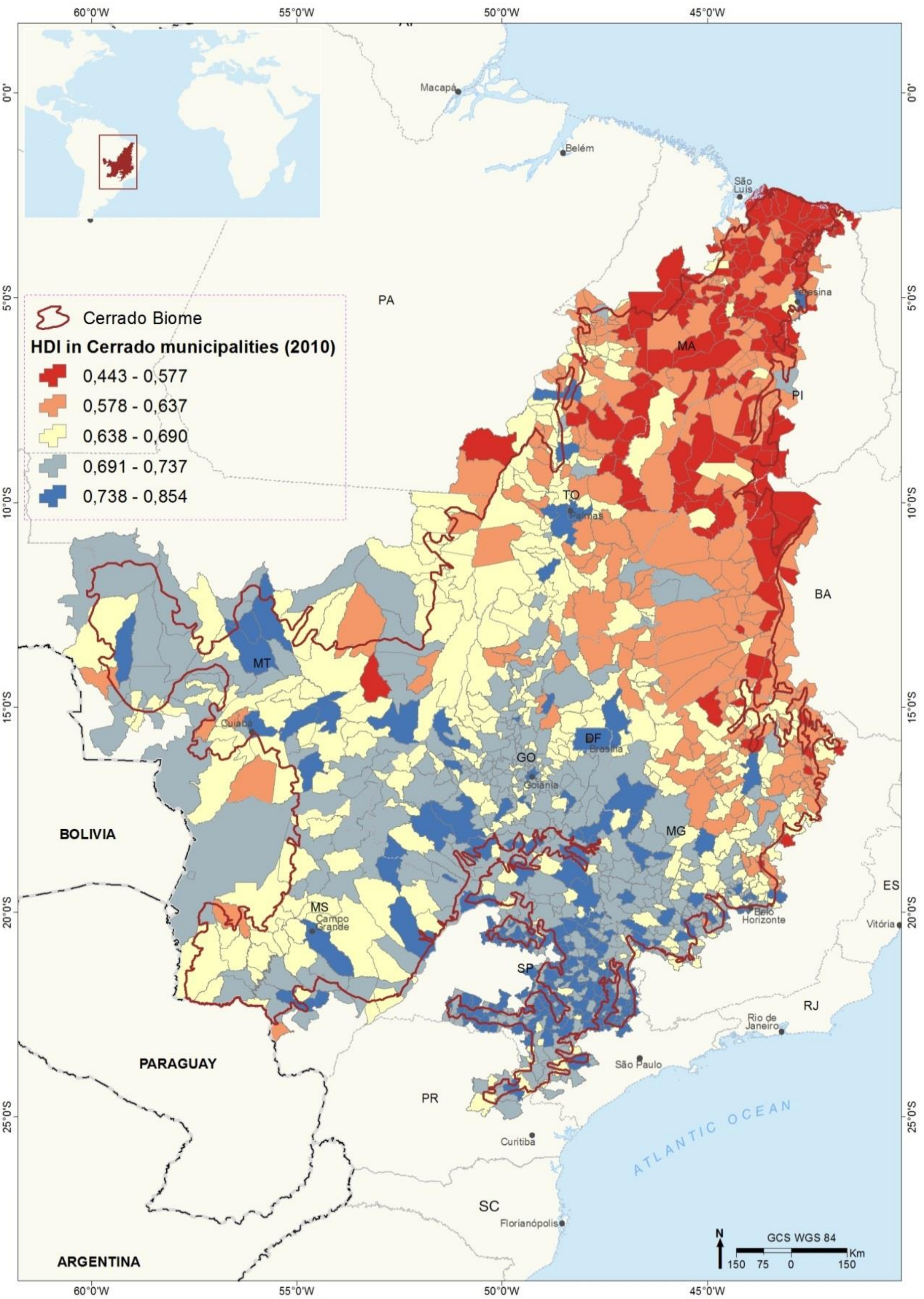
Indicator	**Brasil**	**Bolivia**	**Paraguay**
Human Development Index (HDI)	0.731	0.667	0.669
Total Fertility Rate (TFR)	2.07	2.93	2.06
Life Expectancy	74.3	67.9	76.4
Sex Ratio (males per 100 females)	98	105	101
Literacy (age 15 and over who can read and write)	90	87	94
Urbanization (%)	84	67	61
Per capita income (USD)	7,913	4,800	5,500

Sources: UNDP, IBGE *et al.*

Notes: For these social and demographic data, many of which are not available with sufficient disaggregation, the proxy used for the Cerrado in Brazil is the aggregate data, weighted by total population, for the set of Central Brazil states including Goiás, Federal District, Mato Grosso, Mato Grosso do Sul and Tocantins (core, almost entirely Cerrado), plus Maranhão to represent the Northeastern Cerrado (Maranhão, Piauí and Bahia) and Minas Gerais to represent the Southeastern Cerrado (Minas Gerais and São Paulo). The data for Bolivia and Paraguay are for the entire countries.

The map of HDI by municipality of Brazil (Figure 6.3) shows that the highest indices are in São Paulo, Minas Gerais, Mato Grosso and Mato Grosso do Sul and lowest to the north and east. Since 1980, the HDI has improved dramatically in the interior, due to significant reductions in regional inequality (UNDP 2014).

Figure 6.3: Human Development Index in the Cerrado



Source: IBGE, 2010.

In Brazil, although there are some differences, at least among more isolated indigenous groups and among indigenous women, practically everyone speaks Portuguese and shares a national culture. Bolivia and Paraguay have more cultural diversity than

Central Brazil. Bolivia has become pluri-national, while in Paraguay the Guarani language is official, in addition to Spanish.

6.3 Gender

Generally speaking, gender is not as serious a problem in Brazil as in many other developing countries, especially in Africa and Asia. There are nearly as many women as men in the labor force and there are more women and girls in schools and colleges than boys and men. There is a specific federal ministry for policies for women (SPM) and special police stations. Nonetheless, gender issues require attention in order to guarantee full citizenship and human well-being (SPM 2015), as well as environmental equilibrium and adaptation to climate change, in which women play key roles (Litre & Rocha 2014).

Working women earn less than men. *Machismo* is deep rooted, especially in rural areas, although change is under way. Domestic violence remains a problem, and there is need for improved access to family planning for girls and women.

In the past, many rural women migrated to urban areas, where they found employment as domestic servants, but this is now more difficult because of labor legislation. Youth, seeking modernity, are also leaving the countryside, where the elderly remain, especially the older women, who have a longer life expectancy than men. Because of increasing rates of separation and divorce, combined with male migration to more distant frontier areas, there are many female-headed households, a pattern which contributes to “feminization of poverty” (Medeiros & Costa 2008).

Women play a key role in family farming, especially with regard to home gardens, gathering of firewood and water and care for domestic livestock (Butto *et al.* 2014). Sustainable use of biodiversity, including food processing and handicrafts, contributes to the empowerment of rural women by providing them with income of their own (ISPN field observations). In the northern part of the Cerrado, 400,000 women make a living cracking palmnuts of babassu.

Some public policies favor women, as in the case of land titles in rural settlements and cash transfers (family stipends). Most elementary and secondary school teachers are women, who play a key role in environmental education. There are nearly two women for every man in civil society organizations (CSOs) (see Chapter 8). In the GEF-UNDP Small Grants Program, it has been observed that women play leadership roles in local community organizations in the Cerrado, the most emblematic of which is the Regional Association of Women Rural Workers in the Bico do Papagaio (ASMUPIB), in northern Tocantins. There is also an Interstate Movement of Women Babassu Crackers (MIQCB). On the other hand, women are underrepresented in local, state and federal legislatures and other government structures.

6.4 Economic Trends

In the middle of the 20th century, central Brazil produced rice on recently cleared land. Starting in the 1980s, the main new economic trend in the Cerrado was growth of commodity production as a result of adaptation of agricultural technology to allow continuous planting of monocultures in the Cerrado (Mueller 1993). Soils have high acidity and low fertility but are relatively flat, deep and well drained, being well suited to mechanization of cultivation and harvesting. Productivity of cattle ranching and dairy farming was improved by breeding Zebu and European cattle with artificial insemination and by introduction of exotic species of pasture, mainly from Africa.

Because of the Cerrado, Brazil is now a leading producer and exporter of soybeans and cotton as well as beef, mostly from planted pastures, as well as chicken and pork, fed with grains (Table 6.7). Agribusiness is responsible for 23% of Brazil's GDP, which is now the eighth largest in the world. The Cerrado has the largest area of farm and ranch land in Brazil, some 88 million hectares (Sparovek *et al.* 2011), 44% of the total area. It produces 40% of the beef in Brazil, 84% of the cotton, 60% of the soybeans and 44% of the corn. Cattle raising competes with crops near large cities in the southern part of the hotspot, while grain cultivation expands rapidly in remote regions with more level topography (Silva 2013).

Table 6.7. Production and exports of beef and soybeans, 2014.

	Soy production (tons, 2013) (a)	**Beef production (tons, 2014) (b)**	**Soy exports (USD FOB, 2014) (c)**	**Beef exports (USD FOB, 2014) (c)**
Brazil	81,724,477	8,062,933	31,805,627,204	6,047,374,891
Tocantins	1,557,939	269,302	626,798,100	183,483,729
Maranhão	1,581,687	191,612	757,926,671	4,931,507
Minas Gerais	3,375,690	741,138	852,108,803	401,169,794
Mato Grosso do Sul	5,780,519	965,361	9,966,590,511	1,249,752,589
Mato Grosso	23,416,774	1,325,782	2,339,838,076	1,014,675,751
Goiás	8,913,069	844,34	92,772,238	113,642
Distrito Federal	152,250	5,216	1,470,497,607	724,876,420

Sources: (a) IBGE Produção Agrícola Municipal; (b) IBGE Pesquisa Trimestral do Abate de Animais; (c) Ministério do Desenvolvimento, Indústria e Comércio Exterior, portal AliceWeb2.

As seen in Chapter 9, economic trends are responsible for the destruction of half of the Cerrado (see also map of land use in IBGE 2015). However, there are some possibilities for changes in the pattern of horizontal expansion and even for enhanced partnerships of agribusiness with conservation. For example, a promising new development for the environment is the decision of Brookfield Assets Management Inc., formerly Brascan Ltd., Canada’s largest alternative asset manager, to invest USD 300 million for a new agricultural fund to buy up pasture land and convert it into soy and sugar farming, thus intensifying production. Transnational companies like Bunge now intend to contribute to increasing production of food by 60% with an increase of 90% in productivity and only a 10% increase of the land area (Santos 2015). Monsanto and Syngenta have similar intentions. There is much new technological innovation (Ivaris Jr. 2015). New technology can reduce pressures for deforestation. There could be a rebound effect, with further frontier expansion, but increases in productivity require better locations, close to infrastructure and services.

On a more general level, the requirements of conformity with social, environmental and health standards in countries that import these products can favor sustainability of agribusiness (Nepstad 2008). Exports also mean that the concerns of multinational companies about their reputations among their customers and their shareholders make them interested parties in promoting sustainability in the distant corners of Brazil. This has led to pacts among private sector stakeholders, certification schemes, roundtables, supply chains and global value chains (Gereffi 1994; Dros & Van Gelder 2002; Forest Trends 2015; Supply Change/Forest Trends 2015). Modern agribusiness can be an ally of conservation, if separated from the predatory sectors and monitored as to actual performance.

Agribusiness and urban migration, stimulated to a large extent by silent or violent land conflict, generated a dense urban network and resulted in reduction in the growth of the rural population. The urban economy, based primarily on services that are increasingly modern, does not provide enough employment and income for the migrants and their offspring. On the other hand, urbanization has provided a transportation and communication infrastructure as well as health and educational services for the rural population. At the same time, the urban population in the Cerrado, and in the urban centers of the Southeast, constitutes a consumer market that can purchase products of sustainable use of biodiversity, or "sociobiodiversity," with no need to export these products, as is the case in smaller countries (MMA *et al.* 2007).

The problem now is in MATOPIBA (Maranhão, Tocantins, Piauí and Bahia), where the government proposes agricultural development with little or no social or environmental concern, at least to date (Clark 2015). According to the official plan (Miranda 2015), in the 731,735 km^2, 91% of which is Cerrado, in Tocantins and parts of the other three states, there are 865 settlements, 34 *quilombola* territories and 28 indigenous lands.

The economic trends in Bolivia and Paraguay are different from each other, while Paraguay is following the path of Brazil's Cerrado. While the Santa Cruz de la Sierra region has a dynamic economy as compared to the highlands, southeastern Bolivia remains isolated, with few transportation connections to the Atlantic or the Pacific.

6.5 Bolivia

While the Santa Cruz de la Sierra region has a dynamic economy as compared to the highlands, southeastern Bolivia remains isolated, with few transportation connections to the Atlantic or the Pacific. Since the small part of Bolivia that is in the Cerrado Hotspot is quite different from most of the rest of the country, this section provides more detail about the socioeconomic context of the area on the eastern border considered as part of the Cerrado Hotspot. The same kind of detail is provided in the following section for the small parts of northern Paraguay that are included in the hotspot.

The IBA in Bolivia, with 2,246,779 hectares, is in extreme north of the province of José Miguel de Velasco in Santa Cruz de la Sierra, the country's largest department, which covers most of the eastern lowlands. The Serranía de Huanchaca, in one of the most remote and least accessible parts of Bolivia, lies between the Guaporé (border of Brazil) and Paraguá rivers, 125 km. from Vilhena, Rondônia, in Brazil, to the west of the Serra dos Parecis and the BR-364 highway. Thus, the IBA is 150 km. west of the Alto

Juruena Corridor in the states of Mato Grosso and Rondônia as defined in this profile (see Chapter 13).

The population of the entire Velasco province is 64,517. Bella Vista, Puerto Alegre and Puerto Frey are small towns in or near the IBA, an essentially pristine area which is already highly protected as Noel Kempff Mercado National Park, covering 1,523,000 hectares, having been created in 1988 and declared a UNESCO World Heritage Site in 2000. There is little anthropic pressure, although there was some logging in the 1980s. Now the park is a tourist attraction.

While Santa Cruz de la Sierra has one of the fastest growing metropolitan areas in the world, the economy of the interior of the department is based on crops and livestock, as well as production for subsistence, with low levels of income and human development. There is strong emigration from Bolivia, the poorest country in South America to other countries, especially to large cities in Brazil.

6.6 Paraguay

The main IBA in Paraguay, namely Cerrados de Concepción, is located along the border of Brazil south of the Apa River and east of the Paraguay River in the Department of Concepción. It includes the Paso Bravo National Park, with 93,000 hectares, the smaller Serranía San Luis National Park and the Cerrado de Tagatija private reserve. It is in an area of cattle-raising and is under pressure from illegal logging. The IBA lies south of the Miranda-Bodoquena Corridor in the state of Mato Grosso do Sul (see Chapter 13). The Brazilian side of the Apa River is a Unit of Planning and Management used for environmental planning (Terra *et al.* 2014).

The other two IBA in Paraguay, Estancia Estrella and Arroyo Tagatiya (10,954 hectares and 31,566 hectares respectively), lie in a relatively remote area of the country, west of the Paraguay River in the Department of Alto Paraguay, north of the departmental capital Fuerte Olimpo (population 5,200) and adjacent to the southern extreme of Brazil's Pantanal Biome. The remote areas of Paraguay, which have low income and human development levels, are under growing pressure from expansion of livestock and crops (soybeans, cotton, tobacco, coffee and sugarcane), the basis of the country's economy. The agricultural sector involves many foreign landowners, including Brazilians. Respectively 2% of each IBA is currently used for agriculture, while Arroyo Tagatiya is a major tourism/recreation site.

After being settled by migrants from Brazil (*brasiguaios*), eastern Paraguay has now attracted a strong flow of direct foreign investment, in part because land on the Brazilian side of the Cerrado has become more expensive and in part because of environmental restrictions in Brazil. Exports can be transported down the Paraná River to the Atlantic. Thus, Paraguay has become subject to leakage from its neighbor to the east. All three countries are part of the Mercosul (Common Market of the South) trading block but this has not led to economic integration as originally expected.

6.7 Conclusions

The Cerrado is a stage on which there is strong conflict between agribusiness and local communities of various kinds. Agribusiness puts pressure on the ecosystem, while local communities generally coexist with nature in complex mosaics. Agribusiness is often supported by the executive and legislative branches of government, especially at the state and local levels. On the other hand, as is seen in chapters 7 and 8, there is growing awareness about negative environmental impacts, and some opportunities for synergies between communities and companies are emerging in the progressive subsectors.

The analysis of the socioeconomic context of the Cerrado Hotspot indicates that population growth on the frontier and increased human well-being place strong pressures on the environment. There is no more wilderness in the sense of vast, unsettled virgin areas. The Cerrado is at the heart of an emerging world power and provides food for itself and the world, as well as income and tax revenues. Development is inevitable.

For the short, medium and long terms, it will be necessary to go beyond a focus on conservation of species at local sites to include landscapes at a larger scale. Except in a few cases, rather than isolation between people and nature, it will be necessary to find means for maintaining co-existence of nature with large- and small-scale agriculture, livestock, transportation, energy and communications infrastructure, small communities and large towns and cities. This is "living in harmony with nature," as foreseen in the CBD's 2020 Vision and Strategic Plan for Biodiversity 2011-2020, a ten-year framework for action by all countries and stakeholders to save biodiversity and enhance its benefits for all people.

Funding for this strategy will depend on going beyond biodiversity conservation as such to include water and climate. Water is primarily a regional, national and continental concern, while climate change is a global concern that directly affects both developed and developing countries, which due to globalization are increasingly interdependent. The broader consequences of loss of biodiversity in landscapes can motivate the world to invest in protecting the Cerrado.

7. POLICY CONTEXT OF THE HOTSPOT

This chapter reviews and analyzes policies related to the environment in Brazil, Bolivia and Paraguay, with special emphasis on natural resources management and biodiversity conservation. The text reviews the political situation at different levels, describes development policies and strategies, and assesses how the policy context affects biodiversity. While civil society, analyzed in Chapter 8, is a key player, government policy, analyzed in this chapter, and private sector practices, analyzed in chapters 6 and 9, are closely related and are the main determinants of what actually happens on the ground.

Government in Brazil is particularly complex and fluid, with a tradition of distance between paper and practice that is being overcome through actions of new enforcement institutions, a free press and public participation. Civil society participation has grown, but is not always effective because of capacity limitations, high operating costs, weak technical analysis and political polarization, as well as government and private sector resistance, as described in Chapter 8. Bolivia and Paraguay differ from Brazil and are specific in many ways, while the parts of these countries that lie within the hotspot are very small and remote rather than vast and central.

The first six sections of this chapter focus on Brazil as a whole: 7.1, Overview of Brazil's national political situation; 7.2, Natural resource policies; 7.3, Socio-environmental policies; 7.4, Development policies; 7.5, Land tenure and land use policies; and 7.6, Institutions for implementation. Section 7.7 focuses specifically on policy and governance in the Cerrado Hotspot. Section 7.8 focuses on the policy contexts in Bolivia, while Section 7.9 highlights the commitments by all three countries under global and regional agreements.

7.1 Overview of Brazil's National Political Situation

After 21 years of military rule ending in 1985 and nearly that many years of civilian rule, Brazil is now a mature democracy. There are periodic elections at the national, state and municipal levels. However, following demonstrations in 2013, elections in 2014 and economic and political crises in 2015, there are strong signs of popular dissatisfaction, growing regional and social class divisions and lack of clarity about the way forward (BBC 2015; Unger 2015). Political parties, of which there are 36, are in flux, and the alignments among them are without clear directions. Because of the economic crisis in 2015, it will now be more difficult to protect the environment than when Brazil's economic development stood out among "emerging" countries. The economy has become the overriding concern. Investments in forest conservation dropped by 45% in 2015 as compared to 2014 (Ghelfi 2015).

In 1988, there were sudden changes in public opinion and official attitudes regarding the environment, sparked by burning in the Amazon and the murder of Chico Mendes. The new constitution approved that year provides guarantees for a healthy environment in Article 225. Between 1988 and 2010, there were various important environmental initiatives at all levels (Bursztyn & Persegona 2008). More recent emphasis in government policy, however, has been on economic growth and development, which now seems more urgent than ever. Environmental issues were absent from the general election campaigns in 2014. Congress has become more conservative and seeks greater independence from the executive branch (Sarney 2015). There is growing concern about "backsliding" in the sense of weakening of laws and policies regarding environment, protected areas and indigenous lands. This is the case of a draft constitutional amendment (PEC 215) that would transfer the power to define and revise protected areas and indigenous and *quilombola* lands from the executive to the legislative branch of government.

The policies adopted are not always as positive as they seem at first sight. Various government plans regarding environment, such as Brazil's Agenda 21 (MMA 2004) and the Sustainable Amazon Plan (MMA 2008), look good on paper, but are not implemented. Their role is more inspirational than effective. At least the concept of sustainable development has been widely accepted rather than being considered a luxury or an international conspiracy, as was common before the Earth Summit in Rio de Janeiro in 1992 (Dewar 1995; Ferreira 2003; Carrasco 2006). Rhetorically, at least, the dominant paradigm is now sustainability.

In international forums on the environment, the Ministry of External Relations (MRE) continues to insist on the right to development and differentiated treatment for developing countries, especially as regards to climate change, and emphasizes development and social inclusion (Lago 2009). Brazil stresses North-South transfer of financial resources and technology. Nonetheless, there are also attempts to provide leadership on environment. Brazil hosted the 1992 and 2012 conferences in Rio de Janeiro. At the Conference of the Parties (COP-15) on climate in Copenhagen, Brazil established an important precedent by setting voluntary national goals of reducing deforestation in the Amazon by 80% by 2020 and in the Cerrado by 40% in the same period. It is also proposing ambitious goals at the COP-16 on climate in Paris in December 2015, behind only those of the European Union.

Brazil continues to seek a leadership role in international affairs, both within groups of emerging or middle-income countries such as Brazil, Russia, India and South Africa (BRICS) and with other developing countries in the G-77 plus China. At the same time, Brazil also participates in the G-20, the group of the world's wealthiest nations, in which it has ranked as high as sixth in terms of total Gross Domestic Product (GDP). It seeks to maintain good relations with Europe, the United States and China, with which it has strong commercial ties.

7.2 Natural Resource Policies

The main natural resource policies and laws in Brazil described in the following sub-sections have to do with environment in general, protected areas, water resources, forests/deforestation and climate. Climate is also the subject of Chapter 10.

7.2.1 Environmental Policies

The starting point for natural resource policies and laws in Brazil is the National Environment Policy of 1981, which created the National Environment System (SISNAMA), connecting the federal, state and municipal levels (Ganem 2015). The original policy was very generic, but it established the National Environment Council (CONAMA), which defines environmental policy through its specific resolutions, a total of 467 to date. CONAMA includes representatives of government, civil society and the private sector. The national system also includes state and municipal environmental agencies and councils.

A process of decentralization to states and municipalities is under way. Responsibilities are defined so that lower administrative levels can be more rigorous, establishing higher (but never weaker) standards than higher levels (Nunes & Philippi 2012). State and local capacities for environmental management vary considerably, being lowest in the Amazon, Cerrado and Caatinga biomes, although considerable progress has been made in recent years (Nascimento 2008). Many municipalities lack sufficient human and financial resources for environmental management, especially those with small populations and large areas (ISPN field observations). Since local economic interests are powerful, state and federal oversight is needed. Municipal authorities tend not to be concerned about environment or get involved in environmental projects (IICA 2015). Municipal conservation and restoration plans could be stimulated, as was done in the Atlantic Forest (Dutra 2013), perhaps at the scale of territories such as RECOS rather than individual municipalities or territories unrelated to the political-administrative structure.

7.2.2 Protected Area Policies

The Cerrado has the second largest network of official protected areas in Brazil, second only to the Amazon, which has many more. This hotspot has 168,416 km^2 covered by 214 public protected areas in the various management categories defined by the National System of Conservation Units (SNUC), created by Law 9985 in 2000. This protection network covers 8.3% of the hotspot, with 3.1% (62,875 km^2) in the Strict Protection category and 5.2% (105,541 km^2) in the Sustainable Use category (MMA 2012; Bensusan & Prates 2014). Brazil as a whole has more than 2,000 conservation units, covering 1.5 million km^2 (Bensusan & Prates 2014). The 1,860 terrestrial conservation units cover 17% (1.4 million km^2) of the country. Another 151 conservation units cover 1.5% (52,304 km^2) of the marine zone of 200 miles. Indigenous and maroon (*quilombola*) community lands are not "conservation units" under SNUC, but are considered to be part of the protected areas national program (Maretti 2015a).

The SNUC is coordinated by the Ministry of Environment (MMA). The SNUC divides protected areas into two categories: (1) strictly protected areas (*proteção integral*) and (2) sustainable use protected areas. The first category includes National Parks (IUCN category II), Biological Reserves (Ia), Ecological Stations (Ia), Natural Monuments (III) and Wildlife Refuges (III). The second category includes Environmental Protection Areas (IV), Areas of Particular Ecological Interest (IV), National Forests (VI), Extractive Reserves (VI), Fauna Reserves (VI), Sustainable Development Reserves (VI) and Private Natural Heritage Reserves (IV). Conservation corridors and mosaics are mentioned in the SNUC law but do not have the same legal status as conservation units. Within the ministry, the Chico Mendes Institute for Biodiversity Conservation (ICMBio), created in 2008, became responsible for creating and managing federal protected areas. Analogous secretariats and forestry institutes are responsible for equivalent functions at state and municipal levels.

Coverage of protected areas in the Cerrado is below the Aichi target of 17% set under the Convention on Biological Diversity. The importance of reaching this target is enormous because of the high diversity of endemic species and the great environmental heterogeneity of this hotspot. Machado *et al.* (2004) assessed the effectiveness of protected areas in the Cerrado for 67 species of interest for conservation, including birds, mammals and trees. The results indicated that 14 species, 20.9% of all species under consideration, are not protected by the network of protected areas. Another 33 species (49.3%) are present in protected areas, but their numbers are below the targets set as minimally satisfactory. Only 20 species (29.9%) can be considered well-protected by existing protected areas in the Cerrado. Another example of this situation is in the Espinhaço Mountain Range, notable for the high occurrence of rare and endemic species. Gap analysis by Silva *et al.* (2008), for a set of 31 conservation units and 607 species of flora and fauna, and other elements of conservation interest (types of ecosystems) of the complex shows that 41.8% of the species are not adequately protected. Furthermore, a study of endemic lizards indicates that the current protected area system in the Cerrado is not representative of regional biogeographic regions and does not take into account ancient and current diversity distribution patterns (Mello *et al.* 2015).

Federal, state and municipal governments should provide budget resources every year for the basic expenses of each protected area, such as staff salaries, infrastructure maintenance, inspection and enforcement. In addition to budget resources, some investments in protected areas come from partnerships with the private sector, bilateral and multilateral agencies, nongovernmental organizations and others. However, the government itself recognizes the fragility of the protected area system and knows that its agencies' shortcomings in providing the right instruments for management and protection mean undefined land ownership status, absence of planning mechanisms, lack of resources for basic investments and shortage of technical personnel, among other problems. The creation and implementation of protected areas is therefore a pressing current issue on the Cerrado conservation agenda.

Recent studies on the effectiveness of management of conservation units and other protected areas in the Cerrado attest to the importance of strictly protected areas for biodiversity in maintaining the integrity of the hotspot (Françoso *et al.* 2015; Paiva *et al.* 2015). Both studies evaluated how different categories of protected areas in the Cerrado contribute to achieving conservation targets. Deforestation rates in sustainable use PAs are similar to those outside PAs, indicating they are not suitable to ensure the protection of biodiversity, while strictly PAs exhibit significantly less deforestation.

It is also important to note that strictly PAs, recognized as the main biodiversity protection mechanism, still cover only a small portion of the entire Cerrado, as mentioned above. Environmental Protection Areas (APAs, in Portuguese) cover the largest share of protected areas in the Cerrado, representing 62% of the area protected in the hotspot. This fact is very important and reinforces the need for urgent measures to strengthen the Cerrado's PA network, to ensure the representability and persistence of its biodiversity.

In an attempt to improve the management of protected areas, the federal government has been monitoring the effectiveness of management in federal units, using Rapid Assessment and Prioritization of Protected Area Management (RAPPAM), a method that provides information and analysis to guide institutional management (ICMBio and WWF-Brazil 2011). There have been two assessment cycles, one in 2005-2006 and the other in 2010. The Amazon and Cerrado regions showed greatest improvement in the effective management of protected areas between the two assessment cycles. Despite positive results, the Cerrado and other regions still have a medium score for management effectiveness, indicating the need for investments and improved management.

The creation of protected areas requires some consultations, but not full prior and informed consent for all kinds of areas. Residents of these areas can be resettled. Previous landowners must be paid, although the Law of Fiscal Responsibility, which requires that all government expenses have previously identified sources, is not applied in all cases.

In addition to the conservation strategy for public lands, there has been a significant growth in the number of landowners interested in turning parts of their properties into Private Natural Heritage Reserves (RPPN) (Mesquita 2014). These reserves are declared voluntarily by a person or company and formally recognized by the different levels of government. The 1,340 private reserves currently registered in Brazil represent more than half of the national number of protected areas but cover less than 0.02% (about 7,150 km^2) in terms of area being protected. In Cerrado, 51% of the number of protected areas are private reserves (204), representing an area of 0.09% (about 1,600 km^2) of the area being protected in the biome. Cerrado has about 22% of the area of RPPNs in Brazil. This category is one of the most important conservation strategies in this hotspot, since most of the land is privately owned. With new incentives and greater support for landowners, private reserves could play an even more important role in biodiversity conservation in the Cerrado.

The Brazilian government has considered various areas not officially provided by SNUC as part of the national conservation strategy (CONABIO Resolution 6 of September 3, 2013). They include indigenous and *quilombola* (maroon) lands as well as Legal Reserves (LRs) and Permanent Preservation Areas (APPs) required by the Forest Law. The Cerrado has 95 indigenous lands, totaling 9.6 million hectares, of which 9.1 million hectares are covered by native vegetation. The region also has 44 *quilombola* lands totaling 2.1 million hectares. Of these, 1.2 million hectares are covered by native vegetation. Indigenous and maroon lands therefore account for 10.3 million hectares of native forests in the Cerrado safety net. Considering the SNUC conservation units together with indigenous and *quilombola* lands with native vegetation cover, protected area coverage reaches 13.4% of the total Cerrado area, covering about 27.2 million hectares in 500 different areas throughout the hotspot. Studies with satellite images indicate less clearing on indigenous lands than in conservation units and less clearing in sustainable use reserves than in integral protection conservation units in the Amazon (Ferreira *et al.* 2005; Nepstad *et al.* 2006). Both logic and this evidence suggest that environmental set-asides can be better protected by communities than by a few park guards, who have a limited capacity to control intrusions for logging, poaching and artisanal mining (*garimpo*) and will probably never be numerous enough to effectively manage for large areas in remote regions such as the Cerrado outside the southeast.

After 1992, outstanding progress was made in the creation of protected areas in the Amazon, an achievement facilitated by the fact that most land in the region is in the public domain and property values are an order of magnitude lower than in developed regions (Costa 2012). Now, however, the lack of government revenues for maintenance and for paying former landowners (few have been paid, as can be seen in the table on "regularization" on the ICMBio website) has led the government to give priority to better management of existing protected areas, so that they are not mere "paper parks" (Gaetani 2015).

The Aichi biodiversity targets of 17% in protected areas are being applied to each biome in Brazil. Indigenous lands will be counted to achieve the target. The gap in the Cerrado is enormous, on the order of 200,000 km^2, and will be difficult to cover, because land in this biome is private and expensive. The ways to reach the target for each biome, if it is not revised to be more realistic, would be to count reserves required by the Forest Law, include remaining areas above the minimum required by the Forest Law, facilitate and provide incentives for private natural heritage reserves (RPPNs) and create more Environmental Protection Areas (APAs), a loose category of protected areas generally considered ineffective by conservationists. Those decisions would apply to all of Brazil, not just one biome. What really counts the most for the Cerrado's ecosystems, however, is to maintain the plant cover that still exists on 50% of the total area.

Although RPPNs and APAs are both part of SNUC, they do not require government purchase of land. There is a national association of owners of RPPNs that promotes this alternative, supported and sometimes sponsored by NGOs, through technical expertise, capacity building, advocacy and funds. It should be noted that CEPF investments in the Atlantic Forest included a very successful incentive program for this type of voluntary private protected areas, which after 13 years has been responsible for supporting the creation of more than half of the existing RPPNs in that hotspot. The growing environmental concern in society, including large rural landowners of both older and younger generations, creates a favorable climate for the establishment of private reserves, although insufficient incentives and the bureaucracy, which requires approval of detailed management plans, remain formidable barriers.

The use of environmental criteria to apportion state value-added tax (ICMS) revenues among municipal governments, through a mechanism called ICMS Ecológico, has been adopted voluntarily by some states. It is an important incentive for municipal governments to create and support protected areas and to adopt other conservation measures (Fernandes *et al.* 2011). Of the states that have ICMS Ecológico, five (Mato Grosso, Mato Grosso do Sul, Minas Gerais, São Paulo and Tocantins) are in the Cerrado. In 2009, the value that was redistributed was about USD 200 million (BRL 402.7 million) in 11 states for which data are available (Medeiros *et al.* 2011). The same kind of compensation mechanism could be extended to distribution of federal tax revenues to state governments through a "Green State Participation Fund" (*Fundo de Participação Estadual Verde*), which was proposed by former Minister of Environment and presidential candidate Marina Silva but has not been adopted. Among all biomes, it would favor the Amazon.

Cooperating with the government, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has promoted Biosphere Reserves, as in other countries, but this approach has been more successful in the Atlantic Forest than in the Cerrado, where implementation has only been undertaken in the Federal District (Galinkin 2004) and has not spread. There are also some RAMSAR and World Heritage sites.

Since signing the Convention on Wetlands of International Importance, Brazil has added 12 wetlands to the RAMSAR List. This enhances support for research, access to international funds for project finance and a favorable environment for international cooperation. In exchange, Brazil has promised to maintain their ecological characteristics – elements of biodiversity, as well as the processes that sustain them – and should give priority to their consolidation before other protected areas, as provided in General Objective 8 of the National Strategic Plan for Protected Areas (PNAP), approved by Decree No. 5,758/06. The guideline adopted for RAMSAR sites designation was that these areas are already protected areas, which favors the adoption of measures to implement commitments made by the country under the Convention.

Other instruments for environmental management and planning provided by the SNUC are Biosphere Reserves and mosaics of protected areas. The Cerrado has two Biosphere Reserves recognized by UNESCO. The Espinhaço Biosphere Reserve with 30,070 km^2 is in Minas Gerais, and the proposed Biosphere Reserve of the Cerrado, which would have 296,500 km^2, covers the Federal District and parts of the states of Goiás, Tocantins, Maranhão and Piauí.

The mosaics of protected areas can make a major contribution to the governance of protected areas, enabling integration among different categories of units, groups and levels of government, without destroying the individuality and specific objectives of each unit (Pinheiro 2010). The Atlantic Forest Hotspot pioneered this approach and has nine officially recognized mosaics, with important examples and innovations in the governance of a network of protected areas.

The Cerrado has important experience through the Sertão Veredas-Peruaçu Mosaic, located mainly on the left bank of the São Francisco River in the north and northwest of Minas Gerais and a small portion of southwestern Bahia (FUNATURA 2008). The mosaic has 14 public and private protected areas and an indigenous reservation, totaling more than 1.3 million hectares of protected land in an area of the Cerrado that is strategic in terms of biodiversity, water and opportunities to overcome great social fragility. The mosaics of protected areas offer various opportunities for long-term biodiversity protection, environmental services and regional sustainable development.

Brazil also launched its biodiversity (or “conservation”) corridors approach in the 1990s, as part of the "Ecological Corridors" project, aimed at establishing an integrated strategy for protected areas in forest environments in the Amazon and the Atlantic Forest, under the Pilot Program to Conserve the Brazilian Rainforest-PPG7 (Ayres *et al.* 2005). Several conservation initiatives in Brazil and Andean countries currently are using the approach of biodiversity corridors (Arruda 2004). Corridors are not political or administrative units, but large geographic areas defined on the basis of biological criteria for the purpose of conservation planning. Planning biodiversity corridors incorporates interventions at different spatial scales (from a conservation unit to watersheds to entire states) and different temporal scales (in the short- and medium-term and over decades), seeking alternatives for wider, gradual, decentralized and participatory forms of biodiversity conservation and integrated regional development (Sanderson *et al.* 2003).

Cerrado biodiversity corridors were identified in the assessments of priority areas for the Cerrado and Pantanal in 1998 and 2007. The first to be implemented were: (1) the

Araguaia-Bananal Corridor, along the Araguaia River, including the world's largest fluvial island; (2) the Emas-Taquari Corridor, connecting the Cerrado and the Pantanal; and (3) the Jalapão corridor, in the tri-state area of Tocantins, Bahia and Piauí.

The Jalapão Biodiversity Corridor is an initiative of the Chico Mendes Institute for Biodiversity Conservation (ICMBio), in technical cooperation with the Japan International Cooperation Agency (JICA) and the Government of the State of Tocantins, as well as other partners. The area, located on one of the most important agricultural frontiers in Brazil, called MATOPIBA (initials of the states of Maranhão, Tocantins, Piauí and Bahia), is covered by an extensive network of protected areas, such as Jalapão State Park (158,885 hectares), the Serra Geral Tocantins Ecological Station (761,306 hectares) and the Parnaíba Headwaters National Park (729,813 hectares). These protected areas, along with six others, make up one of the largest remaining native vegetation blocs in Central Brazil and the largest collection of official protected areas in the Cerrado, totaling more than 3 million hectares.

Lastly, Biosphere Reserves, protected areas in the APA category and mosaics are important mechanisms to discipline land use and ensure the sustainable use of natural resources, through participatory planning and management, as in the case of biodiversity corridors, described below.

Indigenous and Community Conserved Areas (ICCAs), as they are known internationally (Borrini-Feyerabend 2005), are not an official category in Brazil. An analysis of the experience at the global level about ICCAs and the Aichi Targets concludes: "It is worth highlighting here that while ICCAs can help in the achievement of all Targets, in particular Targets 1, 5, 7, 11, 13, 14 and 18 simply cannot be achieved without ICCAs" (Kothari & Neumann 2014). Brazilian membership in the international ICCA consortium is incipient. There could be official recognition of these areas, including for ICMS Ecológico and FPE Verde, without their having to become part of the SNUC or subjected to control by federal, state or municipal environmental agencies and their staff, many of which do not always respect indigenous and community rights and values (ISPN field observations). ICCAs would be a way to minimize the conflicts that arise when official protected areas are created in areas occupied by traditional peoples and communities.

7.2.3 Water Resources Policies

The National Water Resources Policy approved in 1997 established watersheds as the units of study and management. There are federal (interstate), state (inter-municipal) and municipal watersheds. The law requires authorization for use of water as well as payment of fees (OCDE 2015).

The water law provides for watershed committees (CBH) including government authorities, users and civil society specialists in water, but not civil society *per se*, as well as water resource agencies (Salles 2015). Watershed committees are located mainly in the more developed regions of Brazil, including the southern half of the Cerrado Hotspot, and the Northeast (Freitas 2015). They are more effective in developed regions, where civil society has greater capacity and watersheds are smaller (Abers 2010; Abers and Keck 2103).

Such environmental management arrangements are made more difficult by the lack of geographical correspondence between watersheds and political and administrative divisions. The water divides rarely if ever coincide with municipal boundaries, while rivers often *are* those very boundaries. It is difficult for committees and agencies to manage activities in the watershed as a whole, especially activities that do not require authorization for use of water. The approach can be considered “fluviocentric.” On the other hand, the participatory decentralization of water management creates the possibility that funds will be made available for conserving and regenerating forests in headwaters and along water courses that regulate river flow.

There are programs of support for so-called “producers of water” who plant and maintain trees on their properties, a practice that also generates benefits for biodiversity and climate. The National Water Agency (ANA) offers a total of USD 1.4 million (BRL 5.6 million) in grant funds for projects of up to USD 175,000 (BRL 700,000) each (http://produtordeagua.ana.gov.br). Payment by users of water is possible in areas close to cities, as in the case of Extrema, in Minas Gerais, which provides water for São Paulo. This is difficult in most of the Cerrado, however, where per capita water availability is much higher (Jardim 2010), but it may be possible in specific areas.

7.2.4 Forest/Deforestation Policies

The Forest Code, which was first approved in 1934 to guarantee the supply of firewood and modified in 1965, 1996 and 2012, provides for Legal Reserves to maintain native plant cover on all rural properties. In most of the Cerrado and most of Brazil, the requirement is 20%, while in the Amazon it is 80%. The parts of the Cerrado that are in the Legal Amazon, *i.e.,* all of Mato Grosso and Tocantins and the western part of Maranhão, require Legal Reserves of 35%. Areas of Permanent Preservation are required along water courses and on hilltops and steep slopes. Legal Reserves can be used sustainably, with approved management plans, while APPs cannot be used at all.

As a result of negotiations between “ruralists” and environmentalists, the 1996 version of the Forest Code, which was never effectively applied, was replaced by the new Forest Law in 2012. It reduced requirements for APPs. There is controversy about a pardon for old clearing on small farms. As for monitoring and enforcement, the new Rural Environmental Registry (CAR) requires self-declared, geo-referenced reporting on compliance. The Brazilian Forest Service (SFB) and state environmental agencies are responsible for CAR implementation. Some states, like Mato Grosso and Bahia, already have their own registries. The Environmental Regularization Program (PRA) can provide support for reaching compliance. There can also be compensation by acquiring surplus uncleared land in nearby areas.

The various registries will provide valuable, detailed data on land use and plant cover. However, at the level of individual properties, many landowners want to avoid self-incrimination, while many state agency personnel do not want to be legally liable for approving self-declared information without verification (ISPN field observations). The normal courses of streams and rivers and the exact boundaries of hilltops and steep slopes are technically difficult to determine on the ground and in satellite images (Oliveira & Fernandes 2013). Establishing consistency between CAR reporting and the forthcoming official maps of land ownership will be a challenge (Dourado 2015).

The deficit of Legal Reserves and APPs in the Cerrado is estimated to be 4.5 million hectares, which will need to be recovered or compensated (Observatório do Código Florestal 2015). On the other hand, impacts in the Cerrado are mixed. With large areas still intact and Legal Reserves of only 20%, another 40 million hectares can still be legally cleared (Sparovek *et al.* 2011; Soares-Filho 2014). Reporting deadlines have been extended to 2016. After 2017, compliance will be a requirement for access to bank credit.

Care must be taken to avoid excessive reliance on protection of riparian forests over other vegetation types uphill from streams and rivers, without dealing with causes and drivers in the watershed as a whole. APPs along water courses can provide habitat and connectivity among forest fragments for species that require continuous forest cover for their mobility. Obviously, however, forests along the banks cannot solve all the problems of availability of water or runoff, erosion and pollution due to land use at higher elevations. Neither do they protect all the biodiversity or carbon stocks.

As mentioned, in 2009 Brazil announced voluntary goals to reduce deforestation in the Amazon and the Cerrado. New ambitious goals are being announced in 2015, including zero illegal deforestation. They do not preclude legal deforestation. They also refer to net deforestation, while national campaigns demand zero deforestation without compensation by reforestation. Brazil did not sign the New York Declaration on Forests, calling for zero deforestation, which is defended by Greenpeace and other organizations.

In addition to the Forest Law, there are various policies and programs to fight deforestation and burning, primarily to reduce emissions of greenhouse gases. In 2009 in Copenhagen, Brazil established a voluntary goal for nationally appropriate mitigation actions (NAMA) with reductions between 36.1% and 38.9% of projected emissions by 2020 by reducing deforestation in the Amazon by 80% and by 40% in the Cerrado.

The Green Stipend (*Bolsa Verde*), established in 2011, provides payments for poor residents of official protected areas and others that are considered priorities for protection. The stipend is USD 75 (BRL 300) every three months for two years and can be renewed.

Brazil is very proud of its success in reducing deforestation rates in the Amazon by 83% since 2004. The main enforcement targets are illegal deforestation and logging. In 2015, the government proposed reaching zero illegal deforestation by 2030. However, most of the clearing is legal in the Cerrado, the Pantanal and the Caatinga, where Legal Reserves are much smaller than in the Amazon, while there is little left to clear in the Atlantic Forest. Enforcement in the Amazon could end up increasing pressure on the Cerrado, *i.e.*, reverse leakage. It is also necessary to take into account indirect land use changes, such as expansion of sugarcane plantations to produce ethanol biofuel (Sawyer 2014).

The deforestation policies now include control of fire, which is monitored by the National Institute of Space Research (INPE) using data from various satellites. In 12 months in 2008-2009, there were 32,001 fires detected in the Cerrado, 40% of the national total. The majority were in the center-north portion of the biome, particularly in the Tocantins-Araguaia and São Francisco basins, mostly in the remnant savanna vegetation (75.6%), with 13.2% in planted pastures and 11% in agricultural areas (Nascimento *et al.* 2011). It should be recalled that “hot spots” on satellite images do not necessarily correspond to clearing, but may be the result of annual pasture management in areas cleared long ago, or traditional land use. The accumulation of clearing in the past should not be confused with new clearing.

In 2015, the Ministry of Environment launched a National Plan to Recover Native Vegetation (PLANAVEG), which is based on effective enforcement of the new Forest Law. The levels of deficit in terms of the Forest Law have been calculated for each biome but are being revised. As mentioned above, the deficit for the Cerrado is estimated at 4.5 million hectares. Restoration will be an essential complement to conservation.

7.2.5 Climate Policies

Climate policies in Brazil are closely linked to policies regarding deforestation, which has been the country’s main source of greenhouse gas emissions, as described in Chapter 10. Because of reductions of 83% in emissions from deforestation since 1994, more attention must be paid to agriculture, energy and transportation. Agriculture is especially relevant in the Cerrado (Bustamante 2015). Of course forests, biodiversity and climate are closely linked, as was evident in the Brazil-Germany symposium on this subject in August 2015. At present, climate is an overriding global concern and thus constitutes a major justification for North-South international cooperation on environment.

Brazil’s climate policy has been based on defense of the right to development and the principle of common but differentiated responsibilities (Lago 2009). The voluntary commitment to reduce emissions, announced at the COP in Copenhagen in 2009 and defined in the National Climate Change Policy (Motta 2011), depends on reduction of deforestation, which has been achieved mainly in the Amazon. The Intended Nationally Determined Contributions (INDCs) to be presented at the COP in Paris in 2015 also focus mostly on lowering deforestation rates, thus generating significant co-benefits for biodiversity and hydrological cycles. Cap-and-trade initiatives are very limited. REDD+ is being discussed, but the main actual practice is the Amazon Fund, which begun with USD 1 billion from Norway.

In 2010, Brazil launched the “Low-Carbon Agriculture” (ABC) Plan and a special line of credit. Coordinated by the Ministries of Agriculture (MAPA) and Agrarian Development (MDA), the plan seeks to reduce carbon emissions by promoting practices in agriculture such as zero till and integrated crop-livestock systems. The initiative has been slow in uptake, given uncertainties about the Forest Law, lack of technical assistance and difficulty in access to credit.

7.3 Socio-Environmental Policies

In addition to specific natural resource policies for Brazil as a whole, described above, there are also numerous “socio-environmental” initiatives that have positive impacts on biodiversity conservation in Brazil in general and in the Cerrado in particular.

7.3.1 Socio-Biodiversity

In 2008, the Secretariat of Extractivism and Sustainable Rural Development (SEDR) of the MMA began promoting value chains for non-timber products, including babassu, *pequi* and *buriti*. In Brazil, "extractivism" does not refer to mining, petroleum and gas, but to the sustainable use of biodiversity, which is called "agro-extractivism." In 2009, these actions were included in the National Plan for Promotion of Socio-Biodiversity Value Chains (PNPSB). Socio-biodiversity products are defined as goods and services (finished products, raw materials or benefits) generated from biodiversity resources, focused on the formation of production chains of interest to traditional people and communities and family farmers, promoting the maintenance and enhancement of their practices and knowledge, ensuring their rights, generating income, promoting their quality of life and improving the environment in which they live.

The plan has focused on six areas: (1) sustainable production and extractivism; (2) industrial processes; (3) markets for socio-biodiversity products; (4) social and productive organization; (5) socio-biodiversity value chains; and (6) valuation of socio-biodiversity services. The macro-level actions seek to include socio-biodiversity products in agricultural policies, in partnership with the National Supply Company (CONAB), such as the Minimum Price Guarantee Policy (PGPM), the Food Acquisition Program (PAA) and the National School Lunch Program (PNAE). The meso-level actions seek to offer specific technical assistance and training for extractive production. At the micro-level, the plan involves two national value chains, one of which, for babassu, occurs in the Cerrado. Local production arrangements that are supported include *pequi* and *buriti* from the Cerrado (Afonso 2014).

The PNPSB is coordinated by the Ministries of Environment, Agrarian Development and Social Development and Fight against Hunger (MDS) and the National Supply Company. It includes state governments, staff, the National Agency for Sanitary Surveillance and Inspection (ANVISA), the Brazilian Forest Service (SFB), the Chico Mendes Institute for Biodiversity Conservation (ICMBio), the National Institute of Colonization and Agrarian Reform (INCRA), the German Technical Cooperation Agency (GIZ), the Brazilian Agricultural Research Corporation (EMBRAPA) and the business sector, development agencies and civil society organizations (MMA *et al.* 2012). The PNPSB was absorbed by the National Commission of Agroecology and Organic Production (CNAPO) in 2015.

In 1966, Decree-Law 79 established rules for agricultural produce floor prices. Since 2008, in response to demands by extractivists, the Floor Price Guarantee Policy for Socio-Biodiversity Products (PGPM-Bio) has provided bonuses for extractivists forced to sell their produce at prices below the official minimum. CONAB, which administers the PGPM, set up an office to develop and operationalize floor prices for socio-biodiversity products. For the 2014/2015 harvest, floor prices were set for six Cerrado products: babassu and *baru* nuts and *macaúba*, *mangaba*, *pequi* and *umbu* fruits. Average prices are only a few dollars per kilogram.

7.3.2 Institutional Markets

The Food Acquisition Program (PAA), established in 2003, is a very important institutional market operated with funds from MDA and MDS. Products purchased from farmers are donated to public institutions such as schools, shelters and hospitals. There are also loans for investments in value-added and storage facilities. The Cerrado products sold by family farms directly to the federal government via CONAB include babassu, *bacaba*, *bacuri*, *baru*, *buriti*, *cagaita*, *cajá*, coconuts, *cupuaçu*, *guariroba*, honey, *murici*, *pequi* and *umbu* in various forms.

Since 2009, Law 11,947 provides that at least 30% of the total funds transferred by the National Education Development Fund (FNDE) should be used to purchase food directly from family farms, marketed individually or collectively. This is another major institutional market for family farmers, especially those located close to large urban centers, where there are more students in schools. In order to help bring family farmers' productive organizations into the PNAE market, the Department of Family Farming (SAF) developed the Nourish Brazil strategy, which seeks to overcome bureaucratic bottlenecks that thwart the matching of supply and demand of family farm products.

This project was later strengthened by the More Management Program, which developed a technical assistance methodology in organization, management, production and marketing for family farming enterprises (Afonso 2012). The More Management program provides technical assistance for productive organizations to promote the integration and qualification of collective enterprises of family farming for institutional and private markets. The program currently serves 461 cooperatives, of which 200 are fully dedicated to providing food for the National School Lunch Program (PNAE). On the other hand, health and sanitary regulations of the Single System of Care for Agricultural Sanitation (SUASA) at times impose severe limits on family and community production and marketing.

7.3.3 Agro-Ecology and Organic Production

In addition to the National Plan for the Promotion of Chains of Socio-Biodiversity Products, the involved ministries established the National Policy for Agro-Ecology and Organic Production (PNAPO) in 2011. The policy aims to integrate, coordinate and adapt policies, programs and actions to induce the agro-ecological transition and organic and agro-ecological production, contributing to sustainable development and quality of life, through the sustainable use of natural resources and the supply and consumption of healthy foods. The PNAPO is run by two bodies: the National Commission for Organic Production and Agro-Ecology (CNAPO) and the Inter-Ministerial Committee for Agro-Ecology and Organic Production (CIAPO). Although the focus is different from the sustainable use of biodiversity, these committees help implement and monitor the socio-biodiversity agenda, within the different spheres of the federal government.

7.3.4 Traditional Peoples and Communities

The National Policy for the Sustainable Development of Traditional Peoples and Communities (PNPCT), set forth by Decree 6040 in 2007, aims to promote sustainable development for traditional peoples and communities, emphasizing the recognition, strengthening and guarantee of their territorial, social, environmental, economic and cultural rights, with respect for and appreciation of their identity, forms of organization and institutions. Traditional peoples and communities are officially defined as being culturally different groups who recognize themselves as such, have their own forms of social organization, occupy and use territories and natural resources as a condition for their cultural, social, religious, ancestral and economic reproduction, using knowledge, innovations and practices generated and transmitted by tradition.

Coordination and implementation of PNPCT is the responsibility of the National Commission for Sustainable Development of Traditional Peoples and Communities (CNPCT), created in 2006 and composed of 15 representatives of federal authorities and 15 representatives of non-governmental organizations. The CNPCT is chaired by the Ministry of Social Development and Fight against Hunger and the Executive Secretary is the Ministry of the Environment, through the Secretariat of Extractivism and Sustainable Rural Development (SEDR). The representatives of civil society include Amazon extractivists, *caiçara* fishers, *fundo de pasto* communities, *terreiro* communities, *quilombolas*, *faxinais*, *geraizeiros*, *pantaneiros*, artisan fishers, Pomeranians, indigenous peoples, Gypsies, babassu palmnut crackers, *retireiros* and rubber tappers. Cerrado peoples and traditional communities are included in the CNPCT through *geraizeiros*, indigenous peoples and babassu palmnut crackers.

Indigenous peoples do not feel entirely comfortable in the broad official category of Traditional Peoples and Communities and Family Farmers (PCTAFs), especially because of many diverse ethnic identities, land conflicts and, in some areas, high rates of suicide and even talk of collective suicide (MOPIC representative at stakeholder consultation).

7.3.5 Indigenous Policy

The Brazilian Constitution of 1988 guarantees indigenous peoples the right to usufruct of the natural resources of the lands they have traditionally occupied, which remain federal property. Indigenous lands are the largest intact areas of the Cerrado and have less deforestation than official protected areas classified for either integral protection or sustainable use. Indigenous hunting and gathering typically constitute forms of sustainable use of biodiversity. However, logging, small-scale mining (*garimpo*) and poaching are threats to biodiversity in these areas.

Indigenous policy is the responsibility of the National Indigenous Foundation (FUNAI), within the Ministry of Justice (MJ). There is political opposition to demarcation of indigenous lands from some quarters, who want to grant local governments the authority to define which lands are indigenous.

In 2012, the National Policy of Territorial and Environmental Management of Indigenous Lands was established. Although indigenous lands are not “conservation units” in the national system (SNUC) or protected areas according to IUCN criteria, they can be considered *de facto* protected areas, based on deforestation rates and other indicators of biodiversity conservation. There is now a small grants program called GATI, coordinated by ISPN, to support specific projects for: 1) territorial and environmental ethno-management; 2) environmental conservation and recovery; and 3) sustainable productive activities. Three of the regional nuclei are in the Cerrado.

7.4 Development Policies

The main development policy in recent years has been the Program to Accelerate Growth (PAC), which is focused on public infrastructure works and is beginning a second phase. At the moment, however, priorities are economic adjustment, reduction in government spending – or at least the budget deficit – and resumption of economic growth.

Social development and inclusion has been promoted through family stipends and benefits of various kinds, especially since 2003. With aging, rural pensions are critically important in the countryside for the elderly and for local economies. The Unified Health System (SUS) provides free public health care. The "Light for All" program has provided rural electrification and the "My House, My Life" program has built millions of low-income housing units. These income redistribution policies may reduce environmental pressure on the part of small farmers, who receive cash, goods or services and are therefore under less economic pressure to produce and sell food.

One of the most relevant development programs for family farmers is the National Program to Strengthen Family Farming (PRONAF), which provides rural credit. To have access, farmers need PRONAF Eligibility Declarations (DAPs). Such declarations and credit are highly concentrated in the Southern Region and in Minas Gerais. On the other hand, rural credit requires the adoption of high-input technology and defaults can lead to loss of property. It is still important to find ways to decrease production costs and increase prices paid to farmers.

7.5 Land Tenure and Land Use Policies

On the whole, land tenure in Brazil is highly concentrated. The open frontier of the past, which received millions of migrants from other parts of Brazil, closed in the 1960s and 1970s, in part because land that was public became large rural estates, many of which were forms of real estate speculation (Sawyer 1984). Even so, there are about a million small family farmers in the Cerrado, with small areas and modest income from rural production, often including milk and eggs (Peres *et al.* 2006).

The Ministry of Agriculture, Livestock and Supply (MAPA) deals with commercial agriculture, while the Ministry of Agrarian Development (MDA) deals with small farmers. The National Institute of Land Settlements and Agrarian Reform (INCRA) is within the MDA. In the 1970s and 1980s, agrarian reform settlements were mostly in the Amazon, but social movements now demand better locations in the South, Southeast, Northeast and Center-West. Access to land in agrarian reform settlements requires expropriation of land, which is now expensive in the Cerrado, while government budgets face large deficits. Settlements are often created on degraded land that was pasture or cropland. They maintain complex mosaics of land use, as compared to monocultures and pastures (*Cadernos do Diálogo* 2011). Some of them have agroforestry systems, contributing to the return of biodiversity and connectivity among fragments. INCRA also creates Agroextractive Settlement Projects (PAEs).

With regard to land use planning, Brazil has decades of experience with Ecological-Economic Zoning (EEZ) by state authorities, especially in the Amazon (Schubart 1992). Technically, it has been difficult to combine environmental and socioeconomic data at the scale needed. The current situation of EEZ planning in each state of the Cerrado varies from scales of 1:1,000,000 to 1:50,000. The states that are farthest advanced are Mato Grosso do Sul and Minas Gerais.

In practice, it has also proven difficult to enforce zoning within the existing legal structure, based on private property. On the other hand, a combination of zoning with the Forest Law, which requires the same percentage of Legal Reserve for all properties regardless of location, could make application of the law more rational in ecological and economic terms, as well as making it more feasible in practice.

7.6 Institutions for Implementation of Resource Management Policies

The governmental institutions involved in the design, implementation and monitoring of natural resource management policies described in the following sections are federal, state, municipal and academic.

7.6.1 Federal Institutions

The federal Ministry of the Environment administers the following agencies: the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), the Chico Mendes Institute of Biodiversity Conservation (ICMBio), the National Water Agency (ANA), the Brazilian Forest Service (SFB) and the Rio de Janeiro Botanical Garden (JBRJ). Within the MMA, in addition to the Executive Secretariat, the most relevant secretariats for implementation of natural resource policy are biodiversity and forests (SBF), extractivism and sustainable rural development (SEDR), climate change and environmental quality (SMCQ), water resources and urban environment (SRHU) and institutional coordination and environmental citizenship (SAIC). A separate secretariat is now being created for forests.

IBAMA was created in 1989, unifying the agencies responsible for forests, fishing and rubber with the secretariat of environment. It is responsible for environmental licensing. ICMBio was split off from IBAMA in 2008, with specific responsibilities for Brazil's protected areas under SNUC. ICMBio also collects and makes available many kinds of data about biodiversity (Silva *et al*. 2015).

Each official conservation unit has its own management board. The boards of federal conservation units are chaired by the chief of the unit, an ICMBio employee. In some cases, there are mosaics of protected areas, for example the Sertão Veredas Peruaçu, in northern Minas Gerais.

ANA was described in the section on water resources policy (7.2.3). Water resource management is typically the responsibility of state environmental agencies. At the same time, however, there is some conflict with companies and agencies responsible for generating hydroelectric power, which are under the Ministry of Mines and Energy (MME).

The Rio de Janeiro Botanical Garden (JBRJ) is much older, having been founded in 1808, before Brazil's Independence. It does research on plants all over Brazil and participated in the stakeholder consultations for the Cerrado ecosystem profile (Martinelli 2014; Martinelli & Moraes, 2013).

The SFB, created in 2006, promotes forest-based activities; supports training, research and technical assistance for the implementation of forestry activities; carries out the

National Forest Inventory and manages the National Forest Development Fund (FNDF). The National Forest Inventory aims to provide information about area of forest cover and different land uses, dynamics of fragmentation, health and vitality of forests, diversity and abundance of forest species, biomass, carbon stocks and soil characteristics under forests. Socioeconomic data includes major uses and perceptions of forest products and services by local people.

The participatory federal environmental councils connected to MMA are the National Environment Council (CONAMA), the National Biodiversity Commission (CONABIO), the National Cerrado Commission (CONACER) and the National Council of Water Resources (CNRH). At the inter-ministerial level, the Commission of Sustainable Development Policies and National Agenda 21, created in 1997, has not been active.

The Green Protocol, which places restrictions on access to bank credit, as well as green procurement policies on the part of government, as proposed by the MMA, could be a means to limit unsustainable practices and to encourage sustainable production in general. Banks may also be held liable for environmental impacts of their investments.

The National Commission of Sustainable Rural Development (CONDRAF), connected to the MDA, is directly concerned with environmental sustainability. There is a specific inter-ministerial committee on climate change (CIM), created in 2007, and an Executive Group (GEx), but no such inter-ministerial committee exists for biodiversity or water. Inter-ministerial committees do not include nongovernmental representatives. Other relevant federal councils that directly influence natural resources management are those mentioned above in the sub-sections on natural-resource, water and socio-environmental policies: CONAMA, CONABIO, CONACER, CNRH, CNPCT and CNAPO. It is difficult for civil society to mobilize qualified representatives to participate effectively in all of them.

The Ministry of National Integration (MI) includes three regional development agencies. The Superintendency of Development of the Center-West (SUDECO) covers a large part of the Cerrado, *i.e.* the states of Goiás, Mato Grosso, Mato Grosso do Sul and the Federal District. The Superintendency for Development of the Northeast (SUDENE) and the Amazon (SUDAM) are important in the northern and western parts of the hotspot. These regional agencies mostly seek to promote regional economic and social development, but have incorporated concerns with environmental sustainability. For example, SUDECO supports “National Integration Routes” that link local socio-biodiversity productive arrangements (clusters) in the Cerrado (ECODATA 2015).

The other federal ministries and agencies that are most relevant to biodiversity conservation are those for agrarian development (MDA), agriculture, livestock and supply (MAPA), science, technology and innovation (MCTI) and strategic affairs (SAE). The latter ministry was abolished in October 2015. MDA is a close ally of MMA (ISPN observations). MAPA is more interested in production and export of commodities than in the environment, but it also works with organic production, which is seen as a business opportunity. MCTI works with climate change, competing with the MMA, and now also works with biodiversity. The National Space Research Institute (INPE) uses sophisticated technology to monitor clearing, burning and the scars they leave. SAE, another ministry, which has a sub-secretariat on sustainable development, has worked mainly with regularization of land tenure in the Amazon, but now also works with the forum of governors of Central Brazil, *i.e.* the Center-West region plus Tocantins, and could focus on sustainability in the Cerrado. The Secretariat of Micro and Small Business (SMPE), downgraded from ministerial status in 2015, works to simplify regulations for small-scale entrepreneurs, an initiative that could be extended to small farmers and local communities. Some of these secretariats have recently been subsumed by ministries, in order to reduce government spending, but their missions continue.

The federal government works on environmental issues together with various intergovernmental organizations, including the United Nations Development Program (UNDP), the United Nations Environment Program (UNEP), the Food and Agriculture Organization (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). They are implementing agencies of the Global Environment Facility (GEF) in its focal areas, which are related to multilateral environmental agreements. International cooperation is coordinated by the Brazilian Cooperation Agency (ABC) of the Ministry of External Relations (MRE) and the Secretariat of International Affairs (SEAIN) of the Ministry of Planning, Budget and Management (MP).

7.6.2 State Institutions

There are ten states in the hotspot in Brazil, as well as the Federal District, with their respective institutions. The National Environment System (SISNAMA) includes federal, state and municipal authorities and promotes nationwide and statewide exchanges of information and experiences. Regionally, there is also a specific Forum of State Secretaries of Environment in the Cerrado, in which the new administration in the Federal District plans to play a leadership role.

State agencies in the Cerrado are uneven in terms of concern about and effective action on environmental affairs. All are now restricted by budget cutbacks, which often impose mergers with development-promotion secretariats. Minas Gerais is the most advanced. Mato Grosso has pioneered work to implement the Forest Law. Mato Grosso do Sul stands out for having completed its ecological-economic zoning, although implementation is another matter. The Secretariat of Environment of the Federal District created a Center of Excellence for Cerrado Studies called “Cerratenses” at the Brasília Botanical Garden (JBB) and is planning to set up a processing plant for agro-socio-biodiversity products from the surrounding region.

The states have rural extension agencies, which are now part of a National Rural Extension Agency (ANATER). Stakeholder consultations highlight the need to make extension effective, move beyond “green revolution” technologies and use modern means of communication and peer-to-peer techniques, in addition to traditional individual in-house technical assistance. When technical assistance is required for credit, technical parameters are needed to support activities other than conventional crops and livestock (Carrazza, 2015).

7.6.3 Municipal and Other Local Institutions

In addition to the Federal District, there are 1,408 municipalities with at least part of their area included in the official Cerrado Hotspot. The great majority have small populations and budgets. Micro-Regions and Meso-Regions defined by the IBGE are used to aggregate statistical data, but not for political or administrative purposes. From 1995 to 2010, there were Rural Territories and "Rural Sustainable and Solidary Development Plans" led by the MDA. Now there are 32 Citizenship Territories in the Cerrado Hotspot, also made up of groups of municipalities. These territories are designed to promote different dimensions of citizenship. It is not clear to what extent they are functional or if they embrace environmental causes.

The Federal District, together with 19 municipalities in the neighboring state of Goiás and two in Minas Gerais, are part of the Integrated Development Region of the Federal District and Surroundings (RIDE).

Table 7.1. Citizenship Territories in the Cerrado.

Águas Emendadas – DF/GO/MG	Lençóis Maranhenses/Munin – MA
Alto Jequitinhonha – MG	Médio Jequitinhonha – MG
Alto Rio Pardo – MG	Noroeste – MT
Baixada Cuiabana – MT	Noroeste de Minas – MG
Baixada Ocidental – MA	Pontal do Paranapanema – SP
Baixo Araguaia – MT	Reforma – MS
Baixo Jequitinhonha – MG	Serra Geral – MG
Baixo Parnaíba – MA	Sertão de Minas – MG
Bico do Papagaio – TO	Sertão do São Francisco – BA
Chapada Diamantina – BA	Sudeste – TO
Chapada dos Veadeiros – GO	Sudoeste Paulista – SP
Cocais – MA	Vale do Itapecuru – MA
Cocais – PI	Vale do Ivinhema – MS
Cone Sul – MS	Vale do Mucuri – MG
Grande Dourados – MS	Vale do Paranã – GO
Jalapão – TO	Vale do Rio Vermelho – GO

7.6.4 Academic and Scientific Organizations

Another set of governmental institutions involved in environmental affairs are public universities and research institutes. There are now many public colleges and universities in all states, both in the capital cities and the interior, where they have more contact with local realities. Research and training are supported by the Ministry of Science, Technology and Innovation (MCTI), especially through the National Research and Technological Development Council (CNPq), and the Ministry of Education (MEC), especially through the Coordination for the Improvement of Higher Education (CAPES). Faculty are required to do research and extension, although these are secondary to teaching. The states have research support foundations (FAP), which are described in Chapter 11, on investment.

A wealth of data, unparalleled in most developing countries, is produced by the Brazilian Institute of Geography and Statistics (IBGE) and the National Space Research Institute (INPE). IBGE has developed sustainable development indicators (IBGE, 2015). There is no specific federal research institute for the Cerrado, as there are for the Amazon, which has the Amazon National Research Institute (INPA) and the Goeldi Museum (MPEG), and for the Semi-Arid region, which has the National Semi-Arid Institute (INSA). A national research institute for the Cerrado could be proposed in order to help fill the numerous gaps in knowledge and carry out more applied research, especially as regards ecology, economy and sociology. What exists is the Scientific and Technological Network for the Conservation and Sustainable Use of the Cerrado (COMCERRADO), a network of researchers supported by the MCTI focused primarily on biological inventories (Machado 2015).

7.7 Policy and Governance in the Cerrado Hotspot

Brazil started paying attention to the Cerrado as a result of symposia on the Cerrado carried out by researchers in the 1960s. Only then was the name modified from the plural *cerrados* to refer to a unified, singular ecosystem. Government initiatives aimed at conservation and sustainable use of the Cerrado biome are recent, with the first dating back to the preparation of the Rio-92 UNCED Conference. The Constituent Assembly of 1988 did not give the Cerrado, the Caatinga or the Pampas the status of national heritage regions, as it did with the Amazon, the Pantanal, the Atlantic Forest and even the Serra do Mar, which is not a biome.

After the 1960s, the Cerrado was considered to be the main site for expansion of the agricultural frontier, seen by nationalists as the new "breadbasket of the world." Its agricultural occupation took place under the aegis of "conservative modernization" dominated by large-scale commodity production, intensive use of capital and building of infrastructure and new roads, with little or no concern for environmental impacts.

The years after the return to democracy in Brazil in 1985 were marked by major social mobilizations. Environmental organizations, social movements and researchers preparing for the Rio-92 Conference drew attention to the fast pace of Cerrado loss, involving erosion, habitat destruction, decrease of fauna and privatization of areas used by local communities. New civil society organizations and social movements united in the Brazilian NGO Forum. Organizations linked to defense of the Cerrado held parallel meetings and were the embryo of the Cerrado NGO Network.

During the official conference, civil society from various countries participated in the parallel "Global Forum 92". The International Forum of NGOs discussed the same topics as the official conference, and various international covenants were signed, including the International Treaty on the Cerrado, which contained a brief summary of the situation and a list of actions to be taken to curb deforestation and loss of biodiversity, water and territories (La Rovere & Vieira 1992). Afterwards, another meeting of environmental organizations held in Goiânia launched the Cerrado NGO Network. During the IV National Meeting, held in 1999 in Montes Claros, Minas Gerais, it approved the Charter of Principles of the Cerrado Network. A document delivered to the Ministry of Environment pointed out the urgency of setting up a specific program for the conservation and sustainable use of the Cerrado.

After the 2002 federal elections, the Cerrado Network sent a letter to the transition team with three main demands: (a) inclusion of the Cerrado in the Constitution as National Heritage; (b) creation of a comprehensive conservation and sustainable use program; and (c) creation of a specific secretariat for the biome within the MMA, as already existed for the Amazon. The first demand has not been met to date, the second was met, at least in terms of intentions, and the third has resulted in a minor change in the administrative structure so far.

7.7.1 Sustainable Cerrado Program (PCS)

The demand by the Cerrado Network to the MMA for the creation of a comprehensive conservation and sustainable use program was the most feasible. During the celebrations of the first National Cerrado Day, on September 11 of each year, the MMA published Ordinance 361/2003, creating a working group to prepare a program for the conservation of the Cerrado. The working group included representatives of the Cerrado Network, other civil society organizations, federal agencies and state governments. Several public consultations around the biome were held. In September 2004, it presented a proposal for the National Program for the Conservation and Sustainable Use of the Cerrado, which became the Sustainable Cerrado Program (PCS). In early 2004, the Secretary of Biodiversity and Forests created centers for each biome. The Cerrado and Pantanal Center (NCP) was intended to facilitate the integration of MMA actions in the two biomes. The Sustainable Cerrado Program and the National Sustainable Cerrado Program Commission (CONACER) were established in 2005. The commission has equal participation between representatives of government and civil society and is responsible for monitoring implementation of the program.

The aim of the program is to promote conservation, restoration, recovery and sustainable management of natural and agricultural ecosystems as well as appreciation and recognition of their traditional populations, seeking to reverse negative social and environmental impacts through: (i) biodiversity conservation; (ii) sustainable use of biodiversity; (iii) traditional communities and family farmers; and (iv) sustainable agriculture, livestock and forestry. Funding and effectiveness have not met expectations.

7.7.2 GEF Sustainable Cerrado Initiative

In order to carry out program guidelines, the NCP was already in negotiations with the World Bank to submit a proposal to the GEF, which received preliminary approval in November 2005 with an initial USD 13 million grant. Officially called the GEF Sustainable Cerrado Initiative, the project aimed to promote increased biodiversity conservation and enhance the sustainable use of natural resources from the Cerrado biome, through appropriate policies and practices (Viana 2009). Negotiations over this project, however, turned out to be more complex than originally anticipated, and funding only began in 2009. Two states were involved: Goiás and Tocantins. A seminar in June 2015 presented some of the results, with greater focus on the ministerial level than on the states, where environmental secretariats were apparently strengthened.

7.7.3 PPCerrado

In 2009, the MMA released its proposal for the Action Plan for the Prevention and Control of Cerrado Deforestation (PPCerrado), similar in many ways to the plan for the

Amazon (PPCDAm), which was considered highly successful. The new version of PPCerrado launched in 2010 stressed the integration of state and local government efforts to reduce deforestation and fires. It also made clear that without the involvement of the private sector, especially agribusiness, it would not be possible to reduce the loss of the biome (MMA 2011). While the Sustainable Cerrado Program (PCS) can be characterized as guiding and directive, the PPCerrado is more operative, containing actions, detailed goals and deadlines. The PPCerrado proposes an investment of USD 100 million in four thematic areas: (i) sustainable production activities; (ii) monitoring and control; (iii) protected areas and land use planning; and (iv) environmental education. Two projects now under way support the PPCerrado in Brazil: the Program to Reduce Deforestation and Burning in the Cerrado and the Project on Prevention, Monitoring and Control of Illegal Burning and Forest Fires in the Cerrado (Cerrado-Jalapão Project), described in Chapter 11. It focuses on 52 priority municipalities where there has been the most deforestation. These municipalities, which constitute only 4% of the 1,408 in the Cerrado biome, accounted for 44% of the deforestation and 22% of the remaining vegetation during 2009-2010 (MMA 2015). The results of PPCerrado have not met expectations, however.

7.7.4 Program to Reduce Deforestation and Burning in the Cerrado in Brazil

Coordinated by the MMA and using British funds of USD 4.3 million, from the Department for Environment, Food and Rural Affairs (DEFRA), the program’s overall objective is to help mitigate climate change and improve natural resource management in the Cerrado by improving public policies and practices of farmers. There are two components: (i) rural environmental legalization, helping farmers comply with forest legislation through the environmental registry of rural properties and by recovering degraded areas; and (ii) preventing and fighting forest fires, strengthening capacity to prevent and fight forest fires at the federal, state and local levels, and promoting alternative farming practices to avoid the use of fire. The area covered by the program is the entire Cerrado Hotspot, focusing on federal protected areas (Chapada das Mesas, Serra da Canastra and Veredas of Western Bahia) and a few municipalities on the list of priorities for prevention and control of deforestation and burning in Maranhão, Tocantins, Piauí and Bahia.

7.7.5 Cerrado-Jalapão Project

The Program for Prevention, Control and Monitoring of Illegal Burning in the Cerrado in Brazil**,** coordinated by the MMA, supported by financial and technical German Official Cooperation (GIZ) and implemented by federal and state executing agencies, carries out a set of activities aimed at improving the prevention and control of fires and burning in the Cerrado, particularly in the region of Jalapão (Tocantins).

7.7.6 CAR-FIP Cerrado Project

The CAR-FIP Cerrado Project is part of the Brazil Investment Plan, through the Forest Investment Program (FIP) under the Climate Investment Fund (CIF). Carried out by the MMA in partnership with state environmental agencies, it will support implementation of the Rural Environmental Registry (CAR) in the Cerrado in order to reduce deforestation and forest degradation and improve the sustainable management of forests, aiming at reductions in CO_2 emissions and protection of forest carbon stocks.

The project is budgeted for USD 32.5 million through a loan agreement with the FIP as well as USD 17.5 million in matching funds. The activities focus on implementing the CAR in selected municipalities in the biome, by: (i) structuring services; (ii) deeding small family farm holdings; (iii) providing equipment and vehicles to enable inclusion in the CAR; (iv) publicity campaigns; (v) mobilizing farmers and their organizations; (vi) training local facilitators to carry out registration; (vii) strengthening state and municipal partners; (viii) thematic databases; (ix) satellite images; (x) monitoring; (xi) analysis of the CAR results; (xi) a system for joining the Environmental Adjustment Program (PRA); and (xii) diffusing technologies for environmental reclamation of degraded areas.

7.7.7 Forest Service

The SFB has three specific actions for the Cerrado biome: (1) completion of the Forest Inventory, now under way; (2) development of strategies to promote community and family forest management; and (3) providing technical assistance to strengthen community-based forest enterprises through the FNDF. In 2013, the FNDF offered technical assistance to five projects in Minas Gerais and Goiás, benefiting 500 families that collect *pequi*, *buriti*, *mangaba*, *baru* and sour coconut, among other products. There is a specific study about community and family forest management in the Cerrado and another about potential sources of supply for an agroindustry in the Federal District.

7.8 Policy Context in Bolivia

After the election in 2006 of Evo Morales, the country’s first indigenous President, Bolivia's constitution was revised in 2009 to introduce major reforms benefiting many of the country’s peasant and indigenous communities. Morales was reelected in 2014. Internationally, President Morales is known for championing environmentalism. He has accused certain countries of committing "ecocide" against "Mother Earth." The Law of the Rights of Mother Earth was passed in 2010, allowing citizens to sue on behalf of (and as part of) Mother Earth.

However, such measures have done little to stop environmental degradation in Bolivia, which loses between 200,000 and 300,000 hectares of forest each year. This jeopardizes endangered species like the giant otter (*Pteronura brasiliensis*), spectacled bear (*Remarctos ornatus*) and jaguar.

Laws halting deforestation have been eased. For example, the 2013 Law of Restitution of Forests excused landowners from paying fines for land they had illegally cleared before 2011. In 2015, small-scale farmers won support for a proposal to expand from five to 20 hectares the limits on the amount of land small producers are allowed to deforest. The government party has given expansion of the agricultural frontier a fundamental role in development. The expansion of soy production has contributed to deforestation, especially in the southeastern state of Santa Cruz, where the Bolivian Cerrado is located.

In 2009, the Ministry of Sustainable Development and Environment was divided into two new ministries, the Ministry of Environment and Water (MMAyA) and the Ministry of Rural Development and Land (MDRyT). The MMAyA develops and implements public policy, laws, plans and projects for conservation, adaptation and sustainable use of natural resources. It is also responsible for irrigation and basic hygiene with a focus on catchment areas. Bolivia's National Service for Protected Areas (SERNAP) currently manages 21 protected areas.

There are three UNESCO Biosphere Reserves in Bolivia. The Ulla-Ulla and Pilón-Lajas reserves are in the Andes or foothills in the northwest, while the Beni Biosphere Reserve is located at the convergence of three biogeographical zones: the Amazon, Chaco and Cerrado.

Recent policy making in Bolivia has tended to emphasize domestic development based on natural resources. It may also be more difficult to implement conservation measures in the context of administrative decentralization and popular participation.

Another important environmental issue has been the construction of hydropower plants within Bolivia on tributaries of the Amazon River to the north or of the Paraná River to the south, along the borders or downstream in Brazil, as in the case of Jirau and Santo Antônio in Rondônia. The decisions on such projects are subject to influence by Brazilian economic interests.

7.9 Policy Context in Paraguay

The Secretariat of Environment (SEAM) is Paraguay's ministry of environment. The country has 22 protected areas in the National System of Protected Wildlife Areas (SINASIP) under the General Directorate of Protection and Conservation of Biodiversity (DGPCB) of SEAM. The Institute of Environmental Development and Economy (IDEA) declares areas such as Laguna Blanca as Natural Heritage.

IDEA evaluates economic, social and environmental values for companies in Paraguay, ensuring that they comply with social and environmental regulations, drawing up management plans and granting licenses and offering expertise on the use of agro chemicals and managing the environment in accordance with sustainable development.

The area including the Paso Bravo and the Serranía San Luis National Parks is being proposed as a UNESCO Biosphere Reserve. The adjacent areas of the Pantanal and Atlantic Forest biomes on the Brazilian side of the border have been nominated as UNESCO Biosphere Reserves.

7.10 Commitments under Global and Regional Agreements

Brazil, Bolivia and Paraguay are all committed to the Convention on Biological Diversity and the various other Rio-1992 agreements, particularly on climate, desertification and forests, as well as the Basel, Rotterdam, Stockholm and Marrakesh agreements. They are also committed to the Millennium Development Goals (MDG), which include sustainable development, and to the post-2015 process, with the Sustainable Development Goals (SDGs) proposed at the Rio+20 conference in 2012, with 17 goals and 169 targets. Goal 15 ("Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" is especially relevant and can justify increases in funding.

With regard specifically to biodiversity, the three countries are committed to the Strategic Plan for Biodiversity 2011-2020, framed by parties to the CBD at the 10th COP in 2010, with its 20 “Aichi Targets.” Brazil has decided to conserve 17% of each biome (Maretti 2015a). As seen earlier in this chapter, there are also commitments to implement RAMSAR, Man and the Biosphere and World Heritage sites.

The participation of Brazil in the BRIICS (Brazil, Russia, India, Indonesia, China and South Africa), IBAS (India, Brazil and South Africa) and BASIC (Brazil, South Africa, India and China) groupings, although they are not regional associations defined by geography, may be more important than American or Latin American regional groupings in terms of influencing decisions on policies that affect the use of natural resources (Sawyer 2011).

At the hemispheric level of the Americas, Brazil, Bolivia and Paraguay all participate in the Organization of American States (OAS). Relations with Brazil were strained when the OAS condemned it for building the Belo Monte hydropower plant on the Xingu River, and Brazil withdrew its ambassador, with no replacement as yet.

Within South America, Brazil and Bolivia participate in the Amazon Cooperation Treaty Organization (OTCA), which involves explicit concern with the environment. Ties with Mercosul, which includes all three countries, are weak, although there have been some regional negotiations regarding environment. There is no similar concern with South American savannas.

7.11 Conclusions

Generally speaking, environmental governance may be difficult in the next few years in Brazil because of economic and political constraints. In political terms, the Cerrado includes ten different states and 1,408 municipalities, and the trend is to decentralize from the federal level to state and local levels. However, economic interests tend to be stronger than environmental interests at the lower levels than at the central level. In economic terms, it is essential to develop environmental strategies, policies, programs and projects that take more account of costs and benefits, as well as who shoulders the costs versus who enjoys the benefits. This requires a socio-ecosystemic perspective.

There are no intermediate levels of government, like counties in the United States, which would be needed for environmental management on an inter-municipal scale. The Territories of Citizenship involve groups of municipalities. Although they do not have legal powers, they could be useful for joint efforts. As mentioned elsewhere, watershed committees have little influence over land use.

Participation of civil society has been structured into many boards, commissions and conferences at all levels, especially since 2003. In practice, however, qualified and representative participation is problematic, as is effective decision making. Civil society representatives tend to defend their own interests rather than the common good. It may be necessary to aim for governance that may not be perfect, but is "good enough" (Grindle 2012).

It should be noted that there are no global or regional agreements for savannas, as there are for forests, desertification and oceans, among other broad environmental categories.

This lack of international standing limits both national action and international cooperation for the Cerrado and all other non-forest and non-desert terrestrial ecosystems. Brazil could provide leadership in focusing global attention on savannas, as it did with desertification more than two decades ago.

8. CIVIL SOCIETY CONTEXT OF THE HOTSPOT

This chapter provides an extensive examination of the context of civil society players and their potential direct or indirect roles in conservation and sustainable development in the Cerrado Hotspot. For the purposes of this chapter, civil society is defined, as per CEPF, as all the international, national, sub-national and local non-government actors that are relevant to the achievement of conservation outcomes and strategic directions described in Chapter 13. This includes, at least, local and international conservation NGOs, economic and community development NGOs, scientific/research/academic institutions (including local universities), professional organizations, producer and sales associations, religious organizations, media, advocacy groups, outreach/education/awareness groups, education, social welfare, indigenous rights, land reform and the parts of the private sector concerned with the sustainable use of natural resources.

In Brazil, indigenous organizations, labor unions (especially of rural workers, including family farmers) and professional and religious organizations are not primarily environmental, but they are nonetheless important to the environment. Women's organizations can also be relevant, and women are very active in other types of organization.

There can also be associations at all levels (federal, state and local) of the legislative and judicial branches of government, as well as associations of state and local governmental authorities or individuals who are not part of the formal structure of government.

Although in the Brazilian legal and political context it may be difficult to justify donor support to for-profit companies or individuals, the private sector is eligible for CEPF grants. Government officials and employees can have their own organizations that are considered civil society.

8.1 Civil Society Organizations

Until the 1980s, when democracy was re-established in Brazil, there were relatively few CSOs mediating between citizens and governments (Schmitter 1972). Since then, there has been large-scale multiplication of a wide range of organizations and a trend for them to spread the scope of their activities from the Southeast and South to the North, Northeast and Center-West.

There are thousands of civil society organizations in Brazil. According to the FASFIL Mapping of Private Foundations and Non-Profit Associations (ABONG *et al.* 2012), in 2010 there were 290,700 such foundations and associations in the country. They were focused predominantly on religion (28.5%), employers and professional associations (15.5%) and development and advocacy (14.6%). The areas of health, education, research and social assistance, having to do with government policies, totaled 54,100 entities (18.6%). There were 2,242 organizations (0.8%) specifically for environment and animal protection in Brazil, a small percentage – less than 1% – but still a significant number.

Although the proportion of CSOs dedicated to the environment as such is small, all the other organizations deal with environment in one way or another. They all participate in decisions affecting the environment through their participation in councils, commissions and conferences of various kinds. They also affect environment through their influence on the private and public behavior of their members. This magnitude of civil society organizations has few parallels in other countries where CEFP works. The size and complexity make it difficult to carry out specific surveys of their activities and their capacities, as has been done in some other hotspots. Some generalizations are nonetheless possible, as explained below. The main point is that local environmental CSOs can only achieve objectives through working together with the rest of society.

According to FASFIL, the regional distribution of CSOs was unequal, although not very different from the distribution of population. The formal organizations surveyed were concentrated in the Southeast (44.2%), Northeast (22.9%) and South (21.5%), being less present in the North (4.9%) and Center-West (6.5%). In 2010, 2.1 million people were employed in these CSOs, more than 1% of the total population. They were mostly women (62.9%), *i.e.* almost two women for every man in CSOs. The average wages were USD 400 (BRL 1,667) per month, just above twice the minimum wage.

This section describes the various types of CSOs in Brazil, Bolivia and Paraguay as a whole and cites examples, without being exhaustive, especially as regards the local level. Their activities in the hotspot are described in section 8.2. The CSOs described in the subsections below are classified in ten categories as environmental movements, socio-environmental movements, workers and family farmers, indigenous peoples, academic, private sector, semi-governmental organizations, coalitions and fora, philanthropy and media. Political parties are also relevant as representatives of civil society, but they are not included here as a category.

8.1.1 Environmental Movements

The National Environment Council (CONAMA) maintains a National Registry of Environmental Organizations (CNEA) with contact information for each organization that sends in an application and shows that environment is part of its bylaws. The Center-West region, most representative of the Cerrado, lists 74 member organizations. The Northeast has 123, the Southeast 283, the South 125 and the North 44, for a total of 649 in Brazil, 28.9% of the 2,242 environmental organizations in the FASFIL survey. Of the 649 organizations registered in CNEA in Brazil, the Center-West has only 11.4%, behind only the North, which has the smallest population of the macro-regions.

Historically, the Brazilian Foundation for Sustainable Development (FBDS) has played a pioneer role in defense of the environmental cause in Brazil (Franco & Drummond 2008). The environmental movement was originally strongest in Rio Grande do Sul and São Paulo, in the most developed regions, but it has spread to other regions, especially when social and environmental priorities are linked.

The largest international environmental CSOs present in Brazil include WWF, CI and The Nature Conservancy (TNC). WWF and CI both have legal status as Brazilian organizations. As can be seen on their websites, the three are active all over Brazil. TNC was instrumental in negotiating application of the Tropical Forest Conservation Act (TFCA) with the United States to swap debt for nature in Brazil starting in 2010.

Greenpeace and Friends of the Earth have been active for many years, while the World Resources Institute (WRI) has recently established WRI Brazil to work with low-carbon economy. The World Conservation Union (IUCN) set up an office in Brasília. Although Indigenous and Community Conserved Areas (ICCAs), which are common in other countries (Borrini-Feyerabend, Kothari, Oviedo 2004), are not yet well known in Brazil, the ICCA Consortium is now recruiting members in the country. The activities of international CSOs relevant to the Cerrado are described in Section 8.3.

The Socioenvironmental Institute (ISA) is a large, entirely Brazilian organization with main offices in São Paulo and Brasília and field operations among indigenous and non-indigenous local communities, primarily in the Amazon region and the state of São Paulo, but also in parts of the Cerrado Hotspot, as described in Section 8.3.

Friends of the Earth Amazônia (*Amigos da Terra Programa Amazônia*) has done important work on public policies in the Amazon, on management of fire and on the marketing of forest products, especially with regard to gastronomy. It plays an important role in dissemination of news clippings about the Amazon and the environment in general, with some overlap with the Cerrado.

The Boticário Group Foundation for Nature Conservation and the Society for Research on Wildlife and Environmental Education (SPVS), both located in Paraná, in southern Brazil, have been key actors in the Pro-Conservation Unit Network (REDEPROUC). The Boticário Group Foundation has organized seven Brazilian Conservation Unit Conferences (CBUC) since 1997, bringing together conservationists from all over Brazil to discuss and take positions on conservation issues.

Since 1985, the Pro-Nature Foundation (FUNATURA), located in Brasília, has been a key player in conservation in Brazil. On a national scale, it played a leadership role in the late 1990s in the design of and negotiations over the law that governs the National System of Nature Conservation Units (SNUC). It works primarily in the Cerrado (see Section 8.3).

After working mostly on research in the Amazon, the Institute for Society, Population and Nature (ISPN), based in Brasília, has focused mainly on the Cerrado since 1995. As Technical-Administrative Coordination of the GEF-UNDP Small Grants Program and the *Programa de Pequenos Projetos Ecossociais* (PPP-ECOS), it has supported local communities in the Cerrado, the Caatinga and the Amazon. The ISPN also works with environmental management of indigenous lands. It is engaged in policy advocacy at the national level regarding rural development and public health regulations.

The Brazilian Forum of NGOs and Social Movements for Environment and Development (FBOMS), established during preparations for the Rio-1992 Conference, is a national umbrella network including dozens of CSOs that are primarily or at least significantly involved with the environment. It has 11 working groups, including Forests, Climate and Socio-biodiversity, among others, and participates in international networks. Its main office is in Brasília.

There are regional networks such as the National Council of Extractivist Populations (CNS, formerly the National Rubber Tappers Council), the Amazon Working Group (GTA), the Atlantic Forest Network (RMA), the Cerrado Network, the Pantanal

Network and the Carajás Forum. There are various state networks focusing on more than one biome such as the Mato Grosso Forum for Environment and Development (FORMAD), which includes the Amazon, Cerrado and Pantanal. The Atlantic Forest Network is more environmental than social, while other networks, in less devastated biomes to the north and west, tend more towards socio-environmental issues.

National thematic networks, without specific geographic focus, but which are active in or influence the Cerrado, include the Climate Observatory (OC), with 32 members, and the Environmental Education Network (REBEA). The Brazilian Semi-Arid Education Network (RESAB) has both a thematic and a geographic focus. The Brazilian Environmental Information Network (REBIA) works to disseminate information. The Brazilian Local Agenda 21 Network (REBAL) works with Agenda 21 issues at the municipal level. The Consultants and Services for Alternative Agricultural Projects (AS-PTA) works with appropriate technological alternatives. The National Agroecology Association (ANA) promotes organic and agro-ecological methods all over Brazil. The Brazilian Association of Water Resources (ABRH) works with water. All of these thematic networks are present in the Cerrado, but could increase the attention they give to the hotspot and be more active, effective and engaged in relevant policy issues.

8.1.2 Socio-Environmental Movements

The most important national and regional associations or networks are listed below in Table 8.1. Some of them have specific working groups on subjects such as forests and climate.

Table 8.1. National and Regional Civil Society Organizations.

ABONG	Brazilian Association of NGOs
APIB	Brazilian Indigenous Peoples Association
Articulação Pacari	Pacari Network
Caritas Brasileira	Caritas
CONAQ	National Coordination of Quilombola Communities
FBOMS	Brazilian Forum of NGOs and Social Movements for Environment and Development
REBEA	Brazilian Environmental Education Network
Rede Cerrado	Cerrado Network
REJUIND	Indigenous Youth Network

On the whole, despite their efforts, civil society associations and networks face difficulties keeping their organizations afoot and gaining any sway over public policy.

Since there are many more social CSOs than environmental CSOs in the hotspot, and the large national and international environmental CSOs are most active in other biomes, there might be a shortage of environmental CSOs dedicated primarily to the environment and in particular in the Cerrado. At the same time, however, social movements have undergone a "greening" process, as they gain more concern about environmental issues. Meanwhile, a more limited "reddening" of environmental movements has stimulated their concerns over social dimensions. Thus, reference is made here to "socio-environmental" or “eco-social” organizations and movements, which play a strategic role.

The Brazilian Association of NGOs (ABONG), a nationwide network with headquarters in either Rio de Janeiro or São Paulo, depending on its coordination, is more involved in urban issues in the most developed regions of Brazil, although it has also spoken out on some environmental issues affecting the rest of the country.

The Amazon Working Group (GTA), the National Council of Extractivist Populations, and the Semi-Arid Network (ASA) tend to be more social than environmental, but are key stakeholders and protagonists regarding environment in general.

The Pastoral Land Commission (CPT), led by the National Conference of Catholic Bishops (CNBB), defends the interests of small farmers in rural areas and is increasingly concerned about the environment. The Marista Solidarity Institute (IMS) promotes social inclusion and human solidarity. The Catholic Church has a universal presence in Brazil, although it is stronger in areas of rural out-migration like Minas Gerais than in frontier and urban areas. The leadership of Pope Francis on “integral ecology” (Alves 2015) has begun making the work of the Catholic Church even more relevant to environmental stewardship.

The Federation of Organizations for Social and Educational Assistance (FASE), based in Rio de Janeiro, is an important organization providing support for socio-environmental initiatives in grassroots communities, including Mato Grosso.

8.1.3 Workers and Family Farmers

Workers in the formal sector are an official social category in Brazil. They are important in terms of public policy, especially since the Workers’ Party took office in 2003. In some cases, workers’ CSOs in urban areas or in industry provide direct or indirect support to rural CSOs or groups.

There are both urban and rural labor unions in every municipality in Brazil, including 1,408 of each kind in the official Cerrado biome. Rural labor unions such as the Rural Workers Union of Lucas do Rio Verde (STRLRV), in northern Mato Grosso, which denounced aerial spraying of pesticides, can make outstanding contributions involving rural workers and their organizations in environmental causes and increasing the visibility of socio-environmental issues.

Each local (municipal) labor union is affiliated with a state federation formally recognized by law. The Unified Workers’ Center (CUT), the main national labor movement, has spoken out on environmental issues. There are now various other national worker organizations such as Labor Strength (*Força Sindical*), General Workers’ Union (UGT), Confederation of Brazilian Workers (CTB), General Central of Brazilian Workers (CGTB), *Nova Central, Intersindical* and *Conlutas*.

The National Confederation of Workers in Agriculture (CONTAG) and the National Federation of Men and Women Workers in Family Agriculture (FETRAF) are more directly relevant to and involved in the environment. Officially, independent small family farmers are members of farmworkers’ labor unions, under the CONTAG.

FETRAF is informal. There are numerous cooperatives of both small and medium farmers, organized at the national level by the Brazilian Cooperative Organization (OCB). The National Union of Family Farmer Cooperatives and Solidarity Economy (UNICAFES), founded in 2005 in Luziânia, Goiás, and based in Brasília, defends sustainable local development through cooperatives of small farmers.

There are various unofficial rural worker movements such as the Landless Workers' Movement (MST), the Small Farmers' Movement (MPA), and the Countryside Workers' Central (CTC), which have become "greener". *Via Campesina* is an international network.

8.1.4 Indigenous Peoples

Indigenous organizations merit specific attention because of the importance of indigenous lands for conservation of biodiversity and maintenance of ecological functions. They can also spread awareness about harmonious relations between nature and culture in the population at large.

The Union of Indigenous Nations (UNI), founded in 1980, and more recently the Brazilian Indigenous Peoples Network (ABIP) are the main nationwide indigenous organizations. There is also a National Commission of Indigenous Youth (CNJI) and an Indigenous Youth Network (REJUIND). Regional indigenous associations include the Coordination of Indigenous Organizations of the Brazilian Amazon (COIAB), the Network of Indigenous Peoples and Organizations of the Northeast, Minas Gerais and Espírito Santo (APOINME), other regional networks for the South, Southeast and Pantanal, the Federation of Indigenous Organizations of the Rio Negro (FOIRN) and the Mobilization of Indigenous Peoples of the Cerrado (MOPIC). At the more local level, there are associations, such as Vyty-Cati, for the Gê groups in Maranhão, Tocantins and Pará, Juruena Vivo, in the Juruena region of Mato Grosso, and Anaí Bahia, in Bahia.

The Missionary Indigenist Council (CIMI), also led by the Catholic Church's CNBB, has played and continues to play an important role in indigenous affairs all over Brazil. The Amazon Cooperation Network (RCA) includes some Cerrado indigenous or indigenist organizations. NGOs that work closely with indigenous peoples include the Socioenvironmental Institute (ISA), mainly in the Upper Rio Negro and the Xingu Indigenous Park; the Center of Indigenist Work (CTI), mainly in Maranhão and Tocantins; the Pro-Indigenous Commission (CPI), mainly in Acre; the Native Amazon Operation (OPAN), mainly in Amazonas and Mato Grosso; and the International Institute of Education in Brazil (IEB), mainly in Amazonas. Of these indigenist organizations, only CTI and OPAN work in the Cerrado, at least so far.

8.1.5 Academia

The main academic and scientific organizations in Brazil are listed in Table 8.2. Through their meetings and publications, the academic and scientific organizations provide for exchange of information at the national level and also for some contact with researchers from other countries. Their interest in and potential to influence public policies and private practices are limited.

Table 8.2. Academic and scientific organizations in Brazil.

ABA	Brazilian Anthropology Association
ABEP	Brazilian Population Studies Association
AGB	Association of Brazilian Geographers
ANPEC	National Association of Graduate Centers in Economics
ANPEGE	National Association of Graduate Study and Research in Geography
ANPOCS	National Association of Graduate Study and Research in Social Sciences
ANPAD	National Association of Graduate Study and Research in Administration
ANPPAS	National Association of Graduate Study and Research in Environment and Society
SBPC	Brazilian Society for the Progress of Science

The creation of the Brazilian Agricultural Research Corporation (EMBRAPA) of the Ministry of Agriculture, Livestock, and Food Supply in 1973 has generated technology for Brazilian agriculture, especially in the Cerrado. EMBRAPA's headquarters are in Brasília, and there are 17 administrative units around the country, including EMBRAPA Cerrados, located outside of Brasília.

The Research Institute at the Rio de Janeiro Botanical Garden (JBRJ) is another important scientific institution. One of its main institutional objectives is to support public policy initiatives that meet the needs of conservation and rational use of the plant genetic resources in Brazil. Its National Center for Plant Conservation (CNCFlora) is responsible for gathering all available data to assess the conservation status of species of national flora and defining action plans to remove them from the list of endangered species. In addition to the Red List of the Brazilian Flora published in 2013, the CNCFlora has been working on the risk assessment and conservation action plan (PAN) for rare plants of the Cerrado (Martinelli *et al.* 2014). The Biodiversitas Foundation, in Belo Horizonte, Minas Gerais, compiled the list of threatened fauna (Machado *et al.* 2013).

8.1.6 Private Sector

There are various business associations, state federations and national confederations in the private sector, as well as vocational training and support services for industrial, commercial and agricultural workers. The main organizations and associations in the private sector in Brazil are listed in Table 8.3.

Seeking competitive differentials and reputational advantages, the private sector has increasingly included the environment as part of corporate social responsibility. Many large firms publish annual social and environmental reports. There is now a stock exchange for environmental assets in Rio de Janeiro (BVRio and BVTrade). There are various kinds of seals and certifications such as the Forest Stewardship Council (FSC) for forest products and the Biodynamic Institute for organic products. Some large companies seek to keep their supply chains clean. This is especially relevant for companies that export products and seek to avoid non-tariff barriers (Nepstad *et al.* 2006). For medium and small business, as well as individual entrepreneurs, on the other hand, the process is more difficult.

Table 8.3. Brazilian Business Associations

Acronym	**Association**
ABAG	Brazilian Agribusiness Association
ABIOVE	Brazilian Association of Vegetable Oil Industries
ABRAS	Brazilian Association of Supermarkets
AIBA	Farmers and Irrigation Association of Bahia
APCD	Association for Direct Seeding in the Cerrado
APROSOJA	Association of Producers of Soybeans and Corn
CEBDS	Brazilian Business Council for Sustainable Development
CAN	National Agricultural and Livestock Confederation
CNI	National Confederation of Industry
IBÁ	Brazilian Tree Institute
Instituto Ethos	Ethos Institute of Companies and Social Responsibility
OCB	Brazilian Organization of Cooperatives
SENAC	National Service of Commercial Apprenticeship
SENAI	National Service of Industrial Apprenticeship
SENAR	National Service of Rural Apprenticeship
SNA	National Society of Agriculture
SRB	Brazilian Rural Society

In the Cerrado, the Cerrado No-Till Farming Association (APDC) has been successful in promoting minimum tillage and integrated crop-livestock systems (Landers *et al.* 2005; Landers 2015). The Association of Farmers and Irrigation in Bahia (AIBA) works in the western part that state, where frontier expansion is intense. The Round Table on Responsible Soy (RTRS) is engaged in keeping the supply chain clean. It has mapped "go" and "no go" zones according to the location of High Conservation Value Areas (HCVA). Most of the Amazon is off limits, but much of the Cerrado can be used under certain conditions (panda.maps.arcgis.com). RTRS provides certification, which remains very limited. The Maggi group seeks compliance with the Forest Law and exports non-GMO soy. The paper and pulp industry is particularly concerned about publicizing its benefits for carbon sequestration and has supported private reserves (Carvalhaes 2015).

To meet consumer demands, many supermarkets have included specific sections for organic products, which sell at higher prices. The *Pão de Açúcar* chain, one of the largest in Brazil, includes community products in its *Caras do Brazil* program. The

Brazilian Association of Supermarkets (ABRAS) has joined the chorus of complaints over scant government support to offset the high cost of sustainable production.

The "S" System's national apprenticeship services (SENAI, SENAC and SENAR) provide vocational training that includes environmental issues. The National Agriculture and Livestock Confederation (CNA) has a special program for youth, who are more open to new technologies.

Rural employer syndicates in each municipality are organized in state federations such as the Federation of Agriculture and Livestock of the State of Mato Grosso (FAMATO) and also the National Confederation of Agriculture and Livestock (CNA) at the federal level. The so-called "ruralists," organized in their congressional caucus or bloc called the Parliamentary Agriculture and Livestock Front, are a major political force. There are also national confederations of industry (CNI) and commerce (CNC). The three confederations work with government relations through their offices in Brasília. The CNI adopted an Agenda 21 for Industry, but the environment has not been a priority, and there is no parallel for agriculture or commerce.

The National Agriculture Society (SNA), located in Rio de Janeiro, was established in 1897, and the Brazilian Rural Society (SRB) was established in São Paulo in 1919. Both are supported by their members. The Brazilian Association of Agribusiness (ABAG), created in 1993, has held 13 national congresses since then. These associations brought together various groups that previously operated in parallel, such as producers of sugar, coffee and beef. Although they are traditional defenders of the large-scale agricultural sector, they have begun to embrace environmental causes.

Some of the other important private sector institutions or organizations in Brazil and their specific initiatives are:

- The Cerrado No-Till Farming Association (APDC) has been very successful in promoting zero-tillage technology, which reduces erosion and keeps biomass in the soil, although it consumes large amounts of pesticides.
- The Brazilian Soybean Producer Association (APROSOJA) began in Mato Grosso and expanded all over Brazil. There is also a Brazilian Association of Vegetable Oil Industries (ABIOVE). They have sought to embrace sustainability through participation in the Round Table on Responsible Soy (RTRS) with support from WWF and Greenpeace.
- The Brazilian Tree Institute (IBÁ) claims to reduce carbon emissions through tree plantations, primarily eucalyptus, grown on a large scale in Minas Gerais and now spreading through other states.
- The Sugarcane Industry Union (UNICA) is the organization that represents sugarcane planters and processors. It claims that use of sugarcane ethanol is one of the best ways to reduce emissions and contests allegations that it involves deforestation, directly or indirectly.
- The Brazilian Federation of Banks (FEBRABAN), which represents the great majority of Brazilian banks, has the stated purpose of contributing to economic, social and sustainable development.
- The Brazilian Association of Supermarkets (ABRAS) includes state-level associations of a sector that is responsible for 6% of the GDP and has direct

contact with consumers. Many supermarkets now have special sections for organic food.

- The Rio de Janeiro Environmental Stock Exchange (BVRio) seeks to promote market mechanisms that can contribute to compliance with environmental regulations and policies.
- The Brazilian Business Council for Sustainable Development (CEBDS) was founded by a group of business leaders after the Rio 1992 Conference. Its members include 70 of the largest business groups in the country, accounting for 40% of GDP. CEBDS is the representative in Brazil of the World Business Council for Sustainable Development (WBCSD).

8.1.7 Semi-Governmental Organizations

Government agencies as well as individual authorities and civil servants participate in various organizations that are not part of the formal government structure. The Brazilian Association of State Environmental Agencies (ABEMA) is for state-level agencies, including the agencyof the Federal District, while the National Association of Municipal Environmental Agencies (ANAMMA) and its associations in each state involve local authorities.

The employees of the MMA and its environmental agencies have workers’ unions and civil-servant associations such as ASIBAMA, ASSEMA and ASCEMA, which often speak out on matters of policy, demanding more rigorous enforcement of environmental laws and more support for protected areas. There is a National Council of Public Attorneys (CNMP), a key group for environmental law enforcement.

The Social Technology Network (RTS) brings together various federal government agencies, nongovernmental organizations and research institutions that disseminate technologies that are developed with and are appropriate for replication by local communities.

In the National Congress, there is a parliamentary caucus for environment (*Frente Parlamentar Ambientalista*) with support from the SOS Atlantic Forest Foundation (SOSMA). The president of the caucus, former Minister of Environment José Sarney Filho, defends specific laws for each Brazilian biome, following the example of the Atlantic Forest Law, approved in 2006. There is now a specific congressional caucus to defend the Cerrado, involving 201 federal deputies and three senators led by Federal Deputy Augusto Carvalho from the Federal District. However, there is an even stronger “FPA” caucus on the other side, in which "ruralists" in large numbers in the *Frente Parlamentar da Agricultura* join forces against environmental and indigenous causes.

8.1.8 Coalitions and Fora

There are various inter-sector coalitions or fora that combine different types of CSOs and could be relevant for the environment in the Cerrado Hotspot. For example, in order to influence multilateral negotiations on forests, some companies came together with the Brazilian Business Council on Sustainable Development (mentioned above), the Ethos Institute, the Forest Dialogue, the Climate Observatory and Brazilian CSOs such as CI, Greenpeace, ISA, IMAFLORA, WRI and WWF to create the Brazil Coalition on

Climate, Forests and Agriculture. Their goal is to promote dialogue among the different stakeholders and the federal government.

The Brazilian Solidarity Economy Forum (FBES) brings together small-scale collective enterprises, civil society and government authorities related to sustainable use of biodiversity.

The Brazilian Environmental Education Network (REBEA) has the interesting characteristic of allowing individual memberships rather than restricting participation to organizations, as is the rule in most networks, which exclude civil servants, university professors, staff of international organizations and other interested individuals who could have much to contribute..

An inter-sector forum that could be relevant to the Cerrado and serve as a model for similar initiatives involving conservation and sustainable use of biodiversity is the Brazilian Forum on Climate Change (FBMC), created in 2000, which brings together government, academia and civil society. Climate has high international visibility and is related to biodiversity through land use, land use change and forestry (LULUCF).

8.1.9 Philanthropy

The main foreign foundations that have been active in Brazil in the area of the environment are the Ford Foundation, MacArthur Foundation and Gordon and Betty Moore Foundation. The Mott, Skoll, Packard and Oak foundations have arrived more recently, as has Climate Works. The Climate and Land Use Alliance (CLUA), which involves the Ford, MacArthur and Packard foundations and Climate Works, has been active in the Amazon and is now analyzing what might be done in the Cerrado. It defends zero deforestation.

Philanthropy within Brazil is historically weak, with few signs of improvement. The traditional feeling is that government is responsible for everything. The government provides tax exemptions only for culture under the Rouanet Law, run by the Ministry of Culture. Some socio-environmental initiatives might qualify.

The Ecumenical Coordination of Service (CESE) is a joint effort of Christian churches that supports local organizations in the defense of human rights. The Socioenvironmental Fund called CASA provides small grants to these organizations with more emphasis on the environment.

The Bank of Brazil Foundation (FBB) has supported local initiatives in the area of environment, including parts of the Cerrado. The Bank of the Northeast (BNB) and the Regional Bank of Brasília (BRB) have also supported various projects. Santander, Itaú and some other private banks provide limited support for environmental initiatives.

8.1.10 Media

Newspapers in large metropolitan areas, mainly São Paulo and Rio de Janeiro, have regular sections and columns on the environment. The federal government’s Brazilian Communication Company (EBC) has a program on “Our Environment.”

Radio is the traditional medium for the rural areas of Brazil, especially in more remote regions, but television is now widely available, as are internet and cellular telephones. National Radio has special programming that includes environment. The Globo network, the major communication company in Brazil, has programs on the environment, and its specific program for rural areas includes some environmental issues and examples of best practices.

The Brazilian Press Association (ABI) is concerned primarily with freedom of the press. There is a Brazilian Network of Environmental Journalism (RBJA), which has congresses every two years. There are numerous websites dealing with environmental issues and providing clippings of relevant news stories.

Bolivia and Paraguay can take advantage of material developed in other Latin American countries where Spanish is spoken, in addition to material provided through Spain's international cooperation, which is not highly focused on rain forests, but includes dry lands and desertification.

8.2 Operating Environment for CSOs

The National Environment Council (CONAMA), established in 1981, during the transition from military to civilian rule, was a pioneer in civil society participation in Brazil. Since then, especially in the past 12 years, numerous opportunities have opened up to CSOs for participation in governmental councils (IPEA 2013). There have also been many national conferences, with state and regional preparatory conferences, as was the case with the National Environment Conferences held in 2003, 2005, 2008 and 2013, inspired by the National Health Conferences.

There are serious difficulties with the legal framework for associations in Brazil, especially for local organizations outside the capital cities and close to nature. There is no legal status for NGOs as such, with that terminology, although the acronym ("ONG" in Portuguese) is in common use. They are now classified as CSOs. In order to have legal standing, nonprofit associations must have bylaws, annual assemblies, elected officers, fiscal councils and accountants, among other requirements.

It is very difficult to comply with official rules regulations regarding expenditures of government funds, which require bidding and complex accounting and reporting. There are various agencies to monitor and enforce regulations, such as the Federal Accounts Court (TCU). Non-compliance requires returning all the funds with interest and monetary correction for inflation, even after many years. Any association in Brazil must obey the labor legislation, which requires 30 days of paid vacation, a 13th month's wage, maternity leave, payment of social security and payment into a severance fund, among other payroll expenses.

The government has created "Social Organizations" (OS) and "Public Interest Civil Society Organizations" (OSCIPs) to facilitate operations in some cases, but such organizations are rare, and they still face major difficulties. A new legal framework for civil society organizations is being debated, and a congressional bloc to defend CSOs has been created, but many of the shortcomings remain in the drafts being considered. A new framework would at least help, even if it does not solve all the problems.

Formal organization is not always compatible with the necessary informality of family and community organizations, especially in rural areas. The "impersonality" (*i.e.*, not hiring or otherwise benefiting any family, relatives or friends, regardless of merit) required in the public sector is incompatible with family and community organization based on kinship. Productive activities based on nature are diverse, with multiple locations in space and seasonality over time. They are not continuous and routine, as in urban industry or commerce. This makes it much more difficult to maintain administrative structures year round for small financial turnovers and to comply with labor laws, which presume long-term, formal employment.

Nonprofit organizations are not eligible for bank credit. Cooperatives for small farmers can get bank credit, but have difficulty in complying with complex bureaucratic requirements and finding reliable leaders. "Social enterprises" such as FrutaSã, in Carolina, Maranhão, owned by the Vyty-Cate indigenous association, are non-profit private companies. This form of organization manages to solve problems such as access to credit, but it is still very rare.

Because of recent economic growth, on the one hand, and recent global and domestic economic crises, on the other, funds from the Brazilian government and from international donors are drying up. Some CSOs have now become inactive, closed down or face disappearance.

At the political level, many environmental CSOs express frustration regarding the results of their participation in government councils and conferences. This was further expressed during the consultation process for the ecosystem profile. They feel they have legitimized decisions with which they do not agree. There are complaints of cooptation. There is much radicalization and polarization and little seeking of compromise or a middle ground. At the same time, of 11,338 rural conflicts surveyed by the CPT between 2005 and 2014, 39% were in the Cerrado (Clark 2015). Environmentalists, rural workers and indigenous leaders are being murdered in the interior of Brazil. Socioenvironmental conflicts are widespread (Assad *et al.* 2009). Chico Mendes is not alone.

8.3 Civil Society Programs and Activities in the Cerrado

This section describes the main national and local organizations that are active in socio-environmental issues the Cerrado Hotspot. An extensive, although not exhaustive, list of civil society organizations is provided in Appendix 5.

The Cerrado Network, a legacy of the "Cerrados Treaty" signed by NGOs at the Rio Conference in 1992, involves hundreds of local civil society organizations. It organizes biannual national meetings and fairs of Cerrado peoples. Its role in public policy is described in Chapter 7. Because of lack of funding for the Cerrado, its office is now closed, and it has no more staff of its own. It operates through its member organizations.

State or regional networks, at intermediate levels between the local and national groupings, include, among others, the Mato Grosso Forum for Environment and Development (FORMAD), the Forum of Environmental NGOs of the Federal District and Surroundings, and the Carajás Forum, which works in Maranhão (especially the lower Parnaíba), Tocantins and Pará.

The Cerrado Center (*Central do Cerrado*), based in Brasília, is a second-order cooperative joining 30 cooperatives from all over the Cerrado to market a wide range of sustainable-use biodiversity products. It ensures high visibility for these products in the national capital.

The Pacari Network works with medicinal plants at the community level in the Cerrado, primarily in Goiás and Minas Gerais, and has begun to develop cosmetics for formal markets because of the difficulties of compliance with rigorous regulations for health products. It won the UNDP Equator Prize in 2012.

The Mobilization of Indigenous Peoples of the Cerrado (MOPIC), created in 2008, is a network that seeks to unite indigenous groups in approximately 100 Indigenous Lands throughout the hotspot. Previously, Cerrado indigenous groups were a minor part of larger organizations in Brazil or the Amazon basin. MOPIC is part of the Cerrado Network. Vyty-Cate, in Maranhão and Tocantins, the Kanindê Ethno-Environmental Defense Fund, in Rondônia, and Wara, in Mato Grosso, are examples of local indigenous or indigenist associations.

The largest international environmental NGOs most active in the Cerrado are WWF and TNC, both of which have their main offices in Brasília, and CI, which has its main office in Rio de Janeiro and a small office in Brasília.

WWF carries out the trinational Cerrado-Pantanal project in the entire Upper Paraguay River basin, including Mato Grosso do Sul, Mato Grosso, Bolivia and Paraguay. The focus is on freshwater ecosystem conservation, protected areas, sustainable value chains and territorial planning, including the three countries. WWF also works with the Sertão Veredas-Peruaçu Protected Areas Mosaic in northern Minas Gerais. It prepared an important photographic exhibit on the Cerrado that was on display at the Brasília airport for several months in 2015.

TNC helps rural landowners comply with the Forest Law in western Bahia and northern Mato Grosso, in close association with agribusiness, including the Bunge corporation. It also works closely with indigenous groups, mostly in the Amazon region.

CI operates at various sites in the Cerrado, including the Bananal Island corridor, along the middle stretch of the Araguaia River, and Jalapão, in the region known as MAPITOBA (Maranhão, Piauí, Tocantins and Bahia), with the Monsanto company. It proposes Sustainable Agricultural Landscapes (PAS). It also collaborates with the Laboratory of Image Processing and Geoprocessing (LAPIG) at the Federal University of Goiás (UFG) regarding georeferenced mapping.

As mentioned in Section 8.1, the Socioenvironmental Institute (ISA) is a large Brazilian NGO based in Brasília. Its work in the Cerrado is carried out in the transition to the Cerrado in the southern part of the Xingu Indigenous Park and in northeastern Mato Grosso, where it promotes compliance with the Forest Law through planting of native seeds and seedlings. It plays a key role in national networks and in policy dialogue.

The Institute for Society, Population and Nature (ISPN), based in Brasília and with a branch office in Maranhão, is one of the middle-size Brazilian NGOs that work mostly in the Cerrado. Founded in 1990, it has participated in work on conservation and biodiversity (priority areas and actions, conservation law). It was secretariat of the Cerrado Network. Since 1995, it has managed the GEF-UNDP Small Grants Program, supporting 380 projects carried out by 275 local or regional organizations all over the Cerrado, as well as organizations in the Caatinga, the Northeast and the Arch of Deforestation, the transition between the Cerrado and the Amazon. The National Steering Committee selects projects from a pool of applicants that is seven times greater than the number that can be supported.

The Pro-Nature Foundation (FUNATURA), mentioned previously because of its national role in conservation, focuses primarily on the Cerrado. It has played a central role in the Cerrado Network. It helped create the Grande Sertão Veredas National Park with the first debt-for-nature swap in Brazil in 1991. With support from GEF, it promoted Private Natural Heritage Reserves (RPPNs) and created one of its own in Pirenópolis, Goiás. FUNATURA is now active mainly in the Sertão Veredas-Peruaçu Protected Areas Mosaic in northern Minas Gerais.

The Brazilian Agency for Environment and Information Technology (ECODATA), based in Brasília, has provided capacity development for communities to write proposals for government funding to set up local agro-extractivist processing plants. ECODATA is also very active in the National Congress, especially in the Commission on Environment and Sustainable Development (CMADS). In 2015, it organized a two-day seminar in the National Congress on norms for conservation and sustainable use in the Cerrado.

The main subregional or state-level organizations that work in the Cerrado primarily with the environment or give it high priority are ICV, FORMAD, ECOA, AMAVIDA, AMDA, CEDAC, Rede Terra, IBRACE, IPEC, IPÊ, Terra Brasilis and Pró-Carnívoros. As can be seen in Appendix 5, there are about 100 other organizations that are not primarily environmental but work on related issues and are indispensable partners in efforts to protect the hotspot ecosystem.

Brazilian social movements active in the Cerrado include the National Confederation of Agricultural Workers (CONTAG), the National Federation of Men and Women Workers in Family Farming (FETRAF), the Pastoral Land Commission (CPT), the Landless Workers' Movement (MST), the Small Farmers' Movement (MPA) and the Rural Workers' Movement (MTC), among others. The CPT, with headquarters in Goiânia, Goiás, has launched a specific campaign to defend the Cerrado. These social movements are all increasingly concerned with the environment, in part because of their own needs and interests and in part because the environment is a way for them to criticize big business. Experience shows that projects on the environment can spur social movements to put “green” issues on their own respective agendas, without attempting to create and maintain strictly environmental CSOs, which would be an unrealistic undertaking in the Cerrado, given bureaucratic barriers, high costs and reductions in funding.

In academia, the main federal universities in the Cerrado Hotspot are located in Brasília, Minas Gerais, Goiás, Mato Grosso, Mato Grosso do Sul, Tocantins and Maranhão. There are also various state and private universities. Graduate programs in environmental sciences and sustainable development are offered at the University of

Brasília (UnB), which has specialists in the Departament of Ecology, a herbarium specialized in the Cerrado and a center in Alto Paraíso, Chapada dos Veadeiros, Goiás. The UnB campus in Planaltina has strong focus on the Cerrado. The Federal University of Goiás (UFG) has a laboratory specialized in monitoring and mapping (LAPIG). There is a specific Network for Geographic Genetics and Regional Planning for Conservation of the Cerrado (GENPAC). The Ministry of Science, Technology and Innovation (MCTI) supported the creation of the Scientific and Technological Network for Conservation and Sustainable Use of the Cerrado (COMCERRADO), which held planning meetings and carried out research on the biome (Machado 2015).

In 2015, the Center of Excellence of Cerrado Studies (Cerratenses) at the Brasília Botanical Garden (JBB) set up a Cerrado Alliance of 32 governmental and nongovernmental research centers. It houses the National Center for Research and Conservation of the Biodiversity of the Cerrado and Caatinga (CECAT) of the Chico Mendes Institute for Biodiversity Conservation (ICMBio) in addition to the International Reference Center on Water and Transdisciplinarity (CIRAT), providing for rich exchanges. In addition to science and technology, Cerratenses also stresses cultural dimensions.

Among semi-governmental organizations, there is a specific Forum of State Secretaries of Environment of the Cerrado. This is especially important in the context of decentralization of environmental management in Brazil, with states implementing federal policies and making their own laws, policies and administrative structures. The government of the Federal District is willing to play a leadership role.

8.4 Civil Society Capacity in the Cerrado

With few exceptions, civil society capacity in the Cerrado is at intermediate levels. On the one hand, it is very difficult for CSOs to comply with unrealistic government regulations, which do not fund administrative expenses and require complex bidding and financial reporting, among many other bureaucratic difficulties intended to avoid corruption. Use of internet is mandatory. There is also limited knowledge in civil society about the complex legal frameworks and government policies and programs relevant to the environment, as described in Chapter 7. There are regional variations, with the strongest organizations in the national and state capitals and limitations in the interior.

In the Cerrado, civil society capacity is highest in the states of São Paulo and Minas Gerais, including the interior. It is also high in the Federal District, Brazil's national capital, although most of the organizations located there operate at a larger scale, reaching other states. Even the organizations with the highest capacity need institutional strengthening, as was made clear in the consultation workshop with civil society. One of those needs regards implementation of the new Regulatory Framework for Civil Society Organizations (MROSC).

The lowest levels of civil society capacity, on the other hand, with a few exceptions, are in the western parts of the states of Piauí and Bahia, especially as regards the environment. However, labor and religious movements are present in these areas, as is the private sector. While there is little explicit concern with environment, the CSOs are all very concerned about water, which depends on land use and land cover, *i.e.*, biodiversity.

Indigenous groups are strongest in the Amazon, where there are more people, more land and more sources of international support, especially from Germany and Norway, as well as connections with indigenous groups in neighboring countries. In the Cerrado, MOPIC is isolated and in need of specific support. One key issue, once land is secured, is how to generate income from sustainable use of natural resources and, in some cases, ethnotourism.

The private sector is well organized in the Cerrado in sectoral associations such as the Brazilian Soybean Producer Association (APROSOJA) and the Brazilian Association of Vegetable Oil Industries (ABIOVE). It has also participated in the Round Table on Responsible Soy (RTRS). There is a specific organization for coffee, gourmet varieties of which are now produced in the Cerrado. The Cerrado No-Till Farming Association (APDC) has brought about a remarkable shift in crop management and defends conservation. There is increasing concern about the environment because of market pressures and because of prospects of scarcity of water, which is already being felt by coffee growers in Minas Gerais, who may also be pushed south by climate change. The private sector in the Amazon region has previous experience with the Soy Moratorium, which was a boycott of soy from recently cleared areas, supported by the Brazilian government. However, since it applied only to the Amazon and excluded the Cerrado, it could cause leakage back to the south. There could also be the same kind of moratorium on purchases of soy or beef from areas that have been cleared recently in the Cerrado.

8.5 Civil Society in Bolivia and Paraguay

International environmental organizations are active in Bolivia and Paraguay. CI has worked in Bolivia since 1987 on conservation and connectivity with public policy and civil society. Eastern Paraguay’s Gura Reta Reserve in the San Rafael Forest benefits from a USD 1 million endowment fund established by CI’s Global Conservation Fund (GCF), the World Land Trust (WLT) and Guyra Paraguay Association, a partner of BirdLife International, which is a leading conservation organization in Paraguay.

WWF has a tri-national program on the Cerrado-Pantanal that operates in Brazil, Bolivia and Paraguay. It has offices and staff working together in all three countries. The program’s objectives are biodiversity conservation through creation and implementation of protected areas, preservation of species, incentives for economic activities with low environmental impact and promotion of sustainable development.

The GEF-UNDP Small Grants Program (SGP), known as *Programa de Pequeñas Donaciones* (PPD), is active in both Bolivia and Paraguay, working with the focal areas of conservation and sustainable use of biodiversity, land degradation and climate change. It provides small grants to NGOs and community-based organizations. The SGP in Bolivia supports protected areas in the Chaco.

Civil society organizations have been strong forces in Bolivia. The Pact of Unity, an alliance formed in 2004 between indigenous peoples and peasant farmers, fought vigorously for reform in the early days of the Morales administration and was decisive in creating Bolivia's new constitution. The Bolivian NGO Environmental Defense

League is one of the most prominent environmental NGOs in Bolivia. Friends of Nature is another NGO. There is also a Bolivian Forum on the Environment and Development. The Land Foundation, a Bolivian NGO, is dedicated to supporting small producers. Many peasant and indigenous organizations are weak and fractured due to internal divisions. There is an Environmental Defense League. However, a *2013 law and presidential decree granted the government broad powers to dissolve nongovernmental organizations.* A civil society strengthening project was launched in 2015 under the coordination of the National Union of Institutions of Social Action (UNITAS) and Welthungerhilfe.

In Paraguay, the USAID Democracy Program has been helping CSOs improve their government oversight and issue-tracking capabilities through a cooperative agreement with *Semillas para la Democracia* (Seeds for Democracy). The association is providing technical assistance and training in managerial capability, financial processes, organizational structure, fundraising, project development, communication strategies and monitoring and evaluation.

8.6 Addressing Gaps in Civil Society Capacity

In the civil society consultation workshop held during the ecosystem profile process and in various other stakeholder consultations, it became clear that, although some common demands such as land and territory would be difficult or impossible to address, there is strong need for:

1. Small grants that could be made available in the priority corridors and KBAs, but should also be made in other areas where the applicants can demonstrate direct strategic relevance to the conservation objectives of the Cerrado. For local organizations, it is essential to simplify the bureaucratic requirements. When this is not possible, subcontracting by larger organizations can be an alternative. Small grants can influence the work of large-scale social movements so as to include the environment.
2. Consolidation grants, for larger amounts and longer periods, that would be important for organizations that have demonstrated capacity to generate relevant impacts and that face high operating expenses in order to maintain offices and qualified staff in capital cities as well as working in remote locations in the interior.
3. Continuous institutional support that is essential for networks among CSOs of various kinds (regional, thematic, indigenous) so that they can maintain offices and staff over time, not just for specific short-term projects, and hold regular meetings involving members who must travel long distances.
4. Capacity development that is needed for CSO representatives in order to ensure qualified participation in official councils, commissions and conferences. There are many such bodies and consultations for the environment, rural development, citizenship territories, traditional peoples and communities, and watersheds, among others, but the representatives need to know more about complex legal frameworks, organizations and programs, the past history, future prospects and “who’s who” among relevant players.
5. Specific capacity development for community leaders who, in order to represent civil society at the ecosystem level and defend collective causes

that are for the common good, need to become familiar with other groups and other parts of the Cerrado.

6. Specific capacities for indigenous representatives who need to enhance their participation in national and international fora and negotiations. Indigenous issues are not limited to Brazil, and Portuguese is of little or no use for contacts and participation in meetings in other countries.
7. Further guidance to journalists in various kinds of media, who have little knowledge about the Cerrado or the best ways to achieve appropriate conservation outcomes.

At the same time, experience shows that local CSOs are not able to pay for the qualified professionals they need, while also complying with difficult rules and regulations. There is a need for changing regulatory frameworks, not just training and capacity-building, as some government agencies and authorities claim. CSOs need some of the same simplifications or “debureaucratization” that the government has provided for small and medium businesses and individual micro-entrepreneurs. The government has also adopted more appropriate procedures for priority government programs such as building cisterns in the Northeast, where the requirements now refer to delivery of final products rather than paperwork formalities. There is now a congressional bloc to defend civil society organizations. The time is right for such adjustments.

Until changes are made in the legal framework, one way to overcome barriers to local civil society organizations is for them to work together with larger organizations in capital cities that are better prepared to deal with all the official regulations and that can subcontract the local organizations in the interior. Thus, local communities would not need to carry out bidding processes and document every expense in forms that are not available or feasible in remote rural areas of the hotspot.

Another way to learn lessons and overcome limitations is interregional cooperation among CSOs. Organizations that focus on the Amazon region, such as the Amazon Working Group (GTA) and the National Council of Extractivist Populations (CNS), can be relevant actors in the Cerrado and transitions in Mato Grosso, Tocantins and Maranhão, which are part of the Amazon region. They have accumulated many years of experience (1994-2010) working with the Pilot Program to Conserve the Brazilian Rainforest (PPG7), described in Chapter 11, which provided knowledge about a range of relevant activities from sustainable forest management and sustainable-use protected areas to policy advocacy and international fundraising. International cooperation among Brazil, Bolivia and Paraguay can also be useful

8.7 Conclusions

Although only a few environmentalist CSOs are already active in the Cerrado, important national-level organizations can be attracted to the hotspot and incorporate specific environmental concerns into their own agendas. There are also at least a hundred local organizations that are not primarily environmental, but are already involved in environmental issues. Beyond them, there are thousands of formal and informal labor, church, civic, business, academic and indigenous organizations that are increasingly concerned about the environment but need stimulus and support to really get involved. This is especially true in the northern part of the hotspot.

The only organization that works with transboundary conservation issues among Brazilian, Bolivian and Paraguayan parts of the hotspot is WWF. Because of Brazilian financial regulations, it is impractical for Brazilian organizations to carry out activities in other countries.

After a boom of creation of CSOs in the post-military period in Brazil, today's main barriers to their survival and effectiveness in promoting conservation outcomes are:

1. Complex and unrealistic regulations regarding nonprofit organizations, the need to comply with labor laws, requirements limiting the use of government funds, etc.;
2. Lack of qualified civil society representatives to participate in official councils, commissions and consultations;
3. Political polarization and lack of realistic environmentalist proposals that might optimize actual outcomes;
4. Limited socio-environmental integration.

Based on an analysis of past experiences, the current situation and the outlooks of stakeholders from all parts of the hotspot, the key opportunities to improve conservation outcomes in the Cerrado can be summarized as follows:

1. Strengthen the institutional capacity of existing CSOs;
2. Facilitate more effective representation in government processes;
3. Work with the three branches of government;
4. Reduce domestic non-tariff barriers to sustainable use of biodiversity;
5. Spatially redistribute activities and funding to include priority areas;
6. Raise greater awareness about the Cerrado and savannas in all of Brazil, and abroad;
7. Enable the "greening" of CSOs that are not primarily concerned about conservation;
8. Effectively apply the private sector's declared commitment to sustainability and avoid greenwashing;
9. Network on regional, inter-regional and international scales;
10. Forge partnerships among large and small CSOs.

9. THREATS TO BIODIVERSITY IN THE HOTSPOT

As explained previously, especially in chapters 6 and 7, the main threat to biodiversity in the Cerrado is clearing of land for pastures and monocultures. Production of commodities for consumption within Brazil and for export is essential for Brazil's balance of trade and for generating tax revenues for government budgets, as well as for meeting the needs of a growing world population and rising consumption of protein in low-income countries.

In the last five decades, the Cerrado has been the main area for agricultural expansion and consolidation of Brazilian agribusiness, leading to loss of half of the original plant cover. It has been projected that the continuing uncontrolled occupation of the Cerrado may lead to loss of 72% of its original area by 2020 and 82% by 2050 (Machado *et al.* 2004; Machado 2015). The process now extends from Brazil into Paraguay as well.

Exact figures on deforestation are difficult to obtain for various reasons. Monitoring of clearing in the Cerrado is much more difficult than in homogenous dense forests, due to the high diversity and fine texture of plant cover. Cerrado vegetation varies from narrow riparian forests that do not appear in satellite images to woody savannas and fields that can easily be confused with degraded pastures where trees and shrubs sprout from deep roots. Little effort has been put into Cerrado deforestation monitoring, while for the Amazon, the Project to Monitor Deforestation in the Legal Amazon **(**PRODES) has monitored annual deforestation rates since 1980. The Action Plan on Deforestation and Fire Prevention and Control in the Cerrado (PPCerrado) of the Ministry of Environment provides official deforestation data from 2003 to 2008 only in averages of 15,000 km^2 per year (Brazil 2014). PPCerrado concluded that up to 2010, 986,711 km^2 of Cerrado were already converted, *i.e.*, 47% of its original area. Most of the remaining areas are fragmented.

9.1 Direct Threats

An overview of the various types of proximate threats to the Cerrado's biodiversity and their relative importance is provided in the following sections. The first deals with direct threats: habitat degradation, fragmentation and conversion; overexploitation of natural resources; fire; pollution, erosion and sedimentation; invasive species. Climate change is described in Chapter 10. The indirect causes of threats (cattle raising, crops, mining, pulp mills, transportation infrastructure, electric power, oil and gas, urban sprawl) are dealt with in Section 9.2. The main conclusions and a ranking of the relative severity of the threats are presented at the end of the chapter.

9.1.1 Habitat Degradation, Fragmentation and Conversion

While half of the Cerrado has been totally cleared, most of the rest has been subject to various kinds of interference. Despite its importance and the critical situation in this hotspot, there is a lack of detailed and historical information about vegetation cover changes, especially during the 1990s. Grecchi *et al.* (2015) concluded that land cover changes from 1990 to 2010 (mostly for agriculture, but not entirely) occurred at an average annual rate of -0.61% between 1990 and 2010. In this period, the hotspot had a net loss of approximately 12 million hectares of natural vegetation. The rates of vegetation loss decreased from the first decade (0.79% per year) to the second (0.44% per year).

It is important to note that the deforestation rate of the Cerrado of 0.69% per year in 2008 was nearly twice the rate of the Amazon (0.42%). However, the deforestation rate in the Cerrado had a 16% decrease between June 2009 and July 2010. Compared with rates of the early 2000's, deforestation has dropped about 40%. The government also announced a 50% reduction in deforestation of the Cerrado in the period between August 2010 and February 2011, compared to the previous 12-month period. Evidence to support these numbers is needed.

Projections for coming decades show the largest increases in agricultural production in the country will be in this region. At the same time, the new Forest Law allows for vast further legal deforestation in the Cerrado (Soares-Filho *et al.* 2014). The spatial analysis of deforestation indicated that about 70% of the warnings (heat points that indicate fire, but could be confused with reflection of sunlight) were concentrated in only 100 municipalities and that there are two active agricultural frontiers in the Cerrado – along the western portion of Bahia State up to the south of Maranhão; and the other one extending from the southeast of Mato Grosso to the east of Mato Grosso do Sul states (Rocha *et al.* 2011). Such expansion occurs mainly in areas of dense vegetation and flat terrain, which are amenable to mechanized crop fields. The urgency of conservation actions is one of the criteria used to define the priority corridors in this ecosystem profile.

Ecosystems consisting of a dozen different types of habitat that are intermingled are naturally fragmented. The fragments are primarily of riparian forests, legally protected by the Forest Law as Areas of Permanent Preservation (APPs), but Legal Reserves (LR) and areas of restricted use, also foreseen in the Forest Law, are or will also be fragments. In the near future, the Rural Environmental Registry (CAR) information system managed by the Brazilian Forest Service (SFB) will allow for mapping, tabulation and analysis of detailed data at the level of each rural property or landholding. The National Forest Inventory, also being carried out by SFB, will be another source of relevant data. In this context, it will be very important to study the different fragmentation patterns, which can result in different pressures on Cerrado biodiversity. A study by Carvalho, Marco Junior and Ferreira (2009) in the state of Goiás, in the core area of Cerrado, shows that landscapes dominated by crops are more fragmented than landscapes dominated by pastures. These crop-dominated landscapes also presented a smaller number of fragments that, for example, could maintain populations of threatened mammal species in Cerrado. In addition, the results of this study indicate that croplands, which usually cover continuous areas larger than pastures, generate a landscape structure more damaging for the conservation of biodiversity in the Cerrado.

Many pastures considered by farmers as degraded are in fact the Cerrado under natural regeneration, as Cerrado plants, because of their deep roots, have a remarkable capacity to resprout. Such regeneration, especially in areas of hilly topography, in addition to enforcement of the Forest Law, could eventually contribute to zero net deforestation. In this context, actions that favor or assist natural regeneration of the Cerrado are important elements in conservation strategies. Although imperfect, they at least provide habitat for larger, more viable populations as well as connectivity to enable gene flows among them.

Habitat loss and fragmentation could be much lower through land sparing. Livestock productivity in the Cerrado is very low, using vast expanses to produce beef, milk and leather. Sano *et al.* (2008) found that 26% of deforested Cerrado lands were occupied by pasture in 2002. Cattle raising involves average herd densities of only one head per hectare, far below rates in developed countries. The time needed for cattle to reach market weight can be three times longer than in developed countries. Approximately one third of the pastureland in the Cerrado is considered "degraded" in the sense of becoming barren or being infested with weeds and brush, although some estimates are much higher.

Mechanized monocultures usually move into flat areas that have been used for cattle raising (Silva 2013). Unlike cattle raising, crop yields are high by international standards and are increasing constantly with the use of modern technology (Abreu 2105). Many traditional territories are surrounded by monocultures, which impede community access to natural resources on which they depend for their livelihoods. Some communities have lost their water courses or had them contaminated by excessive use of agricultural chemicals (field observations).

9.1.2 Pollution, Erosion and Sedimentation

As described in Chapter 4, rapid land use changes in the Cerrado negatively affect the availability of water in hydrological basins of utmost importance to Brazil. Irrigation needed for agricultural activities in the Cerrado and elsewhere to the east and south exerts strong pressure on water resources. Indeed, irrigation represents at least 70% of water consumption in the country as a whole (Lima 2015).

In addition to the impacts associated with reduced water supply, chemical pollution from pesticides (herbicides, insecticides and fungicides) is a major concern. These inputs are widely used in tropical agriculture, where there is no cold winter to avoid the constant buildup of weeds, pests, fungi and disease. The main consumption is for soy, corn and cotton, the most important crops in the Cerrado. Some persistent organic pollutants (POPs) are used illegally, and pesticides forbidden elsewhere are still legal in Brazil. Brazil uses more pesticides than any other country in the world, with 19% of global use, as compared to 17% for the United States (Dall'Agnol 2015).

Chemical fertilizers, which are essential in the poor soils of the Cerrado, can also pollute local streams, a major complaint of communities (Eloy 2014). Pollution downstream is not yet comparable to the Gulf of Mexico's dead zone, but the Pantanal wetlands and the Paraguay-Paraná basin are threatened. Fertilizers are also responsible for emissions of nitrous oxide, a potent greenhouse gas (Bustamante 2015).

In addition to generalized loss of soil from surface erosion when the land is cleared and cultivated or converted to pastureland, there are deep gullies (*voçorocas*) in some parts of the Cerrado. Because of shallow or deep soil erosion, rivers and streams are muddied with clay, and their beds accumulate sand. Stream banks are also damaged by cattle that visit them daily to drink water, which is only rarely channeled by gravity or pumped to troughs in the pastures (ISPN field observations).

Most of the important rivers in the Cerrado have been dammed for hydroelectric plants, which are Brazil's main source of electric power. The dams affect water flows and modify the margins, keeping several species from migrating up to headwaters for spawning. This also impacts fisher communities whose livelihoods depend on these resources.

9.1.3 Invasive Species

The most important invasive species in the Cerrado are African grasses that grow faster and higher than native grasses (Pivello 2005). *Brachiaria* and other pasture species spread wherever there is little or no shade from trees and shrubs, the seeds being dispersed by livestock.

Plantations of eucalyptus and pine now cover vast areas of the Cerrado in Minas Gerais, Goiás, Mato Grosso do Sul and Maranhão, and there are plans for expansion. In the Botanical Garden of Brasília (JBB), the pine trees spread spontaneously, as do exotic ferns (*Pterydium aquilinum*), which are especially aggressive (field observations).

European javalins (*Sus scrofa*), originally brought to South America for hunting, have spread to the southernmost part of the Cerrado, where they are a threat to nature and humans. Other invasive animal species include native species of fish from other parts of the country, even shrimp, as well as exotic species, especially Tilapia, farmed to supply supermarkets. These exotic fish compete with native species, especially in reservoirs used for fish farming.

9.1.4 GMOs

Genetically modified soybeans are widely used in the Cerrado, although there are also non-GMO soybeans exported from Mato Grosso to the European market through a specific port at Kristiansand, in Norway, in response to consumer and government demands. Environmental groups are deeply concerned about impacts of GMOs on native biodiversity, but the National Technical Commission on Biodiversity (CTNBio) approved their use. More research is needed on genetic contamination by GMO crops in the Brazilian context. What is clear is that producers of GMO soybeans make intensive use of glyphosate herbicide, which affects human health.

9.1.5 Fire

Cerrado biodiversity has lived with fire for millennia. The vegetation has features that minimize the effect of burning, such as thick bark, rhizomes and bulbs, as well as high regrowth capacity after fire and a high proportion of underground biomass (Castro & Kauffman 1998; Coutinho 1990).

Nonetheless, fire frequency has intensified drastically due to human actions. Nowadays, fires may occur every year or two, rather than following cycles of 16 years on average as they did before European settlement (Coutinho 1990). Some fire helps Cerrado seeds disperse, germinate and grow. However, a frequent and intense fire regime causes changes in the dynamics of plant communities, affecting the populations of rare species (Miranda 2002). Fire may also affect flowering, fruiting, seed dispersal, biological recruitment and mortality rates.

When the pastures dry out in July and August, they are typically burned intentionally and can easily catch fire accidentally. The fires from exotic species of grass such as *Andropogon*, which reaches heights of 3-4 meters, are much hotter and spread farther, through airborne embers. Hotter fires, caused by the presence of exotic grasses, kill off juvenile trees, preventing recovery of the woodlands and reducing carbon stocks far below what they would be if the juveniles reached adulthood and produced seeds, multiplying the population. While cattle spread exotic seeds, they also reduce fuel quantity by consuming the biomass of the grasses and reducing the intensity of fires. Late fires, for example in October, when accumulated dry biomass is more voluminous, can kill mature trees, abort blossoming and cause other negative effects on the community (Schmidt *et al.* 2005). In addition, a positive feedback triggers expansion of grasses when fire frequency increases (Miranda 2002).

The Cerrado and the Amazon are the biomes most affected by fires in Brazil. One study on the incidence of fires in the Cerrado from 2002-2012 indicates that the areas most affected are pastures in the northern part of the biome (Santos *et al.* 2014). In these areas, the concentration of fire alerts (*pontos de calor*) could be higher than four foci per km^2 per year. The average is about 140,000 fire outbreaks per year in the entire area of the Cerrado.

9.2 Indirect Causes of Threats

The indirect causes of threats to Cerrado ecosystems analyzed in this section include cattle raising, crops, steel, pulp and paper, transportation, electric power, oil and gas, mining and urban sprawl. These derive from the root causes of population growth, increasing food consumption among poor people around the world, especially consumption of protein, economic globalization, North-South outsourcing of economic activities with high energy demands and environmental impacts, spread of “green revolution” agricultural technology and limited concern about the environment and about future generations, among others; in sum, continuity of unsustainable perceptions, practices and policies.

A major indirect cause of threats to the Cerrado is increased global demand for soy and meat from livestock fed with soy, due to changing consumer preferences and purchasing power. Soybeans are also an important commodity imported into Europe for animal feed and for oil (Vankrunkelsven 2006). Recognition of these indirect responsibilities on the part of governments and, possibly, public opinion, could provide leverage for funding of conservation efforts in the hotspot. Such recognition will probably not come spontaneously, without stimulus from Brazil, concerned parties in other countries and international organizations (see Chapter 11).

Investments in the Cerrado prioritize the primary sector of the economy and consume natural resources at a macro-landscape scale (Fearnside 2005; Wood & Porro 2002; Becker *et al.* 2009). They either promote or lead to expansion of the agricultural frontier, including both crops (monocultures) and cattle (extensive pastures), which in turn leads to deforestation and landscape fragmentation, with little or no connectivity through corridors or even “stepping stones,” a more practical alternative (Ditt, Menezes & Pádua 2008). Agribusiness also pollutes air, soil and water. Investments in the various sectors are interrelated and tend to reinforce each other.

At the same time, investments in conservation in other regions may end up sacrificing the Cerrado, because of displacement (“leakage”) of deforestation from other biomes to the Cerrado. This biome has been chosen as the main productive region by the Brazilian government, with little objection from civil society, which considers forests (the Amazon and the Atlantic Forest) more important to conserve. The Cerrado does not have dense forest, but it is equally or more important in terms of both its own biodiversity, water and carbon and the impact of these components on other ecosystems. For example, the largest tributaries of the Amazon descend from the Cerrado, which receives its water from the rain forest. As seen in Chapter 4, Brazil's biomes are interdependent.

It should be noted that investments in the region do not always generate negative impacts on biodiversity, water or carbon. Policies and practices that favor the consolidation and intensification of settlements in areas of the Cerrado that are already densely occupied may reduce pressures for deforestation elsewhere. Horizontal frontier expansion without increases in productivity was the dominant pattern in the past, but verticalization of agriculture through higher productivity on existing farms and ranches, and greater integration with agroindustry, is now under way through Crop-Livestock Integration, which seeks to increase soil quality and organic matter content.

9.2.1 Cattle Raising

Historically, after the mining cycle in the colonial period in the 1700s, traditional cattle raising took advantage of the Cerrado’s natural savannas and grasslands, including seasonal cattle drives into wetlands, like the Araguaia Valley, during the long dry season. There was little or no monetary investment or financial return (Mueller 1995).

Nowadays, although the productivity of cattle raising (both stocking and take-off rates) remains very low by international standards, ranches depend primarily on planted pastures, which require investment in formation and maintenance, as well as fencing. Modern ranches also require investment in vaccines and artificial insemination. Hormones to speed up growth and reduce fat may also be used. Tracking of beef requires electricity, computers and skilled labor (Sawyer 2010).

Creating pastures for cattle-raising is by far the main cause of deforestation in the Cerrado and the Amazon. There are 135 million head of cattle in the Cerrado, on 400,000 km^2(Oliveira 2015). Some of Brazil's largest companies, like JBS or Friboi, Brazil Foods and Marfrig, are in this sector, with multinational ramifications. In 2008, Brazil became the world's largest exporter of beef, but it competes closely with the United States and now with India (Gartlan 2010).

In more settled areas, especially in the southern part of the Cerrado, cattle raising is the basis for production of milk and other dairy products that require proximity to consumer markets (Silva 2013). Milk production is scattered among small farmers, but processing is concentrated in firms like Nestlé, Danone and the new conglomerate Lácteos Brazil.

Traditionally, pastures are burned during the Cerrado's extended dry season to promote new green sprouts, since the tall dry grass is useless for feeding the cattle. The net emissions of CO_2 from this burning are zero because of compensation by regrowth during the rainy season. On the other hand, intentional and accidental burning prevents regrowth of brush and trees, and fires in tall exotic pasture species kill trees and spread far, thus reducing total carbon sequestration in woody biomass, including the roots, which reach 10 to 20 m in depth (Bustamante 2015).

The immense herd of cattle in Brazil also emits a very significant volume of methane, a potent greenhouse gas, which, however, has a shorter residence in the atmosphere (Bustamante 2015). Some investments in technology can decrease methane emissions from this source.

The sale of beef, leather and dairy products is profitable, especially when global consumption of animal protein is growing faster than the population. On the other hand, cattle raising is to a large extent a pretext for investment in real estate speculation. Increases in land values come with public and private investments in transportation infrastructure and urban services. Direct investment in farms or ranches, usually by absentee owners in the remote areas, is made all the more attractive by cheap credit, rolling over of loans or defaults, tax evasion, money laundering, illegal logging and even degrading work conditions that the government considers a form of "slave" labor (Sawyer 2014). In more developed regions, cattle raising is generally more legal, responsible and sustainable. Ranchers have access to subsidized bank credit, often from official banks. Loans are easy to approve because the technical criteria are well known to bank personnel in the interior and the cattle are collateral, as compared to parameters for new crops or biodiversity products, which are considered as being more prone to risk. Ranchers from the South and Southeast regions can sell their land to soybean or sugarcane growers and buy much larger areas on the frontier. Likewise, ranchers in the southern part of the Cerrado can sell their land and buy larger areas farther north. Thus, in addition to simple displacement, there is also multiplication of the "indirect land use change" (ILUC) effect because of the sharp (often up to ten-fold) differential in the land prices (Sawyer 2014).

New investments in fencing and water supply could improve the extremely low productivity of cattle raising, with a stocking rate of only about one head per hectare and with birth-to-slaughter time of several years, *i.e.*, low take-off rates. While overgrazing should be avoided, supplying water within the pastures through gravity or pumps would also limit the damage done to riparian and freshwater biodiversity where cattle rove daily to drink at streams and riversides. Another interesting alternative is integrated crop-livestock systems, which rotate crops and cattle, thus taking better advantage of chemical fertilizers used on crops and of manure left by cattle. The main barrier is that cattle ranchers and crop farmers are distinct social categories, although younger generations are more open to innovations of this kind.

9.2.2 Crops

The main crops grown in the Cerrado are soybeans, sugarcane, corn, cotton, coffee and trees. Data on hectares, tons and value of crops are only available for states and municipalities, following the political-administrative division, not for the biome, but some estimates of relative magnitude can be made.

In the past, the farming frontier was a major producer of rice, beans and manioc, grown by small farmers in the first year or two after clearing. Rice was sold to be consumed in the more developed Southeast. Nowadays manioc meal is no longer a staple food, except in parts of the Amazon, and there has been mechanization and concentration of land tenure in the Cerrado. Rice now comes mainly from mechanized farms in the South region, and the beans come from places like Irecê, Bahia, in the country's semiarid Northeast.

Land use in the Cerrado can be divided into four quadrants by the 48th meridian west and the 15th parallel south. While most of the southwest quadrant of the Cerrado has been cleared, and there are intermediate levels in the southeast and northwest quadrants, the northeast quadrant (in MATOPIBA: Maranhão, Tocantins, Piauí and Bahia) is undergoing rapid conversion, mostly to soybeans, and an ambitious federal agricultural development plan has been announced (MAPA 2015; Miranda *et al.* 2014).

Land tenure in the Cerrado is highly concentrated. According to the 2006 Agricultural Census, 69% of all rural properties in the Cerrado are still owned by small farmers who occupy only 9% of the total area, some 180,000 km^2. Unless local communities receive support, the tendency toward greater concentration of land in large farms is likely to remain strong, accelerating the rate of land use change and generating negative impacts on biodiversity, water and climate.

Crops in the Cerrado are typically planted as monocultures, since the relatively flat topography allows for mechanization of the stages of soil preparation, cultivation and harvesting. Even harvests of sugarcane and coffee, which until recently were still entirely manual, using migrant labor, are now being mechanized (Silva 1981; Ortega *et al.* 2009).

Annual crops and almost all other crops except coffee promote soil erosion and silt waterways. The absence of plant cover during most of the year also favors rapid surface runoff of rainfall, thereby reducing infiltration, evapotranspiration and the formation of new clouds to generate precipitation downwind. The rainwater that runs off the surface flows back to the Atlantic, rather than returning to the atmosphere and moving south to other regions and neighboring countries (Lima 2015).

The chemical fertilizers used on the many crops emit nitrous oxide, a powerful albeit short-lived greenhouse gas (Bustamante 2015). On the other hand, some progress is being made on genetically modified sugarcane that does not rely on nitrogen fertilizer inputs.

In ecosystemic terms and at the global level, greenhouse gas emissions generated by the long-distance life cycles of agribusiness are often ignored. Fertilizers come from Russia, Canada, Morocco and Norway, and soybeans, beef, chicken and pork are exported mainly to Europe and China. All the industry and transportation so far upstream and downstream in global supply chains generate very significant emissions, mostly carbon dioxide from fossil fuels. Obviously, these activities along the commodity chains involve many investors with no direct connections to the Cerrado, who are never held accountable for their local and global environmental impacts.

Soybeans. Soybeans are the main new crop in the Cerrado. Expansion from southern Brazil was enabled by public investments in agricultural technology in the 1970s, primarily by the Brazilian Agricultural Research Corporation (EMBRAPA) of the Ministry of Agriculture, Livestock and Supply (MAPA), often in association with companies such as Monsanto and Bunge, especially for genetically modified soybeans (Christoffoli 2010).

Japan invested in soybean expansion in the Cerrado in the 1970s (Pires 1997), but foreign involvement is now indirect. The soybean growers are nearly all Brazilian, while foreign companies sell inputs (seeds, fertilizers, pesticides, etc.) and machinery, even providing the credit, and buy the beans, meal and oil. Agribusiness, including some direct foreign investment, has moved into the Cerrado to process and add value to local beans, although less so than in Argentina, which produces and exports more oil. Chinese companies and American farmers and investors are beginning to buy land in the Cerrado (Oliveira 2014; Romero 2015).

The Cerrado has been responsible for 35% of all crop production in Brazil, including 58% of the country's total soybean production. Soy production will undoubtedly continue to grow because the beans have so many uses for food, feed and industry in Brazil and abroad. It is useless to fight against the presence of soybeans in the Cerrado (Pufal 1998).

In response to criticism of negative social and environmental impacts, a Round Table on Sustainable Soy was organized in 2004, with strong support from the Netherlands, a major importer (Dros 2002). Grower associations joined but have been reluctant about implementation. The associated moratorium on expansion of soy, limited mainly to the Amazon, has to some extent intensified pressure on the Cerrado.

Sugarcane. In Brazil, since the colonial beginnings, sugarcane has been used to make sugar, mostly for export, and *cachaça*, a type of rum that is mainly for domestic consumption. On small farms, it can provide fodder for cattle during the dry season, but most sugarcane is grown on vast monocrop plantations.

Production of sugarcane has shifted from the Northeast, the leading producer in colonial times, to São Paulo, where yields are much higher. It is now penetrating the southern fringes of the Cerrado, in many cases with investors from the Northeast (ISPN 2007).

Sugarcane is now used to produce ethanol (Sawyer 2014) in an effort intended to reduce greenhouse gas emissions from fossil fuels. There are also human health benefits, due to less air pollution in urban areas. On the other hand, expansion of sugarcane plantations has negative impacts on biodiversity. The social impacts are not clear. Migrant workers are exploited, but they also earn cash income that can allow their family farms to survive, thus avoiding permanent migration to the cities.

Since sugarcane cannot be transported for long distances without losing the level of sucrose sugar, its expansion depends on investments in sugar mills, roads and bridges. Private investments depend on public subsidies and official standards to mix ethanol into all gasoline sold in Brazil.

Sugarcane is not usually a direct cause of deforestation, but, as mentioned above, expansion onto areas of soybean cultivation or ranching can provoke indirect land use change, *i.e.,* deforestation in other locations, if the landowners who sell their land move to frontier areas, where land is also much cheaper.

Currently, sugarcane bagasse is being used for cogeneration of electricity in São Paulo (UNDP 2014). This makes planting of cane more profitable and decreases the net emissions of the industry, which in turn justifies government subsidies to sugar mills.

Cotton. Cotton for use in textile production in Brazil and abroad is also being grown in increasingly vast areas of western Bahia and parts of Goiás. Cotton is notorious for the intense use of pesticides and their impacts on both human health and the environment. Brazil's main industrial cotton consumers are textile companies, led by Coats Corrente, Coteminas, Santista, Bezerra de Menezes, Canatiba and Vicunha Nordeste.

Corn. There are now large monocultures of corn (maize) on the flat lands of the Cerrado, the abundant supply of which attracts farmers who raise chickens and pigs. Corn may be rotated with soybeans, cotton or sorghum, and there may be a second crop in the same year. In addition to animal feed, pig farmers from southern Brazil and from Europe are attracted to the region by the lack of severe restrictions on waste disposal, which has caused serious pollution problems in Holland and Santa Catarina (Lazaretti 2013). About 90% of all corn cultivated in Brazil is now transgenic.

Coffee. The production of coffee has moved from São Paulo and Paraná into the Cerrado region of Minas Gerais, much of which is hilly. It fled from frost, but may need to move back south to cooler latitudes. Some Cerrado coffee is gourmet varieties with all kinds of certification, rather than being produced in bulk for export (Motta 2015). Growing is very decentralized among farmers, but processing is done by large companies such as Três Corações, Melitta, Cacique, Nescafé and Nespresso. Coffee is rarely shaded by native trees, as in some other countries, but it provides some shelter and connectivity for native fauna and gene flows.

9.2.3 Mining

The gold, diamonds and precious stones that motivated the original non-indigenous settlement of southern parts of the Cerrado in the 18th century (Sawyer 2002) are no longer important, except for the Yamana Gold mine in Pilar de Goiás, owned by a Canadian company.

Since the 1940s, however, significant iron ore deposits have been found and developed by Brazilian companies in and around the Cerrado, mainly in Minas Gerais and Pará. The local impacts of mining are intense but cover less than 1% of the Cerrado's 2 million km^2 or Brazil's 8.5 million km^2. On the other hand, the roads, railroads and pipelines needed to transport the iron ore and intermediary products greatly expand the area affected by mining, for example the Carajás railroad, which runs from southern Pará to the port at Itaqui, in Maranhão. Small-scale gold prospectors (*garimpeiros*) also pollute streams and rivers with silt and mercury, but mostly in the Amazon.

The steel industry of Minas Gerais, which has vast deposits of iron ore, has traditionally burned charcoal from native woody species extracted from the Cerrado, often illegally and with severe environmental impacts. This is the major indirect impact of mining, although charcoal is theoretically renewable, compared to coal, the traditional source of energy for smelting. Smaller companies convert iron ore into pig iron, which is then turned into steel at larger plants. One of the main companies producing steel is Usiminas. A similar industry is growing in Maranhão, near the source of ore from

Carajás. In the past, the energy source in that region was wood residues from sawmills (ESMAP 1993), but more is now coming from expanding eucalyptus plantations.

There are also asbestos mines in northern Goiás. The criticisms (denied by producers, who argue that their chrysotile asbestos is harmless) refer mainly to the impacts on human health. The main company is SAMA, part of the Eternit group. Anglo-American also mines nickel ore in the same region.

The World Bank has supported eucalyptus plantations to produce charcoal for the steel industry as a means to reduce emissions of greenhouse gases, which would be much greater if Brazil imported mineral coke. Beneficiaries claim they only plant on land that has already been cleared. There are also new investments through a Global Environment Facility (GEF) project to increase the thermal efficiency of charcoal use.

Small-scale gold and diamond panning was important in the past, but widespread small-scale mining today is mostly limited to the extraction of large volumes of clay (for bricks and tiles) and sand for construction. This type of mining takes place throughout the region, affecting rivers and streams as well as adjacent land. The use of firewood in kilns can cause net emissions if there is unsustainable harvesting, without sufficient regrowth. Many Cerrado native tree species that are used as firewood are slow to grow, but others like acacia do not take so long.

9.2.4 Tree Plantations

Eucalyptus plantations have covered huge swaths of northern Minas Gerais, stretching hundreds of kilometers, and are now being established in western Maranhão. The total area of eucalyptus in Brazil is 4.8 million hectares, mostly in the Cerrado. In some areas, there are also plantations of pine trees. The main companies are Suzano, ArcelorMittal and Fibria. Some large companies also make agreements with farmers and provide seedlings for small-scale plots that are a form of medium- to long-term investment, with low maintenance costs.

While some eucalyptus is made into charcoal to produce pig iron or for home use, most eucalyptus and pine is used as wood or is turned into cellulose pulp for making paper. No native trees are used to make paper in Brazil (Castanheira 2015). Some is also used to make hardboards, particle boards and fiberboards by large companies such as Duratex and Eucatex.

Local communities in northern Minas Gerais complain bitterly that massive eucalyptus plantations in flat highland areas cause water scarcity. This may be because precipitation is transformed into cellulose, while most of it returns to the atmosphere as evapotranspiration. Many plantations have filled in and dried up springs, but there are now improved techniques with lower impacts (Rômulo Mello, personal communication). Studies of rainfall trends and case-control observations are needed to clarify the issue.

9.2.5 Transportation Infrastructure

In the late 1950s, pioneer or penetration dirt roads such as the Belém-Brasília (BR-153) and the Cuiabá-Porto Velho (BR-364) opened up vast new frontiers to the north and west, even before they were actually paved (with World Bank loans) in the 1970s. Since

2000, improvement of the BR-163 highway, from Cuiabá to Santarém, has enabled soybean export from Mato Grosso up a shorter route to the Atlantic, although pavement is still incomplete.

Investments in ports in Porto Velho (Rondônia), Itacoatiara (Amazonas), Santarém (Pará), Itaqui (Maranhão) and Santos (São Paulo), although outside the Cerrado biome, along the Amazon or its tributaries or on the Atlantic coast, are essential for export of soybeans to Europe and China. Beef also is exported live on the hoof to the Mideastern countries, as well as frozen poultry and pork.

The new Ferronorte railway from Mato Grosso to the port of Santos and the recently completed North-South railway, which connects the Center-West to the port of Itaqui, in São Luis, Maranhão, by way of the Carajás railway, built in the 1970s, favors even greater expansion of soybeans in the Cerrado. Now there are plans for roads and railroads to the Pacific, to facilitate exports to China, which will finance the construction.

As occurs in the Amazon (Alves 1999), roads into new areas cause vast impacts on biodiversity in the Cerrado by opening frontier areas. In net terms for conservation, however, it would be better to concentrate impacts along the roads and increase productivity per hectare, working with market-induced anthropic pressure rather than creating roadside protected areas and pushing low-productivity ranching into larger areas, far from the roads. Furthermore, local feeder roads can help consolidate frontiers and reduce expansion to the more distant peripheries.

9.2.6 Electric Power

In the past, hydropower dams flooded riparian forests in the states of Minas Gerais, São Paulo and Goiás (Três Marias, Furnas, São Simão, Água Vermelha), Bahia (along the São Francisco River) and Mato Grosso (Manso). Since 2000, dams have been built on the Tocantins River at Serra da Mesa, Palmas (Luiz Eduardo Magalhães) and Estreito, and more are planned, leaving the Araguaia River, which has less hydropower potential, to be used for transportation and tourism.

Currently, most new major dams in Brazil are being built or are planned in the Amazon region, on the Xingu (Belo Monte), Tapajós and Madeira (Santo Antônio and Jirau) rivers. It should be noted that these dams on tributaries of the Amazon River, within that biome, depend on water that flows downhill from the Cerrado. They may restrict the migration of fish upstream to spawning grounds near the rivers' headwaters in the Cerrado (Prado 2015).

In part because of pressure from environmentalists against large hydropower projects, smaller dams (small hydroelectric centers or "PCHs") are being built in many parts of the Cerrado. However, unless special provisions are made, both small and large dams block the upstream run of freshwater fish. They also affect the volume of water downstream, shortages of which can impair energy and transportation. Power transmission lines have confined environmental and social impacts.

Another shift in dam design has been to avoid large reservoirs and to use the flow of the river. This means, however, that a strong and increasing seasonality of river flows significantly reduces generation during the dry season (Goldemberg 2015). This seasonal variation is further exacerbated by increased clearing and climate change, with larger downstream flows during the rainy season and lower volumes during the dry season.

The main investors in electric power, which is an essential public service under Brazilian law, are state-owned companies and an increasing share of private concessionaires. Power generation and distribution companies include the state-owned Eletronorte company and the Company for Development of the São Francisco Valley (CODEVASF), all coordinated by federal authorities and *Centrais Elétricas Brasileiras* (Eletrobrás), under the Ministry of Mines and Energy.

In spite of negative local and regional impacts, it should be recognized that electricity can favor higher productivity of land use, especially conversion of pasture to the higher value-added crops that require machinery, energy, communication, qualified workers, schools, hospitals, etc. Conversion of pasture to crops may in turn relieve some of the pressure on woodlands and savannas in the Cerrado, as well as in the Amazon. Large dams and power lines also provide royalties and resources that can be used for conservation and other kinds of compensation. The net threat is lower than it appears.

9.2.7 Oil and Gas

Oil and gas in Brazil are extracted from wells in the Northeast, the Amazon, (mostly gas at Urucu in Amazonas state), and offshore, especially from the new deepwater, “pre-salt” deposits off the coast of the Southeast. Much of the natural gas is imported from Bolivia. Some deposits of petroleum have recently been discovered in the Cerrado in northern Minas Gerais, and maps indicate a widespread potential for exploration of natural gas in other parts of the Cerrado in the future, including central Maranhão, where there are many indigenous lands and *quilombola* communities (ISA 2015).

The state-owned company Petrobrás has a monopoly on exploration of oil and gas in Brazil, including biofuels. The prices of gasoline and diesel affect the economic feasibility of producing and using ethanol and biodiesel. Federal price controls have actually bankrupted many ethanol plants (Sawyer 2015).

For the conservation of the Cerrado, a key issue with regard to petroleum is how to use the return on investments in oil and gas, and the collection of royalties and compensation, to promote conservation of ecosystem functions and social benefits among directly affected groups.

9.2.8 Urban Sprawl

Large cities and metropolitan areas in the Cerrado, especially in and around the Federal District, Belo Horizonte, Goiânia and Cuiabá, have generated urban sprawl stretching dozens of kilometers around them. Urban networks in the interior have also expanded, with more than a thousand urban centers, including medium-size cities and small towns.

In the past, huge government investments built the new capital cities of Belo Horizonte, in Minas Gerais, Brasília, the new national capital, and Palmas, the new capital of the state of Tocantins. New capitals have strong impacts on their surroundings. Further investment in new capital cities is now unlikely but the cities generate urban sprawl.

While highly visible, compared to 2 million square kilometers in the Cerrado as a whole, the urban impacts on biodiversity are relatively small, directly impacting perhaps 2% of the total area. Some suburban areas have more trees, including some native species, than untouched native savanna areas. Exotic species like mango trees provide food for native wildlife. There can be urban biodiversity. On the other hand, sewage systems with no investment in treatment severely contaminate rivers in many areas.

While urban expansion creates direct and indirect negative impacts, it also has an important beneficial effect of creating conditions for the rule of law and order and for organization of civil society, which are essential for conservation, as opposed to the "wild west" that still prevails in more remote frontier areas.

9.3 Conclusions

Based on the literature review and the various consultations, the following Table 9.1 summarizes the main direct ecosystemic threats in the Cerrado as analyzed above and ranks their severity now and for the near future, *i.e.*, their immediacy. The evaluation of severity takes into account the scale of impacts at the ecosystem level. Local impacts may be severe. Severity also considers the net impacts, taking into account that some of the impacts can be positive, at least in the overall context. The analysis does not take into account the fact that localized intensification, with major impacts in specific places, may relieve pressure on other areas and make mitigation of impacts more feasible.

Of course, global climate change is also a threat, but is further addressed in the following chapter.

Table 9.1. Threats and their Relative Severity to the Cerrado Hotspot

Threat	Relative Severity
Cattle	High
Annual crops	High
Biofuel	High
Charcoal	High
Fire	High
Tree plantations	High
Erosion	Medium
Invasive species	Medium
Permanent crops	Medium
Swine	Medium
Transportation	Medium
Warming (local and regional)	Medium
Chickens	Low
Dams	Low
Extraction of sand and clay	Low
Genetically modified organisms	Low
Hunting	Low
Logging	Low
Mining	Low
Oil and gas	Low
Urban sprawl	Low
Wild collection	Low

The vast agricultural land, the mineral resources and the hydroelectric potential of the Cerrado will certainly continue to be used as a basis for Brazil's economy, which is now under strong pressure to once again achieve high GDP growth rates. The Cerrado is even considered a "breadbasket" for the world, which faces the challenge of feeding a growing population with increasing levels of consumption of protein. Thus, investments in development will certainly continue to flow. The challenge is to both minimize and compensate for negative impacts, as well as to find ways to generate positive impacts, *i.e.* sustainability.

The main way to reconcile conservation and development is undoubtedly to make better use of the land already cleared, especially as regards low-productivity cattle raising, and avoid or at least minimize new clearing. There can be large increases in per hectare yields as well as significant improvements in erosion, pollution and emissions if efficiency, profitability and spatial concentration enable more preventive and compensatory measures to guarantee sustainability. Horizontal expansion, or “spread” effects in terms of the categories proposed by Gunnar Myrdal (1957), tends to be less sustainable, while spatial concentration and verticalization, or “backwash” effects, may reduce pressure on larger areas, while allowing private investment and public control to avoid negative environmental impacts. This adds spatial dimensions to the Kuznets curve, according to which environmental protection decreases during the first stages of economic development and subsequently increases, along with greater wealth and ability to care for the environment (Stern 2004).

There are also possibilities for restoring degraded areas with native species, often combined with exotic species that accelerate the process. “Rewilding” can be undertaken at a large scale. Planting seedlings, the conventional approach, requires large investments and is high-risk where there are long dry seasons, but there are low-cost alternatives such as fencing to stimulate natural regeneration, direct planting of seeds and providing perches for birds that disperse seeds. Collection of seeds can be a source of income for small farmers and traditional peoples and communities, as in the case of the Cerrado Seed Network. Collection of seeds from areas protected by the Forest Law would be necessary to meet the demand and would not be harmful to ecology if done within limits. Direct seeding reduces costs of restoration as compared to planting seedlings, a benefit which is important for landowners who want to obey the law. These approaches are being implemented to restore Cerrado areas and are especially important in this biome because of the long dry season, which means that recovery and restoration technologies cannot be transferred directly from the Amazon or Atlantic rainforests.

Some investments are being made in agroforestry systems, which can provide environmental benefits while contributing to food security and income. They can incorporate livestock and be used to recover degraded areas (Porro & Miccolis 2011). However, it is necessary to gauge labor demand, economic feasibility (profitability) and the scale of environmental benefits, when only small plots are used. Agroforestry systems cannot be mechanized. It would be important to broaden the scope from plots to entire properties and landscapes.

The focus of efforts should not be limited to large estates. Sustainable productive landscapes can maintain a large part of the original biodiversity, especially the landscapes of family farmers and traditional and indigenous communities. These complex mosaics, including significant portions of original or cultivated plant cover and regrowth, also store carbon and maintain hydrological cycles, with a succession of positive feedback processes.

Conservation planning must be forewarned that negative environmental impacts of development investments are often indirect, for example by pressuring traditional communities and small farmers who live in mosaics of plant cover, which are also home to native fauna, as opposed to the barren pastures and monocultures of agribusiness. Investments in development often dislodge or isolate rural communities that play a role in conservation at the landscape level (ISPN field observations). They could be both more community-friendly and more wildlife-friendly.

The investments that cause negative impacts on conservation are both private and public. Public investments in infrastructure, technology, rural credit and extension and export promotion, for example, enable private investment by farmers, ranchers and other private economic agents. Private investors also lobby the government for a wide range of incentives and investments. Many who are strongly opposed to protected areas and indigenous peoples' rights have increasing power in Congress and in some ministries, not to mention state and local governments (Sarney Filho 2015).

Except for large-scale mining, most of the investment in the Cerrado is made by Brazilian individuals, companies or banks. Some of the private companies are traded on stock markets. The banks include public banks such as the National Economic and Social Development Bank (BNDES), the Bank of Brazil (BB), the Bank of the Northeast (BNB) and the Bank of the Amazon (BASA). Other public finance comes from the Constitutional Funds of the Center-West (FCO), Northeast (FNE) or North (FNO). These public funding sources are more inclined to include environmental criteria, as provided in the Green Protocol (Braga & Moura 2013).

Multinational companies provide credit and inputs and buy and sell the products, especially soybeans. They include Archer Daniels Midland, Bunge, Cargill and Dreyfuss (the "ABCD" giants). Other companies sell the fertilizers that are essential for growing crops in the Cerrado. Syngenta, Monsanto, DuPont and BASF sell commercial (including genetically modified) seeds and pesticides (herbicides, fungicides and insecticides). Companies like John Deere and Massey Ferguson produce tractors and other farm machinery.

The income for farmers to invest or pay back loans comes to a large extent from the companies that buy their products. In Brazil – in addition to the ABCD multinationals – they include supermarket chains like Carrefour and Pão-de-Açúcar. Walmart is gaining market share. Abroad, companies that use raw material from the Cerrado include buyers like Unilever, which can be considered as indirect investors. All are part of supply chains under increasing environmental scrutiny.

Crops also depend on various government subsidies, an indirect form of investment. Financial subsidies may take the form of low-cost and easy credit, loan rollovers or write-offs, floor prices and crop insurance. Indirect subsidies have to do with technology development, rural extension, promotion of exports and construction of roads, railroads and ports, among others.

A small share of direct investment in the Cerrado biome is foreign. As mentioned, some American farmers have bought land in western Bahia, while the government of China is looking into buying land in places like Goiás (Oliveira & Schneider 2015). In addition to national policies and consumer pressures within Brazil, Brazilian investors can be influenced by governments and consumers in countries that import their products. Foreign investors can also be influenced by various means.

Global markets are relevant. Their indirect impacts even involve the relocation of industries from developed countries like the United States and European countries to China, where they find cheap labor. Chinese workers in turn consume soybeans from the Cerrado. Such ecological footprints are global but are rarely taken into account.

Ironically, investments in conservation in other regions, both to the north and west (the Amazon) and to the south and east (the Atlantic Forest), may favor deforestation in the Cerrado by means of leakage, *i.e.*, perverse effects. The requirement for Legal Reserves of 80% in the Amazon as opposed to only 20% in the Cerrado, or 35% for the part of the Cerrado biome located inside the Legal Amazon, is the most outstanding example. The Moratorium on Soy, which is limited to the Amazon, is another case in point.

Environmental licensing and post-licensing monitoring, as well as enforcement of the Forest Law, are ways to control the negative impacts of investments on the environment. However, they are difficult or impossible to implement for activities involving many agents spread over remote areas. Likewise, third-party certification is feasible and effective for industry, but tracking and certifying compliance with standards are not practical for the primary sector, when it involves a multitude of agents.

Payments for environmental services, including payments for Reduction of Emissions from Deforestation and Forest Degradation (REDD+), have been seen as an alternative to influence investors, but they are subject to serious problems of spatial scale and continuity over time. If only some investors in a few places are included, and only part of the time, there will be perverse effects (Sawyer 2015). To be effective in net terms, incentives must be universal and permanent. For impacts in the Cerrado, this is especially true as long as benefits are concentrated in or limited to the Amazon rain forest.

While biodiversity conservation was a worldwide priority for about 20 years, since 2007 a large and increasing part of funding for the environment has gone to reduction of emissions. The effort is sometimes described as "low-carbon". A more appropriate label would be "low-emissions," since reduction of the greenhouse effect depends to a large extent on storing more carbon in biomass and using biofuels, which are also forms of carbon, instead of fossil carbon. Guaranteeing water for biomass survival and growth in dry seasons would be a low-CO_2 strategy. This approach to climate mitigation could justify more resources for biodiversity conservation.

There are various new possibilities, besides command-and-control, to influence investments made directly in the Cerrado or that have indirect effects in the biome. Efforts are under way to hold banks in Brazil liable for the negative impacts of their investments. The Green Protocol (*Protocolo Verde*) is being revived by the Ministry of Environment (Braga & Moura 2013).

Since the largest corporations trade on the stock market, activism by shareholders can influence their behavior. The market can rank companies with regard to their sustainability. Large companies are concerned about their reputations, especially when they operate with large volumes at small profit margins. In these cases, boycotts by consumers, who are also stakeholders, can be effective.

In political terms, agribusiness has been seen as anti-environmental. Overall, this is true. Some agricultural subsectors, however, are actually more stable and serious. Some landowners have an interest in their farms' long-term yields, including future use by their children and grandchildren. The "wheat" of more responsible subsectors can be separated from the "chaff" of frontier crooks, which cause the greatest destruction (Landers 2015). Some landowners are willing and able to create private reserves, which are also a means of protecting their property from logging, wild collection, biopiracy and invasion or clearing as well as conversion to other uses by their heirs.

In short, despite generally bleak prospects for the protection of biodiversity, hydrological cycles and carbon stocks in the Cerrado, a close analysis of investment options can identify various means to influence the behavior of Brazilian and multinational companies, and of individual farmers, ranchers and other entrepreneurs so as to reduce their impacts or at least slow the process of destruction to which the Cerrado and its peoples have been subjected to date. At the same time, such socioeconomic dynamics may gain even greater complexity under climate change scenarios that underline the need for integrated, long-term conservation strategies.

10. CLIMATE CHANGE ASSESSMENT

This chapter investigates how climate change interacts with biodiversity and society in the Cerrado Hotspot. Since climate change is global, the scope is broad. Since Brazil is the world's seventh largest emitter of greenhouse gases (GHG), due primarily to deforestation and agriculture, climate is highly relevant to the prospects for biodiversity conservation. The following sections deal with current and projected patterns in the Cerrado, impacts of climate change on biodiversity, social and economic impacts and potential mitigation and adaptation.

10.1 Past Trends in the Cerrado Climate and Biodiversity

Since at least four million years ago, when grasses spread, complex landscapes have constituted the Cerrado (Simon *et al.* 2009), which is typically dominated by a savanna matrix (with variable tree density and high species richness) that envelops patches of several other types of vegetation – from grasslands to forests. This results in a mosaic of high environmental variability (Reatto *et al.* 1998; Ribeiro & Walter 1998; Furley 1999; Durigan & Ratter 2006). The array of ecosystems in Cerrado landscapes is dynamic in both space and time, with forests predominating in humid periods of the Quaternary, while savannas expanded during dry periods; the present configuration is associated with an "intermediary" climate (Silva 1995; Aguiar *et al*. 2004; Salgado-Labouriau 2005). At the continental scale, the influence of adjacent forest domains (Amazon and Atlantic Forest) on the composition of the Cerrado flora (Felfili *et al.* 1994) and fauna (Silva 1995) reflects this savanna-forest dynamic, indicating that the central position of the Cerrado in the continent played a role in defining its high species richness. Acting as an adaptive pressure for as long as four million years before present, the fire factor also contributed to the evolutionary processes that shaped this hotspot's biodiversity (Simon *et al.* 2009; Cavalcanti *et al.* 2010). At the local scale, isotope-derived evidence shows that forest incrustations advanced towards savanna edges since the last deglaciation (~7,000 years before present), with rates of expansion varying as a function of fire regime and soil composition (Silva *et al.* 2008; Hoffmann *et al.* 2012).

Climate-vegetation interactions that controlled past evolutionary processes in the Cerrado took place through millennia. Even considering this time span, environmental changes related to climate may have been too abrupt to some taxa, as in the case of the terrestrial megafauna that lived in the Cerrado and became extinct some 10,000 years before present (Aguiar *et al.* 2004; Cavalcanti *et al.* 2010). Human activities have influenced the climatic system on a much shorter time scale in recent decades. For the Cerrado, projected changes in temperature and precipitation regimes for the next decades may promote major shifts in ecosystems' structure and functioning (Marengo *et al.* 2010; Bustamante *et al.* 2012).

10.2 Current and Projected Patterns in the Cerrado

Several initiatives to calculate greenhouse gas (GHG) emissions in Brazil emerged from the necessity to obtain updated estimates. For example, civil society started to organize multi-institutional arrays such as the Climate Observatory (OC), which publishes independent estimates based on the same methodology used for governmental inventories. The first official report on national emissions of GHG showed that about 75% of the country's emissions of carbon dioxide (CO_2) were due to changes in land use and forests, *i.e.*, that deforestation and burning, especially in the Amazon and the Cerrado, were the main sources of emissions from 1990 to 1994 (Brasil 2004). This trend was relatively consistent until 2005, when emissions due to land use changes started to decrease from 58% to 15% of national emissions in 2012, mainly as a result of avoided deforestation (Brasil 2014; Brandão Jr. *et al.* 2015). Even though deforestation rates are expected to further decline, climate change impacts are likely to negatively affect carbon stocks in the Cerrado's ecosystems: Due to increased dryness and more frequent burning, net ecosystem carbon exchanges would change from sink to source of carbon (Bustamante *et al.* 2012).

To examine present and future trends related to climate change in Brazil, the Brazilian Panel on Climate Change (PBMC) was established in September 2009, by the Ministries of Science, Technology and Innovation (MCTI) and the Environment (MMA). The work of PBMC integrates perspectives on climate change derived from various scientific communities working on climate science. The PBMC studies follow the division used by the Intergovernmental Panel on Climate Change (IPCC), namely: (1) physical basis; (2) impacts, vulnerability and adaptation; and (3) mitigation.

The findings of the first PBMC reports indicate a complex scenario by the year 2100, requiring adjustments and improvements in planning and knowledge about the natural environment (Domingues *et al.* 2012). The respective complete reports of the three working PBMC groups were published in 2014 (Ambrizzi & Araújo 2014; Assad & Magalhães 2014; Bustamante & La Rovere 2014).

The report of the first working group is called "Scientific Basis of Climate Change for the First National Assessment Report." The main indicators for the Cerrado identified were: (a) 1°C increase in air temperature, with a decrease of 10% to 20% in precipitation over the next three decades (by 2040); (b) by mid-century (2041-2070), an increase between 3 and 3.5ºC in air temperature and a reduction between 20% and 35% of rainfall; and (c) at the end of the century (2071-2100), increasing temperature between 5 and 5.5ºC and a more critical downturn in rainfall, with reductions between 35% and 45%.

As for impacts, vulnerability and adaptation, the temperature rise in any of the situations will probably result in a reduction of the photosynthetic process in Cerrado plants, resulting in a decrease of their biomass and a reduction in primary productivity. At the same time, the increase in the length of the dry period can potentially result in increased vulnerability to fire in the Cerrado, as has already been noted in recent years.

Given that local trends in desertification are already alarming (Carvalho & Almeida-Filho 2009; Horn and Baggio 2011), there is the risk that these processes could be amplified by the potential negative effects of rising temperature, more frequent burning and decreasing precipitation on Cerrado vegetation, especially considering the historically high rates of deforestation and land degradation (Klink and Machado 2005). If the dry season becomes longer (Marengo *et al.* 2010), less cloud cover would make temperatures rise even higher in the summer, which is now the rainy season. Persistent trends in that direction would lead to reduced flow of water in rivers and dry lakes, potentially reducing potable water supplies (Marengo *et al.* 2009), which could also be due to increased atomospheric concentrations of CO_2 "fertilizing" the growth of biomass and absorbing water (Ukkola *et al.* 2015).

Mitigation was analyzed with regard to risks and uncertainty, development and equity as well as drivers and trends. The conclusions are that there are many opportunities for transition to low-carbon and for use of renewable energy sources. Transportation can be more efficient, as can buildings. Barriers to energy efficiency in industry should be reduced. Recovery of pastures and tree farming are ways to reduce emissions of agriculture. Sustainable land-use change is important in the Amazon and Cerrado and could benefit from payment for environmental services, including carbon credits. Overall, there is need for much additional research.

10.3 Impacts of Climate Change on Biodiversity

A pioneer study on climate change effects on the Cerrado flora projected substantial declines for most tree species in the next 40 years (Siqueira & Peterson 2003). The researchers applied techniques of ecological niche modeling to develop a first-pass assessment of likely effects of climate change, as represented by global circulation models, on spatial distribution of 162 tree species by relating known occurrence points (15,657 records) to maps representing current and projected ecological dimensions. Considering both the conservative and the less conservative emission scenarios evaluated – *i.e.*, assuming a 0.5% per year atmospheric CO_2 increase and a 1% per year atmospheric CO_2 increase, respectively – 10% to 32% of the 162 analyzed species could end up without habitable areas in the Cerrado region or become extinct by 2055. Furthermore, between 91 and 123 species were predicted to decline by more than 90% in the potential distributional area in the Cerrado, with major range shifts to the south and to the east.

Expected impacts of global climate change on environmental suitability of wild edible plants, specifically, have been calculated (Oliveira *et al.* 2015). Considering the 16 most popular edible species in the Cerrado and a “business as usual” climate scenario, this research projects large negative effects of climate change on geographical range sizes. After evaluating ecological niche models, their results indicate a shrinking distribution range for 12 species when comparing present and future (2080) climate scenarios. This would lead to insulation of edible species richness in the southeast Cerrado, as this region presented the highest predicted environmental suitability; the degrees of edible species loss in other regions are expected to rise with increasing distance from the southeastern area.

Focusing on *pequi* (*Caryocar brasiliense*), a culturally and economically important Cerrado fruit tree, Nabout *et al.* (2011) found that municipalities currently using *pequi* fruit will have lower production in the future, because their regions will be less suitable for this tree, which in turn may affect the local economies. The authors warn that it will be necessary for governments to develop policies to mitigate adverse impacts, enhance positive impacts and support adaptation to climate change, as well as enhancing local food security.

Marini *et al.* (2009) also predict geographical displacement of species niches for Cerrado endemic bird species: an average range shift of 200 km towards the southeast. Their projections show that the geographical distribution of seven forest-dependent bird species would retract 41% to 80% by the end of the century, considering both the A1B and the B1 IPCC Emission Scenarios. For nine savanna species, estimated distribution retraction was 9% to 37%, while for ten grassland species, range loss was between 2%

and 71%. Given the same premises, only one species (chapada flycatcher (*Suiriri islerorum*), a habitat generalist) is expected to expand its geographical distribution, and only by 5%. The authors used consensus projections to derive these results, considering nine different ecological niche-modeling approaches and three global climatic models (from less conservative to more conservative).

Protected areas represent 8.3% of the Cerrado extension but comprise only 3.1% if considering only strict ("integral") protection, far below the 17% Aichi target. Those areas are concentrated in the northern region of the biome, with few remaining fragments in the south and the east regions, where socioeconomic pressures to convert natural habitats into commercial agroecosystems are highest *(*Klink and Machado 2005*;* Soares-Filho *et al.* 2014). This poor conservation status turns the projected range shifts toward the south and east into very troubling ones – even when considering the inherent limitations of modeling approaches (Siqueira and Peterson 2003; Marini *et al.* 2009; PBMC 2014). Hence, integrating planned actions that promote habitat preservation and ecological restoration through sustainable management is critical to prevent rising species extinction rates *(*Thomas *et al.* 2004; Brook *et al.* 2008).

10.4 Social and Economic Impacts of Climate Change

EMBRAPA Cerrados, in partnership with the State University of Campinas (UNICAMP), modeled changes on spatial patterns of crops in the Cerrado due to climate change. Considering the most optimistic IPCC scenario evaluated (B2 projects a 1.4ºC to 3.8°C rise in mean global surface temperature), areas with a low probability of hazardous thermic events would be reduced by 11.04% for cotton, 8.41% for rice, 4.35% for beans, 12.17% for corn and 21.62% for soy, the main crop in the Cerrado. This could cause combined economic losses of USD 1.7 billion for the main crops in the hotspot, as well as crop migration southwards, where climate conditions might be more favorable but land and labor are more expensive (Assad *et al.* 2008; Costa *et al.* 2010).

Climate change in terms of reduced precipitation could lead to more severe dry seasons and even desertification, as evidenced in the northeastern portion of the Cerrado (Carvalho & Almeida-Filho 2009; Horn & Baggio 2011; Vieira *et al.* 2015). Given that the Cerrado is the main source of water for three of the largest river basins in South America, understanding the socioeconomic and ecological impacts of hydrological changes is critical. The PBMC report lists several studies that already indicate substantial hydrological, geomorphological and biogeochemical changes in these fluvial systems. Modeling South American future precipitation trends that derive from IPCC scenarios, Marengo *et al.* (2009) expect extensive salinization and degradation of croplands as well as dropping livestock productivity, reflecting the fact that water availability and food security are closely related. These prospects are even more critical when macroeconomic pressures towards further conversion of natural ecosystems to annual crops and pastures are considered, since this also implies negative impacts to water resource conservation and additional GHG emissions through biomass burning and oxidation of the soil's organic carbon (Costa *et al.* 2010; Bustamante *et al.* 2012; PBMC 2014). At the local scale, planters of coffee in Patrocínio, Minas Gerais, far from any drylands and between three immense reservoirs, are already worried about scarcity of water (Haggar & Schepp 2012; Motta 2015). In areas adjacent to the semi-arid

Caatinga, in the Jequitinhonha Valley, ISPN field observations have also verified drought-related social and environmental issues.

Native edible plant species are widely used in restaurants, local food, desserts and ice cream, thus contributing substantially to local economies. If the predicted reduction in suitable habitat and geographical range leads to decreasing availability of those species, there can be significant economic risk for traditional communities that depend on native ecosystems for collection of these plants. This may force residents, especially youth, to undertake other economic activities, potentially resulting in less protection of natural ecosystems and further pressures towards conventional land uses.

If climate change is to cause displacement of economic activities to other regions, negative social and economic impacts could be strong. Within the Cerrado, migration to cities is not necessarily a positive route of mitigation or adaptation (Castles 2002). Impacts would be even worse if there are shortages of water and therefore electric power in cities, as are already beginning to occur. Considering the vulnerability of urban populations to floods and landslides, climatic projections indicate the expansion of high-risk areas with extreme events occurring more frequently (PBMC 2014). There has already been serious drought in São Paulo and landslides in Salvador. Overall, these threats mostly concern the economically and geographically vulnerable population, as expected worldwide (IPCC 2014).

10.5 Potential Mitigation and Adaptation

To address this situation, as explained in Chapter 7, the Brazilian government launched the Action Plan for Prevention and Control of Deforestation and Fires in the Cerrado (PPCerrado) as part of the National Policy on Climate Change in 2009. This plan seeks to ensure the reduction of GHG emissions in the region as a national priority. The PPCerrado is integrated with the Sustainable Cerrado Program, which was created in 2005 by the Ministry of Environment. The latter program aims at the conservation, restoration and sustainable use of the Cerrado's ecosystems, with particular focus on enhancing watershed integrity, improving traditional communities' livelihoods and strengthening the management role of civil society in the hotspot. If attained, these conservation goals would contribute greatly to climate change mitigation, mainly through maintenance of ecosystem services that regulate climate through biogeochemical processes (Bustamante *et al.* 2007; Costa *et al.* 2010; Bustamante *et al.* 2012).

Natural ecosystems play a substantial role in balancing anthropogenic GHG emissions, as shown by the growing convergence between the approaches of the Convention on Biological Diversity (CDB) and the United Nations Framework Convention on Climate Change (UNFCC). Thus, reaching the Aichi target of 17% of the Cerrado in protected areas would help mitigate emissions through avoided deforestation and fire management, as well as sequestration, if the hotspot continues to function as a carbon sink (Bustamante *et al.* 2012). However, this target is below what would be necessary in terms of woody plant cover. It would be fundamental to maintain about half of the hotspot with native tree cover, both original and recovered through regeneration and reforestation. That scale is needed in order to mitigate the climate change in terms of precipitation within the biome and in neighboring regions and countries, as explained in Chapter 4, on ecosystem services.

As elsewhere in the world, Cerrado communities that are more economically and environmentally vulnerable will be hit hardest by climate change (IPCC 2007, 2014). The rural poor, who are not so dependent on infrastructure for water, energy and food, may be more resilient than the poor living in cities and towns (Feiden 2011). The best adaptation strategy would be to make it possible for the rural population, including small farmers and other traditional peoples and communities, to remain on the land. For example, Cerrado populations exposed to the risk of future precipitation shifts could adapt through social technologies that already allow rainwater capture and storage in the Caatinga, with minor adjustments. In addition to technology transfers, strong governance and sector-based policies will be required to disseminate sustainable management approaches among farmers. Solving the structural problems concerning land rights and registration is another prerequisite (Lapola *et al.* 2014; Brandão Jr. *et al.* 2015). The dissemination of successful landscape management approaches requires political decisions that guarantee efficacy and continuity. To this end, civil society must interact with various stakeholders (*i.e.*, private sector, global community, governments) to strengthen mitigation and adaptation efforts.

An initiative of this kind that is already under way in northern Minas Gerais is the Satoyama project, which is managed by ISPN, executed by local organized civil society and supported by the GEF-UNDP Small Grants Program. The landscape approach was originally developed in Japan. In this dry region of the Cerrado, the construction of small dams improves water security for local communities, thus alleviating some of the economic and environmental pressures towards emigration. Indirectly, the initiative helps mitigate habitat loss and water constraints for native flora and fauna, which is returning.

10.6 Conclusions

It is essential to link biodiversity conservation and climate change agendas. Considering that human-generated climate changes will occur in a much faster pace in relation to paleo-ecological trends, projected higher temperatures, less rainfall and extreme events are very likely to have severe impacts on the Cerrado biodiversity, as demonstrated for the groups studied so far. Past and current regional land use trends must be set to a transition towards less exploratory occupation and better management practices. Deforestation and indiscriminate use of fire are examples of undesirable activities. The central role of the Cerrado in maintaining interregional hydrological balance and relatively constant flows of water to other regions of Brazil, as well as to Bolivia, Paraguay, Argentina and Uruguay, is clear. Given that biodiversity is sensitive to rising global temperature and regional water scarcity, large increases in funding for biodiversity conservation in the Cerrado are essential, especially at the macro-landscape scale. Resilience to climate change in the Cerrado and neighboring areas depends on maintaining the original ecosystems and the services they provide at a scale of a million square kilometers. This challenging scenario requires integrated efforts from civil society, governments, farmers and the global community to elaborate strong governance and incisive environmentally oriented policies. Another fundamental goal is to provide means for the rural population to trigger the transition towards a more sustainable landscape array. Social and agroecological technology transfers will certainly play a role in this enterprise, because they provide solutions to environmental tensions – including but not restricted to the impacts of a changing climate – that may provoke emigration from rural regions.

11. ASSESSMENT OF CURRENT CONSERVATION INVESTMENT

This chapter assesses recent and current conservation investment, covering both direct investment in such elements as protected areas and environmental science, as well as investment in economic development and local governance with positive impacts on conservation outcomes. Loans are not included, nor are investments intended to generate profit. Thus, the analysis includes traditional economic and social development funders and players whose funding and work, or lack thereof, influence CEPF's niche for investment described in Chapter 12. It makes distinctions among sources, sectors and themes and identifies gaps and lessons learned. Although a precise baseline is not possible, for reasons explained below, some patterns, trends, limitations and opportunities are clear.

To understand what can be done in the Cerrado, one must look to broader contexts both in Brazil, including government, society and the private sector, and abroad, taking into account the environmental policies and priorities of governments, international agencies, foundations and companies. Some investments in social programs or economic development must also be taken into account, to the extent that they can generate large-scale environmental co-benefits, much needed in the Cerrado Hotspot. The purpose of using this broad scope is to identify limitations and opportunities for the Cerrado, as well as lessons learned.

11.1 Investment by Source and Location

The following subsections identify, to the extent possible with what limited data is publicly available, the main investments in the environment in Brazil from domestic and international sources since 1992, when the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, catalyzed Brazil's first large-scale investments in the environment. The analysis begins with the biome that received the most investment, the Amazon, and ends with the biome that received the least, the Pampa. Trends that emerge over time reveal less funding for the Amazon and more for the Cerrado, although dramatic differences remain. Understanding this context of what donors do and do not support is essential for designing a medium- to long-term strategy for additional investment in the Cerrado.

The geographical scope of this analysis is broader than the Cerrado because, for both the short and the long term, it is fundamental to see what sources are available, whether traditional or new, that might shift their geographical or thematic focus or their *modus operandi*. The Cerrado is often eligible for funding, but it has generally failed to present competitive proposals, compared to the Amazon and the Atlantic Forest. Funding tends to be cumulative, with successful grant recipients requesting and receiving further support.

Although many websites, donors and beneficiaries were consulted, detailed data are rarely available and are not broken down in the ideal way for this exercise. The analysis is made more difficult by the fact that the borders between the Cerrado and its four surrounding biomes are blurred, as the Federal District is the only unit that is 100% in the Cerrado. The nine states considered here are only partly in the Cerrado. In most of the existing sources of data, such as the catalog of projects approved by the Brazilian

Cooperation Agency (ABC) of the Ministry of External Relations (MRE) or the lists of projects funded by certain donors, provided on their websites, the investments are not categorized by biome or even by state. Nor is it possible, in most cases, to classify projects or amounts according to a "conservation" criterion. Furthermore, the data on timing and amounts are open to interpretation and misinterpretation. Starting and ending dates and actual expenditures rarely conform with plans, and exchange rates fluctuate by more than 100% over time. The figures often include considerable co-financing, sometimes most of the total, much of which is in-kind contributions rather than in-cash funding, but this is not clearly identified.

It should be noted that many investments in conservation are for the country as a whole. For example, the National Forest Inventory (now being carried out by the Brazilian Forest Service (SFB) with funding from GEF and other sources) covers the entire country. Investments in the various Cerrado states would need to be broken down by municipality in order to be classified by biome. Likewise, many of the costs of research, training, environmental education, administration and participation in international negotiations, among other activities related to conservation, are not calculated on the basis of any geographical criteria. In sum, for all these reasons – purpose, location, timing, execution delays, blurred co-financing, fluctuating exchange rates – the available data are not relatable enough for direct comparison in tables. Nonetheless, general patterns and trends can be identified.

Because of the hundreds or even thousands of investments in conservation in a country as large and as environmentally important as Brazil, only the main investments are considered in this analysis, *i.e.,* those involving over a million dollars, except for the Cerrado, which is analyzed in greater depth. Presumably, there is correlation between the sum of the main investments and the grand totals including all the smaller investments. The Atlantic Forest, at least in regions where wealth is more concentrated, *i.e.,* the Southeast and the South, certainly has more small-scale local investments than the Amazon, Cerrado, Caatinga and Pantanal, which are located in less developed regions.

In the following subsections on each biome, there are examples of what can be done and lessons that can be learned that are relevant for future investment in the Cerrado.

11.1.1 Amazon

The Pilot Program to Conserve the Brazilian Rain Forest (PPG7) was the largest investment ever in international cooperation on the environment. It began in 1992 and lasted until 2012. The total amount of donor money was USD 428 million, primarily from the German government, but also involving other G7 countries, as well as the Netherlands and the European Union. The goals of the program were to conserve biodiversity, reduce deforestation and emissions and provide examples of sustainable development and international environmental cooperation. The subprograms gave rise to 28 projects and led to the creation of a natural resources policy and many protected areas, including support for 2.1 million hectares of Extractive Reserves, demarcation of indigenous lands, a surveillance system, 110 studies about rain forest ecosystems and support for demonstration projects involving 30,000 families in local communities. One major conclusion of the program was that natural resource conservation is only possible with the active participation of forest populations (World Bank website).

Between 1993, when international attention was attracted by a massacre of the Yanomami in Roraima, and 1999, when there was a reorganization of ministries, the MMA became the Ministry of Environment and the Legal Amazon and subsequently expanded to include Water Resources. The Secretariat of Amazon Coordination (SCA), the only secretariat for a biome, had abundant funding but was eliminated during an internal reorganization of the ministry in 2008.

The United States Agency for International Development (USAID) invested in the Amazon through the Global Climate Change (GCC) program and subsequently in a broader environmental program for Brazil, before scaling down in recent years. USAID works to strengthen biodiversity and the conservation of natural resources in protected areas and indigenous lands. It has focused on forest governance, sustainable forest management and biodiversity conservation, providing technical assistance and training for indigenous groups, civil society and local government officials. It supports projects in the Amazon that preserve the environment and its biodiversity and strengthen fire management and forest health. It assists farmers and cattle ranchers with sustainable environmental management practices on their lands and provides technical training to local and indigenous groups on fire management and control. Local women's and indigenous groups have participated in training programs. USAID has supported numerous projects all over the Amazon. North of Manaus, the Smithsonian Institution, under the leadership of Thomas Lovejoy, carried out the Forest Fragments project, which was the birthplace of the concept of biodiversity. The Tropical Forest Foundation (TFF) works with low-impact forestry, mainly in Pará. The University of Florida supported PESACRE and TNC supported SOS Amazônia in Acre, the Amazon region's pioneer state for environmentalism, which spread from there to Amapá and beyond. The United States Forest Service (USFS) has worked with fire control. The State University of New York (SUNY) managed a training program.

The United Nations Food and Agriculture Organization (FAO) has implemented GEF projects in São Félix do Xingu, in Pará, and along the BR-163 highway, in Mato Grosso and Pará, while the United Nations Development Program (UNDP) has implemented several GEF projects in the Amazon, especially in Northwestern Mato Grosso.

The Amazon Fund began in 2010 with a commitment by the government of Norway to provide USD 1 billion to reduce deforestation, although it does not include payments to landowners who do not cut down forest. Germany contributed a smaller amount. The fund is managed by Brazil's National Economic and Social Development Bank (BNDES). Up to 20% of the total could be used outside the Amazon biome, even in neighboring countries, but this has not happened yet. Discussions are now under way on how the Cerrado might be included.

The National Space Research Agency (INPE) focused its efforts on monitoring deforestation in the Amazon region and established the Project to Monitor Deforestation in the Legal Amazon **(**PRODES) and the System to Detect Deforestation in Real Time (DETER) to support law enforcement. The system costs about USD 2 million per year and is therefore expected to expend USD 40 million in 20 years. There was no similar monitoring for other biomes.

Because of their location and focus, the National Amazon Research Institute (INPA), in Manaus, and the Emílio Goeldi Museum of Pará (MPEG), in Belém, both of which connected to the Ministry of Science, Technology and Innovation (MCTI), have been able to attract Brazilian and foreign researchers and international cooperation, as have the federal universities in the Amazon. The Large-Scale Biosphere Atmosphere (LBA) project was a major scientific investment.

Based in São Paulo, the Amazon Program of Friends of the Earth (*Amigos da Terra*), not connected to Friends of the Earth International, has worked in the Amazon since 1989. It promotes sustainable use of forest products, control of fire, support for isolated communities, and policy formulation and monitoring; it also provides an online clipping service about the region (www.amazonia.org.br).

Greenpeace has been active in Brazil since 1992, launching campaigns focusing mainly on the Amazon region and on logging. With support from sources in the Netherlands, it was a key player in the Soy Moratorium, to avoid purchase of soybeans from recently deforested areas in the Amazon, but not in the Cerrado (Dros & van Gelder 2002).

The Institute for Amazon Research (IPAM), the Institute of Man and the Environment in the Amazon (IMAZON), and the International Institute for Education in Brazil (IEB), all NGOs created in the 1990s with initial support from USAID, moved on to mobilize funds from other sources. They have carried out many research and training activities for the Amazon. IEB has carried out leadership training. IMAZON also monitors deforestation in its own parallel nongovernmental system.

The sum of all these investments in the Amazon biome over a little more than two decades is on the order of USD 2 billion, *i.e.*, about USD 100 million per year, with a recent tendency to decline. In all these cases, it should be noted that the Amazon received exceptional attention because it is a tropical forest. Forests have a special appeal for the public and donors. The Amazon forest is also part of a larger South American ecosystem and one part of a broad category that exists in many countries and continents, not only in Brazil. The rich biodiversity is considered a global environmental good. The emissions caused by deforestation were a major justification for investment in conservation. Indigenous peoples, who live in large territories, were another important justification for funding.

11.1.2 Atlantic Forest

In negotiations at the Rio-92 conference, Brazil succeeded in including the Atlantic Forest in the PPG7, which was not originally intended by the donors. Approximately 10% of the USD 428 million was earmarked for this biome, *i.e.*, USD 43 million over 18 years.

Between 2001 and 2011, in two phases, the CEPF invested USD 11 million in the Atlantic Forest, primarily in its central and southern corridors. Various NGOs that initially were supported by CEPF have found other sources to carry on work in this biome.

The USAID supported conservation projects in southern Bahia through the Institute for Socio-Environmental Studies of Southern Bahia (IESB). German cooperation has also channeled investments into the biome.

Since 1990, the Boticário Foundation, connected to a large Brazilian cosmetics company, has supported numerous conservation projects, primarily for protected areas in the Atlantic Forest (and one private nature reserve in the Cerrado). Its present annual budget is now USD 1.1 million. This is a rare example of environmental grant making by a private Brazilian foundation.

Currently, a UN Food and Agriculture Organization (FAO) project funded by GEF supports integrated ecosystem management in Ilha Grande Bay (state of Rio de Janeiro) for a total of USD 2.3 million. The evaluation found that numerous meetings have taken place, but integrated management remains problematic. The project was promising, but is not a model for other regions.

SOS Atlantic Forest and the Atlantic Forest Network, CSOs that raise funds from various sources, have highly qualified personnel and are able to influence government and society. SOS Atlantic Forest has a strong presence in the National Congress. Working in networks, the regional CSOs were successful in passing the federal Atlantic Forest Law specifically for the biome. This was not particularly difficult, since the region is not a theater for unequal conflict between agribusiness, a mainstay for the national economy, and relatively weak socioenvironmental movements.

The state government of São Paulo has invested hundreds of millions of dollars in the Atlantic Forest near the coast, *i.e.*, in mountainous areas under little anthropic pressure. This can illustrate how wealthy developed states with strong urban-industrial economies could afford large investments of this kind.

The sum of these investments in the Atlantic Forest biome is on the order of USD 10 million per year, less than in the Amazon, but much more than in other biomes. The trend has been fairly steady over time, with less international support and more national inputs. It should be noted that, like the Amazon, the Atlantic Forest was able to fit into a broader category of tropical forests. The volume of funding has to do with the fact that most of the biome is in developed regions, with well-qualified scientists and civil society organizations who can mobilize funding from many sources. The need for conservation is essentially a consensus. There is little or no dispute over the importance of conserving the small areas that have not been cleared.

11.1.3 Caatinga

The FAO has a long record of funding for the Caatinga and will receive USD 3.9 million for a GEF project to reverse deforestation in parts of five states, with USD 20 million in matching funds from Brazilian partners.

The Inter-American Institute for Agricultural Cooperation (IICA) works in the Caatinga (Messinis 2015; IICA 2015). The Spanish Agency for International Development Cooperation (AECID) provided approximately USD 25 million for projects in the semi-arid part of the Northeast, mostly for cisterns and "living in harmony with drought" ("*convivência com a seca*"). It should be noted that Spain, which does not have many forests, is notable for not focusing primarily on rain forests. German cooperation has also been involved in small grants.

UNDP has obtained USD 3.8 million in GEF funding for Sergipe, through the MMA, with USD 17 million in local matching funds. It has also obtained USD 5.2 million for non-timber products and agroforestry through EMBRAPA-CENARGEN, with USD 26.3 million in matching funds, to work in the Caatinga, Cerrado and Amazon. The Caatinga is different from other Brazilian biomes in that it is eligible for support under the GEF's Land Degradation focal area. This may be a possibility for parts of other biomes, especially as climate change progresses.

Government spending on social programs in the Caatinga is particularly high because of the large population and high levels of poverty in the region. Such expenditures are justified in political terms, be they well-intentioned or merely electoral. The direct and indirect investments, with conditional cash transfers and a variety of social programs, are also beneficial in helping relieve pressure on environment. Because of these benefits provided by the government, family farmers need to clear less land every year to produce food and generate cash income.

There is much to learn from the rich experiences in the Caatinga regarding work with communities and living in harmony with ecosystems. The particularly important innovations are appropriate social technologies for capture and storage of rainwater for consumption, production and conservation in the context of increasing dryness and threats of desertification. Even before the dryness intensifies due to climate change, there are already several months of practically zero rainfall. Making better use of abundant water from the rainy season by storing it for the dry season would be beneficial both to humans and to other species living in the Cerrado.

The sum of environmental investments in the Caatinga biome is on the order of USD 10 million per year, fairly low, but social and development investments with environmental benefits are much larger. It should be noted that the Caatinga received international attention because it is an area subject to desertification, a problem that affects many other countries, especially in Africa. Another justification for donor funding is that the biome has the highest levels of poverty in Brazil, otherwise considered an emerging middle-income country.

11.1.4 Pantanal

WWF and CI work with the Pantanal, a national heritage ecosystem according to the 1988 Constitution. WWF also works with adjacent areas in Bolivia and Paraguay in the tri-national Cerrado-Pantanal project.

The Social Service of Industry (SESI), a semi-public organization funded by mandatory fees, has invested in private protected areas. The Pantanal attracts tourists from Brazil and the rest of the world, especially because of its fish, which can be observed in crystal-clear water, and its colorful birds.

The state governments of Mato Grosso and Mato Grosso do Sul, despite the lower levels of development in the Center-West as compared to those of the Southeast, have been taking a greater interest in the environment than in the past. Mato Grosso has been a leader in environmental land registration and Mato Grosso do Sul in zoning, both including the relatively limited sections that are in the Pantanal wetlands.

The relatively small investments in environment in the Pantanal biome, around USD 2 million per year, scarcely ahead of the Pampa's, are not anywhere near investment levels in other wetlands biomes. In part, the Pantanal received very little international attention because it is small, compared to most other Brazilian biomes. The attention it did receive has to do with charismatic species, including fish to catch and birds to watch, with potential for ecotourism and recreation. Bonito, in Mato Grosso do Sul, is a major tourist attraction in which public and private investments have synergy with environmental conservation.

11.1.5 Pampa

Although the environmental movement in Brazil began in Rio Grande do Sul, investment in conservation in the Pampa, Brazil's sixth biome, has been insignificant, except for some efforts by the state government of Rio Grande do Sul, where the entire biome is located. The Pampa is not even considered by environmentalists who want the Cerrado and the Caatinga to be declared national heritage regions through a constitutional amendment.

Environmental investments in the Pampa biome, some USD 1 million per year, are insignificant compared to those in the first five biomes. The grasslands are not considered to be of global interest because they lack biodiversity and carbon storage appeal. It is unlikely that this will change in the near future. In that sense, there could be common links among the Cerrado, the Pampa and perhaps the Pantanal, which is sometimes considered to be a humid savanna.

11.1.6 Cerrado

As mentioned in Chapter 6, the main investments indirectly related to environment in the Cerrado were made by the Brazilian Agricultural Research Company (EMBRAPA), which has a specific unit for the Cerrado, originally known as the Center for Cerrados Agricultural Research (CPAC), located in the Federal District. Most of the investment was for technology for crops and livestock, although some researchers at CPAC worked on environmental issues such as useful plants (*e.g.*, Almeida 1998a, 1998b; Almeida *et al.* 1987) and vegetation types, especially gallery forests (*e.g.*, Ribeiro & Walter 2008), among others. EMBRAPA's Genetic Resources and Biotechnology Center (CENARGEN) also did pioneering work with saving agrobiodiversity genetic resources among the Krahô indigenous people in Tocantins, as well as supporting family farmers in northern Minas Gerais.

In 1991, FUNATURA, through The Nature Conservancy (TNC), as mentioned in Chapter 8, received support from Brazil's first debt-for-nature swap, to implement the Grand Sertão-Veredas National Park and resettle the area's original inhabitants. The interest of 6% on USD 2,192,000 provides continuous income of USD 131,520 every year (Piccirillo 1993).

Between 1996 and 2000, the United Kingdom Overseas Development Agency (ODA) and Department for International Development (DfID) funded the project on Conservation and Management of the Plant Biodiversity of the Cerrado Biome (CMBBC), with grants to EMBRAPA-Cerrados, IBAMA, UnB and ISPN, *i.e.* government, academia and civil society, totaling some USD 2 million. A second phase starting in 2001 focused on the Paranã-Pirineus corridor in northeastern Goiás (no data available on funding). The project made significant contributions to scientific knowledge about the botany of the Cerrado (Felfilli *et al.* 1994; Ratter *et al.* 1997; Ribeiro *et al.* 2008; Proença *et al.* 2010). Many reports on socioeconomic aspects were never published but have been very useful for the preparation of this ecosystem profile (Sawyer *et al.* 1999).

As mentioned in Chapter 7 in the policy context, the GEF Sustainable Cerrado Initiative received USD 13 million through the World Bank to support the MMA and the states of Goiás and Tocantins from 2010 to 2015, promoting environmental protection and sustainable agriculture. The Sustainable Cerrado Plan resulting from broad-based consultation with stakeholders in 2003-2004 was used as justification for a full-scale GEF project through the World Bank, but the project did not deal with the parts of the plan regarding sustainable use of biodiversity or communities.

Brazilian government programs like PPCerrado have invested tens of millions of dollars in the hotspot for conservation *per se* (see Chapter 7), but the main government investments have been in social policies, with co-benefits for environment, both in the sense of promoting sustainable use of biodiversity and because social programs reduce the need to clear more land to produce food and income.

Since 1995, the GEF-UNDP Small Grants Program (SGP), through the *Programa de Pequenos Projetos Ecossociais* (PPP-ECOS), has invested USD 10 million to support more than 300 projects having to do primarily with sustainable use of biodiversity by local communities in all the states that are part of the Cerrado. The future of the program in GEF6 is not certain, and it may be necessary to find other sources.

The United States Tropical Forest Conservation Act (TCFA) provides funding through the Brazilian Biodiversity Foundation (FUNBIO) for activities in the Cerrado, including some projects associated with PPP-ECOS that have to do with capacity development and institutional strengthening, such as resource mobilization and dissemination.

WWF in Brazil, which until recently has received significant funding from the international parent organization, has invested in the ongoing trinational Cerrado-Pantanal project in Mato Grosso do Sul and Mato Grosso, as well as in the Chiquitano and Chaco areas of Bolivia and Paraguay. It also invests in the Grande Sertão-Peruaçu Mosaic of protected areas in northern Minas Gerais.

Through its various international cooperation agencies, Germany invested in the Cerrado in 2012 by funding the Cerrado-Jalapão project, providing a total of 13.5 million Euros, equivalent to approximately USD 12 million, primarily for control of wildfire, which is linked to climate change mitigation but also benefits biodiversity. Part of the 550 million Euros that Germany now plans to invest in forests, biodiversity and climate in Brazil, as explained in a seminar on this subject in August 2015, may go to projects in the Cerrado, not just to the Amazon.

Regarding the private sector, Monsanto and CI invested USD 1.1 million in the Produce & Conserve Program in western Bahia between 2009 and 2013. The Round Table on Sustainable Soy (RTRS) and the Cerrado No-Till Farming Association (APDC) involve the private sector in conservation agriculture such as zero tillage and integrated crop-livestock systems. The main concern of the private sector, as expressed in the two consultation workshops held as part of the ecosystem profile process, is with covering the costs of sustainable production.

The Black Jaguar Foundation (BJF), established in Europe in 2015, plans to mobilize resources to protect a corridor along the Araguaia River from its source in southern Goiás to its mouth in Pará (www.black-jaguar.org). It is helping to attract international attention to the Cerrado, not just to the corridor.

The state governments in the Cerrado, which now have their own environmental secretariats, have begun to invest more in the environment than in the past. The investments in the Amazon brought about change in Mato Grosso, Tocantins and Maranhão. The priority in the less developed parts of Brazil continues to be economic growth, mainly through agribusiness and large-scale mining, and social programs. Data on the amounts are not available, since the various cost categories (buildings, staff, travel, consultants, etc.) are not broken out as such. A few municipal governments, such as Alto Paraíso, Goiás, are involved, but they are exceptions to the rule.

Together with the Inter-American Development Bank (IDB), the World Bank Group (IBRD, IFC), other development partners and key Brazilian stakeholders, the Forest Investment Program (FIP) will lend between USD 50 million and USD 70 million for projects in the Cerrado starting in early 2016. The investment plan aims to promote sustainable management and use of previously anthropized savanna wooded areas, maintain carbon stocks and reduce GHG emissions, and improve the collection and management of information across the 11 states of the Cerrado through implementation of the Forest Law and monitoring of deforestation. Brazil's FIP investments also focus on indigenous peoples and local communities, providing access to fire alerts and early warning systems, information and support for environmental compliance, and assistance with the adoption of low-carbon farming practices in and around their lands. The Dedicated Grant Mechanism (DGM) for Indigenous People and Traditional Communities provides a grant of USD 6.5 million channeled through the Center for Alternative Agriculture of Northern Minas Gerais (CAA-NM).

Also through the World Bank, the United Kingdom's Department of Environment, Food and Rural Affairs (DEFRA) is investing USD 4.3 million in three municipalities in Bahia and six in Piaui as well as three protected areas. There appears to be considerable overlap with the priority areas and corridors identified in this ecosystem profile. The funding aims to reduce rates of deforestation by supporting the environmental registration of rural holdings and helping farmers restore vegetation on illegally cleared land. It also funds measures to prevent and manage forest fires. This includes improving Brazil's Early Warning Fire system and supporting emergency aid services to enhance local capacities to handle forest fires.

The various investments in the Cerrado biome after 1992, excluding loans, routine government expenses and for-profit investments, are listed in Table 11.1. They include various investments in economic and social development that have positive environmental impacts. Estimates of yearly amounts for 2015 are provided when available. The sum of these investments is on the order of USD 10 million per year, with a tendency to increase in recent years, but it is still far from sufficient to avoid serious damage to biodiversity, hydrology and climate. The limitations and opportunities are analyzed in the following sections.

Table 11.1. Current Investments in the Cerrado Biome, 2015

Project or Initiative	**Source(s)**	**Notes**	**Approximate Years**	**Approximate amount (USD) in 2015**
CAR Bahia	State Government of Bahia and Amazon Fund (BNDES)	CAR in Bahia, through the state environmental secretariat, for BRL 31.7 million (~USD 8 million)	2014-2016	NA
CAR Mato Grosso do Sul	State Government of Mato Grosso do Sul and Amazon Fund (BNDES)	CAR in Mato Grosso do Sul, through the state environmental secretariat, for BRL 9.8 million (~USD 2.5 million)	2014-2018	NA
CBH - Watershed Committees	Fees charged to users of water	All over Brazil, few in the Cerrado, limited benefits	Ongoing	NA
Cerrado Center (Central do Cerrado)	Federal government (Bank of Brazil Foundation - FBB), among others	Marketing of products of sustainable use of Cerrado biodiversity	Ongoing	USD 150,000 (includes fees)
Cerrado-Jalapão	Bilateral (BMUB, GIZ and KfW)	Control of fire, protected areas and Rural Environmental Registry (CAR), Euro 13.5 million	2012-2016	NA
Cerrado Nucleus	Federal government (University of Brasília - UnB) and grants	Research and extension center in Alto Paraíso, Goiás (Chapada dos Veadeiros)	Ongoing	NA
Cerrado-Pantanal	Civil Society (WWF)	Mostly Pantanal biome, with headwaters in the Cerrado	Ongoing	NA
Cerrado Project	Bilateral (DEFRA)	CAR in western Bahia, through the state environmental secretariat	NA	NA
Cerrado Sociobiodiversity	Federal government (CAPES), with bilateral support from France	Through the University of Brasília at Planaltina (FUP)	NA	NA
Cerratenses	State government (Federal District)	Center of Excellence in Cerrado Studies, with Cerrado Alliance among 32 organizations	Ongoing	NA
Climate Fund	Federal Government and grants	Wide variety of projects	Ongoning	NA

Project or Initiative	**Source(s)**	**Notes**	**Approximate Years**	**Approximate amount (USD) in 2015**
CRAD – Reference Center in Nature Conservation and Recovery of Degraded Areas, University of Brasília (UnB)	Federal government and grants	Focuses primarily on the Cerrado	Ongoing	NA
DEFRA project	Bilateral (UK DEFRA)	8 municipalities and 3 protected areas,10 million pounds (USD 15.4 million)	2011-2016	NA
DGM – Dedicated Grant Mechanism	World Bank	Grants for local communities, total USD 6.5 million	2014-2020	~USD 1 million
Ecological-Economic Zoning (ZEE)	Federal and state governments	Planning of land use	Ongoing	NA
Ecological Value Added Tax (ICMS Ecológico)	State and municipal governments	Some states distribute their tax revenues to municipalities, taking environmental protection into account	Ongoing	NA
EMBRAPA Cerrados	Federal government and grants	Research mostly for agricultural and livestock development, for some environment	Ongoing	NA
Faces of Brazil	Private sector (Pão de Açúcar supermarkets)	Purchase of handicrafts all over Brazil, but difficult to purchase food products except honey in conformity with health regulations	Ongoing	NA
Federal universities	Federal government and grants	The Federal District and all states have federal universities and all faculty are required to do research and extension	Ongoing	NA
FNDF - National Fund for Forest Development	Federal government	Strengthens community-based forest enterprises in Cerrado, total of BRL 2 million for all of Brazil (~USD 513,000)	2014-2015	NA

Project or Initiative	Source(s)	Notes	Approximate Years	Approximate amount (USD) in 2015
GATI - Environmental Management in Indigenous Lands	Multilateral (GEF) through UNDP and federal government (FUNAI)	In selected reference areas, some of which are in the Cerrado, total USD 2.4 million	2014-2018	NA
GEF-UNDP Small Grants Program (SGP)	Multilateral (GEF and UNDP)	Also includes Caatinga biome	Ongoing	USD 1.3 million
IBAMA	Federal government (MMA)	Environmental licensing and inspection	Ongoing	NA
ICMBio	Federal government (MMA)	Maintenance of federal protected areas for BRL 234.5 million (~ USD 60 million)	Ongoing	NA
INOVA Cerrado, Socio-technical and institutional innovations for conservation and valorization of the Cerrado biome	Federal government (CAPES, EMBRAPA, UnB) and Agropolis Foundation	Through the University of Brasília at Planaltina (FUP), Euro 80,000	2014-2015	~USD 88,000
Integration of Conservation and Sustainable Use of Biodiversity in Practices of NTFPs and ASFs in Multiple-Use Forest Land-scapes with High Conservation Value	Multilateral (GEF through UNDP for CENARGEN - EMBRAPA), with 4-to-1 co-financing	Starting in 2015, with some sites in Cerrado and others in Caatinga and Amazon	2015-2017	NA
LAPIG, Federal University of Goiás (UFG)	Federal government and various grants	Monitoring of land use change, climate, etc., in Cerrado and rest of Brazil	Ongoing	NA
Low-Carbon Agriculture (ABC)	Federal government	National level, but limited access to credit for practices such as integrated-livestock production, total for all of Brazil BRL 197 billion (~USD 50.5 billion)	2011-2020	NA

Project or Initiative	Source(s)	Notes	Approximate Years	Approximate amount (USD) in 2015
MATOPIBA	Federal government (Ministry of Agriculture, Livestock and Food Supply - MAPA)	So far, ambitious plan almost entirely for development and practically nothing for environment in four northern Cerrado states (Maranhão, Tocantins, Piaui and Bahia)	2015-2020	~0
Municipal protected areas	Municipal governments	Many municipalities	Ongoing	NA
National Integration Sociobiodiversity Routes	Federal government (SUDECO, Ministry of National Integration - MI)	Promotes links among sociobiodiversity productive clusters in the Center-West	Ongoing	NA
PAA - Food Acquisition Program	Federal government	Institutional market for purchase of sociobiodiversity products all over Brazil, but very bureaucratic, Center-West with BRL 184 million (~USD 47.2 million) for 2003-2013	Ongoing	NA
Petrobrás Ambiental	Federal government	Wide range of projects, funds now limited	Ongoing	NA
PGPM-Bio, Minimum Prices for Socio-Biodiversity Products	Federal government	Minimum prices all over Brazil, but with very low prices, total for all Brazil of BRL 22 million (~USD 5.6 million)	2009-2015	NA
PMFC - Technical Assistance to Support Community and Family Forest Management	Federal government (SFB/MMA)	Federal program being extended to the Cerrado biome, BRL 1.3 million (~USD 333,000)	2014-2016	NA
PNAE - School Lunch Program	Federal government, through municipal governments	Institutional market for purchase of sociobiodiversity products. In 2014,BRL 3.7 billion (~USD 1 billion) for all products in all of Brazil	Ongoing	NA
PNPSB - National Plan for Promotion of	Federal government (various ministries) and state	All over Brazil, for purchase of sociobiodiversity products	Ongoing	NA

Project or Initiative	Source(s)	Notes	Approximate Years	Approximate amount (USD) in 2015
Sociobiodiversity Value Chains	governments			
PPCerrado	Federal government (MMA) and bilateral (UK)	Focus on priority municipalities in the Cerrado, £10 million (~USD 15.4 million)	2011-2016	NA
Private universities	Various sources	Some Catholic universities focus on environment	Ongoing	NA
Producers of water	Federal government (Bank of Brazil Foundation - FBB)	One watershed in the Federal District	Ongoing	NA
RTRS - Round Table on Sustainable Soy	Bilateral (Netherlands, through NGOs)	Meetings, maps, certification	Ongoing	NA
Sertão Veredas Peruaçu Mosaic	Civil society (WWF)	Support from WWF International	Ongoing	NA
Sertão Veredas-Peruaçu Mosaic	Bilateral (interest on USA debt swap)	Through TNC and FUNATURA	Every year	USD 131,520
State protected areas	State governments and Federal District	All states and Federal District	Ongoing	NA
State universities	State governments and grants	All states have universities, many of which have campuses in the interior	Ongoing	NA
UnB Herbarium	Federal government (University of Brasília) and grants	Collection of Cerrado flora	Ongoing	NA

Source: ISPN research on websites.

In comparison to other biomes, it should be noted that the Cerrado is neither tropical forest nor drylands. It has intermediate levels of development, although there are pockets of poverty. There are few charismatic species. The Cerrado does not seem to have much carbon storage appeal, a global environmental good, although there is much more than meets the eye with the underground biomass. Its role in regional and continental hydrological cycles is of the utmost importance but is still poorly understood, at least with regard to the source of the water that flows north, east and south from the central highlands.

11.1.7 Patterns and Trends of Investment in Brazil

The general pattern revealed by the foregoing analysis of large-scale investments (over a million dollars) is hundreds of millions of dollars per year for the Amazon, tens of millions of dollars per year for the Atlantic Forest, Caatinga and Cerrado and only one or two million dollars per year for the Pantanal and Pampa. Funding for amounts under one million dollars is probably proportionally more important in the Atlantic Forest, much of which is in Brazil's most developed states. The environment in the Cerrado is attracting more attention than in the past, but the totals are still far from what is needed. It is essential not only to mobilize more funds, but also to increase the Cerrado's share in existing sources of investment for the environment and to influence investments in economic and social development that have positive or negative environmental impacts so as to shift the balance.

11.1.8 Investment in Bolivia and Paraguay

As mentioned previously, WWF, CI, BirdLife International, WLT, GEF, UNDP and USAID have all invested in biodiversity conservation in Bolivia and Paraguay. The European Union is an important donor, while German, Canadian and Danish bilateral assistance has also been important.

The World Bank has implemented a technical assistance program and supported a multisectoral analysis in order to help the Bolivian government to improve environmental management regarding: (a) water resource pollution by mining and mitigation of the pollution; (b) evaluation of potential wastewater reuse in agriculture; (c) improvement of waste management; and (d) evaluation of health benefits through adequate water supply and basic sanitation.

In Paraguay, the objective of the World Bank's project on "Conservation of Biodiversity and Sustainable Land Management in the Atlantic Forest of Eastern Paraguay" is to assist continued efforts to achieve sustainable natural resource-based economic development in the project area by: a) establishing the Mbaracayu-San Rafael conservation corridor within public and private lands through sustainable native forest management practices for biological connectivity; and b) encouraging sustainable agricultural practices that maintain biodiversity within productive landscapes, while increasing productivity and mainstreaming biodiversity conservation.

It should be noted that although Brazil is no longer a priority for many sources of international cooperation, Bolivia and Paraguay both remain developing countries that have not reached middle-income status, continue to be eligible for funding by international donors.

11.2 Gap Analysis

Universities, foundations and government agencies in developed countries, like the National Science Foundation (NSF), the Fulbright Commission, the British Council, the *Institut Recherche pour le Développement* (IRD) and the *Recherche Agronomique pour le Développement* (CIRAD) have invested vast amounts in research in the Amazon and very little in other Brazilian biomes, including the Cerrado. Investments in the Amazon and their abundant bibliographical outcomes are listed on various websites, but citations of literature about other biomes are relatively rare.

Section 11.1 shows that the main beneficiaries of investment in conservation are located in the Amazon, by far, and in the Atlantic Forest, in second place. If investments in creation of indigenous lands are included as investments in conservation, as was the explicit intention in the PPG7, the Amazon stands out even more. However, much of the land in the Amazon is already in the public domain and does not require that landowners be paid, so the same monetary investment would produce smaller results (square kilometers) in the Cerrado than in the Amazon. The Cerrado also needs to conserve much larger areas than the Atlantic Forest, where only 12% remains.

Investment in new protected areas in Brazil has dropped significantly in recent years, due in part to the fact that vast protected areas had already been created since 1992. The ICMBio website shows that there are many protected areas still awaiting "regularization." Maintenance of protected areas is far from adequate. The other alternative would be to conserve areas outside the official national system (SNUC), such as Indigenous and Community Conserved Areas (ICCAs), in which residents themselves take responsibility for nature conservation, which a few ill-equipped park guards are unable to do.

In the case of conservation in the Cerrado, as compared to the Amazon, it is essential to remember that most of the land is private and that it is and will remain relatively expensive for many years to come. If one assumes an average cost of USD 1,000 per hectare of private land, five million hectares of protected areas would have a total cost of nearly USD 5 billion for regularization. The fact that many payments to landowners have not been made is one of the reasons for political resistance against creating new areas.

Gaps in funding for the Cerrado actually reflect funding gaps for all biomes, as described above, according to available information. The greatest gaps in geographical coverage of protected areas in Brazil are in the Cerrado and the Pampa. The areas under the most intense pressure now have the fewest and smallest protected areas. Investments in other environmental, social and development policies, on the other hand, are less unequal.

Scientific knowledge about the Cerrado is another gap. The coverage of data on species distribution is biased toward proximity to large universities. It is expensive to do field research in remote areas. Information on deforestation, carbon stocks and water cycles is incomplete and outdated. Underground carbon, which is greater than above-ground carbon in many areas, remains a mystery. There is practically no solid information on local and inter-regional atmospheric flows in hydrological cycles or on the importance of biodiversity for surface runoff and evapotranspiration. The economic and ecological costs and benefits of traditional and innovative land uses and practices have not been analyzed, much less used to inform policy.

Federal investment in science and technology is concentrated in the Southeast, where the most qualified researchers are in a better position to compete for federal or international funds in this sector. At the same time, the state research foundation in São Paulo (FAPESP), which receives a fixed percentage of the state budget, has an annual budget larger than the science and technology budgets of the federal government or any other state.

Socio-environmental policies have roughly the same coverage in per capita terms in the Cerrado as in the rest of Brazil and amount to many billions of dollars, as can be seen in

Table 11.1. However, except for Minas Gerais, there is a large gap in the per capita coverage of Declarations of Eligibility for PRONAF (DAPs), which are concentrated in South Brazil. These documents are required to gain access to institutional markets for agro-extractive products, such as PAA and PNAE (see Section 7.3.2).

As explained in Chapter 8, the Cerrado's civil society organizations urgently need funding, including capacity building and institutional support for networks, to carry out activities, meet their legal obligations and participate effectively. It became clear in the final consultation workshop for the ecosystem profile in October 2015 that dependence on one project after another is threatening and counterproductive. Continuity is essential. For this, it would be important to make the regulatory framework more workable (Santana 2015). There is now a congressional bloc to defend CSOs.

Once they have land, indigenous groups still need options for livelihoods and income generation, without depending entirely on the government. They also need special training, including in English, to participate effectively at international meetings and negotiations, for which Portuguese is far from sufficient.

Government environmental agencies have staff and offices, but they need outside support to hire consultants and for stakeholder consultations, policy dialogues, publications, media outreach (websites) and other needs not covered by limited budgets, which are shrinking.

In terms of new sources of investment, the private sector can certainly play a key role. The challenges are to reconcile the interests of producers with those of suppliers of inputs and services (upstream in the supply chains) as well as local buyers and international commodity traders (downstream in the supply chains). Large corporations are often easier to involve than are small and medium companies or individual landowners, although there is enormous heterogeneity within the private sector and change is now under way.

Mobilizations to raise funds and other sources of support depend on inter-sectorial dialogue and negotiations among governments, companies, communities and socio-environmental movements. This in turn requires financial support to develop capacity and to enable participatory processes in a vast region where citizens' physical presence at council and commission meetings is costly.

11.3 Lessons Learned

The lessons learned from the analysis of investments in the environment in various parts of Brazil over the last 25 years, as presented in this chapter, along with the outcomes of the consultation process carried out during preparation of the ecosystem profile, can be summarized as follows:

1. Where there are synergies, links with social investments can multiply resources available for conservation.
2. Biodiversity conservation focused on specific species should take into account their ecosystem functions and should be linked with climate and water, for which there can be more funding than for biodiversity *per se*.
3. Participation of local communities is essential for large-scale conservation and can be more effective.

4. There is insufficient funding for creation of many new protected areas and proper functioning of existing protected areas.
5. International cooperation and funding can influence national, state and local policy and leverage government funding.
6. Considering their current capacities, it is difficult for civil society organizations in Brazil to access government funding and comply with complex and unrealistic requirements, especially in remote areas.
7. There is need for improvement in the scientific and technological basis to justify funding for the Cerrado.
8. Improved awareness about the Cerrado and its ecological functions among the public in general, the press and decision-makers is essential.
9. There are various state and local sources of funding in the Cerrado that should be explored.
10. There are federal and international funds that could be mobilized if proposals from the Cerrado were more frequent and more competitive.
11. Funding from the private sector is possible in some cases, although the sector also demands funding to cover the costs of sustainability, which could be reduced instead of only being paid for by consumers and taxpayers.
12. There is growing recognition among donors of the importance of the Cerrado, although recognition of savannas and non-forest terrestrial ecosystems in general would help leverage support.
13. Some investments do not increase the total amount from government or donors, but only the geographic and thematic distribution. Shifts toward environment and the Cerrado are possible.
14. Some countries that import commodities from Brazil are becoming aware of and assuming some responsibility for their global environmental footprints, which are much more serious in the Cerrado than in other biomes.

11.4 Conclusions

The main conclusion of this analysis of investments in Brazil is the necessity and opportunity of increasing funding for the Cerrado Hotspot in both absolute and relative terms. This would be facilitated by placing the Cerrado in the broader context of tropical savannas.

Because of shifts in their priorities regarding international cooperation, Brazil must depend less on foreign donors. At the same time, domestic government funds are very limited. Tax revenues are insufficient even for health, education and social programs. Public opinion in Brazil is unanimously favorable regarding the environment, as long as consumers and taxpayers do not have to pay for its protection. Consumers abroad say they favor sustainable products, but resist paying premium prices although this is changing slowly. New technology may make it possible to carry out crowd-funding among the minority that is willing to make contributions. Support may now also involve equity, in addition to grants.

Creating protected areas in the Amazon was relatively easy, while the purpose of investing in the Atlantic Forest was to protect what little remains of the original forest. In the Cerrado, meanwhile, synergies must be found among social programs, economic development and the private sector, targeting drivers of destruction while maintaining sustainable productive landscapes, along with traditional conservation at specific sites.

Strict conservation is not feasible or effective on the scale needed to conserve biodiversity and maintain ecosystem services in the Cerrado. For less developed regions, social investments of various kinds can generate many environmental co-benefits. Likewise, infrastructure investments can make agriculture more productive, intensive and sustainable, requiring less land and counteracting the drivers of deforestation. For this to happen, it will be vital to gain a role in policy making (see Chapter 12).

Above all, it is fundamental for the various investors in environment in the Cerrado and in other regions, as well as investors in other areas (infrastructure, energy, commodities, South-South cooperation etc.), to collaborate, seeking synergies and avoiding unnecessary duplication so as to achieve the greatest impact.

12. CEPF NICHE FOR INVESTMENT

12.1 Conservation Investment Needs

As seen in Chapter 5, the remnants of natural Cerrado vegetation are, for the most part, fragmented and heavily pressured by production areas. Out of the six highest indirect threats to the hotspot ranked in Chapter 9, half are related to agriculture (i.e., cattle, annual crops and biofuel). With the Cerrado being considered a ”breadbasket” for the world and as the main productive region by the Brazilian government, the main challenge for conservation is undoubtedly to find ways to reconcile development agendas with maintenance and restoration of natural ecosystems and their associated biodiversity and socio-economic values.

Among the many barriers identified by stakeholders and captured in this document are the following: a regulatory framework that hinders the sustained, effective engagement of civil society (including local communities and private sector companies); a lack of enforcement of existing favorable policies; a weak civil society, especially in terms of capacities for participation in the decision-making sphere; and a lack of appreciation of the biological and socio-economical values of the Cerrado among decision makers at all levels. In addition, as seen in Chapter 11, funding opportunities for civil society organizations wishing to engage in the conservation of the Cerrado are currently very limited, especially in light of the size of the hotspot and the scale of the threats facing it.

The main needs for action in the next five years to conserve the Cerrado Hotspot include:

- to avoid or at least minimize new clearing by making better use of the land already cleared and/or creating alternative economic incentives for land users/owners;
- to restore degraded lands so as to recreate ecological connectivity among fragments of remant vegetation by tailoring low-cost, ecologically and economically appropriate technologies;
- to expand the network of protected areas by creating incentives for private reserves and promoting sustainable land management by indigenous and traditional communities.

Addressing these needs across the Cerrado as a whole will require the combined efforts of many actors. CEPF will need to collaborate closely with (and encourage the involvement of) other funders, both international donors and, most important of all, domestic development, social and environmental programs. CEPF’s focus is on engaging civil society but, even here, the fund will need to make targeted investments, to avoid duplicating efforts of other donors or spreading its resources too thinly. Considering its limited funds, CEPF investment will not attempt to deliver conservation action throughout the hotspot but, rather, to piloting demonstration models, promote their wider replication by other donors and invest in the capacity development of civil society organizations as strong partners in multi-sector initiatives for conservation and sustainable development.

12.2 CEPF Niche

Investment in conservation in the Cerrado must be strategic, in order to achieve the necessary scale in the world's third largest hotspot. The new directions for CEPF's third phase emphasize biodiversity conservation mainstreaming into public policies and the private sector practices and dealing with the drivers of environmental degradation. The investment niche for the Cerrado should not be limited to conservation of biodiversity at specific sites but should also take into account the essential links among biodiversity, ecosystem services, cultural and social issues, and public policy.

The CEPF investment will be used to leverage, enhance and amplify opportunities for financial support as well as technical cooperation, within Brazil and abroad. In some cases, the trinational focus, including Bolivia and Paraguay, is strategic. The impact of CEPF's investment niche is much larger than it might seem at first glance, due to shrinking funding from international donors and government budget restrictions, especially in the context of the current national economic crisis in Brazil.

In terms of target groups, in addition to the civil society groups most directly involved in conservation, it would be strategic for the CEPF investment niche to include local communities of family farmers, indigenous peoples, traditional communities and civil society networks. The main needs identified by the stakeholders through the consultation process are institutional strengthening, capacity building, infrastructure and technology tools.

The Cerrado has a diversity of civil society organizations, with varying levels of capacity to achieve conservation outcomes. Some kinds of institutional strengthening and capacity development, such as learning how to access and manage grants and other kinds of funds, can be achieved through short-term projects. At the same time, support for networks of civil society organizations should be substantial and continuous over the five years, as opposed to short-term small grants for specific purposes. Such investments are strategic, by enhancing the sustainability of civil society organizations, making them more efficient and better able to establish partnerships and raise the necessary funds to fulfill their missions in the years following the period of CEPF investments.

Capacity development should include qualification for participation in policy dialogues through the various councils, commissions and conferences. Few representatives from the Cerrado have both local legitimacy and understanding of complex technical and administrative issues, and there are specific needs of indigenous groups.

Private sector engagement is essential for successful conservation of the Cerrado. In order to have large-scale impacts and to induce transformative processes, it is necessary to implement actions in partnership with associations and cooperatives of producers, farmers and extractive communities. Strengthening associations and promoting the integration of sustainable production chains will be prioritized. There should also be incentives for sustainable business initiatives and a strategy to work with supply chains that link many producers as well as their suppliers, buyers, customers and creditors.

Working with government at all levels is also essential to the success of conservation efforts. Therefore, CEPF will support initiatives that promote dialogue and cooperation among civil society organizations and government agencies responsible for managing issues such as the environment, agriculture, infrastructure and other strategic sectors, since they are responsible for decisions and actions with high impact on the Cerrado’s conservation. The direct participation of civil society organizations or their dialogue with the governance bodies should be promoted and strengthened, through actions that increase their skills to intervene and propose innovations and solutions. CEPF investments could support the development of these skills and create better conditions to promote participatory and inclusive governance of territories and natural resources.

There are some gaps in scientific knowledge about the Cerrado, even about the occurrence of threatened species, as well as the ecosystem services. The traditional and indigenous knowledge on biodiversity and natural resources management remains poorly or not at all considered in the planning and implementation of conservation actions. On the other hand, the information available is vast, both scientific as well as from local communities, but is dispersed and lacks appropriate tools or platforms to allow integrated analysis that can support decision-making processes. CEPF investment will not fill these knowledge gaps at all but will be used strategically to develop and implement tools and protocols for the integration and analysis of existing data. Those tools are key to raising social, political and financial support for conservation of the hotspot.

The identification of conservation outcomes provides a long-term, overarching agenda for conservation of the Cerrado’s unique and valuable biodiversity. Realistically, only a fraction of these priorities can be tackled by civil society organizations over the next five years. Therefore, the ecosystem profile identifies geographic and taxonomic priorities for support.

Regarding species outcomes, of the 160 globally threatened species in the hotspot, CEPF will support actions to address the conservation of nine terrestrial and freshwater priority species. These investments will be focused on the implementation of existing National Action Plans, which present the official guidelines for the protection of these species, developed by experts and validated by the responsible government agency.

Regarding geographic priorities, CEPF investments will focus on four priority corridors: Veadeiros-Pouso Alto-Kalungas; Central de MATOPIBA; Sertão Veredas-Peruaçu; and Mirador-Mesas. Within these corridors, CEPF investments at the site scale will focus on 62 KBAs classified as “Very High” relative importance for conservation, according to the prioritization method validated by stakeholders. It is important to note that, as this ecosystem profile will be adopted by other institutions as a reference for action planning and fundraising for the hotspot, all 13 conservation corridors should be considered as priorities for conservation investment and action, even though the investment of CEPF will only target four of them. Similarly, it should be noted that an additional 47 KBAs of “Very High” relative conservation importance are located outside of the four priority corridors: 40 in other corridors; and seven outside of any conservation corridor.

CEPF investments in the Cerrado are designed to have an enduring impact on the ability of civil society to influence public policies and private initiatives that are aimed at conservation and sustainable development of the hotspot. By investing in one of the most important regions for agricultural commodities in the world, CEPF will help to increase the effectiveness and scale of agribusinesses’ sustainable practices. The harvesting of non-timber forest products and the traditional practices carried out by rural communities, indigenous people and *quilombolas* will also be supported, enabling the exchange of knowledge and a better insertion in the market of the so-called “socio-biodiversity products”. Support to establish new public and private protected areas is also included in the investment strategy, to enhance the status of legal protection for critically endangered species in the hotspot. By this strategy, CEPF will help to leverage coordinated contributions to the conservation of the Cerrado from diverse actors, in the same way as in other hotspots around the world.

12.3 Collaboration with Other Initiatives

CEPF will only be one of several international donors supporting conservation efforts in the Cerrado over the next five years, albeit one of only a few with a principal focus on working through civil society. It will be essential to coordinate closely with other initiatives, to avoid duplication of effort and realize synergies. Collaboration is, therefore, an important element of the CEPF niche, and is reflected in the investment strategy. Specific mechanisms for ensuring effective collaboration with other initiatives will include, but not necessarily be limited to:

- targeting CEPF investments at strategies that align closely with national priorities and that present opportunities for financial leverage;
- proactively engaging with other funders supporting civil society to align support to organizations and share lessons learned;
- establishing a national advisory group with representatives of government, donors and civil society, to provide strategic guidance to the development of the CEPF grant portfolio in the hotspot;
- seeking the development of complementarity in terms of geographical and/or thematical focus based on the investment gaps indentified in the profile or of cooperation on grant making.

Several of the conservation initiatives in the hotspot that are identified in this profile (Sections 7.7 and 11.1.6) will end in 2016, when CEPF investment will have just started. These include the Cerrado-Jalapão project supported by Germany and the Program to Reduce Deforestation and Burning in the Brazilian Cerrado supported by the United Kingdom. Final assessments of these initiatives should provide lessons learned and recommendations that the Regional Implementation Team (RIT) will be able to use to better coordinate and implement the CEPF investment strategy and strategically guide the network of partner institutions.

Regarding other known initiatives that will be implemented during part of the next five years or beyond, such as the CAR-FIP Cerrado Project or the National Plan for the Recovery of Native Vegetation (PLANAVEG) aiming at recovering at least 12.5 million hectares of native vegetation over the next 20 years, the CEPF investment strategy will implement supportive actions. These actions, ranging from local capacity building to piloting approaches and creating socio-environmental benefits as incentives for instance, have been identified as investment gaps in the Cerrado Hotspot.

At the same time, other significant initiatives may begin only during the investment phase, such as the Dedicated Grant Mechanism for Indigenous People and Traditional Communities. The CEPF investment strategy will need to practice adaptive management with regard to new initiatives that arise. The RIT will be instrumental in monitoring this changing investment landscape, and exploring new opportunities for collaboration. This role will be explicitly reflected in the team's scope of work, and it will be resourced accordingly.

13. CEPF INVESTMENT STRATEGY AND PROGRAMMATIC FOCUS

13.1 Conservation Outcomes Prioritization

To ensure that the CEPF strategy will have a significant impact on biodiversity conservation in the hotspot, some investments will focus on priority species and regions. In this sense, the profile identified priority species and priority geographies (KBAs and corridors) from the 1,629 vulnerable or irreplaceable species, 765 KBAs and 13 corridors presented in Chapter 5. A total of nine priority species (Table 13.1), and four priority corridors (Figures 13.3 and 13.4) containing 62 priority sites (Table 13.2 and Figure 13.2) were selected. The criteria and outcomes for each level of investment are presented in this chapter. Further details on the prioritization methodology can be found in Appendix 4.

13.1.1 Species Prioritization

Target conservation species were prioritized according to three main criteria:

1. Level of threat: focused on species classified as critically endangered, the highest risk category assigned by the Brazilian National Red List and IUCN for species facing extremely high risk of extinction in the wild, thus demanding urgent conservation action.

2. Existence of National Action Plans for the Conservation of Endangered Species or Speleological Heritage (Planos de Ação Nacional para a Conservação das Espécies Ameaçadas de Extinção ou do Patrimônio Espeleológico – PAN): focused on species, or sites which contain the species. PANs are public policies that identify and guide priority actions against threats to populations of species and natural environments. PANs are developed with researchers and experts in the field, through consultations and workshops that culminate in the publication of a planning matrix with clear objectives, actions, products, deadlines and possible collaborators. Focusing CEPF investments on species with PANs will promote alignment with federal government priorities.

3. Relative importance of the hotspot for species conservation: focused on endemic species in the hotspot, or even endemic to a specific Cerrado region.

Out of all the species of flora and fauna (including invertebrates) classified as critically endangered on the national Red List, only nine are listed on the international Red List and have PANs or are part of a regional PAN. The nine species listed in Table 13.1 below are the priorities for a CEPF conservation niche of investment. The table also briefly presents priority conservation strategies for each species, selected in accordance with both their respective action plans and specific CEPF niches of investment. The specific strategies, as well as derived actions, can be found in these official and public PANs, which may be consulted for more details.

Three important PANs already exist for species not yet listed on the international red list, three more are being prepared by CNCFlora, two should be published by the end of 2015 and one before mid-2016. These nine additional species are listed in Appendix 6 as candidates for CEPF priority investments should they also be included on the international red list.

Two of those PANs are for the region of Grão Mogol and Serra do Espinhaço Meridional, and the other is for Alto Tocantins Basin. The regions of Grand Mogol State Park and Grão Mogol/Francisco Sá, in central Minas Gerais, and the Serra do Espinhaço are three priority areas for biodiversity conservation (MMA 2007), and are within Serra do Espinhaço Corridor delimited on this ecosystem profile. As presented in Appendix 6, there are 12 critically endangered species in the Grão Mogol region and 45 in Serra do Espinhaço, according to the Red Book of Flora of Brazil (Martinelli & Moraes 2013). These two regions have high species diversity and a high degree of endemism. For example, the Velloziaceae family includes nine species endemic to Grão Mogol; the Compositae family also has nine species and Bromeliaceae has three. The Serra do Espinhaço has entire botanical families that are endemic to the region. However, it is seriously threatened by anthropic activities such as mining (mainly diamonds and iron), agriculture, urban expansion and monocrop plantations (mainly *Eucalyptus*), meaning that conservation actions are urgently needed. The Alto Tocantins Basin is part of two CEPF Cerrado corridors: RIDE DF-ParnaibaAbaeteé and Veadeiros-Pouso Alto-Kalungas. This basin has high species richness. The Chapada dos Veadeiros National Park is considered the core area of biological diversity and is recognized as an important flora endemism center. However, the river basin covers an area with high economic interest arising mainly from the agricultural sector and mining. There are eight known critically endangered species, according to the Red Book of Flora of Brazil (Martinelli & Moraes 2013). Therefore, there is an urgent need for conservation actions to reduce the effects of these factors on endangered species.

13.1.2 KBA Prioritization

KBAs were prioritized by following the recommendations in Chapter 7 by Langhammer *et al.* (2007) and validated in a workshop with researchers and stakeholders from the government and civil society. The six criteria used are listed below and described in greater detail in Appendix 4. The criteria database is also available in Appendix 3.

1- Biological priority: The relative importance of biodiversity in each KBA was determined by two subcriteria: *irreplaceability*, meaning the presence of restricted range species (plants and fish – see Chapter 5, for species outcomes details) and also the site irreplaceability; and *vulnerability*, meaning the presence of threatened species, weighted by the status on the Brazilian National Red List and IUCN Red List.

2- Level of threat: The IPA (*Indice de Pressão Antrópica* or Anthropic Pressure Index) was used. Analyzed for each KBA, the IPA is a synthetic index of economic and demographic pressures on the environment. It is a combination of agriculture/livestock pressure, population growth, stock and flow, at the municipal level.

3- Alignment with national priorities: This means the potential of that KBA to offer an important opportunity to engage with key public sector stakeholders to sustain, leverage, and/or amplify a CEPF best practice and/or conservation achievement. It used a combination of the official database on protected areas (conservation units, indigenous territories and *quilombola* lands – Afrodescendents from runaway slave communities) and official priority areas for conservation (both are official federal categories).

Table 13.1. Priority Threatened Species in the Hotspot

Class	**Family**	**Species**	**Popular Name**	**Brazilian National Red List**	**IUCN Red List**	**Priority Conservation Strategies**
Magnoliopsida	Cactaceae	Discocactus horstii	--	CR	VU	- Increase knowledge about the species, focused on Protected Areas, and its population dynamics, - Enhance and strengthen public policies related to the Cactaceae, especially for international scientific collaboration
Magnoliopsida	Fabaceae	Dimorphandra wilsonii	Faveiro de Wilson	CR	CR	- Create incentives and/or reformulate public policies to mitigate and compensate the threats and to protect the populations of *Dimorphandra wilsonii* - Integrate government institutions, nongovernmentals, the private sector and local communities in actions for the conservation of *Dimorphandra wilsonii* and promote educational activities on its protection and conservation in the areas of occurrence of the species - Expand and protect populations of *Dimorphandra wilsonii* and combat and/or mitigate threats to its range
Aves	Columbidae	Columbina cyanopis	Rolinha do planalto	CR (PEX)	CR	Birds of the Cerrado PAN - Reduce losses and improve habitat quality for species conservation
Aves	Thraupidae	Conothraupis mesoleuca	Tiê-bicudo	EN	CR	- Reduce negative impacts of agribusiness activities on species - Reduce the negative impacts of human settlements, infrastructure projects and exploitation of natural resources. - Increase scientific knowledge on the species
Aves	Emberazidae	Sporophila melanops	Papa-capim do bananal		CR	
Aves	Anatidae	Mergus octosetaceus	Pato mergulhão	CR	CR	- Support conservation actions of the species and its habitat - Increase research and monitoring of their occurrence - Promote awareness and training actions for the species' conservation - Support collaboration and international communication

Class	Family	Species	Popular Name	Brazilian National Red List	IUCN Red List	Priority Conservation Strategies
Insecta	Nymphalidae	Heliconius nattereri	Borboleta	EN	CR	Lepidopteras PAN - Increase information about species with insufficient data and monitor the conservation status of endangered species or occurring in habitats with high conversion rates - Promote actions focused on reducing habitat loss - Strengthen institutions involved in the conservation and management of Lepidoptera - Ensure public awareness of the conservation of Lepidoptera - Increase control and protection of Lepidoptera
Insecta	Riodinidae	Nirodia belphegor	Borboleta	CR	EN	
Amphibia	Hylidae	Phyllomedusa ayeaye	Perereca	--	CR	- Increase research to gain taxonomic, genetic and biological knowledge - Support actions to decrease the loss of habitat from fires - Strengthen public policies related to the use and occupation of land and water resources that affect the species' occurrence - Establish and implement strategies to improve quality and habitat connectivity in protected and priority areas for species conservation - Develop education practices for sustainability aligned with local development, benefiting species conservation

* CR (PEX): Extinct in the wild; CR: Critically Endangered; EN: Endangered; VU: Vulnerable

4- Civil society capacity: A new study, specific to this profile, mapped socio-environmental actions, projects and institutions into the Cerrado biome, an indicator of potential for collaboration.

5- Original vegetation cover: The workshop participants recommended that the percentage of KBAs covered by original vegetation (remnants) be used as additional criteria to prioritize KBAs, emphasizing the need to conserve the Cerrado's last big vegetation covers and ensuring conservation actions in the most intact and pristine areas.

6- Ecosystem services: This criterion ranks the role that KBAs play in the provision of water services to residents (for more details, please see Chapter 5, KBA+ section).

KBA prioritization used the Analytical Hierarchical Process (AHP) methodology because of the large number of KBAs and huge variations along the criteria's range (for example, the number of species of one category ranges from 0 to 10, and another from 0 to 176), to allow the ranges to normalize and finally to enable the use of weights to determine the importance of one criterion over another. A more comprehensive and detailed methodological description is given in the appendices. The final map with all five prioritization categories can be found in Figure 13.1. The analysis classified 109 KBAs as being of "Very High" relative importance for conservation (Table 13.2). These KBAs cover a total area of about 21 million hectares, equivalent to 10% of the area of the hotspot (Table 13.3).

Table 13.3. Summary of KBAs of "Very High" Relative Conservation Importance

	Number of KBAs	**KBA Area (ha)**	**Inside Protected Area (ha)**	**% Protected**
Inside Priority Corridor	62	9,311,581.34	3,052,415.08	32.78
Inside Other Corridors	40	10,525,039.74	1,586,982.11	15.08
Outside Corridor	7	1,293,268.90	279,342.31	21.6
Total	**109**	**21,129,889.98**	**4,918,739.50**	

Of the 109 KBAs of "Very High" relative conservation importance, 62 lie within the four priority corridors and comprise an area of over 9 million hectares. These KBAs are extremely important to include in the strategic actions on the corridor scale, since they indicate the most important areas for biodiversity and ecosystem service conservation. Thirty-two percent of these KBAs are within protected areas, indicating that strategic actions of management and creation of more protected areas can occur there.

Forty of the KBAs are completely contained by others corridors (especially Chapada dos Guimarães, RIDE DF, Espinhaço and Canastra), and the conservation actions could be designed in terms of clusters of KBAs. Only 15% of these are protected, and actions to support the creation of public or private conservation areas are a huge conservation opportunity.

Table 13.2. KBAs of "Very High" Relative Conservation Importance in the Cerrado Hotspot

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
64429	Perdida	Inside Priority Corridor	Central de Matopiba	260,603.92	0	0
64444	Ponte Alta	Inside Priority Corridor	Central de Matopiba	330,253.92	134,931.62	40.9
64449	Almas	Inside Priority Corridor	Central de Matopiba	102,710.49	58,904.99	57.4
64454	Soninho	Inside Priority Corridor	Central de Matopiba	198,439.09	69,840.78	35.2
64464	Parque Estadual do Jalapão	Inside Priority Corridor	Central de Matopiba	21,481.73	21,481.73	100
64466	Brejão do Jalapao	Inside Priority Corridor	Central de Matopiba	78,969.50	78,780.45	99.8
64471	Desabuso	Inside Priority Corridor	Central de Matopiba	8,965.92	8,962.28	100
64473	Rio Novo	Inside Priority Corridor	Central de Matopiba	4,015.70	4,013.70	100
64476	Frito Gado	Inside Priority Corridor	Central de Matopiba	38,650.67	38,650.67	100
64478	Toca	Inside Priority Corridor	Central de Matopiba	24,825.51	24,823.21	100
64479	Esteneu	Inside Priority Corridor	Central de Matopiba	27,075.35	27,075.27	100
64491	Rio da Volta	Inside Priority Corridor	Central de Matopiba	24,237.76	24,229.66	100
64492	Mateiros	Inside Priority Corridor	Central de Matopiba	11,765.86	11,765.86	100
64493	Pedra de Amolar	Inside Priority Corridor	Central de Matopiba	36,675.54	36,675.54	100
64515	Taquaraçu	Inside Priority Corridor	Central de Matopiba	106,260.70	55,509.75	52.2
64517	Porto Nacional	Inside Priority Corridor	Central de Matopiba	319,932.12	460.75	0.1
64549	Manuel Alves	Inside Priority Corridor	Central de Matopiba	318,737.89	38,126.61	12
64624	Novo Jardim	Inside Priority Corridor	Central de Matopiba	425,536.22	132.61	0
72992	PN das Nascentes do Rio Parnaíba	Inside Priority Corridor	Central de Matopiba	279,146.20	261,980.07	93.9

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
74225	EE Rio Preto	Inside Priority Corridor	Central de Matopiba	790,151.49	290,763.53	36.8
74243	Rio de Janeiro	Inside Priority Corridor	Central de Matopiba	22,856.73	21,885.74	95.8
74262	Cabeceira das Lajes	Inside Priority Corridor	Central de Matopiba	63,431.96	4,279.37	6.7
64225	Rio Itapicuru	Inside Priority Corridor	Mirador- Mesas	3,049.99	0	0
71886	Alpercatinha	Inside Priority Corridor	Mirador- Mesas	70,241.64	70,229.14	100
72871	Santo Antônio de Balsas	Inside Priority Corridor	Mirador- Mesas	39,360.10	0	0
72929	Uruçuí-preto	Inside Priority Corridor	Mirador- Mesas	605,948.42	64,842.40	10.7
74429	RVS das Veredas do Oeste Baiano	Inside Priority Corridor	Sertão Veredas - Peruaçu	113,236.25	46,982.42	41.5
74447	Correntina	Inside Priority Corridor	Sertão Veredas - Peruaçu	148,151.87	0	0
74461	Guará	Inside Priority Corridor	Sertão Veredas - Peruaçu	129,657.93	0	0
74476	Santo Antônio	Inside Priority Corridor	Sertão Veredas - Peruaçu	92,016.74	0	0
74584	PN Grande Sertão Veredas	Inside Priority Corridor	Sertão Veredas - Peruaçu	611,513.58	302,952.22	49.5
74586	Côcos	Inside Priority Corridor	Sertão Veredas - Peruaçu	61,313.22	0	0
74589	Itaguari	Inside Priority Corridor	Sertão Veredas - Peruaçu	456,336.02	58,840.97	12.9
74714	PE Veredas do Peruaçu	Inside Priority Corridor	Sertão Veredas - Peruaçu	138,748.80	135,364.15	97.6
74715	PN Cavernas do Peruaçu	Inside Priority Corridor	Sertão Veredas - Peruaçu	238,615.50	39,520.39	16.6
74734	RVS Rio Pandeiros	Inside Priority Corridor	Sertão Veredas - Peruaçu	38,431.58	7,646.27	19.9
74784	EE Sagarana	Inside Priority Corridor	Sertão Veredas - Peruaçu	331,829.06	2,319.07	0.7
6475	Corriola	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	134,394.65	54,179.58	40.3
64545	Natividade	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	235,778.06	0	0

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
64634	Montes Claros	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	198,155.27	28,880.10	14.6
64636	Maquiné	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	125,085.42	125,085.42	100
64637	Sucuri	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	170,243.13	62,399.63	36.7
64638	São Bartolomeu	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	99,232.14	61,512.89	62
64644	Calheiros	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	126,157.55	6,569.72	5.2
64654	Parque Estadual de Terra Ronca	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	268,560.46	58,426.32	21.8
64658	Macacão	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	161,833.11	92,281.82	57
64664	Baco Pari	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	130,908.96	3,426.44	2.6
64668	APA das Nascentes do Rio Vermelho	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	74,524.00	72,655.21	97.5
64738	Laranjal	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	136,670.50	60,571.13	44.3
64742	São Bento	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	18,056.59	18,056.59	100
64744	Parque Nacional da Chapada dos Veadeiros	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	132,526.16	132,516.41	100
64746	Córrego Areia	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	21,568.74	21,568.74	100
64747	Muquém	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	35,175.29	35,175.29	100
64748	Ribeirao Santana	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	37,822.39	37,822.39	100

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
64749	Rio Claro	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	65,747.88	65,747.88	100
64761	Tocantizinho	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	108,532.79	50,409.96	46.4
64762	Couros	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	47,835.13	47,832.45	100
64766	Picarrão	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	40,859.84	40,859.84	100
64768	RPPN Fazenda Branca Terra dos Anões	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	66,882.06	34,466.02	51.5
64769	Córrego Roncador	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	124,638.72	0	0
64782	Bacalhau	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	61,378.63	0	0
64792	Bilhagua	Inside Priority Corridor	Veadeiros - Pouso Alto - Kalungas	115,838.86	0	0
44969	Terra Indígena Pirineus de Souza	Inside Other Corridors	Alto Juruena	246,608.11	188,820.46	76.6
6773	Aldeia Carajá	Inside Other Corridors	Araguaia	8,984.35	3,864.57	43
6839	Rio dos Patos	Inside Other Corridors	Araguaia	121,226.03	62,860.63	51.9
65972	Furo da Gameleira	Inside Other Corridors	Araguaia	9,247.05	9,237.25	99.9
66224	Parque Nacional do Araguaia	Inside Other Corridors	Araguaia	16,212.80	16,212.80	100
89674	Arica-açu	Inside Other Corridors	Chapada dos Guimarães	169,275.31	50,056.16	29.6
89675	PN da Chapada dos Guimãraes	Inside Other Corridors	Chapada dos Guimarães	576,667.35	72,801.98	12.6
89684	Marzagão	Inside Other Corridors	Chapada dos Guimarães	59,503.57	35,394.03	59.5

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
89694	APA Estadual da Chapada dos Guimaraes	Inside Other Corridors	Chapada dos Guimarães	166,913.93	95,239.68	57.1
71845	PN dos Lençóis Maranhenses	Inside Other Corridors	Lençóis Maranhenses	21,697.29	21,697.29	100
89522	PN da Serra da Bodoquena	Inside Other Corridors	Miranda- Bodoquena	2,008,714.06	76,927.97	3.8
64898	Monumento Natural do Conjunto Espeleológico do Morro da Pedreira	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	41,435.98	41,409.85	99.9
64899	Reserva Biológica da Contagem	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	91,298.57	75,394.08	82.6
64998	APA da Serra dos Pireneus	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	51,011.74	11,624.66	22.8
74847	Unaí	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	289,479.47	12,257.60	4.2
74849	APA do Planalto Central	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	166,754.34	123,391.46	74
74892	Ribeirão Santa Catarina	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	337,167.45	0	0
84968	EE do Jardim Botânico	Inside Other Corridors	RIDE DF - Parnaíba -Abaeté	535,582.26	228,854.45	42.7
74996	Vargem Bonita	Inside Other Corridors	Serra da Canastra	82,883.65	27,193.78	32.8
74998	RPPN Fazenda do Lobo	Inside Other Corridors	Serra da Canastra	81,463.37	25,968.22	31.9
84876	PN da Serra da Canastra	Inside Other Corridors	Serra da Canastra	64,170.90	51,512.06	80.3
84879	Alpinópolis	Inside Other Corridors	Serra da Canastra	304,434.46	62,198.89	20.4
84984	Araguari	Inside Other Corridors	Serra da Canastra	462,663.80	14,774.86	3.2
7588	Parque Estadual Grão Mogol	Inside Other Corridors	Serra do Espinhaço	508,683.42	33,591.29	6.6
74928	Imbalacaia	Inside Other Corridors	Serra do Espinhaço	82,238.24	6,709.50	8.2
74941	Velhas	Inside Other Corridors	Serra do Espinhaço	409,807.79	268.09	0.1

Code	Name	Status	Corridor	KBA Area (ha)	Inside Protected Area (ha)	% Protected
74944	PE da Serra do Cabral	Inside Other Corridors	Serra do Espinhaço	199,002.96	38,448.39	19.3
74946	Pardo Grande	Inside Other Corridors	Serra do Espinhaço	203,131.55	0	0
74948	PN da Serra do Cipó	Inside Other Corridors	Serra do Espinhaço	449,751.89	67,783.38	15.1
74949	APA do Carste de Lagoa Santa	Inside Other Corridors	Serra do Espinhaço	1,155,436.39	60,446.29	5.2
74951	Pirapora	Inside Other Corridors	Serra do Espinhaço	370,669.54	0	0
75829	PE Rio Preto	Inside Other Corridors	Serra do Espinhaço	464,603.31	12,527.91	2.7
75891	EE Acaua	Inside Other Corridors	Serra do Espinhaço	336,057.41	2,071.94	0.6
75892	Itacambira	Inside Other Corridors	Serra do Espinhaço	105,003.96	0	0
75898	Caeté-mirim	Inside Other Corridors	Serra do Espinhaço	41,767.80	12,650.19	30.3
75899	PE Biribiri	Inside Other Corridors	Serra do Espinhaço	211,994.54	18,229.71	8.6
76689	Preto do Itambé	Inside Other Corridors	Serra do Espinhaço	6,858.91	6,649.13	96.9
76692	Morro do Pilar	Inside Other Corridors	Serra do Espinhaço	12,828.87	6,940.56	54.1
76693	Rio Picão	Inside Other Corridors	Serra do Espinhaço	32,849.81	4,131.97	12.6
76694	PE Serra do Intendente	Inside Other Corridors	Serra do Espinhaço	20,957.53	8,841.04	42.2
69529	APA da Serra Dourada	Outside Corridor		77,644.62	21,113.21	27.2
84649	EE Itirapina	Outside Corridor		142,248.46	48,488.94	34.1
84652	Jacaré-pepira	Outside Corridor		261,427.32	57,028.30	21.8
84659	Araqua	Outside Corridor		87,572.52	21,934.22	25
84662	Corumbatai	Outside Corridor		163,963.72	110,794.70	67.6
84672	Vitória	Outside Corridor		42,347.78	19,879.89	46.9
84841	FE de Bebedouro	Outside Corridor		518,064.48	103.05	0

Figure 13.1 KBAs Classified According to Their Relative Importance for Conservation (from Lowest to Very High Category)

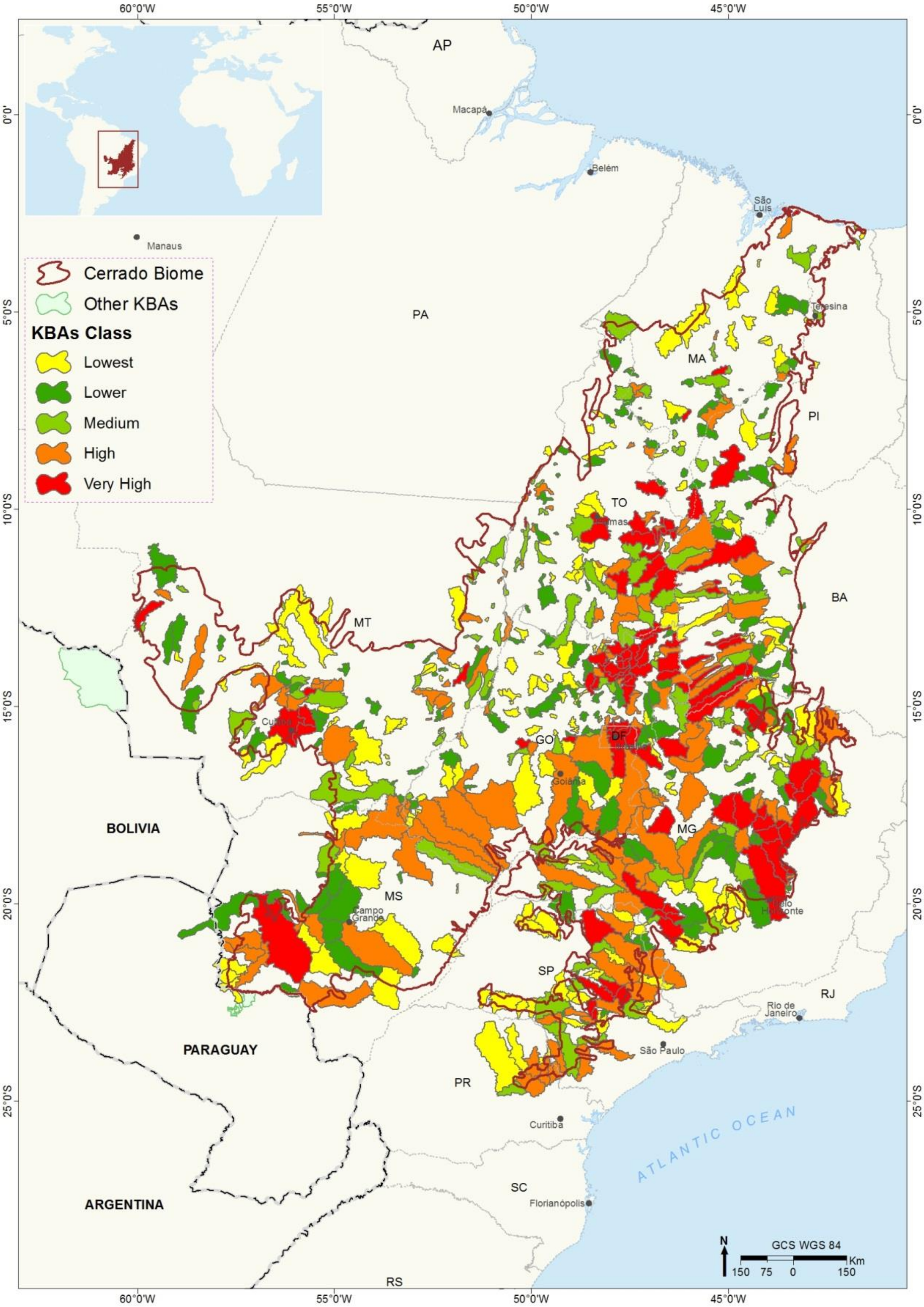
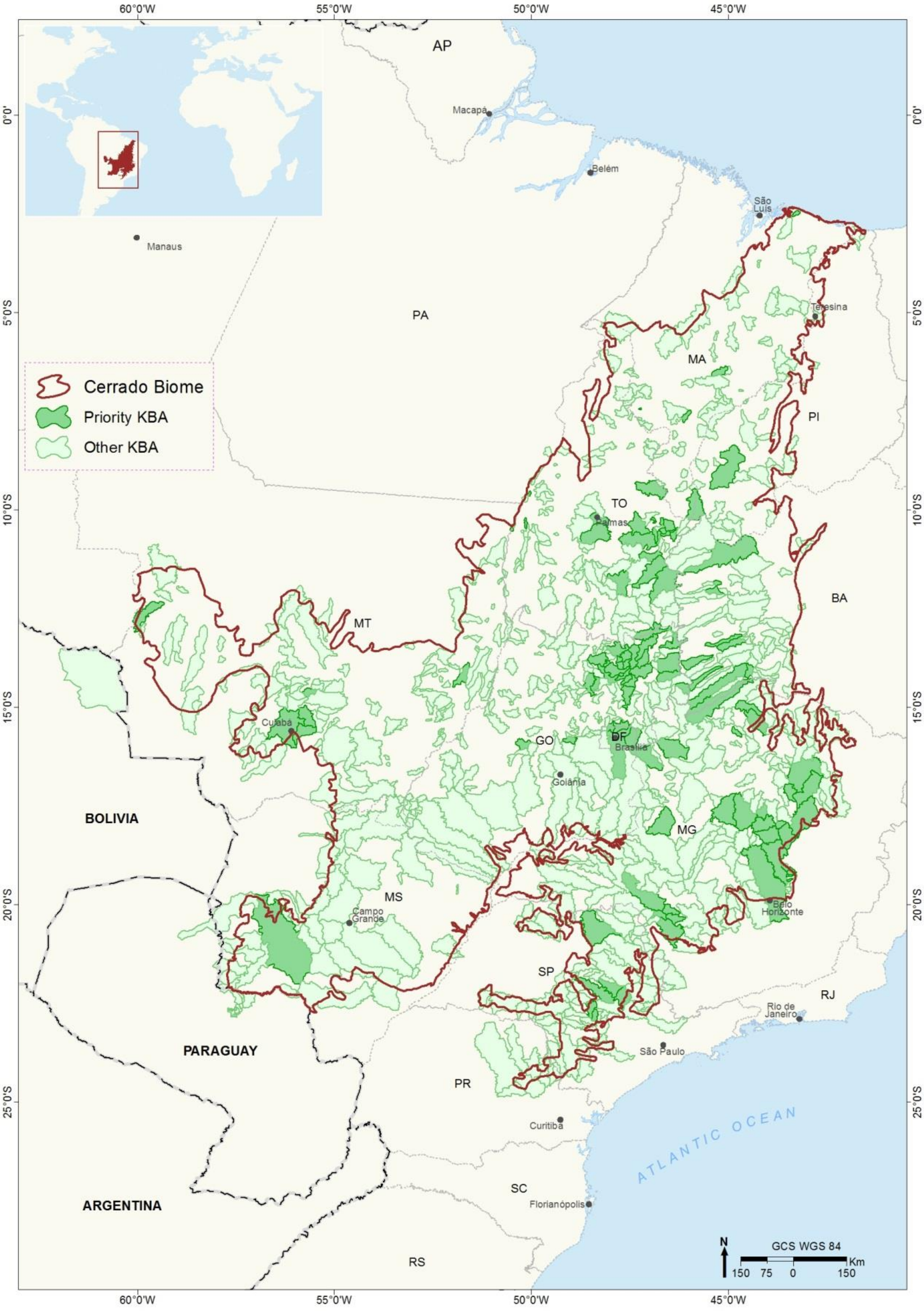


Figure 13.2. Priority KBAs in the Cerrado Hotspot



The seven KBAs totally outside any corridor require separate conservation actions at the site scale. Six of them are located in São Paulo state and one in Goiás state. Most of the protected areas that intersect with these KBAs are APAs (Environmental Protection Areas), which allow different activities and open an opportunity for establishment of more restrictive protected areas, including private reserves.

KBAs from Bolivia and Paraguay were not part of the KBA prioritization process due to the lack of comparative data from their sites. The target species (endangered birds) considered to designate KBAs in these countries are only a fraction of those used in Brazil (threatened fauna, threatened flora, rare fish and rare plants). Thus, involving these areas in a prioritization process using these criteria would inevitably lead to a low position in the ranking. In addition, other data used to prioritize KBAs was not available for these areas. In this sense, the investment strategy for the four KBAs in Bolivia and Paraguay should follow what BirdLife already described and identified in its previous study.

13.1.3 Corridor Prioritization

The corridors are an important geographic strategy for conservation, requiring different actions that can range from support for sustainable production to the strictest protection. For the four corridors selected as CEPF's investment targets, the selection process took into account their relative importance in terms of the number and priority level of KBAs within their boundaries, imminent threat to their conservation, opportunity of results amplification and the need for more conservation funds.

The criteria used to rank the corridors were (see Table 13.4):

1. *Highest relative ranking in terms of KBA*. All the criteria used for KBA prioritization (biological importance, threat level, civil society capacity, natural vegetation cover, ecosystem services and alignment with national policies) also impact its corridor prioritization, which is a result of the weighted average of KBAs inside the corridor.

2. *Conservation investment gaps*: To support KBA prioritization analyses of civil society capacities, a survey was done on civil society organizations and their socioenvironmental actions. On the basis of these results, each corridor was classified by the levels of conservation investments and the final result is ranked according to the major gaps identified.

3. *Opportunity to work with civil society:* also by using the scores from the civil society survey, each corridor was classified in terms of opportunities to work with civil society, considering the number and type of organizations present in the territory and their capacity-building needs.

4. *CEPF's potential leverage:* The corridor offers an important opportunity to engage with key public and private sector stakeholders to sustain, leverage, and/or amplify a CEPF best practice and/or conservation achievement.

5. *Urgency of conservation actions*: The region known as MATOPIBA, containing the last important remnants of the Cerrado, is being recognized as the last

frontier for agriculture expansion. The government recently created an inter-ministerial agency for the development of the region, aimed at expanding agriculture. This will inevitably convert a massive area of the Cerrado's natural cover. All corridors in the MATOPIBA project area were defined as highly urgent for conservation.

6. Natural vegetation cover: Since so much of the Cerrado has already been converted to agriculture and other land uses, and it is urgent to conserve all its remaining fragments. This criterion aims to identify the last major remnants of the Cerrado and to prioritize these important areas.

Based on the application of these criteria, four priority corridors for CEPF investment were selected: Central de Matopiba; Mirador-Mesas; Sertão Veredas-Peruaçu; and Veadeiros-Pouso Alto-Kalungas (Figure 13.3). All four are located in strategic regions of the Cerrado that were recently anthropized with pasture and agriculture activities, resulting in a high level of threat to their ecosystems. They are corridors with high proportions of natural cover (average of 78%) but with little protected area coverage (average of 24%) and low management capacities to care for protected territories. On average, 3% of the four corridors is included within indigenous territories, while *quilombola* lands represent less than 1%.

The four priority corridors represent about 32.2 million hectares within the Cerrado Hotspot corresponding to approximately 16% of the whole hotspot. They represent extremely important geographic regions for the conservation of the Cerrado's biodiversity, with a need for investment and excellent opportunities to catalyze and amplify the results of conservation actions.

The Serra do Espinhaço corridor has many important endemic and threatened species, highlighted in scientific literature and in national action plans (PANs). The Serra do Espinhaço Meridional PAN (for plants and herpetofauna) and the Grão Mogol PAN (for plants) indicate priority strategies and conservation actions for the region and for threatened and endemic species that inhabit the area. It is strongly recommended that CEPF's strategic investment niche in this region keep its focus on species, aligned with these PANs.

It is also important to mention that three corridors that were not identified as priorities for CEPF investment possess important clusters of KBAs of "Very High" relative importance for conservation: RIDE DF-Parnaba Abaeté; Chapada dos Guimarães; and Serra da Canastra.

Table 13.4. Relative Importance of the Corridors for the CEPF Investment Niche

Corridors	Average KBA importance	Average KBA importance	Conservation investments gaps	Opportunity to work with Civil Society	CEPF potential leverage	Urgency of conservation actions[b]	% natural vegetation cover	Natural vegetation cover[c]	CEPF prioritization sum [d]
Alto Juruena	3.16	Low	High	Medium	Medium	Medium	80	High	Medium
Araguaia	13.3	High	High	Low	Medium	High	84	High	Medium
Central de Matopiba	15.96	High	High	Medium	High	High	81	High	High
Chapada dos Guimaraes	4.53	Medium	Low	Low	Low	Medium	61	Medium	Low
Emas-Taquari	8.8	Medium	Medium	Low	Low	Medium	30	Low	Low
Lencois Maranhenses	1	Low	High	Medium	Medium	High	89	High	Medium
Mirador-Mesas	5.1	Medium	High	Medium	High	High	84	High	High
Miranda-Bodoquena	1.6	Low	Medium	High	Medium	Medium	44	Low	Medium
RIDE DF-Paranaiba-Abaete	8.75	Medium	Medium	High	Low	Medium	41	Low	Medium
Serra da Canastra	3.85	Low	Low	High	Medium	Medium	37	Low	Low
Serra do Espinhaco	14.7	High	Low	High	Medium	Medium	60	Medium	Medium
Sertao Veredas-Peruacu	12.58	High	Medium	High	High	High	70	High	High
Veadeiros-Pouso Alto-Kalungas	18.64	High	Medium	High	High	High	75	High	High

[a]Average KBA Importance: Low < 4 < Medium < 12 < High. [b]Urgency of Conservation Actions: All corridors that are part of MATOPIBA region were considered high level of urgency for conservation actions, and the others were considered medium level. [c]Natural Vegetation Cover: Low < 50% < Medium < 70% < High. [d]CEPF Prioritization Sum: average of all criteria, considering Low = 1, Medium = 2, High = 3 for each criterion. The final ranking score is Low < 1.5 < Medium < 2.3 ≤ High.

Figure 13.3. Priority Corridors in the Cerrado Hotspot

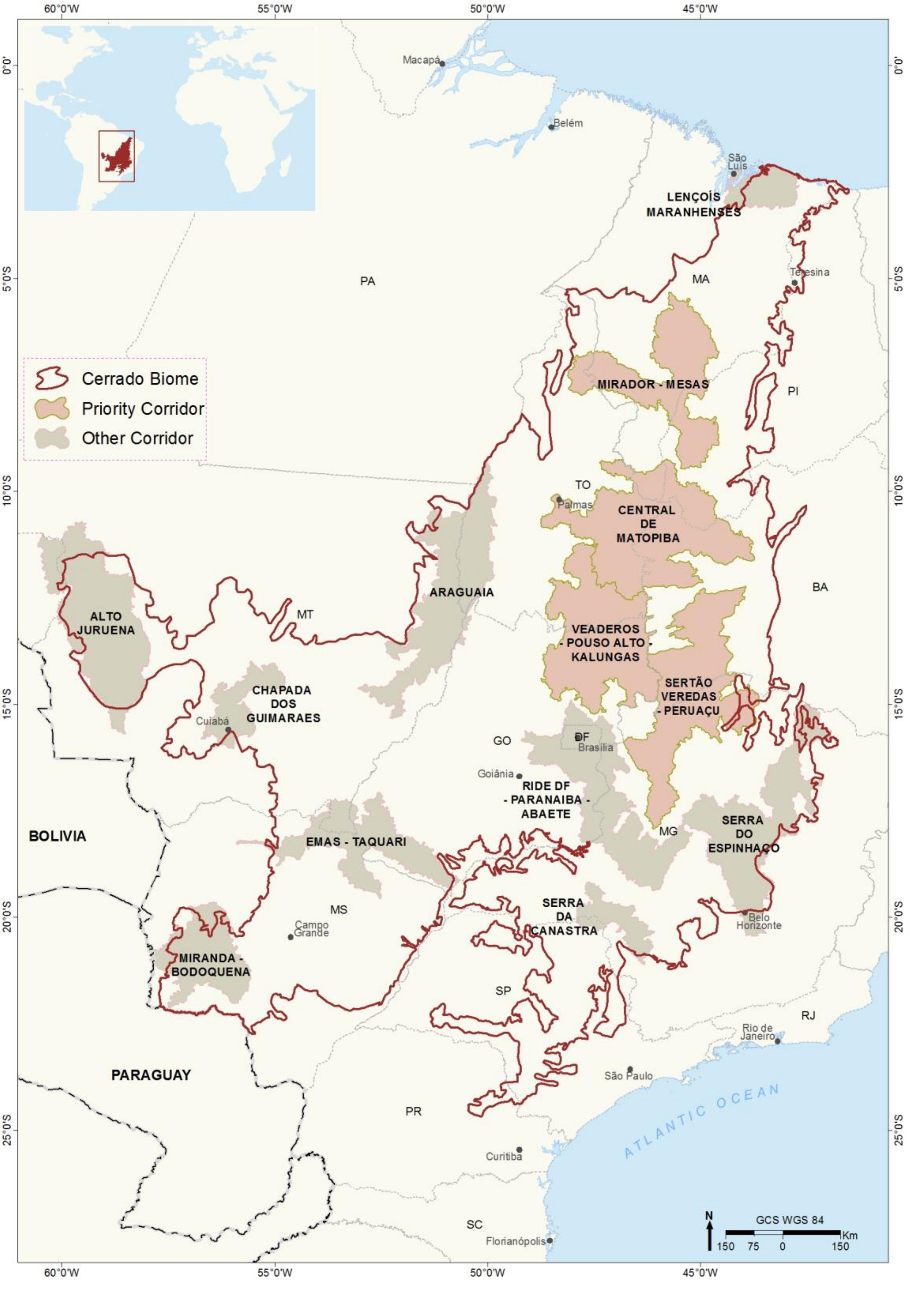
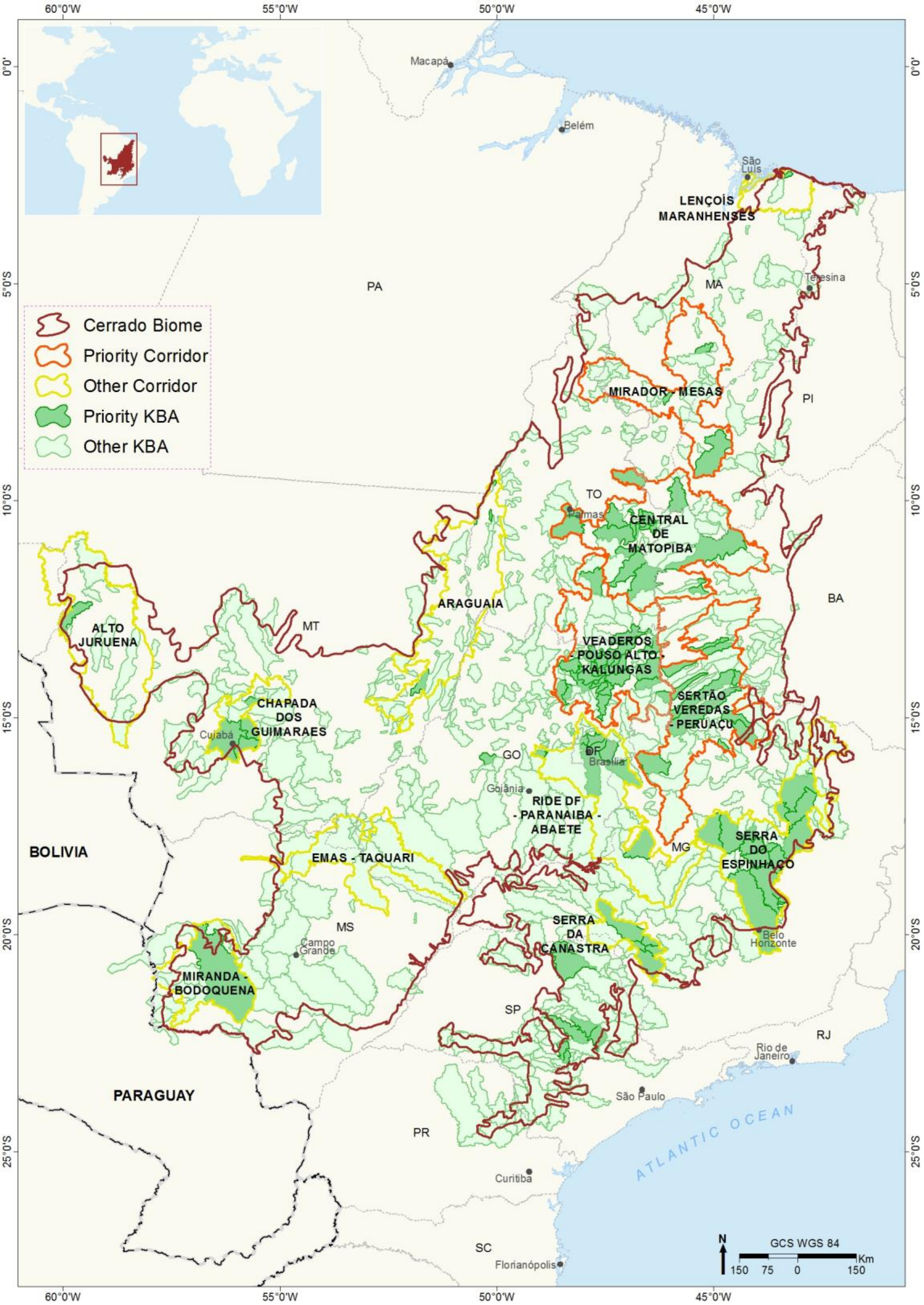


Figure 13.4 Priority KBAs and Priority Corridors in the Cerrado Hotspot



13.2 Strategic Directions and Investment Priorities

The broad and detailed compilation of information presented in the first 11 chapters of the ecosystem profile was used to refine a first set of 120 actions for the integrated conservation of the Cerrado Hotspot. These 120 actions were organized into 12 categories:

1. Ecosocial Monitoring.
2. Integrated Ecosystem Management.
3. Environmental Protection.
4. Sustainable Use.
5. Water Resources.
6. Indigenous Peoples and Traditional Communities.
7. Family Agriculture.
8. Agriculture.
9. Public Policies.
10. Institutional Strengthening.
11. Knowledge and Information.
12. Sustainable Financing.

As described in Chapters 1 and 2, about 170 experts were consulted during the profiling process and, in particular, during the four consultation workshops that brought together CSOs, private sector companies, academia and government institutions. These experts were tasked with ranking the identified actions to guide medium-term investments in the Cerrado.

Based on this work, a preliminary investment strategy was then compiled, with 15 investment priorities grouped into four strategic directions at three geographic scales: site; corridor; and hotspot. The preliminary strategy was presented at the final consultation workshop, during which stakeholders further streamlined it.

The geographic scale created most of the discussions. Many stakeholders objected strongly to being asked prioritize among the conservation corridors. They were concerned that the corridors not being prioritized might no longer be considered for investments by other donors. Once it was made clear that this additional prioritization of the corridors was for the CEPF investment niche only and that all 13 corridors should be considered by other donors as being priorities for conservation investment, agreement was quickly reached on the four priority corridors. In addition, stakeholder felt that it was important to define site-scale priorities, based on KBAs, in order to guide site selection for the creation of private protected areas (RPPNs), as this was seen as a site-specific need rather than a landscape-wide one, due to the high fragmentation of the hotspot.

The final investment strategy, presented in Table 13.5, is in accordance with the stakeholders present at the final consultation workshop and with members of the Senior Advisory Group, and also incorporates feedback from the CEPF Working Group. The investment strategy is for five years, and comprises 17 investment prioritiesgrouped into seven strategic directions.

Table 13.5. Strategic Directions and Investment Priorities for the CEPF Investment Niche

CEPF Strategic Directions	CEPF Investment Priorities
1. Promote the adoption of best practices in agriculture in the priority corridors	1.1 Identify and disseminate sustainable technologies and production practices in the agriculture sector to ensure protection of biodiversity, maintenance of ecosystem services and food security
	1.2 Promote the development and adoption of public policies and economic incentives for improved agricultural and livestock production practices, promoting sustainable agricultural landscapes
2. Support the creation/ expansion and effective management of protected areas in the priority corridors	2.1 Support studies and analyses necessary to justify the creation and expansion of public protected areas, while promoting conservation and sustainable use of biodiversity and valuing local and traditional culture
	2.2 Promote the inclusion of existing indigenous, *quilombola* and traditional populations, respecting and integrating their traditional knowledge, into conservation/restoration planning by government and civil society
	2.3 Encourage the creation and implementation of private protected areas (RPPNs) to extend legal protection in priority KBAs
3. Promote and strengthen supply chains associated with the sustainable use of natural resources and ecological restoration in the hotspot	3.1 Support the development of markets and supply chains for sustainably harvested non-timber products, in particular for women and youth
	3.2 Promote capacity-building initiatives in particular among seed collectors, seedlings producers and those who carry out restoration activities, to enhance technical and management skills and low-cost, ecologically appropriate technologies in the supply chain of ecological restoration
	3.3 Promote the adoption of public policies and economic incentives to expand the scale and effectiveness of conservation and restoration of Permanent Preservation Areas (APPs) and Legal Reserves (LRs), through improved productive systems that enhance ecosystem services
4. Support the protection of threatened species in the hotspot	4.1 Support the implementation of National Action Plans (PANs) for priority species, with a focus on habitat management and protection
5. Support the implementation of tools to integrate and to share data on monitoring to better inform decision-making processes in the hotspot	5.1 Support the dissemination of data on native vegetation cover and dynamics of land uses, seeking reliability and shorter time intervals between analyses and informed evidence-based decision-making
	5.2 Support the collection and dissemination of monitoring data on quantity and quality of water resources, to integrate and to share data on the main river basins in the hotspot

CEPF Strategic Directions	CEPF Investment Priorities
6. Strengthen the capacity of civil society organizations to promote better management of territories and of natural resources and to support other investment priorities in the hotspot	6.1 Strengthen capacities of civil society organizations to participate in collective bodies and processes related to the management of territories and natural resources
	6.2 Develop and strengthen technical and management skills of civil society organizations, on environment, conservation strategy and planning, policy advocacy, fund raising, compliance with regulations and other topics relevant to investment priorities
	6.3 Facilitate processes of dialogue and cooperation among public, private and civil society actors to identify synergies and to catalyze integrated actions and policies for the conservation and sustainable development of the Cerrado
	6.4 Disseminate information about the biological, ecological, social and cultural functions of the Cerrado to different stakeholders, including civil society leaders, decision makers, and national and international audiences
7. Coordinate the implementation of the investment strategy of the CEPF in the hotspot through a Regional Implementation Team	7.1 Coordinate and implement the strategy of investments of CEPF in the Cerrado, through procedures to ensure the effective use of resources and achievement of expected results
	7.2 Support and strategically guide the network of institutions responsible for the implementation of actions and projects funded by CEPF, promoting their coordination, integration, cooperation and exchange of experiences and lessons learned

13.3 Descriptions of Strategic Directions and Investment Priorities

For the investment strategy of CEPF, the seven Strategic Directions and 17 Investment Priorities are described below.

Strategic Direction 1. Promote the adoption of best practices in agriculture in the priority corridors

Sustainability has been an issue for Brazilian rural production, insofar as the growing concern of global society with climate change and biodiversity loss and establishment of environmental standards has begun to restrict demand for products regarded as harmful to the environment.One of the main sources of greenhouse gases in the Cerrado is agriculture, mainly because of inappropriate management practices. Such practices are one reason why new Cerrado areas keep being opened, to increase output. Agriculture is the sector that consumes the most water in Brazil through irrigation.

CEPF could contribute significantly to GHG reduction, water use efficiency and higher yields, while avoiding opening new areas and promoting social development, through the dissemination of best practices in agriculture. In this scenario, the investments of CEPF could induce the implementation of social and environmental safeguards. The purpose would be to strengthen initiatives that generate added value for the protection and recovery of natural capital, best practices for production and respect of the rights and the traditional livelihoods of communities that inhabit the hotspot.

Investment Priority 1.1 – Identify and disseminate sustainable technologies and production practices in the agriculture sector to ensure protection of biodiversity, maintenance of ecosystem services and food security
The adoption of best practices depends both on innovations based on the integration of science with traditional knowledge and dissemination of these innovations for the largest possible number of actors.

The CEPF investment strategy should prioritize initiatives involving associations, cooperatives and producer groups. This kind of investment could involve, for instance, the capacity building of farmer organizations through peer-to-peer exchanges and field visits or the preparation and distribution of technical manuals and folders in order to disseminate best practices. Best practices could focus on soil and water conservation, such as cultivation along contour lines, zero-tillage and ground cover, drip irrigation, fire reduction and control, crop rotation, crop-livestock integration, agroforestry systems and *in-situ* conservation of crop genetic resources. Locally adapted solutions could improve water infiltration, enhance groundwater recharge, reduce runoff and control erosion, among other benefits.

Investment Priority 1.2 – Promote the development and adoption of public policies and economic incentives for improved agricultural and livestock production practices, promoting sustainable agriculture landscapes
Public policies and economic incentives are key elements to induce changes in the production systems. Funds that value sustainable practices and recognize the social and economic importance of so-called "socio-biodiversity products" can increase the positive impact of these activities on biodiversity conservation and ecosystem services.

CEPF should support initiatives of civil society organizations to influence policies and their implementation and to propose incentives for best practices. Cooperation, social dialogue and coordination are initiatives that could contribute to the integration of farming with biodiversity and ecosystem services conservation. This could involve working with groups such as the Brazilian Coalition for Climate, Agriculture and Forestry, among others, in order to bring agribusiness into the conservation agenda.

Another relevant support would be for outreach and training workshops on financial incentives for agricultural practices compatible with sustainable production, such as Low Carbon Agriculture (ABC), Green Livestock, Forest Certification, Sustainable Landscape Partnership, Minimum Price Guarantee Program for Biodiversity Products (PGPMBio), additional 30% in the price for organic products produced by familyfarmers within the National School Lunch Program (PNAE) etc.

Strategic Direction 2. Support the creation/expansion and effective management of protected areas in the priority corridors

According to the Convention on Biological Diversity, protected areas are the central pillar of the strategies to protect biodiversity *in situ*. Although an average of 24% of the four priority corridors for CEPF investment are already under some degree of legal protection, some important sites for biodiversity and ecosystem services are still unprotected. In addition, some of the existing protected areas have insufficient effectiveness of management to meet the primary objectives for which these areas were created.

CEPF investments would contribute to raising the status of legal protection in the priority areas. To enhance processes to establish new public and private areas as well as to increase the effectiveness of existing ones, CEPF could support advisory councils, conservation initiatives in buffer zones, and training opportunities for managers and civil society advisors.

Investment Priority 2.1 – Support studies and analyses necessary to justify the creation and expansion of public protected areas, while promoting conservation and sustainable use of biodiversity and valuing local and traditional culture
In the priority corridors, there are many KBAs that remain unprotected. In most cases, the process to design, designate and establish a protected area is very complicated and slow, and most of the time governments need scientific support for their proposals. CEPF could support technical and territorial studies conducted by civil society organizations, including studies on the importance of protected areas as drivers for development and as suppliers of crucial ecosystem services for human welfare. These studies could provide evidence to back up proposals for the creation or expansion of protected areas in the priority corridors. The research could be linked to joint policy initiatives and social dialogue to raise support for the creation of new protected areas.

In addition, multi-stakeholders processes seeking participation and support for the preparation and implementation of management plans, financing, recruitment and other initiatives are required to enhance the effectiveness of protected areas. They could all be good investment opportunities for CEPF.

Investment Priority 2.2 – Promote the inclusion of existing indigenous, quilombola and traditional populations, respecting and integrating their traditional knowledge, into conservation/restoration planning by government and civil society
Complementary to the national system of “conservation units” in Brazil, Indigenous Lands and *quilombola* Territories contribute to nature conservation. Those lands and territories protect not only natural resources but also traditional livelihoods based on those resources for local communities. It would be strategic to integrate all these areas into conservation efforts.

To this end, it would be important to identify and disseminate good and innovative examples of appropriate conservation and environmental management approaches, including the sustainable use of natural resources in and around protected areas, in synergy with the National Policy for Environmental Management in Indigenous Lands (PNGATI). CEPF could also support the establishment of community agreements for resource use and help communities to declare their territories as ICCAs (Indigenous and Community Conserved Areas).

Investment Priority 2.3 – Encourage the creation and implementation of private protected areas (RPPNs) to extend legal protection in priority KBAs
As was successfully supported by CEPF in the Atlantic Forest, the creation and implementation of Private Natural Heritage Reserves (RPPNs) should be stimulated since they do not require expropriation of property but provide a legal framework for the protection of land. There is scope for these private properties to play a key role in complementing the existing system of public protected areas, providing increased connectivity as well as increasing the representation of priority areas included in the

protected areas network. CEPF should focus its available funding on the 62 priority KBAs within the four priority corridors while seeking opportunities to leverage additional funding to support conservation actions for the other 47 priority KBAs outside of the priority corridors. The simplification of regulations and procedures is needed as well as incentives to create more RPPNs in the Cerrado.

Strategic Direction 3. Promote and strengthen supply chains associated with the sustainable use of natural resources and ecological restoration in the hotspot

The sustainable use of biodiversity is an important complementary conservation strategy because it encourages communities to maintain native areas in order to generate income. CEPF might contribute to overcoming some of the regulatory bottlenecks that keep sustainable use from becoming a more efficient strategy for social development and biodiversity conservation.

On the other hand, the conversion of natural ecosystems into farmland – an intense process in recent years in the Cerrado – is the main threat to the hotspot. Where critical areas for water springs protection and soil erosion prevention have lost their natural plant cover, serious socio-biodiversity impacts are and will be expected in the near future if these attributes are not restored. Due to soil characteristics, climate and the structure of vegetation, ecosystem restoration in the Cerrado still poses scientific and technological challenges that need to be addressed.

Investment Priority 3.1 – Support the development of markets and supply chains for sustainably harvested non-timber forest products, in particular for women and youth
Building on the successful experiences of the UNDP-GEF Small Grants Program CEPF should help local communities, in particular women and youth, to improve sustainable extraction and production practices for non-timber products. More specifically, CEPF could provide them with grants to exchange experiences and practices in the conservation and sustainable use of biodiversity and to transfer appropriate social technologies for the use of natural resources, with less environmental impact and more income generation for them. A special focus may be given to species identified as icons of conservation and sustainable use of the Cerrado (e.g., *pequi*, *baru*, golden grass, *buriti*, *babaçu* and others).

In addition, networking, coordination, knowledge management and capacity building actions are required to influence public policies to remove barriers to sustainable use.

Investment Priority 3.2 – Promote capacity-building initiatives in particular among seed collectors, seedlings producers and those who carry out restoration activities, to enhance technical and management skills and low-cost, ecologically appropriate technologies in the supply chain of ecological restoration
There is now great demand for Cerrado restoration on private land, especially in Permanent Preservation Areas (APPs) and Legal Reserves (LRs) after the Forest Code (now the Forest Law) came into force. In Brazil, most of the knowledge regarding restoration of natural vegetation comes from the Atlantic and Amazon forests. With the Cerrado being such a diverse savanna, with many specificities regarding soils, drainage and seasonal dryness, knowledge of how to restore it with lower costs and lower risks still needs to be acquired.

The Ministry of Environment launched in 2015 the National Plan for the Recovery of Native Vegetation (PLANAVEG), which will need support to be implemented in the Cerrado. CEPF may support the implementation of supportive actions, including the training and compliance of different segments in the restoration production chain (seed collection, seedling nurseries and restoration of critical areas), as well as research to tailor techniques that will enable restoration in the Cerrado. In addition, CEPF could support networking in order to influence the legal framework regarding native seed collection and seedling production for upscaling.

Further, CEPF may promote pilot demonstrations of innovations that offer greater efficiency and lower cost for ecological restoration activities in critical areas, such as direct seeding or "muvuca" (use of seeds of native species instead of seedlings in the restoration process) and assisted natural regeneration.

Investment Priority 3.3 – Promote the adoption of public policies and economic incentives to expand the scale and effectiveness of conservation and restoration of Permanent Preservation Areas (APPs) and Legal Reserves (LRs), through improved productive systems that enhance ecosystem services

There is a need to protect the existing remnants of the Cerrado and to scale up restoration processes in order to comply with the Rural Environmental Registry (CAR). It would be important to provide socio-environmental benefits and synergies as incentives for compliance.

CEPF could also support Permanent Preservation Areas and Legal Reserves in the Cerrado, via the establishment of strategic partnerships among civil society organizations, academic institutions, businesses, governments and individuals as inspired by a similar initiative in the Atlantic Forest (The Atlantic Forest Restoration Pact).

Promoting the productive chain of restoration as both employment and income generation opportunities for local communities and as a means to re-establish the integrity of biodiversity is another strategic investment approach for the hotspot. CEPF investments could also support regional strategic plans within priority corridors to address connectivity gaps and scale up environmental recovery initiatives in line with the National Plan for Native Vegetation Recovery.

Strategic Direction 4. Support the protection of threatened species in the hotspot

The Ministry of Environment of Brazil adopts a protocol for the protection of endangered species found in the country. Based on this protocol, National Action Plans (PANs) are prepared for a species in particular, for a group of endangered species, or for regions classified as extremely important for biodiversity. In the latter, these plans include a set of actions to protect habitats for a large number of endangered species.

Investment Priority 4.1 – Support the implementation of National Action Plans (PANs) for priority species, focusing on habitat management and protection

For the Cerrado, nine species that are highly threatened in Brazil and included on the IUCN Red List have been prioritized for CEPF investments. Through coordination with the National Action Plans Support Groups (Grupos de Apoio aos Planos de Ação Nacional – GAPAN), priority actions set out in the PANs related to these nine priority species could be identified. CEPF funding should also then focus on supporting the implementation of those actions, especially those related to management and habitat protection.

Strategic Direction 5. Support the implementation of tools to integrate and to share data on monitoring to better inform decision-making processes in the hotspot

In a hotspot where crops and pastures have been replacing natural ecosystems in recent years, it is essential to have an agile, efficient, reliable and transparent system to monitor native vegetation coverage. The importance of the hotspot to provide water for human welfare and economic development also highlights the importance of monitoring changes in the hydrological cycle resulting from climate change and loss of native vegetation.

Despite government monitoring initiatives, stakeholders have pointed out the need for accessibility of data to enable civil society organizations and academic institutions to monitor the changes in shorter intervals and with greater accuracy. Rather than funding new monitoring activities, CEPF could support the creation of an online platform to store and disseminate data being produced by monitoring programs carried out bygovernment, universities, civil society and the private sector), as well as encouragingthe production of integrated analysis to better inform decision-makers.

Investment Priority 5.1 – Support the dissemination of data on native vegetation cover and dynamics of land uses, seeking reliability and shorter time intervals between analyses and informed evidence-based decision making

The CEPF investments can help promote partnerships and leverage resources to implement a joint long-term program to analyze existing monitoring data and to generate annual information on deforestation and changes in vegetation cover. These investments could also strengthen and expand civil society skills for monitoring and analyzing public policies affecting the Cerrado, such as the Forest Code Observatory, CAR Observatory, Climate Change Observatory, Inovacar, etc.

Investment Priority 5.2 – Support the collection and dissemination of monitoring data on the quantity and quality of water resources, to integrate and to share data about the main river basins in the hotspot

The CEPF investments could support workshops with members of the watershed management committees of the main rivers in the hotspot, local stakeholders and researchers to discuss results of monitoring, to exchange experiences on conservation initiatives and to plan actions aimed at improving watershed management. A diagnosis of the status of Cerrado rivers could be useful to increase awareness among the general public as well as the agriculture sector in particular to make a more efficient use of water resources.

Strategic Direction 6. Strengthen the capacity of civil society organizations to promote better management of territories and natural resources and to support other investment priorities in the hotspot

Strengthening the capacity of civil society organizations is key to the long-term sustainability of the actions to be supported by CEPF. This was an integral part of CEPF's investments in the Atlantic Forest, where institutions involved in the hotspot were strengthened and became most prominent and influential. Such a strategy should also be adopted in the Cerrado.

Investment Priority 6.1 – Strengthen capacities of civil society organizations to participate in collective bodies and processes related to the management of territories and natural resources

Continued support for the management and consolidation of institutional networks and coalitions for territorial governance, such as the Cerrado Network, Mobilization of Indigenous Peoples of the Cerrado (MOPIC), Interstate Movement of Babassu Crackers (MIQCB), Pacari Network, Cerrado Central, mosaics of protected areas and the Cerrado Seeds Network, all of which are possible investments.

Strengthening, expanding and qualifying civil society representation in forums and councils related to the conservation and sustainable use of the Cerrado is crucial in any long-term strategy. CEPF investments could be key in enhancing civil society's influence in several forums, such as management boards of protected areas and mosaics, municipal and state environmental councils, territories boards or watershed management committees, among others.

Investment Priority 6.2 – Develop and strengthen technical and management skills of civil society organizations, on environment, conservation strategy and planning, policy advocacy, fund raising, compliance with regulations and other topics relevant to investment priorities

Inspired by the Atlantic Forest experience, the implementation of an institutional strengthening program, covering the most relevant content to be identified and proposed by local organizations, will be strategic.

The content and format of this program could be designed and detailed according to a specific assessment to identify demands and gaps for training. It could include modular classroom courses, training of trainers and/or tutoring.

Investment Priority 6.3 – Facilitate processes of dialogue and cooperation among public, private and civil society actors to identify synergies and to catalyze integrated actions and policies for the conservation and sustainable development of the Cerrado

To engage the private sector in the agenda of sustainable development and to promote its interaction with government programs, CEPF investments could help establish or enhance multi-stakeholder initiatives (MSI), such as forums for dialogue and cooperation, to leverage institutional, political and financial support to conserve the Cerrado.

This approach could also support exchanges and integration among conservation and sustainable use institutions, programs and initiatives, such as PPCerrado, FIP Cerrado, GEF Cerrado, and best practices of territorial governance among public and private institutions of Brazil, Paraguay and Bolivia.

Investment Priority 6.4 – Disseminate information about the biological, ecological, social and cultural functions of the Cerrado to different stakeholders, including civil society leaders, decision makers, and national and international audiences
CEPF could support the development of promotional publications, broadcasting spots, public campaigns and other communication tools and media to contribute to the dissemination of information on the Cerrado, its ecosystems, its species, its importance for ecosystem services and climate resilience, and also on the traditional knowledge and culture of the Cerrado.

Investments should also sponsor the implementation of an integrated database, based on a broad, collaborative protocol, prioritizing information on biodiversity, ecosystem services, food and raw materials production and culture. This kind of geographic information system tool is strategic for planning and monitoring initiatives, including for monitoring the impact of CEPF investments in the medium and long term.

Strategic Direction 7. Coordinate the implementation of the CEPF investment strategy in the hotspot through a Regional Implementation Team

CEPF will support a Regional Implementation Team to convert its strategy into a cohesive portfolio of grants that exceeds in impact the sum of its parts. The Regional Implementation Team will consist of one or more civil society organizations active in the Cerrado. It will be selected by CEPF according to approved terms of reference, , following a competitive process and selection criteria available at www.cepf.net. The team will operate in a transparent and open manner, consistent with CEPF's mission and all provisions of the CEPF operational manual. Organizations that are members of the Regional Implementation Team will not be eligible to apply for other CEPF grants within the Cerrado hotspot.

The Regional Implementation Team will provide strategic leadership and local knowledge to build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the conservation goals described in the ecosystem profile.

Investment Priority 7.1 – Coordinate and implement the CEPF strategy of investments in the Cerrado through procedures to ensure the effective use of resources and achievement of expected results
This investment priority covers the three administrative functions of the Regional Implementation Team: (i) establish and coordinate a process for proposal solicitation and review, (ii) manage a program of small grants, and (iii) provide reporting and monitoring.

For large grants, the Regional Implementation Team assists applicants and the CEPF Secretariat by reviewing and processing grant applications, ensuring compliance with CEPF policies, and facilitating on-time and accurate grantee and portfolio reporting and monitoring. In particular, the Regional Implementation Team has a very important role to play in soliciting and reviewing proposals. This role encompasses a wide range of activities, from issuing calls for proposals to establishing review committees to making final recommendations for approval or rejection. Though much of this work is labeled as administrative, it does have a sound programmatic foundation, as grants need to be strategic and of high quality. These tasks require technical expertise, knowledge of strategy, and the ability to understand that all selected projects will make a unique contribution to the achievement of CEPF's objectives.

The Regional Implementation Team also assumes significant administrative responsibilities as manager of CEPF's small granting mechanism, including budgeting, processing proposals, and drafting and monitoring contracts. Small grants play an extremely important role in the CEPF portfolio, so they should be coherent with the overall grant portfolio. These grants can address themes or geographic areas of importance, serve as planning grants, or provide opportunities to engage local and grassroots groups that may not have the capacity to implement large grants.

This investment priority also covers reporting and monitoring. The process entails collecting data on portfolio performance, ensuring compliance with reporting requirements, ensuring that grantees understand and comply with social and environmental safeguard policies, and reviewing reports. It also includes site visits to grantees, which may identify needs for follow-up capacity building. This will ensure effective project implementation and monitoring, and requires technical expertise to be performed effectively and to inform adaptive management.

Investment Priority 7.2 – Support and strategically guide the network of institutions responsible for the implementation of actions and projects funded by CEPF, promoting their coordination, integration, cooperation and exchange of experiences and lessons learned

This investment priority covers the two programmatic functions of the Regional Implementation Team: (i) coordinate and communicate CEPF investment, build partnerships and promote information exchange in the hotspot; and (ii) build the capacity of grantees.

These functions include facilitating learning exchanges among grantees and other stakeholders, identifying leveraging opportunities for CEPF, and aligning CEPF investment with investments by other donors. Programmatic functions require the Regional Implementation Team to maintain in-house conservation expertise to ensure that CEPF funds are strategically channeled to optimize the achievement of its conservation objectives.

A critical programmatic function, especially in the context of the Cerrado hotspot, is to coordinate different CEPF investments and facilitate partnership building among different actors. The Regional Implementation Team will be responsible for identifying local civil society organizations active within the four priority corridors, facilitating partnerships between them and the national civil society organizations best placed to provide technical and financial support.

This investment priority also covers capacity building, a function that is regarded as being at the core of the Regional Implementation Team's responsibilities. This function focuses on building the capacity of domestic civil society organizations to access and make effective use of CEPF funding. A cornerstone of the Regional Implementation

Team’s work is to ensure that partners have the institutional and individual ability to design and implement projects that contribute to the targets of the investment strategy. It is specifically targeted at appropriate strategic stakeholders to ensure delivery of CEPF’s objectives through improved projects and higher quality implementation. Experience has shown that these capacity development efforts are essential to ensuring good projects that are integrated into a wider hotspot strategy and a common conservation vision.

14. SUSTAINABILITY

On the basis of the contents of previous chapters, especially that of Chapter 13, which in turn are all based on literature review, data analysis, field observations and extensive stakeholder consultations, this chapter presents recommendations regarding: (14.1) capacity development for sustainability; (14.2) sustainable financing; and (14.3) sustaining change through norms and regulations. Ways are suggested for the proposed strategic directions and investment priorities to result in sustainable conservation outcomes.

14.1 Capacity Development for Sustainability

The foremost demand expressed during all the stakeholder consultations for the Cerrado Hotspot ecosystem profile development was for capacity development of various kinds, both institutional and technical.

For civil society organizations in the Cerrado Hotspot to be sustainable, one of the key capacities needed at the institutional level is the ability to locate sources of funding and prepare competitive proposals. Cerrado-based CSOs are generally not as skilled as are competitors in other regions, who generally have more knowledge and experience. In addition, CSOs need institutional strengthening to learn how to spend the funds properly, achieve the results promised in their proposals and comply with all the regulations of government and donors. The new regulatory framework for CSOs approved in 2015 is more appropriate in many respects, but it maintains several difficult requirements and adds others.

Another urgent need is for training to qualify the participation of civil society representatives in networks, policy advocacy and participatory processes led by regional and national associations, the government, international organizations and the private sector.

Indigenous communities have specific needs in order to take on environmental management in their lands and to promote sustainable livelihoods without excessive dependence on doles from government. Their leaders also need to participate in national and international initiatives to defend their rights.

More capacity specifically focused on the Cerrado is needed in the academic and scientific community, especially with reference to its interdependent ecological functions regarding biodiversity, water and carbon. There could be support for students to do field work in the hotspot, hopefully becoming involved in the Cerrado for the rest of their careers, and for students, professors and scientists to participate in exchanges.

Technical capacity development is also needed for local and regional civil society organizations to monitor land use changes and their impacts on biodiversity, fire, water and pollution. In order to fit into government and international priorities, CSOs need to understand more about carbon stocks and emissions and about hydrological cycles, in addition to flora and fauna. Knowledge of appropriate social technology for the sustainable use of biodiversity can be disseminated through publications, electronic media and peer-to-peer exchanges in communities. Rural extension agents should have more capacity to disseminate this technology.

This gap in capacity also corresponds to the need for capacity building among government agencies, especially state and municipal agencies, to be able to design and implement suitable measures to reconcile conservation and development. Although governments cannot be funded by CEPF, civil society organizations can provide training, information and consulting. There is also a specific need to develop journalists' and opinion leaders' capacities to grasp the specificities of the Cerrado Hotspot and understand how to reconcile conservation and development in this particular context, where antagonisms often prevail over cooperation.

The CEPF investment strategy presented in Chapter 13 addresses several of those capacity-building needs. The implementation of this strategy will pave the way for stronger and more efficient CSOs in the hotspot. One low-cost means to stimulate higher visibility and spontaneous capacity development in the Cerrado Hotspot would be to award prizes for outstanding initiatives, as is done by the Equator Prize at the global level, for the tropics; the Celso Furtado prize, for Brazil; the Chico Mendes Prize, for the Amazon; and the Drylands Champions and Mandacaru prizes, for the Caatinga. Experience shows that the beneficiaries make good use of the money and that the publicity has broad outreach.

14.2 Sustainable Financing

For financing to become sustainable, it is essential, first of all, to provide convincing justifications to donors, governments, legislatures and the public at large. Cerrado's biodiversity is not only rich, but also unique, and it has very useful genetic properties, especially in the context of global climate change. In addition to biodiversity conservation, the ecological functions related to water and carbon, which depend on biodiversity, can provide leverage to convince many funding agents that investment is needed for the Cerrado.

As for geographical focus, much of the Cerrado biome actually lies within the Legal Amazon, which includes the entire states of Mato Grosso and Tocantins and more than half of Maranhão. Even more of the Cerrado is located in the Amazon river basin, which stretches further south and includes about half of Goiás and part of the Federal District. Thus, some of the funding earmarked for the Amazon could be used in the Cerrado.

In order to apply the Rural Environmental Registry (CAR), the Brazilian government and multilateral and bilateral international organizations will invest billions of dollars to restore land that should have been protected as Legal Reserves and Areas of Permanent Preservation under the Forest Law. It would be important to influence the use of funds so as to provide socio-environmental benefits and synergies, without punishing hardest those who are least responsible for the damage but are most vulnerable to inspections and restrictions.

The private sector, at least the large companies, can get involved in conservation through corporate social responsibility. Their suppliers can be convinced to provide commodities acceptable to consumers and governments according to standards established in Brazil and abroad. Since commodity volumes are large and profit margins are small, a relatively small group of consumers can achieve significant results, as can relatively small groups of shareholders. The field activities of agribusiness can be monitored by remote sensing and by local communities using modern technology such as smartphones, as is now being done with monitoring of wildfire in the Federal District.

For public and private protected areas, another possibility is to establish mechanisms for them to generate their own income, especially by opening them for public visitation, recreation and tourism, charging entry fees and allowing concessions for food and lodging (Barros & La Penha 1994; IPÊ 2008; Maretti 2015b).

Payment for environmental services (PES) is an attractive approach, but it must be dealt with carefully to avoid justifying predatory practices in areas where there are no payments, or when payments have been interrupted. Interruption of payments that are not legally required is a high risk in the current economic situation or when budget deficits occur and the environment is a low priority. The most feasible payments seem to be to specific sites that provide water for large cities that can easily afford the payments, as in the case of Extrema in Minas Gerais, which supplies water for São Paulo and is literally an extreme case. It might be more replicable and secure to pay for material goods (food, handicrafts, medicinal plants, etc.) through payment for environmental goods and services ("PEGS") than for abstract services provided over areas of millions of square kilometers, with high opportunity costs to maintain the native plant cover.

Certification is also considered attractive but is difficult to apply to the primary sector in remote areas. Requiring certification could result in insufficient supplies of certified products. In actual practice, few consumers are willing to pay a premium for certified sustainable products. Branding plus sample verification of products is another approach, which depends more on reputation than verification of production processes at numerous locations in the countryside.

Financing for Brazil is now threatened by its "graduation" as an upper middle-income country, one no longer considered a priority for international development assistance. Continued financing could be justified in terms of trilateral North-South-South financial and technical cooperation. This is an approach foreseen in the Sustainable Development Goals and one that the Brazilian government strongly favors, especially with respect to Latin America and Portuguese-speaking countries in Africa and the Pacific (Sawyer 2011; Ayllon Pino 2013).

CEPF's investment strategy can leverage additional funds for the conservation of the Cerrado by raising the profile of its biological, ecological, social and cultural functions among donors, governments, and the local and international public at large. Although small grants cannot solve the problems of all local communities in the medium and long term, they can be instrumental in discovering appropriate sustainable technologies that can be more widely diffused. They enable a learning-by-doing approach to deal with complex government regulations on the use of public funds. They can also cover expenses, like personnel and administration, which government funds cannot, and thus complement official funding. Government investment and finance can be influenced through "seed money" from international cooperation for government, civil society, academia and the private sector, which in turn can leverage domestic funding sources, which in Brazil are many times greater than donor funds. A small percentage of the billions of dollars the government spends every year in Brazil can make an enormous difference for the environment, especially if links are established to economic, social, educational, scientific and cultural budgets and policies.

14.3 Sustaining Change through Standards and Rules

One of the most far-reaching and long-lasting changes in environment and society could be achieved by changing standards and rules that currently favor unsustainability. There are at least two targets on which to focus attention. The executive branch of government has some leeway as it issues enabling decrees, administrative orders, standards, etc., to "regulate" existing laws. Only the legislative branch, however, can write, amend or repeal the laws themselves. Convincing the executive and legislative branches of government to change existing standards and rules requires knowledge of the broader legal framework and legislative and administrative processes. Such knowledge is not common among civil society organizations, especially local groups in less developed regions. Well-grounded legal advice is important. It is only available in large state capitals and Brasília.

One way to help make standards and rules more appropriate is to study and disseminate what is done in other countries. It would be important for state and local governments to establish regulations that are suitable to each situation, rather than only being allowed to be stricter than federal requirements, as is now the case. In order to avoid abuses, there could be a requirement that any flexibility at the sub-national level be approved by the federal government, rather than automatically being considered illegal, as is now the case.

The much-needed sustainability of environmental management will be actively promoted by the CEPF investment strategy via CSOs' active participation in networks related to the management of territories and natural resources, capacity building of CSOs on policy advocacy, and dialogue and cooperation facilitation among public, private and civil society actors. This strategy will also support exchanges among public and private institutions of Brazil and its neighboring countries (Paraguay and Bolivia).

14.4 Conclusions

Sustainability of conservation outcomes in the Cerrado Hotspot requires understanding each of the country's specificities, along with changes now under way in the national and international contexts. In addition to site-specific investments, it is important for CEPF to promote systemic change. Although building awareness is challenging, there is growing recognition of the importance of the environment in general and that of the Cerrado in particular, including biodiversity, water and climate. As long as the appropriate approaches are used, stressing dialogue and multi-faceted mutual benefits of various kinds, the sustainability of conservation gains can be achieved at specific sites in the future.

CERRADO HOTSPOT LOGICAL FRAMEWORK 2016-2021

Objective	Targets	Means of Verification	Important Assumptions
Engage civil society in the conservation of globally threatened biodiversity through targeted investments that maintain ecosystem functions and human well-being **TOTAL BUDGET:** **$ 8,000,000**	At least 40 local civil society organizations with increased capacities actively participate in conservation actions and management of territories guided by the ecosystem profile. At least 8 partnerships and networks formed among public, private and civil society actors to facilitate synergies and to catalyze integrated actions and policies for the conservation and sustainable development of the Cerrado in support of the ecosystem profile. At least 500,000 hectares of protected areas targeted by CEPF grants with new or strengthened protection and management. At least 5 land-use planning or public policies influenced to accommodate biodiversity. At least 500 000 hectares of production landscapes with improved management for biodiversity conservation or sustainable use within 4 corridors targeted by CEPF grants. At least 5 globally threatened species targeted by CEPF grants have stable or improved conservation status. At least 60 local and indigenous communities are empowered and directly benefit from the sustainable use of resources and/or the restoration of ecological connectivity at the landscape scale.	Civil Society Tracking Tool (CSTT) on CEPF's investment beneficiaries. Grantee and RIT performance reports. Protected Area Tracking Tool (SP1 METT). Annual portfolio overview reports; portfolio midterm and final assessment reports. IUCN Red List of Threatened Species.	The CEPF ecosystem portfolio will effectively guide and coordinate conservation action in the Cerrado Hotspot. Investments by other funders will support complementary activities that reduce threats to priority corridors, sites and species. Civil society organizations, government and private companies will be willing to engage in biodiversity conservation, form new partnerships, and adopt innovative approaches.

Intermediate Outcomes	Intermediate Indicators	Means of Verification	Important Assumptions
Outcome 1: Best practies in agriculture adopted in the priority corridors. US$ 800,000	At least 6 sustainable technologies and production best practices in the agriculture sector identified and disseminated to ensure protection of biodiversity, maintenance of ecosystem services and food security. At least 4 financial incentives for sustainable land-sparing agricultural and livestock practices promoted among commodity chains in priority corridors. At least 2 consistent public policies (legislation, policies, programs, public-private partnerships, etc.) created or adjusted to promote conservation and sustainable use of biodiversity.	Best practices dissemination tools. Grantee and RIT performance reports. Secretariat supervision mission reports. Adopted public policies.	Governments, private companies and donors will remain committed to sustainable development goals thus providing suitable and sufficient funding sources to expand best practices models. Private companies in key agriculture sectors will appreciate the business model for better environmental and social practices. Financial incentives will trigger increased interest for best practices.

Outcome 2: Protected areas in the priority corridors expanded and the effectiveness of their management strengthened. US$ 1,200,000	At least 10 studies and analyses carried out to justify the creation or expansion of public protected areas in priority corridors and/or to promote conservation and sustainable use of biodiversity while valuing local and traditional culture within management plans of protected areas. Five protected areas located in priority KBAs in the priority corridors with an integrated management plan designed and implemented. At least 10% of indigenous, *quilombola* and traditional community lands, located in the priority corridors, integrated in the planning and strategies for conservation and sustainable development at macro scale, respecting traditional knowledge and culture, as an alternative form of protection and management of lands outside of the official national system (SNUC). At least 50 new Private Natural Heritage Reserves (RPPN) established in priority KBAs.	Studies and maps provided to national, state and municipal governments. Protected Areas Tracking Tool (SP1 METT). Integrated management plans of protected areas. Strategic plans integrating community lands at macro scale; reports on alternative forms of conservation and management. Signed RPPN commitment agreements. Grantee and RIT performance reports. Secretariat supervision mission reports.	Government policies will provide for legal enforcement of the Forest Law. The government is receptive to participation of private landowners and indigenous, *quilombola* and traditional communities in the effort of conservation and management of the Cerrado. Local organizations, private landowners, and indigenous, *quilombola* and traditional communities will be willing to play an active role in improving the protected area network and management.

Outcome 3: Supply chains associated with the sustainable use of natural resources and ecological restoration in the hotspot promoted and strengthened**.** US$ 1,800,000	At least 10 markets and supply chains for sustainably harvested non-timber forest products developed or enabled with direct benefit for networks or groups of women and youth in particular. Innovations regarding seeds, seedlings and planting that result in greater efficiency and lower cost in ecological restoration activities demonstrated in at least 10 sites, especially in Permanent Preservation Areas (APPs) and Legal Reserves (LRs). Production capacity and management skills of 20 community-based businesses working with ecological restoration productive chain enhanced. One pilot network made of civil society organizations, academic institutions, businesses and governments supported to create synergies and provide socio-environmental benefits as incentives for ecosystem restoration and compliance with the Forest Law. At least 2 public policies (legislation, regional strategic plans, etc.) created or adjusted to promote ecosystem restoration and sustainable use of biodiversity.	Grantee and RIT performance reports. Reports on innovations for ecological restoration supply chain. Training needs assessments and evaluation reports. Secretariat supervision mission reports. Adopted public policies.	Private enterprises in key natural resource sectors will appreciate the business case for more sustainable practices with improved benefit sharing. Governments and donors will remain committed to environmentally sustainable development and ecological restoration. Suitable and sufficient funding sources will be available for replication of ecological restoration productive chain models. Governments create space for civil society to engage in policy reform processes.
Outcome 4: Protection of priority threatened species and their habitats increased. US$ 700,000	Priority actions identified in National Action Plans, especially on habitat management and protection, implemented for at least 5 priority threatened species.	IUCN Red List of Threatened Species. Grantee and RIT performance reports. Secretariat supervision mission reports.	Adequate support to habitat management will benefit the species and the main causes of threat are amenable to conservation action and can be addressed within the timeframe of the investment. Sufficient capacity to implement targeted species conservation action exists within civil society or can be built.

Outcome 5: Decision-making processes in the hotspot improved thanks to better access to monitoring data. US$ 500,000	At least one partnership successfully leverages resources for the implementation of a joint long-term dissemination program on native vegetation cover and dynamics of land uses in the Hotspot in order to support different stakeholders for planning and decision making. At least 4 action plans based on shared data and experiences for better water quantity and quality developed and made available to relevant stakeholders to improve watershed management.	Effective long-term dissemination program. Grantee and RIT performance reports. Published action plans for improved watershed management. Secretariat supervision mission reports.	Civil society organizations are willing to work collaboratively to respond to conservation challenges. Governments will create space for civil society to engage in the review and dissemination of land-use and development plans. Economic and development decision making can be influenced by arguments about the biological, ecological, social and cultural values of natural ecosystems.

Outcome 6: Strengthened capacity of civil society organizations to influence better management of territories and of natural resources and support other investment priorities in the hotspot. US$ 2,000,000	At least five networks and/or alliances of civil society organizations strengthened, with enhanced skills to participate in relevant forums. At least 100 members of governance bodies and councils (national councils, watershed committees, protected areas management boards, Citizenship Territories, state/municipal councils, etc.) with strengthened capacity to participate in and influence forums related to the conservation and sustainable use of the Cerrado. At least 40 civil society organizations with developed and strengthened institutional and technical skills (environment, conservation strategy and planning, management, policy advocacy, fundraising and reporting, regulatory frameworks, etc.) to function effectively and participate in relevant conservation and management actions guided by the ecosystem profile. At least 2 multi-stakeholder initiatives (MSI) that involve the private sector (global commodity chains), small farmers, traditional communities, governments and donors promoted to identify synergies and to catalyze integrated actions and policies for the conservation and sustainable development of the Cerrado. At least 20 publications (books, manuals, technical reports, websites, etc.) or awareness raising actions (broadcasting spots, public campaigns and media outreach) on the Cerrado biodiversity, ecosystem services, protected areas, restoration, sustainable practices and climate resilience and civil society participation published. At least one tri-national initiatives to raise awareness for protection and management of Cerrado KBAs in Brazil, Bolivia and Paraguay launched	Training needs assessments and evaluation reports. Grantee and RIT performance reports. Civil Society Tracking Tool (CSTT) on CEPF's investment beneficiaries. Secretariat supervision mission reports. Published books, manuals, websites, etc. on the functions of the Cerrado. Publicized awareness raising campaigns on the Cerrado	The operating environment for civil society will remain constant or improve across the hotspot. Local organizations will be willing to play an active role in site-based conservation, in mainstreaming biodiversity and in governance forums. The key capacity limitations of civil society organizations can be addressed through a combination of capacity building and grant support. Civil society organizations are able to retain trained staff who benefit from capacity building opportunities. Civil society organizations, governments and private companies are willing to work collaboratively to respond to conservation challenges. Increased widespread awareness on the values of the Cerrado will translate into increased support for conservation initiatives locally.

Outcome 7: A Regional Implementation Team (RIT) provides strategic leadership and effectively coordinates CEPF investment in the Cerrado Hotspot. US$ 1,000,000	At least 60 civil society organizations, including at least 40 local and indigenous organizations actively participate in conservation actions guided by the ecosystems profile. At least 85 percent of local civil society organizations receiving grants demonstrate more effective capacity in managing the resources according to CEPF and government rules, in achieving goals and objectives and in learning to mobilize further resources. Funding leveraged from other donors towards the priorities set in the ecosystem profile bring an additional investment in the Cerrado Hotspot of at least $2 million. At least 2 participatory assessments are undertaken and lessons learned and best practices from the hotspot are documented.	Civil Society Tracking Tool (CSTT) on CEPF's investment beneficiaries. Grantee and RIT performance reports; Secretariat supervision mission reports. Strategies and reports of other donors. Portfolio midterm and final assessment reports.	Qualified organizations will apply to serve as the Regional Implementation Team in line with the approved terms of reference and the ecosystem profile. The CEPF call for proposals will elicit appropriate proposals that advance the goals of the ecosystem profile. Civil society organizations will collaborate with each other, government agencies, and private sector actors in a coordinated regional conservation program in line with the ecosystem profile.

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APPENDICES

Appendix 1. List of Trigger Species
Appendix 2. Terrestrial KBA Raw Data
Appendix 3. Ranking KBAs AHP Data
Appendix 4. KBA Prioritization Methodology
Appendix 5. Civil Society Organizations
Appendix 6. Candidate Priority Species

APPENDIX 1. LIST OF TRIGGER SPECIES

Table 1.1. Threatened fauna

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
1	Amphibia	Amphibia	Anura	Aromobatidae	*Allobates brunneus*	CR	LC
2	Amphibia	Amphibia	Anura	Aromobatidae	*Allobates goianus*	EN	DD
3	Amphibia	Amphibia	Anura	Cycloramphidae	*Proceratophrys moratoi*	EN	CR
4	Amphibia	Amphibia	Anura	Cycloramphidae	*Proceratophrys sanctaritae*	CR	-
5	Amphibia	AMPHIBIA	ANURA	BUFONIDAE	*Melanophryniscus peritus*	-	CR
6	Amphibia	AMPHIBIA	ANURA	HYLIDAE	*Bokermannohyla izecksohni*	-	CR
7	Amphibia	AMPHIBIA	ANURA	HYLIDAE	*Phyllomedusa ayeaye*	-	CR
8	Aves	AVES	PELECANIFORMES	ARDEIDAE	*Agamia agami*	-	VU
9	Aves	AVES	PASSERIFORMES	TYRANNIDAE	*Alectrurus risora*	-	VU
10	Aves	AVES	PICIFORMES	GALBULIDAE	*Jacamaralcyon tridactyla*	-	VU
11	Aves	AVES	PASSERIFORMES	COTINGIDAE	*Procnias nudicollis*	-	VU
12	Aves	AVES	PSITTACIFORMES	PSITTACIDAE	*Anodorhynchus hyacinthinus*	-	VU
13	Aves	AVES	ACCIPITRIFORMES	ACCIPITRIDAE	*Buteogallus coronatus*	-	EN
14	Aves	AVES	PASSERIFORMES	TYRANNIDAE	*Culicivora caudacuta*	-	VU
15	Aves	AVES	CAPRIMULGIFORMES	CAPRIMULGIDAE	*Eleothreptus candicans*	-	EN
16	Aves	AVES	PASSERIFORMES	THAMNOPHILIDAE	*Herpsilochmus pectoralis*	-	VU
17	Aves	AVES	GRUIFORMES	RALLIDAE	*Laterallus xenopterus*	-	VU
18	Aves	AVES	PASSERIFORMES	EMBERIZIDAE	*Poospiza cinerea*	-	VU
19	Aves	AVES	PSITTACIFORMES	PSITTACIDAE	*Pyrrhura perlata*	-	VU
20	Aves	AVES	PICIFORMES	RAMPHASTIDAE	*Ramphastos ariel*	-	EN
21	Aves	AVES	PICIFORMES	RAMPHASTIDAE	*Ramphastos culminatus*	-	VU
22	Aves	AVES	PICIFORMES	RAMPHASTIDAE	*Ramphastos vitellinus*	-	VU
23	Aves	AVES	Passeriformes	Thraupidae	*Sporophila melanops*	-	CR
24	Aves	Aves	Anseriformes	Anatidae	*Mergus octosetaceus*	CR	CR
25	Aves	Aves	Passeriformes	Thraupidae	*Sporophila maximiliani*	CR	-
26	Aves	Aves	Columbiformes	Columbidae	*Columbina cyanopis*	CR(PEX)	CR
27	Aves	Aves	Accipitriformes	Accipitridae	*Urubitinga coronata*	EN	-
28	Aves	Aves	Charadriiformes	Scolopacidae	*Calidris pusilla*	EN	NT
29	Aves	Aves	Passeriformes	Dendrocolaptidae	*Lepidocolaptes wagleri*	EN	-
30	Aves	Aves	Passeriformes	Rhinocryptidae	*Scytalopus novacapitalis*	EN	NT

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
31	Aves	Aves	Passeriformes	Scleruridae	*Geositta poeciloptera*	EN	VU
32	Aves	Aves	Passeriformes	Thraupidae	*Conothraupis mesoleuca*	EN	CR
33	Aves	Aves	Passeriformes	Thraupidae	*Coryphaspiza melanotis*	EN	VU
34	Aves	Aves	Psittaciformes	Psittacidae	*Pyrrhura pfrimeri*	EN	EN
35	Aves	Aves	Tinamiformes	Tinamidae	*Nothura minor*	EN	VU
36	Aves	Aves	Tinamiformes	Tinamidae	*Taoniscus nanus*	EN	VU
37	Aves	AVES	PSITTACIFORMES	PSITTACIDAE	*Anodorhynchus glaucus*	-	CR
38	Aves	AVES	CHARADRIIFORMES	SCOLOPACIDAE	*Numenius borealis*	-	CR
39	Aves	aves	Accipitriformes	Accipitridae	*Harpia harpyja*	VU	NT
40	Aves	aves	Accipitriformes	Accipitridae	*Morphnus guianensis*	VU	NT
41	Aves	Aves	Apodiformes	Trochilidae	*Lophornis gouldii*	VU	VU
42	Aves	Aves	Caprimulgiformes	Caprimulgidae	*Hydropsalis candicans*	VU	-
43	Aves	Aves	Cuculiformes	Cuculidae	*Neomorphus geoffroyi*	VU	VU
44	Aves	Aves	Galliformes	Cracidae	*Penelope ochrogaster*	VU	VU
45	Aves	Aves	Passeriformes	Dendrocolaptidae	*Dendrocolaptes medius*	VU	-
46	Aves	Aves	Passeriformes	Dendrocolaptidae	*Xiphocolaptes falcirostris*	VU	VU
47	Aves	Aves	Passeriformes	Icteridae	*Curaeus forbesi*	VU	EN
48	Aves	Aves	Passeriformes	Motacillidae	*Anthus nattereri*	VU	VU
49	Aves	Aves	Passeriformes	Thamnophilidae	*Cercomacra ferdinandi*	VU	VU
50	Aves	Aves	Passeriformes	Thraupidae	*Sporophila hypoxantha*	VU	LC
51	Aves	Aves	Passeriformes	Thraupidae	*Sporophila melanogaster*	VU	NT
52	Aves	Aves	Passeriformes	Thraupidae	*Sporophila palustris*	VU	EN
53	Aves	Aves	Passeriformes	Thraupidae	*Sporophila ruficollis*	VU	NT
54	Aves	Aves	Passeriformes	Tyrannidae	*Alectrurus tricolor*	VU	VU
55	Aves	Aves	Pelecaniformes	Ardeidae	*Tigrisoma fasciatum*	VU	LC
56	Aves	Aves	Piciformes	Picidae	*Celeus obrieni*	VU	EN
57	Aves	Aves	Psittaciformes	Psittacidae	*Amazona vinacea*	VU	EN
58	Aves	Aves	Tinamiformes	Tinamidae	*Tinamus tao*	VU	VU
59	Aves	AVES	Piciformes	Capitonidae	*Capito dayi*	-	VU
60	Aves	Aves	Tinamiformes	Tinamidae	*Crypturellus noctivagus zabele*	VU	-
61	Aves	Aves	Passeriformes	Dendrocolaptidae	*Hylexetastes uniformis*	-	VU
62	Aves	Aves	Passeriformes	Thraupidae	*Sporophila nigrorufa*	-	VU
63	Invertebrados	BIVALVIA	UNIONOIDA	HYRIIDAE	*Castalia martensi*	-	VU
64	Invertebrados	BIVALVIA	UNIONOIDA	HYRIIDAE	*Diplodon dunkerianus*	-	EN

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
65	Invertebrados	BIVALVIA	UNIONOIDA	HYRIIDAE	*Diplodon expansus*	-	VU
66	Invertebrados	BIVALVIA	UNIONOIDA	HYRIIDAE	*Diplodon fontaineanus*	-	EN
67	Invertebrados	BIVALVIA	UNIONOIDA	HYRIIDAE	*Diplodon pfeifferi*	-	VU
68	Invertebrados	GASTROPODA	STYLOMMATOPHORA	ORTHALICIDAE	*Drymaeus acervatus*	-	VU
69	Invertebrados	GASTROPODA	STYLOMMATOPHORA	ORTHALICIDAE	*Drymaeus henseli*	-	VU
70	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Gonyostomus gonyostomus*	-	CR
71	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Hirinaba curytibana*	-	CR
72	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Megalobulimus fragilion*	-	EN
73	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Megalobulimus grandis*	-	CR
74	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Megalobulimus lopesi*	-	EN
75	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Megalobulimus parafragilior*	-	EN
76	Invertebrados	GASTROPODA	STYLOMMATOPHORA	STROPHOCHEILIDAE	*Megalobulimus proclivis*	-	CR
77	Invertebrados	GASTROPODA	STYLOMMATOPHORA	CHAROPIDAE	*Ptychodon schuppi*	-	EN
78	Invertebrados	GASTROPODA	STYLOMMATOPHORA	CHAROPIDAE	*Radioconus goeldi*	-	CR
79	Invertebrados	GASTROPODA	STYLOMMATOPHORA	CHAROPIDAE	*Radioconus riochcoensis*	-	EN
80	Invertebrados	GASTROPODA	STYLOMMATOPHORA	CHAROPIDAE	*Radiodiscus amdenus*	-	EN
81	Invertebrados	GASTROPODA	STYLOMMATOPHORA	CHAROPIDAE	*Radiodiscus compactus*	-	VU
82	Invertebrados	GASTROPODA	STYLOMMATOPHORA	ORTHALICIDAE	*Tomigerus gibberulus*	-	EX
83	Invertebrados	GASTROPODA	STYLOMMATOPHORA	ORTHALICIDAE	*Tomigerus turbinatus*	-	EX
84	Invertebrados	GASTROPODA	STYLOMMATOPHORA	HELICODISCIDAE	*Zilchogyra paulistana*	-	CR
85	Invertebrados	INSECTA	LEPIDOPTERA	LYCAENIDAE	*Cyanophrys bertha*	-	VU
86	Invertebrados	INSECTA	ODONATA	LIBELLULIDAE	*Elga newtonsantosi*	-	CR
87	Invertebrados	INSECTA	ODONATA	LIBELLULIDAE	*Erythrodiplax acantha*	-	CR
88	Invertebrados	INSECTA	LEPIDOPTERA	PAPILIONIDAE	*Eurytides iphitas*	-	VU
89	Invertebrados	INSECTA	COLEOPTERA	CERAMBYCIDAE	*Macrodontia cervicornis*	-	VU
90	Invertebrados	INSECTA	COLEOPTERA	DYTISCIDAE	*Megadytes ducalis*	-	EX
91	Invertebrados	INSECTA	ODONATA	LIBELLULIDAE	*Micrathyria kleerekoperi*	-	CR
92	Invertebrados	INSECTA	COLEOPTERA	DYTISCIDAE	*Rhantus orbignyi*	-	EX
93	Invertebrados	INSECTA	ODONATA	LIBELLULIDAE	*Micrathyria pseudhypodidyma*	-	VU
94	Invertebrados	MALACOSTRACA	DECAPODA	TRICHODACTYLIDAE	*Trichodactylus crassus*	-	EN
95	Invertebrados	MALACOSTRACA	DECAPODA	PALAEMONIDAE	*Cryphiops brasiliensis*	-	CR
96	Invertebrados	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE	*Tropocyclops federensis*	-	VU
97	Invertebrados	MAXILLOPODA	CYCLOPOIDA	CYCLOPIDAE	*Tropocyclops nananae*	-	VU
98	Invertebrados	Arachnida	Amblypygi	Charinidae	*Charinus eleonorae*	CR	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
99	Invertebrados	Arachnida	Amblypygi	Charinidae	*Charinus troglobius*	CR	-
100	Invertebrados	Arachnida	Araneae	Ctenidae	*Isoctenus corymbus*	CR	-
101	Invertebrados	Arachnida	Araneae	Pholcidae	*Metagonia diamantina*	CR	-
102	Invertebrados	Arachnida	Araneae	Prodidomidae	*Lygromma ybyguara*	CR	-
103	Invertebrados	Arachnida	Araneae	Theraphosidae	*Avicularia gamba*	CR	-
104	Invertebrados	Arachnida	Araneae	Theraphosidae	*Tmesiphantes hypogeus*	CR	-
105	Invertebrados	Arachnida	Opiliones	Cryptogeobiidae	*Spinopilar moria*	CR	-
106	Invertebrados	Arachnida	Opiliones	Gonyleptidae	*Giupponia chagasi*	CR	-
107	Invertebrados	Arachnida	Opiliones	Gonyleptidae	*Iandumoema uai*	CR	-
108	Invertebrados	Arachnida	Palpigradi	Eukoeneniidae	*Eukoenenia maquinensis*	CR	-
109	Invertebrados	Arachnida	Palpigradi	Eukoeneniidae	*Eukoenenia sagarana*	CR	-
110	Invertebrados	Arachnida	Pseudoscorpiones	Bochicidae	*Spelaeobochica allodentatus*	CR	-
111	Invertebrados	Arachnida	Pseudoscorpiones	Bochicidae	*Spelaeobochica iuiu*	CR	-
112	Invertebrados	Arachnida	Pseudoscorpiones	Chthoniidae	*Pseudochthonius biseriatus*	CR	-
113	Invertebrados	Arachnida	Scorpiones	Chactidae	*Hadrurochactas araripe*	CR	-
114	Invertebrados	Chilopoda	Scolopendromorpha	Scolopendridae	*Scolopendropsis duplicata*	CR	-
115	Invertebrados	Diplopoda	Spirostreptida	Spirostreptidae	*Pseudonannolene tocaiensis*	CR	-
116	Invertebrados	Gastropoda	Pulmonata	Bulimulidae	*Thaumastus lundi*	CR	-
117	Invertebrados	Gastropoda	Pulmonata	Planorbidae	*Plesiophysa dolichomastix*	CR	-
118	Invertebrados	Insecta	Coleoptera	Carabidae	*Coarazuphium tessai*	CR	-
119	Invertebrados	Insecta	Lepidoptera	Papilionidae	*Parides burchellanus*	CR	NT
120	Invertebrados	Insecta	Lepidoptera	Riodinidae	*Joiceya praeclarus*	CR	EN
121	Invertebrados	Insecta	Lepidoptera	Riodinidae	*Nirodia belphegor*	CR	EN
122	Invertebrados	Insecta	Lepidoptera	Sphingidae	*Nyceryx mielkei*	CR	-
123	Invertebrados	Arachnida	Araneae	Ochyroceratidae	*Ochyrocera ibitipoca*	EN	-
124	Invertebrados	Arachnida	Araneae	Prodidomidae	*Brasilomma enigmatica*	EN	-
125	Invertebrados	Arachnida	Araneae	Theraphosidae	*Avicularia diversipes*	EN	-
126	Invertebrados	Arachnida	Araneae	Theraphosidae	*Oligoxystre diamantinensis*	EN	-
127	Invertebrados	Arachnida	Opiliones	Escadabiidae	*Spaeleoleptes spaeleus*	EN	-
128	Invertebrados	Arachnida	Opiliones	Gonyleptidae	*Iandumoema setimapocu*	EN	-
129	Invertebrados	Arachnida	Opiliones	Gonyleptidae	*Pachylospeleus strinatii*	EN	-
130	Invertebrados	Arachnida	Palpigradi	Eukoeneniidae	*Eukoenenia virgemdalapa*	EN	-
131	Invertebrados	Arachnida	Scorpiones	Buthidae	*Ananteris infuscata*	EN	-
132	Invertebrados	Arachnida	Scorpiones	Buthidae	*Rhopalurus lacrau*	EN	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
133	Invertebrados	Arachnida	Scorpiones	Buthidae	*Troglorhopalurus translucidus*	EN	-
134	Invertebrados	Diplopoda	Spirostreptida	Spirostreptidae	*Pseudonannolene ambuatinga*	EN	-
135	Invertebrados	Diplopoda	Spirostreptida	Spirostreptidae	*Pseudonannolene imbirensis*	EN	-
136	Invertebrados	Entognatha	Collembola	Sminthuridae	*Pararrhopalites papaveroi*	EN	-
137	Invertebrados	Gastropoda	Littorinimorpha	Pomatiopsidae	*Spiripockia punctata*	EN	-
138	Invertebrados	Insecta	Anisoptera	Aeshnidae	*Rhionaeschna eduardoi*	EN	-
139	Invertebrados	Insecta	Anisoptera	Libellulidae	*Elasmothemis schubarti*	EN	-
140	Invertebrados	Insecta	Coleoptera	Carabidae	*Coarazuphium pains*	EN	-
141	Invertebrados	Insecta	Coleoptera	Scarabaeidae	*Dichotomius eucranioides*	EN	EN
142	Invertebrados	Insecta	Hymenoptera	Apidae	*Melipona (Michmelia) rufiventris*	EN	-
143	Invertebrados	Insecta	Lepidoptera	Hesperiidae	*Zonia zonia diabo*	EN	-
144	Invertebrados	Insecta	Lepidoptera	Lycaenidae	*Magnastigma julia*	EN	-
145	Invertebrados	Insecta	Lepidoptera	Lycaenidae	*Strymon ohausi*	EN	-
146	Invertebrados	Insecta	Lepidoptera	Nymphalidae	*Hamadryas velutina browni*	EN	-
147	Invertebrados	Insecta	Lepidoptera	Papilionidae	*Heraclides himeros baia*	EN	-
148	Invertebrados	Insecta	Zygoptera	Heteragrionidae	*Heteragrion petienses*	EN	-
149	Invertebrados	Arachnida	Araneae	Theraphosidae	*Pterinopelma sazimai*	VU	-
150	Invertebrados	Diplopoda	Polydesmida	Chelodesmidae	*Dioplosternus salvatrix*	VU	-
151	Invertebrados	Diplopoda	Polydesmida	Chelodesmidae	*Sandalodesmus stramineus*	VU	-
152	Invertebrados	Gastropoda	Pulmonata	Physidae	*Physa marmorata*	VU	LC
153	Invertebrados	Insecta	Anisoptera	Aeshnidae	*Castoraeschna januaria*	VU	-
154	Invertebrados	Insecta	Anisoptera	Libellulidae	*Macrothemis tessellata*	VU	-
155	Invertebrados	Insecta	Anisoptera	Libellulidae	*Micrathyria divergens*	VU	VU
156	Invertebrados	Insecta	Coleoptera	Carabidae	*Coarazuphium bezerra*	VU	-
157	Invertebrados	Insecta	Coleoptera	Scarabaeidae	*Canthon corpulentus*	VU	VU
158	Invertebrados	Insecta	Coleoptera	Scarabaeidae	*Canthon quadripunctatus*	VU	VU
159	Invertebrados	Insecta	Coleoptera	Vesperidae	*Hypocephalus armatus*	VU	-
160	Invertebrados	Insecta	Ephemeroptera	Baetidae	*Camelobaetidius maranhensis*	VU	-
161	Invertebrados	Insecta	Ephemeroptera	Baetidae	*Camelobaetidius spinosus*	VU	-
162	Invertebrados	Insecta	Lepidoptera	Pieridae	*Cunizza hirlanda planasia*	VU	-
163	Invertebrados	Insecta	Zygoptera	Coenagrionidae	*Homeoura lindneri*	VU	-
164	Invertebrados	Arachnida	Araneae	Pholcidae	*Metagonia potiguar*	CR	-
165	Mammalia	Mammalia	Artiodacyla	Cervidae	*Blastocerus dichotomus*	VU	VU
166	Mammalia	Mammalia	Artiodacyla	Cervidae	*Ozotoceros bezoarticus bezoarticus*	VU	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
167	Mammalia	Mammalia	Artiodacyla	Cervidae	*Ozotoceros bezoarticus leucogaster*	VU	-
168	Mammalia	Mammalia	Artiodacyla	Tayassuidae	*Tayassu pecari*	VU	VU
169	Mammalia	Mammalia	Carnivora	Canidae	*Chrysocyon brachyurus*	VU	NT
170	Mammalia	Mammalia	Carnivora	Canidae	*Lycalopex vetulus*	VU	LC
171	Mammalia	Mammalia	Carnivora	Canidae	*Speothos venaticus*	VU	NT
172	Mammalia	Mammalia	Carnivora	Felidae	*Leopardus colocolo*	VU	NT
173	Mammalia	Mammalia	Carnivora	Felidae	*Leopardus guttulus*	VU	-
174	Mammalia	Mammalia	Carnivora	Felidae	*Leopardus tigrinus*	EN	VU
175	Mammalia	Mammalia	Carnivora	Felidae	*Leopardus wiedii*	VU	NT
176	Mammalia	Mammalia	Carnivora	Felidae	*Panthera onca*	VU	NT
177	Mammalia	Mammalia	Carnivora	Felidae	*Puma concolor*	VU	LC
178	Mammalia	Mammalia	Carnivora	Felidae	*Puma yagouarondi*	VU	-
179	Mammalia	Mammalia	Carnivora	Mustelidae	*Pteronura brasiliensis*	VU	EN
180	Mammalia	Mammalia	Chiroptera	Furipteridae	*Furipterus horrens*	VU	LC
181	Mammalia	Mammalia	Chiroptera	Natalidae	*Natalus macrourus*	VU	-
182	Mammalia	Mammalia	Chiroptera	Phyllostomidae	*Glyphonycteris behnii*	VU	DD
183	Mammalia	Mammalia	Chiroptera	Phyllostomidae	*Lonchophylla dekeyseri*	EN	NT
184	Mammalia	Mammalia	Chiroptera	Phyllostomidae	*Lonchorhina aurita*	VU	LC
185	Mammalia	Mammalia	Cingulata	Dasypodidae	*Priodontes maximus*	VU	VU
186	Mammalia	Mammalia	Cingulata	Dasypodidae	*Tolypeutes tricinctus*	EN	VU
187	Mammalia	Mammalia	Didelphimorphia	Didelphidae	*Thylamys macrurus*	EN	NT
188	Mammalia	Mammalia	Didelphimorphia	Didelphidae	*Thylamys velutinus*	VU	LC
189	Mammalia	Mammalia	Perissodactyla	Tapiriidae	*Tapirus terrestris*	VU	VU
190	Mammalia	Mammalia	Pilosa	Myrmecophagidae	*Myrmecophaga tridactyla*	VU	VU
191	Mammalia	Mammalia	Primates	Atelidae	*Alouatta ululata*	EN	EN
192	Mammalia	Mammalia	Primates	Cebidae	*Sapajus cay*	VU	-
193	Mammalia	Mammalia	Rodentia	Caviidae	*Kerodon acrobata*	VU	DD
194	Mammalia	Mammalia	Rodentia	Caviidae	*Kerodon rupestris*	VU	LC
195	Mammalia	Mammalia	Rodentia	Cricetidae	*Euryoryzomys lamia*	EN	EN
196	Mammalia	Mammalia	Rodentia	Cricetidae	*Gyldenstolpia planaltensis*	EN	-
197	Mammalia	Mammalia	Rodentia	Cricetidae	*Juscelinomys candango*	CR(PEX)	EX
198	Mammalia	Mammalia	Rodentia	Cricetidae	*Microakodontomys transitorius*	EN	EN
199	Mammalia	Mammalia	Rodentia	Cricetidae	*Oligoryzomys rupestris*	EN	DD
200	Mammalia	Mammalia	Rodentia	Cricetidae	*Rhipidomys tribei*	EN	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
201	Mammalia	Mammalia	Rodentia	Cricetidae	*Thalpomys cerradensis*	VU	LC
202	Mammalia	Mammalia	Rodentia	Cricetidae	*Thalpomys lasiotis*	EN	LC
203	Mammalia	Mammalia	Rodentia	Echimyidae	*Phyllomys brasiliensis*	EN	EN
204	Mammalia	Mammalia	Rodentia	Echimyidae	*Trinomys moojeni*	EN	EN
205	Mammalia	Mammalia	Rodentia	Echimyidae	*Trinomys yonenagae*	EN	EN
206	Mammalia	MAMMALIA	DIDELPHIMORPHIA	DIDELPHIDAE	*Monodelphis unistriatus*	-	CR
207	Mammalia	MAMMALIA	RODENTIA	DINOMYIDAE	*Dinomys branickii*	-	VU
208	Mammalia	MAMMALIA	RODENTIA	CRICETIDAE	*Kunsia fronto*	-	EN
209	Mammalia	MAMMALIA	DIDELPHIMORPHIA	DIDELPHIDAE	*Monodelphis umbristriatus*	-	VU
210	Mammalia	MAMMALIA	DIDELPHIMORPHIA	DIDELPHIDAE	*Thylamys karimii*	-	VU
211	Mammalia	MAMMALIA	RODENTIA	ECHIMYIDAE	*Trinomys moojeni*	-	EN
212	Peixes	Actinopterygii	Characiformes	Characidae	*Aphyocheirodon hemigrammus*	VU	-
213	Peixes	Actinopterygii	Characiformes	Characidae	*Brycon gouldingi*	EN	-
214	Peixes	Actinopterygii	Characiformes	Characidae	*Brycon nattereri*	VU	-
215	Peixes	Actinopterygii	Characiformes	Characidae	*Brycon orbignyanus*	EN	-
216	Peixes	Actinopterygii	Characiformes	Characidae	*Creagrutus varii*	VU	-
217	Peixes	Actinopterygii	Characiformes	Characidae	*Hasemania crenuchoides*	VU	-
218	Peixes	Actinopterygii	Characiformes	Characidae	*Hyphessobrycon coelestinus*	EN	-
219	Peixes	Actinopterygii	Characiformes	Characidae	*Kolpotocheirodon theloura*	VU	-
220	Peixes	Actinopterygii	Characiformes	Characidae	*Lophiobrycon weitzmani*	EN	-
221	Peixes	Actinopterygii	Characiformes	Characidae	*Mylesinus paucisquamatus*	EN	-
222	Peixes	Actinopterygii	Characiformes	Characidae	*Stygichthys typhlops*	EN	DD
223	Peixes	Actinopterygii	Characiformes	Prochilodontidae	*Prochilodus vimboides*	VU	-
224	Peixes	Actinopterygii	Characiformes	Serrasalmidae	*Myleus tiete*	EN	-
225	Peixes	Actinopterygii	Cyprinodontiformes	Poeciliidae	*Pamphorichthys pertapeh*	CR	-
226	Peixes	Actinopterygii	Cyprinodontiformes	Poeciliidae	*Phallotorynus jucundus*	EN	-
227	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Cynolebias griseus*	CR	-
228	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Cynolebias leptocephalus*	CR	-
229	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias alternatus*	VU	-
230	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias auratus*	CR	-
231	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias brunoi*	VU	-
232	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias fasciatus*	VU	-
233	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias flammeus*	EN	-
234	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias fulminantis*	CR	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
235	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias ghisolfii*	CR	-
236	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias gibberatus*	VU	-
237	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias hellneri*	EN	-
238	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias magnificus*	EN	-
239	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias marginatus*	CR	-
240	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias multiradiatus*	CR	-
241	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias nielseni*	EN	-
242	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias notatus*	EN	-
243	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias rufus*	CR	-
244	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias similis*	VU	-
245	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias stellatus*	EN	-
246	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias tocantinensis*	CR	-
247	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias trilineatus*	VU	-
248	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Hypsolebias virgulatus*	CR	-
249	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Maratecoara formosa*	VU	-
250	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Maratecoara splendida*	VU	-
251	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus crixas*	VU	-
252	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus illuminatus*	VU	-
253	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus karaja*	VU	-
254	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus kayapo*	VU	-
255	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus kunzei*	VU	-
256	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus litteratus*	VU	-
257	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus pindorama*	VU	-
258	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus pinima*	EN	-
259	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus planaltinus*	VU	-
260	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus rubromarginatus*	VU	-
261	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus rutilicaudus*	VU	-
262	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus salmonicaudus*	VU	-
263	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus scalaris*	EN	-
264	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus ubirajarai*	VU	-
265	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Melanorivulus vittatus*	EN	-
266	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Pituna brevirostrata*	VU	-
267	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Plesiolebias canabravensis*	VU	-
268	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Plesiolebias xavantei*	EN	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
269	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys boitonei*	VU	-
270	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys cholopteryx*	EN	-
271	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys nigromaculatus*	VU	-
272	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys parallelus*	VU	-
273	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys punctulatus*	VU	-
274	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys santanae*	CR	-
275	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Simpsonichthys zonatus*	CR	-
276	Peixes	Actinopterygii	Cyprinodontiformes	Rivulidae	*Trigonectes strigabundus*	EN	-
277	Peixes	Actinopterygii	Gymnotiformes	Sternopygidae	*Eigenmannia vicentespelaea*	VU	-
278	Peixes	Actinopterygii	Perciformes	Cichlidae	*Crenicichla cyclostoma*	CR	-
279	Peixes	Actinopterygii	Perciformes	Cichlidae	*Crenicichla jegui*	EN	-
280	Peixes	Actinopterygii	Perciformes	Cichlidae	*Teleocichla cinderella*	EN	-
281	Peixes	Actinopterygii	Siluriformes	Doradidae	*Hassar shewellkeimi*	VU	-
282	Peixes	Actinopterygii	Siluriformes	Doradidae	*Rhynchodoras xingui*	EN	-
283	Peixes	Actinopterygii	Siluriformes	Heptapteridae	*Chasmocranus brachynema*	EN	-
284	Peixes	Actinopterygii	Siluriformes	Heptapteridae	*Pimelodella spelaea*	EN	-
285	Peixes	Actinopterygii	Siluriformes	Heptapteridae	*Rhamdiopsis krugi*	VU	-
286	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Ancistrus cryptophthalmus*	EN	-
287	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Ancistrus formoso*	VU	-
288	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Ancistrus minutus*	EN	-
289	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Baryancistrus niveatus*	CR	-
290	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Corumbataia britskii*	VU	-
291	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Loricaria coximensis*	CR	-
292	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Microlepidogaster perforatus*	CR	-
293	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Pareiorhaphis mutuca*	EN	-
294	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Pareiorhaphis nasuta*	CR	-
295	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Pareiorhaphis scutula*	EN	-
296	Peixes	Actinopterygii	Siluriformes	Loricariidae	*Lamontichthys avacanoeiro*	EN	-
297	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Aguarunichthys tocantinsensis*	EN	-
298	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Bagropsis reinhardti*	VU	-
299	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Conorhynchos conirostris*	EN	-
300	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Pimelodus halisodous*	VU	-
301	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Pimelodus joannis*	VU	-
302	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Pimelodus stewarti*	VU	-

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
303	Peixes	Actinopterygii	Siluriformes	Pimelodidae	*Steindachneridion amblyurum*	CR	-
304	Peixes	Actinopterygii	Siluriformes	Pseudopimelodidae	*Lophiosilurus alexandri*	VU	-
305	Peixes	Actinopterygii	Siluriformes	Pseudopimelodidae	*Microglanis robustus*	CR	-
306	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Ituglanis bambui*	CR	-
307	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Ituglanis epikarsticus*	VU	-
308	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Ituglanis mambai*	EN	-
309	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Ituglanis passensis*	VU	-
310	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Ituglanis ramiroi*	VU	-
311	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Trichomycterus dali*	VU	-
312	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Trichomycterus itacarambiensis*	CR	-
313	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Trichomycterus novalimensis*	EN	-
314	Peixes	Actinopterygii	Siluriformes	Trichomycteridae	*Trichomycterus rubbioli*	VU	-
315	Peixes	ACTINOPTERYGII	CHARACIFORMES	BRYCONIDAE	*Brycon orthotaenia*	-	VU
316	Peixes	ACTINOPTERYGII	CYPRINODONTIFORMES	RIVULIDAE	*Cynolebias boitonei*	-	VU
317	Peixes	ACTINOPTERYGII	CYPRINODONTIFORMES	RIVULIDAE	*Cynolebias constanciae*	-	VU
318	Peixes	ACTINOPTERYGII	CHARACIFORMES	CHARACIDAE	*Astyanax trierythropterus*	-	VU
319	Peixes	CHONDRICHTHYES	RAJIFORMES	NARCINIDAE	*Benthobatis kreffti*	-	VU
320	Reptilia	Reptilia	Squamata	Amphisbanidae	*Amphisbaena uroxena*	EN	-
321	Reptilia	Reptilia	Squamata	Amphisbanidae	*Leposternon kisteumacheri*	VU	-
322	Reptilia	Reptilia	Squamata	Dipsadidae	*Apostolepis serrana*	EN	-
323	Reptilia	Reptilia	Squamata	Dipsadidae	*Apostolepis striata*	EN	-
324	Reptilia	Reptilia	Squamata	Dipsadidae	*Ditaxodon taeniatus*	VU	-
325	Reptilia	Reptilia	Squamata	Dipsadidae	*Hydrodynastes melanogigas*	EN	-
326	Reptilia	Reptilia	Squamata	Dipsadidae	*Phalotris multipunctatus*	EN	-
327	Reptilia	Reptilia	Squamata	Dipsadidae	*Philodryas livida*	VU	VU
328	Reptilia	Reptilia	Squamata	Gymnophthalmidae	*Bachia didactyla*	EN	-
329	Reptilia	Reptilia	Squamata	Gymnophthalmidae	*Bachia psamophila*	CR	-
330	Reptilia	Reptilia	Squamata	Gymnophthalmidae	*Heterodactylus lundii*	VU	-
331	Reptilia	Reptilia	Squamata	Gymnophthalmidae	*Placosoma cipoense*	EN	-
332	Reptilia	Reptilia	Squamata	Teiidae	*Ameiva parecis*	EN	-
333	Reptilia	Reptilia	Squamata	Teiidae	*Kentropyx vanzoi*	VU	-
334	Reptilia	Reptilia	Squamata	Tropiduridae	*Stenocercus dumerilii*	VU	-
335	Reptilia	Reptilia	Squamata	Typhlopidae	*Typhlops amoipira*	EN	DD
336	Reptilia	REPTILIA	SQUAMATA	LEIOSAURIDAE	*Anisolepis undulatus*	-	VU

	Grupo	Classe	Ordem	Família	Espécie	Brazilian National Red List Status	IUCN Red List Status
337	Reptilia	REPTILIA	SQUAMATA	DIPSADIDAE	*Calamodontophis ronaldoi*	EN	EN
338	Reptilia	REPTILIA	SQUAMATA	GYMNOPHTHALMIDAE	*Calyptommatus confusionibus*	-	EN
339	Reptilia	REPTILIA	SQUAMATA	GYMNOPHTHALMIDAE	*Bachia bresslaui*	-	VU
340	Reptilia	REPTILIA	TESTUDINES	CHELIDAE	*Hydromedusa maximiliani*	-	VU
341	Reptilia	REPTILIA	SQUAMATA	COLUBRIDAE	*Tantilla boipiranga*	-	VU

Table 1.2. Threatened flora

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
1	ACANTHACEAE	*Dyschoriste lavandulacea*	EN	
2	ACANTHACEAE	*Justicia ramulosa*	VU	
3	ACANTHACEAE	*Staurogyne elegans*	VU	
4	ACANTHACEAE	*Stenandrium hatschbachii*	EN	
5	ACANTHACEAE	*Stenandrium stenophyllum*	EN	
6	ALISMATACEAE	*Sagittaria lancifolia*	VU	
7	ALSTROEMERIACEAE	*Alstroemeria brasiliensis*	EN	
8	ALSTROEMERIACEAE	*Alstroemeria orchidioides*	EN	
9	ALSTROEMERIACEAE	*Alstroemeria penduliflora*	EN	
10	AMARANTHACEAE	*Alternanthera decurrens*	EN	
11	AMARANTHACEAE	*Alternanthera januarensis*	EN	
12	AMARANTHACEAE	*Froelichiella grisea*	EN	
13	AMARANTHACEAE	*Gomphrena paranensis*	VU	
14	AMARANTHACEAE	*Pfaffia argyrea*	EN	
15	AMARANTHACEAE	*Pfaffia minarum*	VU	
16	AMARYLLIDACEAE	*Griffinia aracensis*	CR	
17	AMARYLLIDACEAE	*Griffinia gardneriana*	EN	
18	AMARYLLIDACEAE	*Griffinia liboniana*	EN	
19	AMARYLLIDACEAE	*Griffinia nocturna*	CR	
20	AMARYLLIDACEAE	*Habranthus irwinianus*	VU	
21	AMARYLLIDACEAE	*Hippeastrum goianum*	EN	
22	AMARYLLIDACEAE	*Hippeastrum leucobasis*	CR	
23	AMARYLLIDACEAE	*Hippeastrum morelianum*	VU	
24	AMARYLLIDACEAE	*Hippeastrum reginae*	EN	
25	AMARYLLIDACEAE	*Zephyranthes candida*	EN	
26	ANACARDIACEAE	*Schinopsis balansae*	EN	
27	ANEMIACEAE	*Anemia trichorhiza*	VU	
28	APIACEAE	*Eryngium scirpinum*	EN	
29	APIACEAE	*Klotzschia rhizophylla*	EN	
30	APOCYNACEAE	*Ditassa auriflora*	CR	
31	APOCYNACEAE	*Ditassa cipoensis*	EN	
32	APOCYNACEAE	*Ditassa cordeiroana*	EN	
33	APOCYNACEAE	*Ditassa itambensis*	EN	
34	APOCYNACEAE	*Gyrostelma oxypetaloides*	EN	
35	APOCYNACEAE	*Hemipogon abietoides*	CR	

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36	APOCYNACEAE	*Hemipogon furlanii*	EN	
37	APOCYNACEAE	*Hemipogon hatschbachii*	CR	
38	APOCYNACEAE	*Hemipogon piranii*	CR	
39	APOCYNACEAE	*Minaria bifurcata*	CR	
40	APOCYNACEAE	*Minaria diamantinensis*	CR	
41	APOCYNACEAE	*Minaria grazielae*	EN	
42	APOCYNACEAE	*Minaria hemipogonoides*	CR	
43	APOCYNACEAE	*Minaria inconspicua*	EN	
44	APOCYNACEAE	*Minaria magisteriana*	EN	
45	APOCYNACEAE	*Minaria polygaloides*	EN	
46	APOCYNACEAE	*Minaria refractifolia*	VU	
47	APOCYNACEAE	*Minaria semirii*	EN	
48	APOCYNACEAE	*Oxypetalum ekblomii*	EN	
49	APOCYNACEAE	*Prestonia solanifolia*	EN	
50	AQUIFOLIACEAE	*Ilex prostrata*	CR	
51	ARALIACEAE	*Schefflera gardneri*	EN	
52	ARALIACEAE	*Schefflera glaziovii*	EN	
53	ARAUCARIACEAE	*Araucaria angustifolia*	EN	CR
54	ARECACEAE	*Acrocomia emensis*	VU	
55	ARECACEAE	*Attalea barreirensis*	VU	
56	ARECACEAE	*Attalea brasiliensis*	EN	
57	ARECACEAE	*Butia capitata*	VU	
58	ARECACEAE	*Butia leptospatha*	CR	
59	ARECACEAE	*Butia microspadix*	VU	
60	ARECACEAE	*Butia purpurascens*	EN	VU
61	ARECACEAE	*Euterpe edulis*	VU	
62	ARECACEAE	*Syagrus glaucescens*	VU	VU
63	ARECACEAE	*Syagrus macrocarpa*	EN	EN
64	ARECACEAE	*Syagrus mendanhensis*	CR	
65	ASTERACEAE	*Acritopappus irwinii*	VU	
66	ASTERACEAE	*Aldama corumbensis*	EN	
67	ASTERACEAE	*Aldama filifolia*	EN	
68	ASTERACEAE	*Aldama goyazii*	VU	
69	ASTERACEAE	*Aldama linearifolia*	CR	
70	ASTERACEAE	*Aldama vernonioides*	EN	
71	ASTERACEAE	*Anteremanthus hatschbachii*	EN	

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72	ASTERACEAE	*Aspilia almasensis*	VU	
73	ASTERACEAE	*Aspilia cordifolia*	EN	
74	ASTERACEAE	*Aspilia cylindrocephala*	VU	
75	ASTERACEAE	*Aspilia diamantinae*	EN	
76	ASTERACEAE	*Aspilia diffusiflora*	VU	
77	ASTERACEAE	*Aspilia eglerii*	CR	
78	ASTERACEAE	*Aspilia espinhacensis*	EN	
79	ASTERACEAE	*Aspilia jugata*	CR	
80	ASTERACEAE	*Aspilia pereirae*	EN	
81	ASTERACEAE	*Aspilia prostrata*	EN	
82	ASTERACEAE	*Aspilia reticulata*	VU	
83	ASTERACEAE	*Aspilia silphioides*	EN	
84	ASTERACEAE	*Baccharis concinna*	VU	
85	ASTERACEAE	*Baccharis elliptica*	EN	
86	ASTERACEAE	*Baccharis lychnophora*	VU	
87	ASTERACEAE	*Baccharis polyphylla*	VU	
88	ASTERACEAE	*Baccharis pseudoalpestris*	VU	
89	ASTERACEAE	*Calea abbreviata*	CR	
90	ASTERACEAE	*Calea brittoniana*	CR	
91	ASTERACEAE	*Calea gentianoides*	VU	
92	ASTERACEAE	*Calea heteropappa*	EN	
93	ASTERACEAE	*Chresta souzae*	EN	
94	ASTERACEAE	*Chromolaena arrayana*	EN	
95	ASTERACEAE	*Chromolaena costatipes*	EN	
96	ASTERACEAE	*Chronopappus bifrons*	VU	
97	ASTERACEAE	*Chrysolaena nicolackii*	VU	
98	ASTERACEAE	*Dimerostemma annuum*	EN	
99	ASTERACEAE	*Dimerostemma grazielae*	VU	
100	ASTERACEAE	*Disynaphia ericoides*	EN	
101	ASTERACEAE	*Disynaphia praeficta*	EN	
102	ASTERACEAE	*Disynaphia variolata*	EN	
103	ASTERACEAE	*Echinocoryne echinocephala*	EN	
104	ASTERACEAE	*Eremanthus argenteus*	EN	
105	ASTERACEAE	*Eremanthus polycephalus*	VU	
106	ASTERACEAE	*Gochnatia rotundifolia*	VU	
107	ASTERACEAE	*Gyptis vernoniopsis*	EN	

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108	ASTERACEAE	*Heterocondylus lysimachioides*	VU	
109	ASTERACEAE	*Ichthyothere elliptica*	EN	
110	ASTERACEAE	*Lepidaploa spixiana*	EN	
111	ASTERACEAE	*Lessingianthus adenophyllus*	EN	
112	ASTERACEAE	*Lessingianthus asteriflorus*	EN	
113	ASTERACEAE	*Lessingianthus eitenii*	EN	
114	ASTERACEAE	*Lessingianthus exiguus*	VU	
115	ASTERACEAE	*Lessingianthus irwinii*	VU	
116	ASTERACEAE	*Lessingianthus pumillus*	VU	
117	ASTERACEAE	*Lessingianthus reitzianus*	VU	
118	ASTERACEAE	*Lessingianthus rosmarinifolius*	EN	
119	ASTERACEAE	*Lessingianthus souzae*	EN	
120	ASTERACEAE	*Lessingianthus stoechas*	VU	
121	ASTERACEAE	*Lessingianthus subcarduoides*	EN	
122	ASTERACEAE	*Lessingianthus venosissimus*	EN	
123	ASTERACEAE	*Lessingianthus westermanii*	EN	
124	ASTERACEAE	*Lessingianthus zuccarinianus*	VU	
125	ASTERACEAE	*Lomatozona artemisiifolia*	EN	
126	ASTERACEAE	*Lulia nervosa*	EN	
127	ASTERACEAE	*Lychnophora diamantinana*	EN	
128	ASTERACEAE	*Lychnophora gardneri*	EN	
129	ASTERACEAE	*Lychnophora granmogolensis*	EN	
130	ASTERACEAE	*Lychnophora humillima*	CR	
131	ASTERACEAE	*Lychnophora markgravii*	EN	
132	ASTERACEAE	*Lychnophora martiana*	EN	
133	ASTERACEAE	*Lychnophora mello-barretoi*	EN	
134	ASTERACEAE	*Lychnophora pohlii*	EN	
135	ASTERACEAE	*Lychnophora rosmarinifolia*	EN	
136	ASTERACEAE	*Lychnophora sellowii*	EN	
137	ASTERACEAE	*Lychnophora souzae*	CR	
138	ASTERACEAE	*Lychnophora syncephala*	EN	
139	ASTERACEAE	*Lychnophora tomentosa*	VU	
140	ASTERACEAE	*Lychnophora villosissima*	EN	
141	ASTERACEAE	*Lychnophoriopsis candelabrum*	EN	
142	ASTERACEAE	*Lychnophoriopsis damazioi*	EN	
143	ASTERACEAE	*Lychnophoriopsis hatschbachii*	EN	

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144	ASTERACEAE	*Mikania alvimii*	EN	
145	ASTERACEAE	*Mikania argyreiae*	VU	
146	ASTERACEAE	*Mikania cipoensis*	EN	
147	ASTERACEAE	*Mikania glabra*	EN	
148	ASTERACEAE	*Mikania glauca*	EN	
149	ASTERACEAE	*Mikania hartbergii*	EN	
150	ASTERACEAE	*Mikania hastato-cordata*	VU	
151	ASTERACEAE	*Mikania itambana*	EN	
152	ASTERACEAE	*Mikania neurocaula*	EN	
153	ASTERACEAE	*Mikania premnifolia*	EN	
154	ASTERACEAE	*Mikania viminea*	EN	
155	ASTERACEAE	*Mikania warmingii*	EN	
156	ASTERACEAE	*Minasia alpestris*	EN	
157	ASTERACEAE	*Minasia pereirae*	EN	
158	ASTERACEAE	*Minasia scapigera*	EN	
159	ASTERACEAE	*Moquiniastrum hatschbachii*	VU	
160	ASTERACEAE	*Moquiniastrum ramboi*	VU	
161	ASTERACEAE	*Moquiniastrum sordidum*	VU	
162	ASTERACEAE	*Piptolepis buxoides*	EN	
163	ASTERACEAE	*Piptolepis imbricata*	CR	
164	ASTERACEAE	*Piptolepis leptospermoides*	CR	
165	ASTERACEAE	*Proteopsis argentea*	VU	
166	ASTERACEAE	*Richterago angustifolia*	EN	
167	ASTERACEAE	*Richterago arenaria*	VU	
168	ASTERACEAE	*Richterago caulescens*	CR	
169	ASTERACEAE	*Richterago conduplicata*	EN	
170	ASTERACEAE	*Richterago elegans*	VU	
171	ASTERACEAE	*Richterago hatschbachii*	EN	
172	ASTERACEAE	*Richterago lanata*	EN	
173	ASTERACEAE	*Richterago petiolata*	EN	
174	ASTERACEAE	*Richterago polyphylla*	EN	
175	ASTERACEAE	*Richterago riparia*	VU	
176	ASTERACEAE	*Richterago stenophylla*	EN	
177	ASTERACEAE	*Senecio gertii*	EN	
178	ASTERACEAE	*Senecio hatschbachii*	EN	
179	ASTERACEAE	*Stevia hilarii*	CR	

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180	ASTERACEAE	*Stevia leptophylla*	EN	
181	ASTERACEAE	*Strophopappus bicolor*	EN	
182	ASTERACEAE	*Strophopappus ferrugineus*	EN	
183	ASTERACEAE	*Symphyopappus uncinatus*	EN	
184	ASTERACEAE	*Wedelia macedoi*	CR	
185	ASTERACEAE	*Wunderlichia cruelsiana*	EN	
186	ASTERACEAE	*Wunderlichia senae*	EN	
187	BEGONIACEAE	*Begonia apparicioi*	EN	
188	BEGONIACEAE	*Begonia perdusenii*	EN	
189	BIGNONIACEAE	*Adenocalymma dichilum*	EN	
190	BIGNONIACEAE	*Anemopaegma arvense*	EN	
191	BIGNONIACEAE	*Fridericia crassa*	VU	
192	BIGNONIACEAE	*Handroanthus spongiosus*	EN	
193	BIGNONIACEAE	*Jacaranda intricata*	CR	
194	BIGNONIACEAE	*Tabebuia cassinoides*	EN	
195	BIGNONIACEAE	*Zeyheria tuberculosa*	VU	VU
196	BLECHNACEAE	*Blechnum heringeri*	VU	
197	BROMELIACEAE	*Alcantarea duarteana*	EN	
198	BROMELIACEAE	*Bromelia braunii*	CR	
199	BROMELIACEAE	*Bromelia macedoi*	VU	
200	BROMELIACEAE	*Deuterocohnia meziana*	VU	
201	BROMELIACEAE	*Dyckia fosteriana*	EN	
202	BROMELIACEAE	*Dyckia rariflora*	EN	
203	BROMELIACEAE	*Dyckia reitzii*	EN	EN
204	BROMELIACEAE	*Dyckia ursina*	CR	
205	BROMELIACEAE	*Eduandrea selloana*	EN	
206	BROMELIACEAE	*Encholirium biflorum*	CR	
207	BROMELIACEAE	*Encholirium disjunctum*	CR	
208	BROMELIACEAE	*Encholirium heloisae*	EN	
209	BROMELIACEAE	*Encholirium irwinii*	CR	
210	BROMELIACEAE	*Encholirium luxor*	EN	EN
211	BROMELIACEAE	*Encholirium pedicellatum*	CR	
212	BROMELIACEAE	*Encholirium scrutor*	EN	
213	BROMELIACEAE	*Encholirium vogelii*	CR	
214	BROMELIACEAE	*Lapanthus duartei*	EN	
215	BROMELIACEAE	*Neoregelia leprosa*	VU	

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216	BROMELIACEAE	*Orthophytum humile*	CR	
217	BROMELIACEAE	*Pitcairnia bradei*	CR	
218	BROMELIACEAE	*Tillandsia crocata*	EN	
219	BROMELIACEAE	*Vriesea diamantinensis*	EN	
220	BROMELIACEAE	*Vriesea minarum*	EN	
221	BROMELIACEAE	*Vriesea saxicola*	EN	
222	CACTACEAE	*Arrojadoa eriocaulis*	EN	EN
223	CACTACEAE	*Arthrocereus glaziovii*	EN	EN
224	CACTACEAE	*Arthrocereus melanurus subsp. melanurus*	EN	
225	CACTACEAE	*Arthrocereus melanurus subsp. odorus*	EN	
226	CACTACEAE	*Arthrocereus rondonianus*	EN	
227	CACTACEAE	*Brasilicereus markgrafii*	EN	VU
228	CACTACEAE	*Cereus mirabella*	VU	EN
229	CACTACEAE	*Cipocereus bradei*	VU	VU
230	CACTACEAE	*Cipocereus crassisepalus*	EN	EN
231	CACTACEAE	*Cipocereus minensis*	VU	
232	CACTACEAE	*Coleocephalocereus buxbaumianus subsp. flavisetus*	VU	
233	CACTACEAE	*Discocactus catingicola*	VU	
234	CACTACEAE	*Discocactus horstii*	CR	VU
235	CACTACEAE	*Discocactus pseudoinsignis*	CR	EN
236	CACTACEAE	*Facheiroa cephaliomelana*	EN	VU
237	CACTACEAE	*Facheiroa cephaliomelana subsp. estevesii*	EN	
238	CACTACEAE	*Micranthocereus albicephalus*	EN	VU
239	CACTACEAE	*Micranthocereus auriazureus*	EN	EN
240	CACTACEAE	*Micranthocereus dolichospermaticus*	EN	
241	CACTACEAE	*Micranthocereus violaciflorus*	EN	EN
242	CACTACEAE	*Pereskia aureiflora*	VU	EN
243	CACTACEAE	*Pilosocereus aurisetus subsp. aurilanatus*	EN	
244	CACTACEAE	*Pilosocereus fulvilanatus*	EN	
245	CACTACEAE	*Uebelmannia buiningii*	CR	CR
246	CACTACEAE	*Uebelmannia gummifera*	VU	EN
247	CACTACEAE	*Uebelmannia pectinifera*	EN	EN
248	CELASTRACEAE	*Maytenus rupestris*	VU	
249	CISTACEAE	*Helianthemum brasiliense*	EN	
250	COMMELINACEAE	*Dichorisandra glaziovii*	VU	
251	CONNARACEAE	*Rourea cnestidifolia*	EN	

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252	CONNARACEAE	*Rourea pseudospadicea*	EN	
253	CONVOLVULACEAE	*Evolvulus glaziovii*	VU	
254	CONVOLVULACEAE	*Evolvulus kramerioides*	VU	
255	CONVOLVULACEAE	*Evolvulus rariflorus*	VU	
256	CONVOLVULACEAE	*Evolvulus riedelii*	EN	
257	CONVOLVULACEAE	*Evolvulus stellariifolius*	EN	
258	CONVOLVULACEAE	*Ipomoea carajasensis*	VU	
259	CONVOLVULACEAE	*Ipomoea macedoi*	CR	
260	CONVOLVULACEAE	*Ipomoea subrevoluta*	VU	
261	CONVOLVULACEAE	*Jacquemontia revoluta*	EN	
262	CONVOLVULACEAE	*Merremia repens*	EN	
263	CYPERACEAE	*Bulbostylis smithii*	EN	
264	CYPERACEAE	*Lagenocarpus bracteosus*	EN	
265	DICHAPETALACEAE	*Stephanopodium engleri*	EN	
266	DICKSONIACEAE	*Dicksonia sellowiana*	EN	
267	DIOSCOREACEAE	*Dioscorea asperula*	VU	
268	DIOSCOREACEAE	*Dioscorea loefgrenii*	VU	
269	DROSERACEAE	*Drosera graomogolensis*	EN	
270	DRYOPTERIDACEAE	*Elaphoglossum acrocarpum*	VU	
271	ERICACEAE	*Gaultheria sleumeriana*	CR	
272	ERICACEAE	*Gaylussacia centunculifolia*	EN	
273	ERICACEAE	*Gaylussacia oleifolia*	EN	
274	ERIOCAULACEAE	*Actinocephalus cipoensis*	CR	
275	ERIOCAULACEAE	*Actinocephalus claussenianus*	VU	
276	ERIOCAULACEAE	*Comanthera elegans*	EN	
277	ERIOCAULACEAE	*Leiothrix echinocephala*	VU	
278	ERIOCAULACEAE	*Paepalanthus ater*	CR	
279	ERIOCAULACEAE	*Paepalanthus hydra*	EN	
280	ERIOCAULACEAE	*Syngonanthus laricifolius*	VU	
281	EUPHORBIACEAE	*Astraea cincta*	EN	
282	EUPHORBIACEAE	*Bernardia crassifolia*	EN	
283	EUPHORBIACEAE	*Croton leptobotryus*	VU	
284	EUPHORBIACEAE	*Euphorbia attastoma*	EN	
285	EUPHORBIACEAE	*Euphorbia gymnoclada*	VU	
286	EUPHORBIACEAE	*Manihot procumbens*	VU	
287	FABACEAE	*Aeschynomene laca-buendiana*	EN	

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288	FABACEAE	*Apuleia leiocarpa*	VU	
289	FABACEAE	*Calliandra carrascana*	EN	
290	FABACEAE	*Centrosema carajasense*	VU	
291	FABACEAE	*Chamaecrista cipoana*	VU	
292	FABACEAE	*Chamaecrista fodinarum*	VU	
293	FABACEAE	*Chamaecrista lagotois*	CR	
294	FABACEAE	*Chamaecrista stillifera*	VU	
295	FABACEAE	*Chamaecrista tephrosiifolia*	VU	
296	FABACEAE	*Chamaecrista ulmea*	CR	
297	FABACEAE	*Dalbergia nigra*	VU	VU
298	FABACEAE	*Dimorphandra wilsonii*	CR	CR
299	FABACEAE	*Harpalyce parvifolia*	EN	
300	FABACEAE	*Hymenaea parvifolia*	VU	
301	FABACEAE	*Leucochloron foederale*	EN	VU
302	FABACEAE	*Leucochloron minarum*	EN	
303	FABACEAE	*Lupinus coriaceus*	VU	
304	FABACEAE	*Lupinus decurrens*	EN	
305	FABACEAE	*Melanoxylon brauna*	VU	
306	FABACEAE	*Mimosa acroconica*	EN	
307	FABACEAE	*Mimosa adamantina*	EN	
308	FABACEAE	*Mimosa barretoi*	EN	
309	FABACEAE	*Mimosa bombycina*	EN	
310	FABACEAE	*Mimosa chrysastra*	CR	
311	FABACEAE	*Mimosa heringeri*	EN	
312	FABACEAE	*Mimosa leprosa*	EN	
313	FABACEAE	*Mimosa lithoreas*	EN	
314	FABACEAE	*Mimosa macedoana*	EN	
315	FABACEAE	*Mimosa montis-carasae*	EN	
316	FABACEAE	*Mimosa paucifolia*	VU	
317	FABACEAE	*Mimosa suburbana*	CR	
318	FABACEAE	*Mimosa uniceps*	EN	
319	FABACEAE	*Neptunia pubescens*	VU	
320	FABACEAE	*Peltogyne maranhensis*	VU	
321	GELSEMIACEAE	*Mostuea muricata*	VU	
322	GENTIANACEAE	*Senaea coerulea*	EN	
323	GENTIANACEAE	*Zygostigma australe*	EN	

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324	GESNERIACEAE	*Goyazia petraea*	EN	
325	GESNERIACEAE	*Paliavana werdermannii*	VU	
326	GESNERIACEAE	*Sinningia araneosa*	VU	
327	GESNERIACEAE	*Sinningia defoliata*	VU	
328	GESNERIACEAE	*Sinningia piresiana*	EN	
329	GESNERIACEAE	*Sinningia rupicola*	EN	
330	GESNERIACEAE	*Sphaerorrhiza burchellii*	EN	
331	HYMENOPHYLLACEAE	*Hymenophyllum silveirae*	CR	
332	HYPERICACEAE	*Hypericum mutilum*	VU	
333	IRIDACEAE	*Pseudotrimezia brevistamina*	CR	
334	IRIDACEAE	*Pseudotrimezia concava*	CR	
335	IRIDACEAE	*Pseudotrimezia gracilis*	CR	
336	IRIDACEAE	*Pseudotrimezia synandra*	EN	
337	IRIDACEAE	*Pseudotrimezia tenuissima*	EN	
338	IRIDACEAE	*Trimezia exillima*	EN	
339	IRIDACEAE	*Trimezia fistulosa*	EN	
340	IRIDACEAE	*Trimezia fistulosa var. longifolia*	CR	
341	IRIDACEAE	*Trimezia plicatifolia*	EN	
342	LAMIACEAE	*Cyanocephalus caprariifolius*	EN	
343	LAMIACEAE	*Cyanocephalus digitatus*	EN	
344	LAMIACEAE	*Cyanocephalus tagetifolius*	EN	
345	LAMIACEAE	*Eriope crassipes subsp. cristalinae*	CR	
346	LAMIACEAE	*Eriope machrisae*	EN	
347	LAMIACEAE	*Hypenia aristulata*	CR	
348	LAMIACEAE	*Hypenia crispata*	EN	
349	LAMIACEAE	*Hypenia micrantha*	EN	
350	LAMIACEAE	*Hypenia subrosea*	EN	
351	LAMIACEAE	*Hyptidendron claussenii*	EN	
352	LAMIACEAE	*Hyptidendron conspersum*	EN	
353	LAMIACEAE	*Hyptis alpestris*	EN	
354	LAMIACEAE	*Hyptis angustifolia*	EN	
355	LAMIACEAE	*Hyptis arenaria*	VU	
356	LAMIACEAE	*Hyptis colligata*	EN	
357	LAMIACEAE	*Hyptis cruciformis*	EN	
358	LAMIACEAE	*Hyptis frondosa*	VU	
359	LAMIACEAE	*Hyptis hamatidens*	VU	

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360	LAMIACEAE	*Hyptis imbricatiformis*	EN	
361	LAMIACEAE	*Hyptis pachyphylla*	VU	
362	LAMIACEAE	*Hyptis penaeoides*	EN	
363	LAMIACEAE	*Oocephalus piranii*	CR	
364	LAURACEAE	*Aiouea bracteata*	VU	
365	LAURACEAE	*Cinnamomum erythropus*	EN	
366	LAURACEAE	*Cinnamomum quadrangulum*	VU	
367	LAURACEAE	*Mezilaurus itauba*	VU	
368	LAURACEAE	*Ocotea beulahiae*	EN	
369	LAURACEAE	*Ocotea catharinensis*	VU	VU
370	LAURACEAE	*Ocotea confertiflora*	VU	
371	LAURACEAE	*Ocotea felix*	EN	
372	LAURACEAE	*Ocotea odorifera*	EN	
373	LAURACEAE	*Ocotea porosa*	EN	VU
374	LAURACEAE	*Ocotea tabacifolia*	EN	
375	LAURACEAE	*Persea pedunculosa*	EN	
376	LECYTHIDACEAE	*Cariniana legalis*	EN	VU
377	LECYTHIDACEAE	*Lecythis schwackei*	EN	VU
378	LOGANIACEAE	*Spigelia aceifolia*	EN	
379	LOGANIACEAE	*Spigelia cipoensis*	CR	
380	LOGANIACEAE	*Spigelia lundiana*	EN	
381	LOGANIACEAE	*Spigelia reitzii*	EN	
382	LYCOPODIACEAE	*Diphasium jussiaei*	EN	
383	LYCOPODIACEAE	*Phlegmariurus itambensis*	EN	
384	LYCOPODIACEAE	*Phlegmariurus ruber*	CR	
385	LYCOPODIACEAE	*Pseudolycopodiella benjaminiana*	EN	
386	LYTHRACEAE	*Cuphea arenarioides*	VU	
387	LYTHRACEAE	*Cuphea cipoensis*	EN	
388	LYTHRACEAE	*Cuphea cuiabensis*	EN	
389	LYTHRACEAE	*Cuphea rubro-virens*	CR	
390	LYTHRACEAE	*Cuphea teleandra*	CR	
391	LYTHRACEAE	*Diplusodon aggregatifolius*	EN	
392	LYTHRACEAE	*Diplusodon ericoides*	CR	
393	LYTHRACEAE	*Diplusodon glaziovii*	CR	
394	LYTHRACEAE	*Diplusodon gracilis*	CR	
395	LYTHRACEAE	*Diplusodon hatschbachii*	VU	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
396	LYTHRACEAE	*Diplusodon minasensis*	EN	
397	LYTHRACEAE	*Diplusodon orbicularis*	VU	
398	LYTHRACEAE	*Diplusodon ovatus*	EN	
399	LYTHRACEAE	*Diplusodon panniculatus*	CR	
400	LYTHRACEAE	*Diplusodon retroimbricatus*	CR	
401	LYTHRACEAE	*Diplusodon villosissimus*	VU	
402	LYTHRACEAE	*Lafoensia nummularifolia*	VU	
403	MALPIGHIACEAE	*Banisteriopsis andersonii*	VU	
404	MALPIGHIACEAE	*Banisteriopsis cipoensis*	EN	
405	MALPIGHIACEAE	*Banisteriopsis hatschbachii*	EN	
406	MALPIGHIACEAE	*Banisteriopsis hirsuta*	EN	
407	MALPIGHIACEAE	*Byrsonima brachybotrya*	VU	
408	MALPIGHIACEAE	*Byrsonima cipoensis*	EN	
409	MALPIGHIACEAE	*Byrsonima fonsecae*	CR	
410	MALPIGHIACEAE	*Byrsonima microphylla*	EN	
411	MALPIGHIACEAE	*Byrsonima onishiana*	EN	
412	MALPIGHIACEAE	*Camarea humifusa*	EN	
413	MALPIGHIACEAE	*Camarea linearifolia*	CR	
414	MALPIGHIACEAE	*Heladena multiflora*	EN	
415	MALPIGHIACEAE	*Heteropterys aliciae*	CR	
416	MALPIGHIACEAE	*Heteropterys dusenii*	VU	
417	MALPIGHIACEAE	*Heteropterys hatschbachii*	CR	
418	MALPIGHIACEAE	*Janusia linearifolia*	VU	
419	MALPIGHIACEAE	*Janusia occhionii*	EN	
420	MALPIGHIACEAE	*Peixotoa andersonii*	CR	
421	MALPIGHIACEAE	*Peixotoa bahiana*	CR	
422	MALPIGHIACEAE	*Peixotoa barnebyi*	EN	
423	MALPIGHIACEAE	*Peixotoa cipoana*	EN	
424	MALPIGHIACEAE	*Peixotoa psilophylla*	VU	
425	MALPIGHIACEAE	*Stigmaphyllon harleyi*	EN	
426	MALPIGHIACEAE	*Stigmaphyllon macedoanum*	CR	
427	MALPIGHIACEAE	*Thryallis laburnum*	VU	
428	MALPIGHIACEAE	*Thryallis parviflora*	EN	
429	MALVACEAE	*Hochreutinera hasslerana*	EN	
430	MALVACEAE	*Pavonia grazielae*	VU	
431	MELASTOMATACEAE	*Cambessedesia atropurpurea*	VU	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
432	MELASTOMATACEAE	*Cambessedesia weddellii*	VU	
433	MELASTOMATACEAE	*Huberia pirani*	EN	
434	MELASTOMATACEAE	*Lavoisiera cordata*	VU	
435	MELASTOMATACEAE	*Lithobium cordatum*	EN	
436	MELASTOMATACEAE	*Marcetia hatschbachii*	EN	
437	MELASTOMATACEAE	*Marcetia semiriana*	EN	
438	MELASTOMATACEAE	*Miconia angelana*	CR	
439	MELASTOMATACEAE	*Miconia cipoensis*	EN	
440	MELASTOMATACEAE	*Microlicia canastrensis*	EN	
441	MELASTOMATACEAE	*Microlicia flava*	EN	
442	MELASTOMATACEAE	*Microlicia humilis*	VU	
443	MELASTOMATACEAE	*Microlicia macedoi*	EN	
444	MELASTOMATACEAE	*Microlicia microphylla*	CR	
445	MELASTOMATACEAE	*Microlicia obtusifolia*	EN	
446	MELASTOMATACEAE	*Microlicia psammophila*	EN	
447	MELASTOMATACEAE	*Ossaea warmingiana*	VU	
448	MELASTOMATACEAE	*Svitramia integerrima*	EN	
449	MELASTOMATACEAE	*Svitramia minor*	VU	
450	MELASTOMATACEAE	*Svitramia wurdackiana*	VU	
451	MELASTOMATACEAE	*Tibouchina bergiana*	EN	
452	MELASTOMATACEAE	*Tibouchina riedeliana*	EN	
453	MELASTOMATACEAE	*Trembleya chamissoana*	EN	
454	MELASTOMATACEAE	*Trembleya hatschbachii*	EN	
455	MELIACEAE	*Cedrela fissilis*	VU	EN
456	MELIACEAE	*Cedrela odorata*	VU	VU
457	MELIACEAE	*Swietenia macrophylla*	VU	VU
458	MELIACEAE	*Trichilia stellato-tomentosa*	VU	
459	MORACEAE	*Dorstenia conceptionis*	EN	
460	MYRISTICACEAE	*Virola surinamensis*	VU	EN
461	MYRTACEAE	*Accara elegans*	EN	
462	MYRTACEAE	*Eugenia blanda*	EN	
463	MYRTACEAE	*Myrceugenia bracteosa*	EN	VU
464	MYRTACEAE	*Myrceugenia franciscensis*	EN	VU
465	MYRTACEAE	*Myrceugenia hatschbachii*	VU	
466	MYRTACEAE	*Myrcia diaphana*	VU	
467	MYRTACEAE	*Neomitranthes gracilis*	EN	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
468	MYRTACEAE	*Siphoneugena kuhlmannii*	VU	
469	OCHNACEAE	*Luxemburgia angustifolia*	VU	
470	OCHNACEAE	*Luxemburgia flexuosa*	VU	
471	OCHNACEAE	*Ouratea hatschbachii*	EN	
472	OLEACEAE	*Chionanthus subsessilis*	VU	CR
473	ORCHIDACEAE	*Cattleya guttata*	VU	
474	ORCHIDACEAE	*Cattleya intermedia*	VU	
475	ORCHIDACEAE	*Cattleya walkeriana*	VU	
476	ORCHIDACEAE	*Cleistes aphylla*	EN	
477	ORCHIDACEAE	*Constantia cipoensis*	CR	
478	ORCHIDACEAE	*Cycnoches pentadactylum*	EN	
479	ORCHIDACEAE	*Cyrtopodium caiapoense*	VU	
480	ORCHIDACEAE	*Cyrtopodium hatschbachii*	EN	
481	ORCHIDACEAE	*Cyrtopodium latifolium*	CR	
482	ORCHIDACEAE	*Cyrtopodium linearifolium*	CR	
483	ORCHIDACEAE	*Cyrtopodium lissochiloides*	VU	
484	ORCHIDACEAE	*Cyrtopodium palmifrons*	VU	
485	ORCHIDACEAE	*Cyrtopodium triste*	VU	
486	ORCHIDACEAE	*Dryadella lilliputiana*	VU	
487	ORCHIDACEAE	*Epidendrum henschenii*	EN	
488	ORCHIDACEAE	*Grandiphyllum hians*	VU	
489	ORCHIDACEAE	*Grobya cipoensis*	CR	
490	ORCHIDACEAE	*Habenaria achalensis*	VU	
491	ORCHIDACEAE	*Habenaria galeandriformis*	CR	
492	ORCHIDACEAE	*Habenaria piraquarensis*	EN	
493	ORCHIDACEAE	*Hadrolaelia brevipedunculata*	VU	
494	ORCHIDACEAE	*Hadrolaelia jongheana*	EN	
495	ORCHIDACEAE	*Hadrolaelia pumila*	VU	
496	ORCHIDACEAE	*Hoffmannseggella briegeri*	EN	
497	ORCHIDACEAE	*Hoffmannseggella caulescens*	EN	
498	ORCHIDACEAE	*Hoffmannseggella ghillanyi*	EN	
499	ORCHIDACEAE	*Isabelia virginalis*	VU	
500	ORCHIDACEAE	*Malaxis jaraguae*	VU	
501	ORCHIDACEAE	*Phragmipedium vittatum*	VU	
502	ORCHIDACEAE	*Phymatidium geiselii*	EN	
503	ORCHIDACEAE	*Pseudolaelia cipoensis*	CR	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
504	ORCHIDACEAE	*Pteroglossa hilariana*	EN	
505	ORCHIDACEAE	*Saundersia mirabilis*	EN	
506	ORCHIDACEAE	*Scuticaria itirapinensis*	CR	
507	ORCHIDACEAE	*Thysanoglossa jordanensis*	EN	
508	OROBANCHACEAE	*Agalinis brachyphylla*	VU	
509	OROBANCHACEAE	*Agalinis nana*	EN	
510	OROBANCHACEAE	*Agalinis ramulifera*	EN	
511	OROBANCHACEAE	*Agalinis schwackeana*	CR	
512	OROBANCHACEAE	*Esterhazya caesarea*	VU	
513	OXALIDACEAE	*Oxalis diamantinae*	CR	
514	PASSIFLORACEAE	*Passiflora setulosa*	EN	
515	PENTAPHYLACACEAE	*Ternstroemia cuneifolia*	VU	
516	PHYLLANTHACEAE	*Phyllanthus gladiatus*	VU	
517	PHYTOLACCACEAE	*Microtea papilosa*	VU	
518	PIPERACEAE	*Peperomia cordigera*	VU	
519	PIPERACEAE	*Peperomia hemmendorffii*	EN	
520	PIPERACEAE	*Piper loefgrenii*	VU	
521	PLANTAGINACEAE	*Angelonia alternifolia*	CR	
522	POACEAE	*Agrostis longiberbis*	EN	
523	POACEAE	*Altoparadisium chapadense*	CR	
524	POACEAE	*Aristida brasiliensis*	EN	
525	POACEAE	*Arthropogon xerachne*	CR	
526	POACEAE	*Arundinella deppeana*	VU	
527	POACEAE	*Axonopus fastigiatus*	VU	
528	POACEAE	*Axonopus hydrolithicus*	CR	
529	POACEAE	*Axonopus monticola*	EN	
530	POACEAE	*Axonopus uninodis*	CR	
531	POACEAE	*Canastra lanceolata*	CR	
532	POACEAE	*Chusquea attenuata*	EN	
533	POACEAE	*Chusquea heterophylla*	EN	
534	POACEAE	*Chusquea tenuiglumis*	CR	
535	POACEAE	*Digitaria neesiana*	EN	
536	POACEAE	*Gymnopogon doellii*	CR	
537	POACEAE	*Leersia ligularis*	VU	
538	POACEAE	*Merostachys abadiana*	CR	
539	POACEAE	*Paspalum repandum*	EN	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
540	POACEAE	*Setaria parviflora var. pilosissima*	CR	
541	POACEAE	*Sporobolus apiculatus*	EN	
542	POACEAE	*Triraphis devia*	EN	
543	POACEAE	*Zizaniopsis bonariensis*	EN	
544	PODOCARPACEAE	*Podocarpus barretoi*	CR	
545	PODOCARPACEAE	*Podocarpus brasiliensis*	VU	
546	PODOSTEMACEAE	*Mourera weddelliana*	VU	
547	PODOSTEMACEAE	*Podostemum ovatum*	EN	
548	POLYGALACEAE	*Polygala franchetii*	EN	
549	POLYGALACEAE	*Polygala tamariscea*	VU	
550	POLYPODIACEAE	*Pecluma hoehnii*	CR	
551	PRIMULACEAE	*Myrsine congesta*	EN	
552	PROTEACEAE	*Euplassa incana*	VU	
553	PROTEACEAE	*Euplassa semicostata*	EN	
554	PTERIDACEAE	*Adiantum tetragonum*	EN	
555	PTERIDACEAE	*Cheilanthes regnelliana*	EN	
556	PTERIDACEAE	*Doryopteris rufa*	EN	
557	PTERIDACEAE	*Jamesonia cheilanthoides*	EN	
558	PTERIDACEAE	*Jamesonia insignis*	EN	
559	PTERIDACEAE	*Pellaea cymbiformis*	EN	
560	PTERIDACEAE	*Pellaea gleichenioides*	EN	
561	RHAMNACEAE	*Gouania inornata*	EN	
562	RHAMNACEAE	*Scutia arenicola*	EN	
563	RUBIACEAE	*Galianthe souzae*	EN	
564	RUBIACEAE	*Melanopsidium nigrum*	VU	
565	RUBIACEAE	*Mitracarpus eritrichoides*	EN	
566	RUBIACEAE	*Psychotria microcarpa*	EN	
567	RUBIACEAE	*Rudgea parquioides subsp. hirsutissima*	EN	
568	RUBIACEAE	*Rudgea sessilis subsp. cipoana*	EN	
569	RUBIACEAE	*Staelia hatschbachii*	EN	
570	RUTACEAE	*Esenbeckia irwiniana*	EN	
571	RUTACEAE	*Pilocarpus alatus*	VU	
572	RUTACEAE	*Pilocarpus microphyllus*	EN	
573	RUTACEAE	*Pilocarpus trachylophus*	EN	
574	SAPINDACEAE	*Talisia subalbens*	VU	
575	SAPOTACEAE	*Manilkara dardanoi*	VU	EN

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
576	SAPOTACEAE	*Micropholis emarginata*	EN	EN
577	SAPOTACEAE	*Pouteria bullata*	EN	VU
578	SAPOTACEAE	*Pouteria furcata*	EN	VU
579	SIMAROUBACEAE	*Castela tweedii*	EN	
580	SIMAROUBACEAE	*Simaba glabra*	VU	
581	SIMAROUBACEAE	*Simaba salubris*	CR	
582	SIMAROUBACEAE	*Simaba warmingiana*	EN	
583	SMILACACEAE	*Smilax lappacea*	EN	
584	SMILACACEAE	*Smilax lutescens*	EN	
585	SOLANACEAE	*Lycianthes repens*	EN	
586	SOLANACEAE	*Schwenckia curviflora*	EN	
587	THELYPTERIDACEAE	*Thelypteris multigemmifera*	CR	
588	TROPAEOLACEAE	*Tropaeolum warmingianum*	EN	
589	VELLOZIACEAE	*Barbacenia delicatula*	EN	
590	VELLOZIACEAE	*Barbacenia glutinosa*	CR	
591	VELLOZIACEAE	*Barbacenia longiscapa*	CR	
592	VELLOZIACEAE	*Barbacenia paranaensis*	EN	
593	VELLOZIACEAE	*Barbacenia pungens*	CR	
594	VELLOZIACEAE	*Barbacenia riparia*	CR	
595	VELLOZIACEAE	*Barbacenia rodriguesii*	EN	
596	VELLOZIACEAE	*Barbacenia spiralis*	EN	
597	VELLOZIACEAE	*Vellozia alata*	EN	
598	VELLOZIACEAE	*Vellozia armata*	EN	
599	VELLOZIACEAE	*Vellozia barbata*	EN	
600	VELLOZIACEAE	*Vellozia gigantea*	EN	
601	VELLOZIACEAE	*Vellozia glabra*	EN	
602	VELLOZIACEAE	*Vellozia hatschbachii*	EN	
603	VELLOZIACEAE	*Vellozia leptopetala*	EN	
604	VELLOZIACEAE	*Vellozia lilacina*	EN	
605	VELLOZIACEAE	*Vellozia metzgerae*	EN	
606	VELLOZIACEAE	*Vellozia nuda*	EN	
607	VELLOZIACEAE	*Vellozia patens*	EN	
608	VELLOZIACEAE	*Vellozia piresiana*	EN	
609	VELLOZIACEAE	*Vellozia sessilis*	EN	
610	VELLOZIACEAE	*Vellozia streptophylla*	EN	
611	VELLOZIACEAE	*Vellozia subalata*	EN	

	Family	Species	Brazilian National Red List Status	IUCN Red List Status
612	VERBENACEAE	*Lippia bradei*	VU	
613	VERBENACEAE	*Lippia pumila*	EN	
614	VERBENACEAE	*Lippia rhodocnemis*	EN	
615	VERBENACEAE	*Stachytarpheta procumbens*	EN	
616	VIOLACEAE	*Pombalia strigoides*	EN	
617	VITACEAE	*Cissus inundata*	VU	
618	VOCHYSIACEAE	*Vochysia pygmaea*	EN	
619	XYRIDACEAE	*Xyris aurea*	EN	
620	XYRIDACEAE	*Xyris blepharophylla*	EN	
621	XYRIDACEAE	*Xyris cipoensis*	EN	
622	XYRIDACEAE	*Xyris coutensis*	CR	
623	XYRIDACEAE	*Xyris dardanoi*	CR	
624	XYRIDACEAE	*Xyris hystrix*	CR	
625	XYRIDACEAE	*Xyris longifolia*	EN	
626	XYRIDACEAE	*Xyris nigricans*	CR	
627	XYRIDACEAE	*Xyris obtusiuscula*	EN	
628	XYRIDACEAE	*Xyris platystachya*	CR	
629	XYRIDACEAE	*Xyris rigida*	CR	
630	XYRIDACEAE	*Xyris sincorana*	EN	
631	XYRIDACEAE	*Xyris sororia*	CR	
632	XYRIDACEAE	*Xyris tortilis*	CR	
633	XYRIDACEAE	*Xyris uninervis*	CR	
634	XYRIDACEAE	*Xyris vacillans*	EN	
635	XYRIDACEAE	*Xyris wawrae*	EN	

Table 1.3. Rare Plants

	Family	Species
1	ACANTHACEAE	*Justicia clivalis*
2	ACANTHACEAE	*Staurogyne minarum*
3	ACANTHACEAE	*Stenandrium goiasense*
4	ACANTHACEAE	*Stenandrium irwinii*
5	ALISMATACEAE	*Echinodorus lanceolatus*
6	ALSTROEMERIACEAE	*Alstroemeria chapadensis*
7	AMARANTHACEAE	*Gomphrena hermogenesii*
8	AMARANTHACEAE	*Gomphrena hillii*
9	AMARANTHACEAE	*Gomphrena marginata*
10	ANNONACEAE	*Duguetia rotundifolia*
11	APOCYNACEAE	*Barjonia grazielae*
12	APOCYNACEAE	*Blepharodon hatschbachii*
13	APOCYNACEAE	*Ditassa insignis*
14	APOCYNACEAE	*Ditassa obscura*
15	APOCYNACEAE	*Mandevilla rubra*
16	APOCYNACEAE	*Mandevilla semirii*
17	APOCYNACEAE	*Marsdenia neomanarae*
18	APOCYNACEAE	*Marsdenia virgultorum*
19	APOCYNACEAE	*Matelea matogrossensis*
20	APOCYNACEAE	*Matelea refracta*
21	APOCYNACEAE	*Minaria campanuliflora*
22	APOCYNACEAE	*Nephradenia filipes*
23	APOCYNACEAE	*Oxypetalum habrogynum*
24	APOCYNACEAE	*Oxypetalum helios*
25	APOCYNACEAE	*Rauvolfia ligustrina*
26	APOCYNACEAE	*Tassadia geniculata*
27	ARACEAE	*Anthurium megapetiolatum*
28	ARACEAE	*Philodendron cipoense*
29	ARACEAE	*Philodendron pachyphyllum*
30	ARACEAE	*Philodendron rhizomatosum*
31	ARALIACEAE	*Schefflera botumirimensis*
32	ARALIACEAE	*Schefflera cephalantha*
33	ARALIACEAE	*Schefflera fruticosa*
34	ASTERACEAE	*Aspilia discolor*
35	ASTERACEAE	*Aspilia goiazensis*
36	ASTERACEAE	*Aspilia hatschbachii*
37	ASTERACEAE	*Aspilia podophylla*
38	ASTERACEAE	*Aspilia pseudoyedaea*
39	ASTERACEAE	*Bidens edentula*
40	ASTERACEAE	*Calea irwinii*
41	ASTERACEAE	*Chrysolaena dusenii*
42	ASTERACEAE	*Dasyphyllum reticulatum*
43	ASTERACEAE	*Dasyphyllum retinens*
44	ASTERACEAE	*Dasyphyllum trichophyllum*
45	ASTERACEAE	*Eremanthus pabstii*
46	ASTERACEAE	*Ichthyothere mattogrossensis*
47	ASTERACEAE	*Lessingianthus arachniolepis*
48	ASTERACEAE	*Lessingianthus argenteus*
49	ASTERACEAE	*Lessingianthus caiapoensis*
50	ASTERACEAE	*Lessingianthus heringeri*
51	ASTERACEAE	*Lessingianthus rugulosus*
52	ASTERACEAE	*Lessingianthus scaposus*
53	ASTERACEAE	*Minasia cabralensis*
54	ASTERACEAE	*Minasia lewinsohnii*
55	ASTERACEAE	*Stenophalium heringeri*
56	ASTERACEAE	*Vernonanthura almedae*

	Family	Species
57	ASTERACEAE	*Vernonanthura lindbergii*
58	ASTERACEAE	*Wedelia souzae*
59	BALANOPHORACEAE	*Lophophytum rizzoi*
60	BIGNONIACEAE	*Adenocalymma subspicatum*
61	BIGNONIACEAE	*Jacaranda racemosa*
62	BURSERACEAE	*Protium dawsonii*
63	CACTACEAE	*Cipocereus pleurocarpus*
64	CALOPHYLLACEAE	*Kielmeyera similis*
65	CALOPHYLLACEAE	*Kielmeyera trichophora*
66	CAMPANULACEAE	*Lobelia brasiliensis*
67	CHRYSOBALANACEAE	*Hirtella juruensis*
68	CHRYSOBALANACEAE	*Licania maguirei*
69	COMMELINACEAE	*Tripogandra elata*
70	COMMELINACEAE	*Tripogandra warmingiana*
71	CONNARACEAE	*Rourea chrysomalla*
72	CONNARACEAE	*Rourea prancei*
73	CONVOLVULACEAE	*Bonamia kuhlmannii*
74	CONVOLVULACEAE	*Evolvulus chapadensis*
75	CONVOLVULACEAE	*Evolvulus gnaphalioides*
76	CUCURBITACEAE	*Cayaponia rugosa*
77	CUNONIACEAE	*Lamanonia brasiliensis*
78	CYPERACEAE	*Bulbostylis lombardii*
79	CYPERACEAE	*Cryptangium humile*
80	CYPERACEAE	*Eleocharis loefgreniana*
81	CYPERACEAE	*Lagenocarpus adamantinus*
82	CYPERACEAE	*Rhynchospora tenuis*
83	CYPERACEAE	*Scleria cuyabensis*
84	ERIOCAULACEAE	*Actinocephalus nodifer*
85	ERIOCAULACEAE	*Actinocephalus robustus*
86	ERIOCAULACEAE	*Actinocephalus stereophyllus*
87	ERIOCAULACEAE	*Actinocephalus aggregatus*
88	ERIOCAULACEAE	*Actinocephalus compactus*
89	ERIOCAULACEAE	*Actinocephalus coutoensis*
90	ERIOCAULACEAE	*Actinocephalus deflexus*
91	ERIOCAULACEAE	*Actinocephalus diffusus*
92	ERIOCAULACEAE	*Actinocephalus fimbriatus*
93	ERIOCAULACEAE	*Actinocephalus graminifolius*
94	ERIOCAULACEAE	*Comanthera cipoensis*
95	ERIOCAULACEAE	*Comanthera circinnata*
96	ERIOCAULACEAE	*Eriocaulon aquatile*
97	ERIOCAULACEAE	*Eriocaulon burchellii*
98	ERIOCAULACEAE	*Eriocaulon cipoense*
99	ERIOCAULACEAE	*Eriocaulon griseum*
100	ERIOCAULACEAE	*Leiothrix cipoensis*
101	ERIOCAULACEAE	*Leiothrix crassifolia*
102	ERIOCAULACEAE	*Leiothrix fulgida var. milho-verdensis*
103	ERIOCAULACEAE	*Leiothrix luxurians*
104	ERIOCAULACEAE	*Leiothrix rupestris*
105	ERIOCAULACEAE	*Leiothrix sclerophylla*
106	ERIOCAULACEAE	*Leiothrix sinuosa*
107	ERIOCAULACEAE	*Leiothrix spiralis*
108	ERIOCAULACEAE	*Paepalanthus albidus*
109	ERIOCAULACEAE	*Paepalanthus anamariae*
110	ERIOCAULACEAE	*Paepalanthus argenteus*
111	ERIOCAULACEAE	*Paepalanthus aureus*
112	ERIOCAULACEAE	*Paepalanthus barbiger*
113	ERIOCAULACEAE	*Paepalanthus complanatus*

	Family	Species
114	ERIOCAULACEAE	*Paepalanthus cordatus*
115	ERIOCAULACEAE	*Paepalanthus globulifer*
116	ERIOCAULACEAE	*Paepalanthus homomallus*
117	ERIOCAULACEAE	*Paepalanthus obtusifolius*
118	ERIOCAULACEAE	*Paepalanthus pulvinatus*
119	ERIOCAULACEAE	*Paepalanthus revolutus*
120	ERIOCAULACEAE	*Paepalanthus rupestris*
121	ERIOCAULACEAE	*Paepalanthus senaeanus*
122	ERIOCAULACEAE	*Paepalanthus stuetzelii*
123	ERIOCAULACEAE	*Paepalanthus superbus*
124	ERIOCAULACEAE	*Paepalanthus urbanianus*
125	ERIOCAULACEAE	*Syngonanthus bracteosus*
126	ERIOCAULACEAE	*Syngonanthus hygrotrichus*
127	ERIOCAULACEAE	*Syngonanthus latifolius*
128	FABACEAE	*Chamaecrista gymnothyrsa*
129	FABACEAE	*Aeschynomene graminoides*
130	FABACEAE	*Aeschynomene simplicifolia*
131	FABACEAE	*Bauhinia candelabriformis*
132	FABACEAE	*Bauhinia malacotrichoides*
133	FABACEAE	*Bocoa ratteri*
134	FABACEAE	*Calliandra gardneri*
135	FABACEAE	*Calliandra linearis*
136	FABACEAE	*Calliandra santosiana*
137	FABACEAE	*Chamaecrista adamantina*
138	FABACEAE	*Chamaecrista altoana*
139	FABACEAE	*Chamaecrista caiapo*
140	FABACEAE	*Chamaecrista caracensis*
141	FABACEAE	*Chamaecrista catapodia*
142	FABACEAE	*Chamaecrista catiarae*
143	FABACEAE	*Chamaecrista centiflora*
144	FABACEAE	*Chamaecrista coradinii*
145	FABACEAE	*Chamaecrista deltoidea*
146	FABACEAE	*Chamaecrista dumalis*
147	FABACEAE	*Chamaecrista ericifolia*
148	FABACEAE	*Chamaecrista fuscescens*
149	FABACEAE	*Chamaecrista geraldii*
150	FABACEAE	*Chamaecrista gumminans*
151	FABACEAE	*Chamaecrista hatschbachii*
152	FABACEAE	*Chamaecrista ixodes*
153	FABACEAE	*Chamaecrista lavradioides*
154	FABACEAE	*Chamaecrista leucopilis*
155	FABACEAE	*Chamaecrista macedoi*
156	FABACEAE	*Chamaecrista ochrosperma*
157	FABACEAE	*Chamaecrista pachyclada*
158	FABACEAE	*Chamaecrista phyllostachya*
159	FABACEAE	*Chamaecrista polymorpha*
160	FABACEAE	*Chamaecrista psoraleopsis*
161	FABACEAE	*Chamaecrista simplifacta*
162	FABACEAE	*Chamaecrista vauthieri*
163	FABACEAE	*Crotalaria goiasensis*
164	FABACEAE	*Crotalaria irwinii*
165	FABACEAE	*Crotalaria rufipila*
166	FABACEAE	*Desmodium glabrescens*
167	FABACEAE	*Desmodium juruenense*
168	FABACEAE	*Mimosa cryptothamnos*
169	FABACEAE	*Mimosa cyclophylla*
170	FABACEAE	*Mimosa decorticans*

	Family	Species
171	FABACEAE	*Mimosa humivagans*
172	FABACEAE	*Mimosa laniceps*
173	FABACEAE	*Mimosa lepidophora*
174	FABACEAE	*Mimosa manidea*
175	FABACEAE	*Mimosa oligosperma*
176	FABACEAE	*Mimosa pycnocoma*
177	FABACEAE	*Mimosa pyrenea*
178	FABACEAE	*Mimosa regina*
179	FABACEAE	*Mimosa setosissima*
180	FABACEAE	*Mimosa splendida*
181	FABACEAE	*Mimosa ulbrichiana*
182	FABACEAE	*Mimosa ulei*
183	FABACEAE	*Mimosa virgula*
184	FABACEAE	*Moldenhawera acuminata*
185	FABACEAE	*Poiretia marginata*
186	FABACEAE	*Poiretia unifoliolata*
187	FABACEAE	*Zornia glaziovii*
188	FABACEAE	*Zornia subsessilis*
189	GENTIANACEAE	*Schultesia irwiniana*
190	GENTIANACEAE	*Schultesia piresiana*
191	GESNERIACEAE	*Paliavana plumerioides*
192	LAMIACEAE	*Eriope angustifolia*
193	LAMIACEAE	*Eriope filifolia*
194	LAMIACEAE	*Eriope xavantium*
195	LAMIACEAE	*Hypenia concinna*
196	LAMIACEAE	*Hypenia paradisi*
197	LAMIACEAE	*Hyptidendron dictiocalyx*
198	LAMIACEAE	*Hyptis asteroides*
199	LAMIACEAE	*Hyptis caduca*
200	LAMIACEAE	*Hyptis coriacea*
201	LAMIACEAE	*Hyptis dictyodea*
202	LAMIACEAE	*Hyptis heterophylla*
203	LAMIACEAE	*Hyptis humilis*
204	LAMIACEAE	*Hyptis loeseneriana*
205	LAMIACEAE	*Hyptis nivea*
206	LAMIACEAE	*Hyptis tenuifolia*
207	LENTIBULARIACEAE	*Utricularia huntii*
208	LORANTHACEAE	*Oryctina eubrachioides*
209	LORANTHACEAE	*Psittacanthus acinarius*
210	LORANTHACEAE	*Struthanthus microstylus*
211	LORANTHACEAE	*Struthanthus planaltinae*
212	LORANTHACEAE	*Struthanthus pusillifolius*
213	LORANTHACEAE	*Struthanthus rufo-furfuraceus*
214	LYTHRACEAE	*Diplusodon leucocalycinus*
215	LYTHRACEAE	*Diplusodon nigricans*
216	LYTHRACEAE	*Cuphea anamariae*
217	LYTHRACEAE	*Cuphea cunninghamiifolia*
218	LYTHRACEAE	*Cuphea disperma*
219	LYTHRACEAE	*Cuphea fuchsiifolia*
220	LYTHRACEAE	*Cuphea lucens*
221	LYTHRACEAE	*Cuphea potamophila*
222	LYTHRACEAE	*Cuphea sclerophylla*
223	LYTHRACEAE	*Cuphea warmingii*
224	LYTHRACEAE	*Cuphea xanthopetala*
225	LYTHRACEAE	*Diplusodon adpressipilus*
226	LYTHRACEAE	*Diplusodon alatus*
227	LYTHRACEAE	*Diplusodon appendiculosus*

	Family	Species
228	LYTHRACEAE	*Diplusodon argenteus*
229	LYTHRACEAE	*Diplusodon bradei*
230	LYTHRACEAE	*Diplusodon canastrensis*
231	LYTHRACEAE	*Diplusodon capitalensis*
232	LYTHRACEAE	*Diplusodon capitatus*
233	LYTHRACEAE	*Diplusodon chapadensis*
234	LYTHRACEAE	*Diplusodon decussatus*
235	LYTHRACEAE	*Diplusodon floribundus*
236	LYTHRACEAE	*Diplusodon glocimarii*
237	LYTHRACEAE	*Diplusodon grahamae*
238	LYTHRACEAE	*Diplusodon heringeri*
239	LYTHRACEAE	*Diplusodon longipes*
240	LYTHRACEAE	*Diplusodon mattogrossensis*
241	LYTHRACEAE	*Diplusodon mononeuros*
242	LYTHRACEAE	*Diplusodon parvifolius*
243	LYTHRACEAE	*Diplusodon petiolatus*
244	LYTHRACEAE	*Diplusodon plumbeus*
245	LYTHRACEAE	*Diplusodon pygmaeus*
246	LYTHRACEAE	*Diplusodon rosmarinifolius*
247	LYTHRACEAE	*Diplusodon rotundifolius*
248	LYTHRACEAE	*Diplusodon rupestris*
249	LYTHRACEAE	*Diplusodon sigillatus*
250	LYTHRACEAE	*Diplusodon sordidus*
251	LYTHRACEAE	*Diplusodon thysanosepalus*
252	LYTHRACEAE	*Diplusodon trigintus*
253	MALPIGHIACEAE	*Acmanthera fernandesii*
254	MALPIGHIACEAE	*Banisteriopsis arborea*
255	MALPIGHIACEAE	*Banisteriopsis byssacea*
256	MALPIGHIACEAE	*Banisteriopsis goiana*
257	MALPIGHIACEAE	*Byrsonima cordifolia*
258	MALPIGHIACEAE	*Byrsonima hatschbachii*
259	MALPIGHIACEAE	*Janusia christianeae*
260	MALPIGHIACEAE	*Mascagnia aptera*
261	MALPIGHIACEAE	*Peixotoa anadenanthera*
262	MALPIGHIACEAE	*Peixotoa axillaris*
263	MALPIGHIACEAE	*Peixotoa gardneri*
264	MALPIGHIACEAE	*Peixotoa irwinii*
265	MALPIGHIACEAE	*Peixotoa octoflora*
266	MALPIGHIACEAE	*Pterandra hatschbachii*
267	MALPIGHIACEAE	*Pterandra viridiflora*
268	MELASTOMATACEAE	*Chaetostoma scoparium*
269	MELASTOMATACEAE	*Cambessedesia pityrophylla*
270	MELASTOMATACEAE	*Cambessedesia salviifolia*
271	MELASTOMATACEAE	*Cambessedesia semidecandra*
272	MELASTOMATACEAE	*Chaetostoma flavum*
273	MELASTOMATACEAE	*Chaetostoma selagineum*
274	MELASTOMATACEAE	*Chaetostoma stenocladon*
275	MELASTOMATACEAE	*Comolia edmundoi*
276	MELASTOMATACEAE	*Lavoisiera adamantium*
277	MELASTOMATACEAE	*Lavoisiera angustifolia*
278	MELASTOMATACEAE	*Lavoisiera bradeana*
279	MELASTOMATACEAE	*Lavoisiera caryophyllea*
280	MELASTOMATACEAE	*Lavoisiera firmula*
281	MELASTOMATACEAE	*Lavoisiera humilis*
282	MELASTOMATACEAE	*Lavoisiera macrocarpa*
283	MELASTOMATACEAE	*Lavoisiera mucorifera*
284	MELASTOMATACEAE	*Lavoisiera punctata*

	Family	Species
285	MELASTOMATACEAE	*Lavoisiera senaei*
286	MELASTOMATACEAE	*Lavoisiera subulata*
287	MELASTOMATACEAE	*Microlicia cipoana*
288	MELASTOMATACEAE	*Microlicia crebropunctata*
289	MELASTOMATACEAE	*Microlicia ordinata*
290	MELASTOMATACEAE	*Microlicia scoparia*
291	MELASTOMATACEAE	*Microlicia tenuifolia*
292	MELASTOMATACEAE	*Microlicia vernicosa*
293	MORACEAE	*Ficus carautana*
294	MYRTACEAE	*Plinia nana*
295	MYRTACEAE	*Psidium firmum*
296	OCHNACEAE	*Luxemburgia ciliatibracteata*
297	OCHNACEAE	*Luxemburgia damazioana*
298	OCHNACEAE	*Luxemburgia hatschbachiana*
299	OCHNACEAE	*Luxemburgia speciosa*
300	OCHNACEAE	*Ouratea acicularis*
301	OCHNACEAE	*Sauvagesia lanceolata*
302	OROBANCHACEAE	*Esterhazya nanuzae*
303	OXALIDACEAE	*Oxalis areolata*
304	OXALIDACEAE	*Oxalis pretoensis*
305	OXALIDACEAE	*Oxalis veadeirosensis*
306	PASSIFLORACEAE	*Passiflora hypoglauca*
307	PIPERACEAE	*Peperomia warmingii*
308	PLANTAGINACEAE	*Angelonia pratensis*
309	PLANTAGINACEAE	*Philcoxia goiasensis*
310	PLANTAGINACEAE	*Philcoxia minensis*
311	POACEAE	*Axonopus aureus*
312	POACEAE	*Axonopus grandifolius*
313	POACEAE	*Dichanthelium sendulskyii*
314	POACEAE	*Digitaria pampinosa*
315	POACEAE	*Guadua magna*
316	POACEAE	*Mesosetum alatum*
317	POACEAE	*Mesosetum longiaristatum*
318	POACEAE	*Ophiochloa bryoides*
319	POACEAE	*Otachyrium piligerum*
320	POACEAE	*Panicum ephemeroides*
321	POACEAE	*Paspalum biaristatum*
322	POACEAE	*Paspalum brachytrichum*
323	POACEAE	*Paspalum burmanii*
324	POACEAE	*Paspalum filgueirasii*
325	POACEAE	*Paspalum longiaristatum*
326	POACEAE	*Paspalum petrense*
327	POACEAE	*Paspalum vallsii*
328	POACEAE	*Rheochloa scabrifolia*
329	POACEAE	*Sporobolus hians*
330	POACEAE	*Sporobolus paucifolius*
331	POLYGALACEAE	*Asemeia marquesiana*
332	POLYGALACEAE	*Asemeia pohliana*
333	POLYGALACEAE	*Polygala apparicioi*
334	POLYGALACEAE	*Polygala asperuloides*
335	POLYGALACEAE	*Polygala bevilacquai*
336	POLYGALACEAE	*Polygala grazielae*
337	POLYGALACEAE	*Polygala irwinii*
338	POLYGALACEAE	*Polygala juncea*
339	POLYGALACEAE	*Polygala malmeana*
340	POLYGALACEAE	*Polygala patens*
341	POLYGALACEAE	*Polygala pseudocoriacea*

	Family	Species
342	POLYGALACEAE	*Polygala pseudoerica*
343	POLYGALACEAE	*Polygala suganumae*
344	POLYGONACEAE	*Coccoloba cereifera*
345	PRIMULACEAE	*Myrsine cipoensis*
346	RUBIACEAE	*Borreria burchellii*
347	RUBIACEAE	*Borreria gracillima*
348	RUBIACEAE	*Borreria guimaraesensis*
349	RUBIACEAE	*Borreria irwiniana*
350	RUBIACEAE	*Borreria paulista*
351	RUBIACEAE	*Borreria rosmarinifolia*
352	RUBIACEAE	*Borreria tocantinsiana*
353	RUBIACEAE	*Diodia macrophylla*
354	RUBIACEAE	*Galianthe macedoi*
355	RUBIACEAE	*Galianthe matogrossiana*
356	RUBIACEAE	*Mitracarpus pusillus*
357	RUBIACEAE	*Psyllocarpus schwackei*
358	RUBIACEAE	*Staelia tocantinsiana*
359	SANTALACEAE	*Phoradendron anamariae*
360	SANTALACEAE	*Phoradendron dimerostachys*
361	SANTALACEAE	*Phoradendron virens*
362	SCHOEPFIACEAE	*Schoepfia velutina*
363	SOLANACEAE	*Brunfelsia rupestris*
364	SOLANACEAE	*Solanum eitenii*
365	SYMPLOCACEAE	*Symplocos glaberrima*
366	SYMPLOCACEAE	*Symplocos insolita*
367	SYMPLOCACEAE	*Symplocos saxatilis*
368	TURNERACEAE	*Piriqueta araguaiana*
369	TURNERACEAE	*Piriqueta caiapoensis*
370	TURNERACEAE	*Piriqueta cristobaliae*
371	TURNERACEAE	*Piriqueta emasensis*
372	TURNERACEAE	*Piriqueta lourteigiae*
373	TURNERACEAE	*Turnera cipoensis*
374	TURNERACEAE	*Turnera coccinea*
375	TURNERACEAE	*Turnera collotricha*
376	TURNERACEAE	*Turnera coriacea*
377	TURNERACEAE	*Turnera elliptica*
378	TURNERACEAE	*Turnera foliosa*
379	TURNERACEAE	*Turnera gardneriana*
380	TURNERACEAE	*Turnera ignota*
381	TURNERACEAE	*Turnera pinifolia*
382	TURNERACEAE	*Turnera princeps*
383	TURNERACEAE	*Turnera reginae*
384	TURNERACEAE	*Turnera revoluta*
385	TURNERACEAE	*Turnera riedeliana*
386	VELLOZIACEAE	*Barbacenia andersonii*
387	VELLOZIACEAE	*Barbacenia blackii*
388	VELLOZIACEAE	*Barbacenia cylindrica*
389	VELLOZIACEAE	*Barbacenia fulva*
390	VELLOZIACEAE	*Barbacenia glabra*
391	VELLOZIACEAE	*Barbacenia hatschbachii*
392	VELLOZIACEAE	*Barbacenia lymansmithii*
393	VELLOZIACEAE	*Barbacenia minima*
394	VELLOZIACEAE	*Barbacenia reflexa*
395	VELLOZIACEAE	*Barbacenia umbrosa*
396	VELLOZIACEAE	*Vellozia bradei*
397	VELLOZIACEAE	*Vellozia costata*
398	VELLOZIACEAE	*Vellozia exilis*

	Family	Species
399	VELLOZIACEAE	*Vellozia luteola*
400	VELLOZIACEAE	*Vellozia maxillarioides*
401	VELLOZIACEAE	*Vellozia prolifera*
402	VELLOZIACEAE	*Vellozia sellowii*
403	VELLOZIACEAE	*Vellozia spiralis*
404	VELLOZIACEAE	*Vellozia tillandsioides*
405	VELLOZIACEAE	*Vellozia torquata*
406	VERBENACEAE	*Lantana gracilis*
407	VERBENACEAE	*Lippia diamantinensis*
408	VERBENACEAE	*Lippia rubella*
409	VERBENACEAE	*Bouchea chascanoides*
410	VERBENACEAE	*Bouchea fluminensis*
411	VERBENACEAE	*Lippia ciliata*
412	VERBENACEAE	*Lippia duartei*
413	VERBENACEAE	*Lippia gardneriana*
414	VERBENACEAE	*Lippia grandiflora*
415	VERBENACEAE	*Lippia macedoi*
416	VERBENACEAE	*Stachytarpheta discolor*
417	VERBENACEAE	*Stachytarpheta integrifolia*
418	VERBENACEAE	*Stachytarpheta itambensis*
419	VERBENACEAE	*Stachytarpheta lacunosa*
420	VERBENACEAE	*Stachytarpheta monachinoi*
421	VERBENACEAE	*Stachytarpheta pohliana*
422	VOCHYSIACEAE	*Callisthene erythroclada*
423	VOCHYSIACEAE	*Qualea elegans*
424	VOCHYSIACEAE	*Vochysia petraea*
425	VOCHYSIACEAE	*Vochysia pygmaea*
426	VOCHYSIACEAE	*Vochysia rotundifolia*
427	XYRIDACEAE	*Xyris archeri*
428	XYRIDACEAE	*Xyris diaphanobracteata*
429	XYRIDACEAE	*Xyris goyazensis*
430	XYRIDACEAE	*Xyris itambensis*
431	XYRIDACEAE	*Xyris lanuginosa*
432	XYRIDACEAE	*Xyris obcordata*
433	XYRIDACEAE	*Xyris paradisiaca*
434	XYRIDACEAE	*Xyris pranceana*
435	XYRIDACEAE	*Xyris rupicola*
436	XYRIDACEAE	*Xyris spectabilis*
437	XYRIDACEAE	*Xyris subsetigera*
438	XYRIDACEAE	*Xyris veruina*
439	XYRIDACEAE	*Xyris vestita*

Table 13.4. Rare Fish

	Family	Species
1	Ancistrinae	*Ancistrus aguaboensis Fisch-Muller, Mazzoni & Weber, 2001*
2	Ancistrinae	*Ancistrus claro Knaack, 1999*
3	Ancistrinae	*Ancistrus cryptophthalmus Reis, 1987*
4	Ancistrinae	*Ancistrus damasceni (Steindachner, 1907)*
5	Ancistrinae	*Ancistrus formoso Sabino & Trajano, 1997*
6	Ancistrinae	*Ancistrus jataiensis Fisch-Muller, Cardoso, da Silva & Bertaco, 2005*
7	Ancistrinae	*Ancistrus minutus Fisch-Muller, Mazzoni & Weber, 2001*
8	Ancistrinae	*Ancistrus parecis Fisch-Muller, Cardoso, Silva, Bertaco, 2005*
9	Ancistrinae	*Ancistrus reisi Fisch-Muller, Cardoso, da Silva & Bertaco, 2005*
10	Ancistrinae	*Megalancistrus barrae (Steindachner, 1910)*
11	Anostomidae	*Leporinus microphthalmus Garavello, 1989*
12	Anostomidae	*Leporinus sexstriatus Britski & Garavello, 1980*
13	Anostomidae	*Leporinus steindachneri Eigenmann, 1907*
14	Anostomidae	*Sartor respectus Myers & Carvalho, 1959*
15	Anostomidae	*Schizodon dissimilis (Garman, 1890)*
16	Anostomidae	*Schizodon rostratus (Borodin, 1931)*
17	Apteronotidae	*Sternarchorhynchus mesensis Campos-da-Paz, 2000*
18	Auchenipteridae	*Glanidium albescens LÂ • tken, 1874*
19	Callichthyidae	*Aspidoras albater Nijssen & IsbrÂ • cker, 1976*
20	Callichthyidae	*Aspidoras belenos Britto, 1998*
21	Callichthyidae	*Aspidoras eurycephalus Nijssen & IsbrÂ • cker, 1976*
22	Callichthyidae	*Aspidoras lakoi Miranda Ribeiro, 1949*
23	Callichthyidae	*Aspidoras microgalaeus Britto, 1998*
24	Callichthyidae	*Aspidoras pauciradiatus (Weitzman & Nijssen, 1970)*
25	Callichthyidae	*Aspidoras raimundi (Steindachner, 1907)*
26	Callichthyidae	*Aspidoras taurus Lima & Britto, 2001*
27	Callichthyidae	*Aspidoras velites Britto, Lima & Moreira, 2002*
28	Callichthyidae	*Corydoras difluviatilis Britto & Castro, 2002*
29	Callichthyidae	*Corydoras maculifer Nijssen & IsbrÂ • cker, 1971*
30	Callichthyidae	*Corydoras multimaculatus Steindachner, 1907*
31	Callichthyidae	*Corydoras treitlii Steindachner, 1906*
32	Cetopsidae	*Cetopsis caiapo Vari, Ferraris & de Pinna, 2005*
33	Cetopsidae	*Cetopsis sandrae Vari, Ferraris & de Pinna, 2005*
34	Cetopsidae	*Cetopsis sarcodes Vari, Ferraris & de Pinna, 2005*
35	Characinae	*Acestrocephalus maculosus Menezes, 2006*
36	Characinae	*Phenacogaster jancupa Malabarba & Lucena, 1995*
37	Cichlidae	*Aequidens plagiozonatus Kullander, 1984*
38	Cichlidae	*Apistogramma piauiensis Kullander, 1980*
39	Cichlidae	*Crenicichla compressiceps Ploeg, 1986*
40	Crenuchidae	*Characidium stigmosum Melo & Buckup, 2002*
41	Crenuchidae	*Melanocharacidium auroradiatum Costa & Vicente, 1994*
42	Curimatidae	*Curimata acutirostris Vari & Reis, 1995*
43	Curimatidae	*Cyphocharax signatus Vari, 1992*
44	Curimatidae	*Steindachnerina corumbae Pavanelli & Britski, 1999*
45	Doradidae	*Franciscodoras marmoratus (Reinhardt, 1874)*
46	Doradidae	*Hassar affinis (Steindachner, 1881)*
47	Glandulocaudinae	*Lophiobrycon weitzmani Castro, Ribeiro, Benine & Melo, 2003*
48	Glandulocaudinae	*Xenurobrycon coracoralinae Moreira, 2005*
49	Gymnotidae	*Gymnotus diamantinensis Campos-da-Paz, 2002*
50	Hemiodontidae	*Hemiodus parnaguae Eigenmann & Henn, 1916*
51	Heptapteridae	*Chasmocranus brachynema Gomes & Schubart, 1958*
52	Heptapteridae	*Imparfinis minutus (LÂ • tken, 1874)*
53	Heptapteridae	*Imparfinis schubarti (Gomes, 1956)*
54	Heptapteridae	*Phenacorhamdia somnians (Mees, 1974)*
55	Heptapteridae	*Phenacorhamdia unifasciata Britski, 1993*
56	Heptapteridae	*Pimelodella parnahybae Fowler, 1941*

	Family	Species
57	Heptapteridae	*Pimelodella spelaea Trajano, Reis & Bichuette, 2004*
58	Heptapteridae	*Rhamdia enfurnada Bichuette & Trajano, 2005*
59	Heptapteridae	*Rhamdiopsis microcephala (LÂ • tken, 1874)*
60	Hypoptopomatinae	*Corumbataia britskii Ferreira & Ribeiro, 2007*
61	Hypoptopomatinae	*Corumbataia cuestae Britski, 1997*
62	Hypoptopomatinae	*Corumbataia tocantinensis Britski, 1997*
63	Hypoptopomatinae	*Otocinclus tapirape Britto & Moreira, 2002*
64	Hypoptopomatinae	*Parotocinclus prata Ribeiro, Melo & Pereira, 2002*
65	Hypostominae	*Hypostomus ericae Hollanda Carvalho & Weber, 2004*
66	Hypostominae	*Hypostomus goyazensis (Regan, 1908)*
67	Hypostominae	*Hypostomus lima (LÂ • tken, 1874)*
68	Hypostominae	*Hypostomus macrops (Eigenmann & Eigenmann, 1888)*
69	Hypostominae	*Hypostomus mutucae Knaack, 1999*
70	Hypostominae	*Hypostomus paulinus (Ihering, 1905)*
71	Hypostominae	*Hypostomus vaillanti (Steindachner, 1877)*
72	Hypostominae	*Hypostomus variipictus (Ihering, 1911)*
73	Hypostominae	*Hypostomus variostictus (Miranda Ribeiro, 1912)*
74	Hypostominae	*Pareiorhaphis stephanus Oliveira & Oyakawa, 1999*
75	Incertae	*Astyanacinus goyanensis Miranda Ribeiro, 1944*
76	Incertae	*Astyanacinus moorii (Boulenger, 1892)*
77	Incertae	*Astyanax elachylepis Bertaco & Lucinda, 2005*
78	Incertae	*Astyanax kullanderi Costa, 1995*
79	Incertae	*Astyanax turmalinensis Triques Â®et alÂ¯., 2003*
80	Incertae	*Astyanax unitaeniatus Garutti, 1998*
81	Incertae	*Caiapobrycon tucurui Malabarba & Vari, 2000*
82	Incertae	*Creagrutus atrisignum Myers, 1927*
83	Incertae	*Creagrutus britskii Vari & Harold, 2001*
84	Incertae	*Creagrutus ignotus Vari & Harold, 2001*
85	Incertae	*Creagrutus molinus Vari & Harold, 2001*
86	Incertae	*Creagrutus mucipu Vari & Harold, 2001*
87	Incertae	*Creagrutus saxatilis Vari & Harold, 2001*
88	Incertae	*Creagrutus seductus Vari & Harold, 2001*
89	Incertae	*Creagrutus varii Ribeiro Â®et alÂ¯., 2004*
90	Incertae	*Hasemania crenuchoides Zarske & Gâ€šry, 1999*
91	Incertae	*Hasemania nana (LÂ • tken, 1875)*
92	Incertae	*Hemigrammus brevis Ellis, 1911*
93	Incertae	*Hemigrammus skolioplatus Bertaco & Carvalho, 2005*
94	Incertae	*Hyphessobrycon balbus Myers, 1927*
95	Incertae	*Hyphessobrycon coelestinus Myers, 1929*
96	Incertae	*Hyphessobrycon eylios Lima & Moreira, 2003*
97	Incertae	*Hyphessobrycon hamatus Bertaco & Malabarba, 2005*
98	Incertae	*Hyphessobrycon hexastichos Bertaco & Carvalho, 2005*
99	Incertae	*Hyphessobrycon langeanii Lima & Moreira, 2003*
100	Incertae	*Hyphessobrycon loweae Costa & Gâ€šry, 1994*
101	Incertae	*Hyphessobrycon melanostichos Carvalho & Bertaco, 2006*
102	Incertae	*Hyphessobrycon mutabilis Costa & Gâ€šry, 1994*
103	Incertae	*Hyphessobrycon notidanos Carvalho & Bertaco, 2006*
104	Incertae	*Hyphessobrycon stegemanni Gâ€šry, 1961*
105	Incertae	*Hyphessobrycon weitzmanorum Lima & Moreira, 2003*
106	Incertae	*Jupiaba yarina Zanata, 1997*
107	Incertae	*Knodus geryi Lima, Britski & Machado, 2004*
108	Incertae	*Microschemobrycon elongatus Gâ€šry, 1973*
109	Incertae	*Moenkhausia bonita Benine, Castro & Sabino, 2004*
110	Incertae	*Moenkhausia hysterosticta, Lucinda, Malabarba & Benine, 2007*
111	Incertae	*Moenkhausia loweae Gâ€šry, 1992*
112	Incertae	*Moenkhausia nigromarginata Costa, 1994*
113	Incertae	*Moenkhausia pyrophthalma Costa, 1994*

	Family	Species
114	Incertae	*Moenkhausia tergimacula Lucena & Lucena, 1999*
115	Incertae	*Oligosarcus planaltinae Menezes & Gâ€šry, 1983*
116	Incertae	*Stigichthys typhlops Brittan & Bâ€ • hlke, 1965*
117	Loricariinae	*Farlowella henriquei Miranda Ribeiro, 1918*
118	Loricariinae	*Harttia garavelloi Oyakawa, 1993*
119	Loricariinae	*Rineloricaria hoehnei (Miranda Ribeiro, 1912)*
120	Neoplecostominae	*Neoplecostomus paranensis Langeani, 1990*
121	Parodontidae	*Apareiodon argenteus Pavanelli & Britski, 2003*
122	Parodontidae	*Apareiodon cavalcante Pavanelli & Britski, 2003*
123	Parodontidae	*Apareiodon machrisi Travassos, 1957*
124	Parodontidae	*Apareiodon tigrinus Pavanelli & Britski, 2003*
125	Pimelodidae	*Bagropsis reinhardti LÂ • tken, ex Reinhardt, 1874*
126	Pimelodidae	*Brachyplatystoma parnahybae Steindachner, 1908*
127	Poeciliidae	*Cnesterodon hypselurus Lucinda & Garavello, 2000*
128	Poeciliidae	*Cnesterodon septentrionalis Rosa & Costa, 1993*
129	Poeciliidae	*Phalloceros zsp. D*
130	Poeciliidae	*Phallotorynus jucundus von Ihering, 1930*
131	Prochilodontidae	*Prochilodus lacustris Steindachner, 1907*
132	Pseudopimelodidae	*Batrocoglanis melanurus Shibatta & Pavanelli, 2006*
133	Pseudopimelodidae	*Microglanis leptostriatus Mori & Shibatta, 2006*
134	Rivulidae	*Cynolebias altus Costa, 2001*
135	Rivulidae	*Cynolebias attenuatus Costa, 2001*
136	Rivulidae	*Cynolebias gibbus Costa, 2001*
137	Rivulidae	*Cynolebias gilbertoi Costa, 1998*
138	Rivulidae	*Cynolebias griseus Costa, Lacerda & Brasil, 1990*
139	Rivulidae	*Maratecoara formosa Costa & Brasil, 1995*
140	Rivulidae	*Maratecoara lacortei (Lazara, 1991)*
141	Rivulidae	*Maratecoara splendida Costa, 2007*
142	Rivulidae	*Neofundulus parvipinnis Costa, 1988*
143	Rivulidae	*Pituna brevirostrata Costa, 2007*
144	Rivulidae	*Pituna compacta (Myers, 1927)*
145	Rivulidae	*Pituna obliquoseriata Costa, 2007*
146	Rivulidae	*Pituna poranga Costa, 1989*
147	Rivulidae	*Plesiolebias canabravensis Costa & Nielsen Â®inÂ¯ Costa, 2007*
148	Rivulidae	*Plesiolebias filamentosus Costa & Brasil Â®inÂ¯ Costa, 2007*
149	Rivulidae	*Plesiolebias fragilis Costa, 2007*
150	Rivulidae	*Plesiolebias lacerdai Costa, 1989*
151	Rivulidae	*Plesiolebias xavantei (Costa, Lacerda & Tanizaki, 1988)*
152	Rivulidae	*Rivulus apiamici Costa, 1989*
153	Rivulidae	*Rivulus dapazi Costa, 2005*
154	Rivulidae	*Rivulus decoratus Costa, 1989*
155	Rivulidae	*Rivulus egens Costa, 2005*
156	Rivulidae	*Rivulus kayapo Costa, 2006*
157	Rivulidae	*Rivulus litteratus Costa, 2005*
158	Rivulidae	*Rivulus paracatuensis Costa, 2003*
159	Rivulidae	*Rivulus pinima Costa, 1989*
160	Rivulidae	*Rivulus rossoi Costa, 2005*
161	Rivulidae	*Rivulus rutilicaudus Costa, 2005*
162	Rivulidae	*Rivulus scalaris Costa, 2005*
163	Rivulidae	*Rivulus violaceus Costa, 1991*
164	Rivulidae	*Simpsonichthys adornatus Costa, 2000*
165	Rivulidae	*Simpsonichthys alternatus (Costa & Brasil, 1994)*
166	Rivulidae	*Simpsonichthys auratus Costa & Nielsen, 2000*
167	Rivulidae	*Simpsonichthys boitonei Carvalho, 1959*
168	Rivulidae	*Simpsonichthys brunoi Costa, 2003*
169	Rivulidae	*Simpsonichthys cholopteryx Costa, Moreira & Lima, 2003*
170	Rivulidae	*Simpsonichthys delucai Costa, 2003*

	Family	Species
171	Rivulidae	*Simpsonichthys fasciatus Costa & Brasil, 2006*
172	Rivulidae	*Simpsonichthys flagellatus Costa, 2003*
173	Rivulidae	*Simpsonichthys flammeus (Costa, 1989)*
174	Rivulidae	*Simpsonichthys gibberatus Costa & Brasil, 2006*
175	Rivulidae	*Simpsonichthys igneus Costa, 2000*
176	Rivulidae	*Simpsonichthys janaubensis Costa, 2006*
177	Rivulidae	*Simpsonichthys marginatus Costa & Brasil, 1996*
178	Rivulidae	*Simpsonichthys multiradiatus (Costa & Brasil, 1994)*
179	Rivulidae	*Simpsonichthys nielseni Costa, 2005*
180	Rivulidae	*Simpsonichthys notatus (Costa, Lacerda & Brasil, 1990)*
181	Rivulidae	*Simpsonichthys parallelus Costa, 2000*
182	Rivulidae	*Simpsonichthys radiosus Costa & Brasil, 2004*
183	Rivulidae	*Simpsonichthys rufus Costa, Nielsen & de Luca, 2001*
184	Rivulidae	*Simpsonichthys santanae (Shibata & Garavello, 1992)*
185	Rivulidae	*Simpsonichthys semiocellatus (Costa & Nielsen, 1997)*
186	Rivulidae	*Simpsonichthys similis Costa & Hellner, 1999*
187	Rivulidae	*Simpsonichthys stellatus (Costa & Brasil, 1994)*
188	Rivulidae	*Simpsonichthys trilineatus (Costa & Brasil, 1994)*
189	Rivulidae	*Simpsonichthys virgulatus Costa & Brasil, 2006*
190	Rivulidae	*Simpsonichthys zonatus (Costa & Brasil, 1990)*
191	Rivulidae	*Trigonectes rubromarginatus Costa, 1990*
192	Rivulidae	*Trigonectes strigabundus Myers, 1925*
193	Sarcoglanidinae	*Ammoglanis diaphanus Costa, 1994*
194	Sternopygidae	*Eigenmannia microstoma (Reinhardt, 1852)*
195	Sternopygidae	*Eigenmannia vicentespelaea Triques, 1996*
196	Trichomycterinae	*Ituglanis bambui Bichuette & Trajano, 2004*
197	Trichomycterinae	*Ituglanis epikarsticus Bichuette & Trajano, 2004*
198	Trichomycterinae	*Ituglanis herberti (Miranda Ribeiro, 1940)*
199	Trichomycterinae	*Ituglanis macuanima Datovo & Landim, 2005*
200	Trichomycterinae	*Ituglanis passensis FernÂ ndez & Bichuette, 2002*
201	Trichomycterinae	*Ituglanis ramiroi Bichuette & Trajano, 2004*
202	Trichomycterinae	*Trichomycterus brasiliensis LÂ • tken, 1874*
203	Trichomycterinae	*Trichomycterus concolor Costa, 1992*
204	Trichomycterinae	*Trichomycterus itacambirussu Triques & Vono, 2004*
205	Trichomycterinae	*Trichomycterus itacarambiensis Trajano & de Pinna, 1996*
206	Trichomycterinae	*Trichomycterus landinga Triques & Vono, 2004*
207	Trichomycterinae	*Trichomycterus punctatissimus Castelnau, 1855*
208	Trichomycterinae	*Trichomycterus reinhardti (Eigenmann, 1917)*
209	Trichomycterinae	*Trichomycterus santaeritae (Eigenmann, 1918)*
210	Trichomycterinae	*Trichomycterus variegatus Costa, 1992*

APPENDIX 2. TERRESTRIAL KBA RAW DATA

Table 2.1. Terrestrial KBA Raw Data for country, area, Langhamer concept, number of rare fish and rare plants

KBA	Ottobacia	COD	Name	Country	Area (hectar)	Langhamer concept		Number of Rare Plants	Number of Rare Fish
						Vulnerable Species	Irrepleaceble Species		
1	56	1	Goiatins	Brazil	20409,68	0	1	0	1
2	56	2	Tres Barras	Brazil	24316,96	0	1	0	1
3	56	3	Aguas do Paulista	Brazil	26818,87	0	1	0	1
4	56	4	Nova Nazare	Brazil	10118,73	0	1	0	1
5	56	5	Natalandia	Brazil	38419,34	0	2	0	2
6	56	6	Unai de Minas	Brazil	17237,81	0	1	0	1
7	56	7	Campinacu	Brazil	24369,09	0	1	0	1
8	56	8	Delgado	Brazil	22453,42	0	3	0	3
9	56	9	Canarana	Brazil	30284,75	0	1	0	1
10	56	10	Aldeia	Brazil	37909,95	0	1	0	1
11	56	11	PE Serra de Sonora	Brazil	120900,89	0	1	0	1
12	56	12	Agua Clara	Brazil	16787,69	0	1	0	1
13	56	13	Paranatinga	Brazil	55660,19	0	1	0	1
14	56	14	Sao Felipe	Brazil	18834,55	0	3	0	3
15	56	15	Man-Azde	Brazil	34638,41	0	1	0	1
16	4	657	Araguaia	Brazil	32662,89	0	1	0	1
17	4	6455	Sao Valerio	Brazil	309340,19	0	1	0	1
18	4	6475	Corriola	Brazil	134394,65	2	9	3	6
19	4	6492	Sao Patricio	Brazil	197132,89	0	1	0	1
20	4	6545	Lajeado	Brazil	10571,87	1	0	0	0
21	4	6591	Santana do Araguaia	Brazil	10487,70	0	1	1	0
22	4	6642	Lagoa da Confusao	Brazil	91147,77	1	0	0	0
23	4	6653	Javaes	Brazil	18018,86	0	1	0	1
24	4	6691	Terra Indigena Kraho-Kanela	Brazil	116541,97	0	1	0	1
25	4	6771	Santa Terezinha	Brazil	9065,63	0	1	1	0
26	4	6773	Aldeia Caraja	Brazil	8984,35	4	1	1	0
27	4	6811	Rio das Mortes	Brazil	2921,86	1	0	0	0
28	4	6828	Piabanha	Brazil	101997,33	2	6	5	1
29	4	6839	Rio dos Patos	Brazil	121226,03	1	2	0	2

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
30	4	6844	Zacarias	Brazil	128241,77	8	7	6	1
31	4	6847	Insula	Brazil	82269,69	2	1	0	1
32	4	6871	Nova Xavantina	Brazil	172151,71	12	5	4	1
33	4	6882	Suspiro	Brazil	97067,22	0	1	0	1
34	4	6892	Perdidos	Brazil	38347,83	0	1	0	1
35	4	6917	APA Meandros do Rio Araguaia	Brazil	110095,23	1	1	0	1
36	4	6918	Ribeirao Sao Domingos	Brazil	37878,44	0	1	0	1
37	4	6938	Corixo do Cascavel	Brazil	143826,88	1	1	0	1
38	4	6959	Registro do Araguaia	Brazil	18640,89	4	1	0	1
39	4	6966	Rio Bonito	Brazil	195393,53	4	9	8	1
40	4	7483	Joao Pinheiro	Brazil	647888,52	2	6	3	3
41	4	7587	Josenopolis	Brazil	81726,03	0	1	0	1
42	4	7588	Parque Estadual Grao Mogol	Brazil	508683,42	65	30	28	2
43	5	42699	Mariana	Brazil	189520,63	0	1	1	0
44	5	42728	Suiazinho	Brazil	350209,63	2	0	0	0
45	5	42964	Ribeirao Agua Limpa	Brazil	128872,65	1	1	1	0
46	5	42968	Queimada	Brazil	44928,56	1	0	0	0
47	5	42969	Sete de Setembro	Brazil	49082,13	1	0	0	0
48	5	42977	Culuene	Brazil	34759,78	0	1	0	1
49	5	42986	Couto de Magalhaes	Brazil	53633,29	1	0	0	0
50	5	44483	Rio Verde	Brazil	354115,89	0	1	1	0
51	5	44493	APA do Salto Magessi	Brazil	624668,87	0	1	1	0
52	5	44496	Piabas	Brazil	148104,02	1	0	0	0
53	5	44649	Tapurah	Brazil	24697,02	1	3	0	3
54	5	44658	Marape	Brazil	210395,98	1	0	0	0
55	5	44676	Caju Doce	Brazil	23300,21	1	0	0	0
56	5	44688	Agua Verde	Brazil	84324,43	2	0	0	0
57	5	44692	Nova Mutum	Brazil	199499,11	1	0	0	0
58	5	44694	Tres Lagoas	Brazil	44126,87	0	1	1	0
59	5	44696	Rio Preto	Brazil	94090,36	0	2	2	0
60	5	44698	Arinos	Brazil	96440,50	1	0	0	0
61	5	44829	Cravari	Brazil	56975,36	0	1	0	1
62	5	44888	Campo Novo do Parecis	Brazil	23603,45	0	2	2	0
63	5	44946	Terra Indigena Utiariti	Brazil	438632,22	0	2	1	1
64	5	44954	Terra Indigena Enawene-Nawe	Brazil	32097,23	1	0	0	0
65	5	44962	Estacao Ecologica de Ique	Brazil	80588,11	1	0	0	0
66	5	44969	Terra Indigena Pirineus de Souza	Brazil	246608,11	0	4	1	3

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
67	5	44981	Estacao do Juruena	Brazil	261345,97	1	1	1	0
68	5	44983	Juruena	Brazil	38885,20	1	0	0	0
69	5	44992	Campos de Julio	Brazil	207209,98	0	1	0	1
70	5	46299	Terra Indigena Parque do Aripuana	Brazil	586795,50	0	1	1	0
71	5	64113	RESEX Extremo Norte do Estado do Tocantins	Brazil	496410,72	1	1	0	1
72	5	64159	Cachoeira Santana	Brazil	10393,92	1	1	1	0
73	5	64171	Xupe	Brazil	38622,26	3	1	1	0
74	5	64181	Farinha	Brazil	66200,84	2	0	0	0
75	5	64182	Cancela	Brazil	35850,51	2	1	1	0
76	5	64183	Parque Nacional Chapada das Mesas	Brazil	82591,91	1	0	0	0
77	5	64193	Carolina	Brazil	176908,71	2	2	2	0
78	5	64197	Urupuchote	Brazil	45294,26	1	0	0	0
79	5	64225	Rio Itapicuru	Brazil	3049,99	2	0	0	0
80	5	64234	Salobro	Brazil	14187,56	1	0	0	0
81	5	64252	Ribeirao do Maranhao	Brazil	7818,93	1	0	0	0
82	5	64261	Santa Filomena	Brazil	20046,97	2	0	0	0
83	5	64262	Estevao	Brazil	35225,43	1	0	0	0
84	5	64292	Ribeirao Tabocas	Brazil	72244,30	1	1	1	0
85	5	64298	Rio Bonito do Tocantins	Brazil	78559,69	0	1	1	0
86	5	64311	Monumento Natural das Arvores Fossilizadas	Brazil	72926,25	1	0	0	0
87	5	64318	Cana-brava	Brazil	44075,46	1	0	0	0
88	5	64319	Santarosa	Brazil	17050,20	1	0	0	0
89	5	64346	Nova Olinda	Brazil	40825,59	1	0	0	0
90	5	64369	Mato Grande	Brazil	47763,26	0	1	1	0
91	5	64373	Panela de Ferro	Brazil	67379,08	0	1	1	0
92	5	64376	Agua Fria	Brazil	95182,48	1	0	0	0
93	5	64378	Tranqueira	Brazil	115110,44	1	1	1	0
94	5	64429	Perdida	Brazil	260603,92	2	0	0	0
95	5	64444	Ponte Alta	Brazil	330253,92	2	1	1	0
96	5	64447	Pindorama do Tocantins	Brazil	192561,65	1	0	0	0
97	5	64449	Almas	Brazil	102710,49	3	1	1	0
98	5	64454	Soninho	Brazil	198439,09	3	1	1	0
99	5	64459	APA do Jalapao	Brazil	73141,52	0	1	1	0
100	5	64464	Parque Estadual do Jalapao	Brazil	21481,73	7	0	0	0
101	5	64466	Brejao do Jalapao	Brazil	78969,50	4	1	1	0
102	5	64471	Desabuso	Brazil	8965,92	1	0	0	0
103	5	64473	Rio Novo	Brazil	4015,70	1	0	0	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
104	5	64476	Frito gado	Brazil	38650,67	3	0	0	0
105	5	64477	Cortapena	Brazil	22225,35	0	1	1	0
106	5	64478	Toca	Brazil	24825,51	7	1	1	0
107	5	64479	Esteneu	Brazil	27075,35	6	1	1	0
108	5	64483	Jorge	Brazil	36506,77	0	1	1	0
109	5	64487	Verde do Tocantins	Brazil	23456,61	1	0	0	0
110	5	64491	Rio da Volta	Brazil	24237,76	2	1	1	0
111	5	64492	Mateiros	Brazil	11765,86	2	0	0	0
112	5	64493	Pedra de Amolar	Brazil	36675,54	3	1	1	0
113	5	64496	Come Assado	Brazil	67627,28	0	1	1	0
114	5	64497	Galhao	Brazil	44864,13	0	1	1	0
115	5	64513	Parque Estadual do Lajeado	Brazil	213205,26	1	0	0	0
116	5	64514	Santa Luzia	Brazil	152876,90	1	0	0	0
117	5	64515	Taquaracu	Brazil	106260,70	8	0	0	0
118	5	64516	APA Lago de Palmas	Brazil	298606,41	2	3	3	0
119	5	64517	Porto Nacional	Brazil	319932,12	4	4	4	0
120	5	64519	Rio Tocantins	Brazil	70788,31	1	0	0	0
121	5	64521	Brejinho de Nazare	Brazil	16306,56	1	2	0	2
122	5	64524	Alianca do Tocantins	Brazil	88807,20	1	0	0	0
123	5	64539	Surubim	Brazil	2206,26	0	2	2	0
124	5	64541	Apinage	Brazil	114811,10	1	0	0	0
125	5	64542	Pedras	Brazil	200598,96	2	0	0	0
126	5	64544	Rocinha	Brazil	77575,99	0	4	4	0
127	5	64545	Natividade	Brazil	235778,06	2	3	3	0
128	5	64546	Dianopolis	Brazil	280050,18	0	1	1	0
129	5	64548	Itaboca	Brazil	185664,72	0	2	2	0
130	5	64549	Manuel Alves	Brazil	318737,89	1	1	1	0
131	5	64561	Santo Antonio do Tocantins	Brazil	60307,71	0	1	1	0
132	5	64562	Taipoca	Brazil	72416,42	0	1	1	0
133	5	64584	Talisma	Brazil	399095,02	0	3	1	2
134	5	64588	Santa Teresa	Brazil	176267,08	1	2	2	0
135	5	64589	Rio do Ouro	Brazil	226070,91	1	0	0	0
136	5	64593	APA Foz do Rio Santa Tereza	Brazil	19018,90	2	0	0	0
137	5	64596	Rio das Almas	Brazil	134148,20	0	2	2	0
138	5	64621	Palma	Brazil	317009,90	0	1	1	0
139	5	64622	Arraias	Brazil	153214,24	1	3	3	0
140	5	64623	Pau d'arco	Brazil	155302,07	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
141	5	64624	Novo Jardim	Brazil	425536,22	3	3	3	0
142	5	64626	Corcunda	Brazil	232621,63	0	1	1	0
143	5	64628	Sobrado	Brazil	111106,84	3	1	1	0
144	5	64629	Lavandeira	Brazil	223878,11	2	1	1	0
145	5	64631	Quebra-coco	Brazil	208533,39	1	1	1	0
146	5	64633	TQ Kalungas	Brazil	227943,78	1	0	0	0
147	5	64634	Montes Claros	Brazil	198155,27	3	7	6	1
148	5	64636	Maquine	Brazil	125085,42	15	17	17	0
149	5	64637	Sucuri	Brazil	170243,13	5	12	12	0
150	5	64638	Sao Bartolomeu	Brazil	99232,14	2	8	8	0
151	5	64642	Floresta Nacional da Mata Grande	Brazil	102123,38	0	5	1	4
152	5	64644	Calheiros	Brazil	126157,55	5	0	0	0
153	5	64649	Divinopolis de Goias	Brazil	37562,80	0	1	1	0
154	5	64651	Nova Roma	Brazil	17215,73	2	0	0	0
155	5	64653	Morro Alto	Brazil	12331,27	1	0	0	0
156	5	64654	Parque Estadual de Terra Ronca	Brazil	268560,46	6	6	3	3
157	5	64655	Guatacaba	Brazil	36384,83	1	0	0	0
158	5	64658	Macacao	Brazil	161833,11	30	44	44	0
159	5	64662	Santa Maria	Brazil	222560,58	1	2	1	1
160	5	64664	Baco Pari	Brazil	130908,96	4	6	4	2
161	5	64665	Rio Corrente	Brazil	76422,79	0	1	1	0
162	5	64666	Buriti	Brazil	119130,58	2	2	2	0
163	5	64668	APA das Nascentes do Rio Vermelho	Brazil	74524,00	1	3	0	3
164	5	64669	Sitio da Abadia	Brazil	155218,42	2	0	0	0
165	5	64676	Rio dos Macacos	Brazil	135769,95	0	1	1	0
166	5	64677	Flores de Goias	Brazil	7443,88	1	0	0	0
167	5	64682	Extrema	Brazil	112390,82	0	2	1	1
168	5	64689	Rio Paraim	Brazil	56113,35	1	0	0	0
169	5	64694	Sao Joao d'Alianca	Brazil	20750,30	7	1	1	0
170	5	64695	Crixas	Brazil	136248,60	2	3	3	0
171	5	64699	Entorno de Brasilia	Brazil	56120,74	3	5	4	1
172	5	64711	APA Lago de Peixe-Angical	Brazil	95647,95	0	2	2	0
173	5	64725	Cana-brava de Minacu	Brazil	14793,71	1	0	0	0
174	5	64733	Cavalcante	Brazil	17709,57	0	1	0	1
175	5	64735	Ribeirao Bonito	Brazil	15747,04	1	0	0	0
176	5	64736	Minacu	Brazil	25509,45	1	1	0	1
177	5	64737	Sao Felix	Brazil	13872,18	1	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
178	5	64738	Laranjal	Brazil	136670,50	1	4	4	0
179	5	64739	Preto	Brazil	12972,02	0	1	1	0
180	5	64741	Serra do Tombador	Brazil	37140,81	0	1	1	0
181	5	64742	Sao Bento	Brazil	18056,59	3	0	0	0
182	5	64744	Parque Nacional da Chapada dos Veadeiros	Brazil	132526,16	28	28	28	0
183	5	64746	Corrego Areia	Brazil	21568,74	6	10	9	1
184	5	64747	Muquem	Brazil	35175,29	11	17	17	0
185	5	64748	Ribeirao Santana	Brazil	37822,39	19	8	7	1
186	5	64749	Rio Claro	Brazil	65747,88	25	39	39	0
187	5	64761	Tocantizinho	Brazil	108532,79	18	21	20	1
188	5	64762	Couros	Brazil	47835,13	17	32	32	0
189	5	64764	Morro Tira-chapeu	Brazil	94060,34	1	0	0	0
190	5	64765	Cachoeirinha	Brazil	27125,32	0	1	0	1
191	5	64766	Picarrao	Brazil	40859,84	33	46	46	0
192	5	64768	RPPN Fazenda Branca Terra dos Anões	Brazil	66882,06	3	5	5	0
193	5	64769	Corrego Roncador	Brazil	124638,72	12	16	15	1
194	5	64774	Prata Grande	Brazil	19140,96	0	1	1	0
195	5	64781	Niquelandia	Brazil	58259,64	3	3	3	0
196	5	64782	Bacalhau	Brazil	61378,63	11	15	15	0
197	5	64783	Santa Rita	Brazil	64397,41	0	2	2	0
198	5	64784	Ribeirao Conceicao	Brazil	53991,01	1	0	0	0
199	5	64786	Serra do Passanove	Brazil	44256,58	0	1	1	0
200	5	64791	Rio Palmeira	Brazil	56931,77	0	2	0	2
201	5	64792	Bilhagua	Brazil	115838,86	6	11	11	0
202	5	64797	Rio da Mula	Brazil	129926,25	2	0	0	0
203	5	64798	Passa-tres	Brazil	57344,56	1	1	1	0
204	5	64799	Cafe	Brazil	9746,88	2	1	1	0
205	5	64811	Ribeirao Ponte Alta	Brazil	42522,19	1	1	1	0
206	5	64812	Ribeirao da Laguna	Brazil	19637,71	0	1	1	0
207	5	64815	Cocal	Brazil	16325,24	1	0	0	0
208	5	64821	Patos	Brazil	15397,06	0	1	0	1
209	5	64829	Forquilha	Brazil	43294,11	1	1	1	0
210	5	64841	Pensao Sao Miguel	Brazil	39506,66	1	1	1	0
211	5	64847	Jacare	Brazil	38124,12	2	2	2	0
212	5	64848	Sardinha	Brazil	25626,57	2	6	6	0
213	5	64849	Joao Alves	Brazil	28478,41	1	2	2	0
214	5	64854	RPPN Fazenda Cachoeirinha	Brazil	25278,42	2	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
215	5	64862	Padre Bernardo	Brazil	5168,79	0	1	1	0
216	5	64866	Rio dos Bois	Brazil	5206,40	1	0	0	0
217	5	64883	Mucungo	Brazil	32231,66	1	0	0	0
218	5	64889	Arraial Velho	Brazil	34434,68	0	3	3	0
219	5	64892	APA de Cafuringa	Brazil	50313,96	2	1	1	0
220	5	64894	Corrego Fundo	Brazil	19806,42	3	6	6	0
221	5	64898	Monumento Natural do Conjunto Espeleologico do Morro da Pedreira	Brazil	41435,98	8	7	7	0
222	5	64899	Reserva Biologica da Contagem	Brazil	91298,57	25	9	9	0
223	5	64915	Lavrinha	Brazil	38022,26	1	0	0	0
224	5	64916	Lajes	Brazil	76160,32	2	0	0	0
225	5	64941	Rialma	Brazil	16734,43	0	1	1	0
226	5	64946	Irmaos	Brazil	19551,35	0	1	1	0
227	5	64949	Serra do Cocalzinho	Brazil	17618,93	1	0	0	0
228	5	64982	Canastra	Brazil	70913,51	0	1	1	0
229	5	64986	Uru	Brazil	73228,98	1	1	1	0
230	5	64995	Jaragua	Brazil	12703,05	0	1	1	0
231	5	64996	Parque Estadual da Serra de Jaragua	Brazil	101137,00	1	0	0	0
232	5	64998	APA da Serra dos Pireneus	Brazil	51011,74	7	20	20	0
233	5	64999	Padre Souza	Brazil	104204,09	0	2	2	0
234	5	65116	Piranhas	Brazil	179955,58	1	0	0	0
235	5	65374	Lagoa Preta	Brazil	57488,42	0	1	1	0
236	5	65392	Jenipapo	Brazil	42463,20	1	0	0	0
237	5	65415	APA Ilha do Bananal-Cantao	Brazil	5031,33	1	0	0	0
238	5	65585	Rio Caiapo	Brazil	21675,37	1	0	0	0
239	5	65587	Grotao	Brazil	88635,10	2	0	0	0
240	5	65589	Ribeirao Grande	Brazil	64363,23	4	0	0	0
241	5	65811	Furo do Coco	Brazil	13625,26	1	0	0	0
242	5	65852	Murici	Brazil	29269,04	1	0	0	0
243	5	65855	Rio do Coco	Brazil	18522,07	2	0	0	0
244	5	65972	Furo da Gameleira	Brazil	9247,05	10	0	0	0
245	5	65973	Cicice	Brazil	27875,40	2	0	0	0
246	5	66224	Parque Nacional do Araguaia	Brazil	16212,80	10	0	0	0
247	5	66227	Ariari	Brazil	35631,83	1	0	0	0
248	5	66234	Pium	Brazil	5268,93	1	0	0	0
249	5	66254	Terra Indigena Parque do Araguaia	Brazil	12356,31	1	0	0	0
250	5	66256	Ipuca do Riozinho	Brazil	22953,18	1	0	0	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
251	5	66257	Ilha de Santa Anna	Brazil	14159,57	0	1	1	0
252	5	66261	Riozinho	Brazil	2003,17	2	0	0	0
253	5	66467	Cristalandia	Brazil	6562,64	0	1	1	0
254	5	66623	Urubu	Brazil	72097,98	2	0	0	0
255	5	66668	Sandolandia	Brazil	17772,11	0	1	1	0
256	5	66696	Baiao	Brazil	59581,92	1	0	0	0
257	5	66821	Urubu Grande	Brazil	32614,43	1	0	0	0
258	5	66925	Xavante	Brazil	23906,69	1	0	0	0
259	5	66951	Escuro	Brazil	254537,78	0	1	0	1
260	5	67821	Xavantinho	Brazil	214561,97	1	0	0	0
261	5	67822	Terra Indigena Maraiwatsede	Brazil	114182,30	0	3	3	0
262	5	67966	Terra Indigena Cacique Fontoura	Brazil	6278,12	0	1	1	0
263	5	67973	Santa Izabel do Morro	Brazil	19075,20	1	2	2	0
264	5	68141	Novo Santo Antonio	Brazil	10425,20	0	1	1	0
265	5	68255	Sao Joao Grande	Brazil	8165,68	1	0	0	0
266	5	68311	Ribeirao Cascalheira	Brazil	11112,58	1	0	0	0
267	5	68334	Terra Indigena Pimentel Barbosa	Brazil	43647,20	1	0	0	0
268	5	68351	RVS Quelonios do Araguaia	Brazil	5153,23	1	0	0	0
269	5	68353	Cocalinho	Brazil	9081,51	4	0	0	0
270	5	68382	Angico	Brazil	25062,68	0	1	1	0
271	5	68389	Terra Indigena Areoes	Brazil	29425,24	0	1	1	0
272	5	68461	Pindaiba	Brazil	15437,75	1	0	0	0
273	5	68463	Barra do Garças	Brazil	11274,97	0	1	0	1
274	5	68464	Galheiro	Brazil	39778,64	1	5	5	0
275	5	68486	Cava Funda	Brazil	10050,37	1	0	0	0
276	5	68489	PE da Serra Azul	Brazil	17434,47	0	1	1	0
277	5	68497	Corrente	Brazil	5665,54	0	1	0	1
278	5	68622	Cachoeira	Brazil	17590,71	1	0	0	0
279	5	68681	Jau	Brazil	12169,06	1	0	0	0
280	5	68685	Agua Boa	Brazil	19194,98	0	3	3	0
281	5	68695	Areao	Brazil	13120,68	1	0	0	0
282	5	68732	Dom Bosco	Brazil	39069,19	0	1	0	1
283	5	68748	Terra Indigena Sao Marcos	Brazil	7084,43	4	1	1	0
284	5	68756	Paredao Grande	Brazil	45600,42	2	0	0	0
285	5	68757	General Carneiro	Brazil	136789,13	1	0	0	0
286	5	68993	Engano	Brazil	23638,91	1	0	0	0
287	5	68998	Agua Azul	Brazil	13086,55	1	0	0	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
288	5	69133	PE do Araguaia	Brazil	28347,53	1	0	0	0
289	5	69159	Formoso do Araguaia	Brazil	1734,43	1	0	0	0
290	5	69163	APA dos Meandros do Rio Araguaia	Brazil	89447,90	1	0	0	0
291	5	69166	Chapeu	Brazil	172095,28	1	0	0	0
292	5	69167	Cristalino	Brazil	204221,33	1	1	1	0
293	5	69169	Mata do Inferno	Brazil	157366,82	1	0	0	0
294	5	69223	Crixas-mirim	Brazil	101053,89	1	0	0	0
295	5	69249	Pintado	Brazil	97726,17	0	1	0	1
296	5	69262	Bonopolis	Brazil	15196,93	2	0	0	0
297	5	69286	Barreiro	Brazil	31343,98	0	1	1	0
298	5	69294	Ribeirao d'Anta	Brazil	106454,48	1	0	0	0
299	5	69295	Crixas-acu	Brazil	73679,01	0	1	1	0
300	5	69441	Tesouras	Brazil	16222,11	1	0	0	0
301	5	69443	Alagado	Brazil	76153,98	1	0	0	0
302	5	69449	Braco do Mato	Brazil	19415,80	1	0	0	0
303	5	69462	Pinguela	Brazil	43006,74	0	4	0	4
304	5	69488	Alagadinho	Brazil	8346,95	0	1	1	0
305	5	69494	Cavalo Queimado	Brazil	69285,14	0	1	1	0
306	5	69513	Aruana	Brazil	11393,93	1	0	0	0
307	5	69514	Medio Araguaia	Brazil	15978,43	1	0	0	0
308	5	69516	Brejao	Brazil	40690,76	1	0	0	0
309	5	69519	Terra Indigena Karaja de Aruana	Brazil	2753,08	1	0	0	0
310	5	69521	RPPN Boca da Mata	Brazil	34322,19	2	1	0	1
311	5	69523	Matrincha	Brazil	150683,33	0	1	0	1
312	5	69529	APA da Serra Dourada	Brazil	77644,62	8	7	4	3
313	5	69568	PE da Serra Dourada	Brazil	87703,78	6	7	7	0
314	5	69582	Dom Bill	Brazil	46053,66	0	1	1	0
315	5	69626	Bom Jardim	Brazil	154913,54	1	1	1	0
316	5	69627	Retiro das Piranhas	Brazil	16162,78	1	1	1	0
317	5	69629	Pantano	Brazil	129073,34	1	1	1	0
318	5	69698	Sao Jose	Brazil	27881,49	1	0	0	0
319	5	69811	APA Estadual Pe da Serra Azul	Brazil	45359,72	5	3	3	0
320	5	69861	Bandeira	Brazil	11443,76	1	0	0	0
321	5	69866	Guiratinga	Brazil	7584,52	0	1	1	0
322	5	69886	Alto Garcas	Brazil	12313,29	0	1	0	1
323	5	69946	Sucupira	Brazil	182229,89	1	0	0	0
324	5	69954	Sao Joao	Brazil	48356,36	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
325	5	69966	Diamantino	Brazil	38414,26	0	1	1	0
326	5	69981	Babilonia	Brazil	27903,39	0	3	1	2
327	5	69984	Empantanado	Brazil	26537,78	1	1	0	1
328	5	69985	Mineiros	Brazil	45279,90	1	3	0	3
329	5	69989	Jacu	Brazil	18166,34	2	0	0	0
330	5	69993	Alto Araguaia	Brazil	1896,95	2	0	0	0
331	5	69994	Gordura	Brazil	28030,34	2	0	0	0
332	5	69995	Santa Rita do Araguaia	Brazil	24628,30	2	0	0	0
333	5	69996	Ribeirao do Sapo	Brazil	27053,91	1	3	0	3
334	5	69997	Zeca Nonato	Brazil	67894,57	4	1	0	1
335	5	69998	Queixada	Brazil	23440,81	2	0	0	0
336	5	69999	Araguainha	Brazil	48940,02	2	0	0	0
337	5	71647	Terra Indigena Geralda Toco Preto	Brazil	521170,34	1	0	0	0
338	5	71648	Terra Indigena Krikati	Brazil	352217,83	1	0	0	0
339	5	71652	Ipixuna Acu	Brazil	320007,96	1	0	0	0
340	5	71655	RPPN Fazenda Sao Francisco	Brazil	113104,82	0	1	1	0
341	5	71662	Presidente Dutra	Brazil	88923,27	1	0	0	0
342	5	71666	Rio das Flores	Brazil	144351,98	2	0	0	0
343	5	71687	Terra Indigena Porquinhos	Brazil	45359,62	2	0	0	0
344	5	71691	Terra Indigena Cana Brava/Guajajara	Brazil	17100,23	3	0	0	0
345	5	71831	Itapecuru	Brazil	11813,97	1	0	0	0
346	5	71842	TQ Santa Joana	Brazil	159724,29	2	0	0	0
347	5	71845	PN dos Lençois Maranhenses	Brazil	21697,29	1	0	0	0
348	5	71851	RPPN Fazenda Pantanal	Brazil	40041,31	1	0	0	0
349	5	71853	Itapicuru	Brazil	297521,49	1	0	0	0
350	5	71855	Cajazeira	Brazil	23903,66	1	0	0	0
351	5	71866	Inhumas	Brazil	151246,93	0	1	1	0
352	5	71874	Baixao do Bandeira	Brazil	27781,69	1	0	0	0
353	5	71875	Fortuna	Brazil	42591,21	2	0	0	0
354	5	71884	Mirador	Brazil	30144,31	1	0	0	0
355	5	71886	Alpercatinha	Brazil	70241,64	1	0	0	0
356	5	71899	PE de Mirador	Brazil	236416,73	1	0	0	0
357	5	71929	APA dos Morros Garapenses	Brazil	238730,36	1	0	0	0
358	5	71942	APA Upaon-Açu/Miritiba/Alto Preguicas	Brazil	137098,75	1	0	0	0
359	5	72121	RPPN Fazenda Centro	Brazil	35188,54	1	1	0	1
360	5	72168	Caraiba	Brazil	42674,35	1	0	0	0
361	5	72196	Riachao	Brazil	75440,57	1	0	0	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
362	5	72211	FN de Palmares	Brazil	57219,71	2	4	0	4
363	5	72314	Timon	Brazil	30276,02	1	0	0	0
364	5	72347	Sao Francisco do Maranhao	Brazil	76349,94	1	0	0	0
365	5	72349	Sucupira do Riachao	Brazil	85245,43	0	1	1	0
366	5	72411	Caninde	Brazil	20253,43	1	0	0	0
367	5	72549	PN da Serra das Confusoes	Brazil	250528,43	2	2	2	0
368	5	72556	Floriano	Brazil	5875,03	0	1	1	0
369	5	72632	Coqueiro	Brazil	62547,75	1	0	0	0
370	5	72643	Riacho de Sant'Ana	Brazil	45431,87	1	0	0	0
371	5	72646	Baliza	Brazil	31259,88	3	0	0	0
372	5	72653	Paraim	Brazil	239884,67	1	0	0	0
373	5	72656	Matoes	Brazil	107363,96	3	0	0	0
374	5	72669	Gurgueia	Brazil	137746,37	1	0	0	0
375	5	72681	APA do Rangel	Brazil	34769,23	1	0	0	0
376	5	72686	Vereda Uniao	Brazil	91359,16	1	0	0	0
377	5	72693	Riacho Frio	Brazil	76019,72	2	0	0	0
378	5	72695	Parnagua	Brazil	159093,89	1	0	0	0
379	5	72696	Malhada da Barra	Brazil	75763,80	2	0	0	0
380	5	72699	Sebastiao Barros	Brazil	164789,87	1	0	0	0
381	5	72724	Cardoso	Brazil	137367,49	1	0	0	0
382	5	72729	Prata	Brazil	33175,64	1	0	0	0
383	5	72733	Riacho do Belem	Brazil	60149,99	3	0	0	0
384	5	72786	Curimata	Brazil	4778,13	1	0	0	0
385	5	72797	Urucui	Brazil	3771,91	1	0	0	0
386	5	72816	Santa Isabel	Brazil	26178,61	0	1	1	0
387	5	72817	Balsas	Brazil	16630,38	0	1	1	0
388	5	72818	Gameleira	Brazil	32525,59	0	1	1	0
389	5	72819	Riacho dos Picos	Brazil	34570,88	1	0	0	0
390	5	72829	Fortaleza dos Nogueiras	Brazil	49771,93	1	0	0	0
391	5	72834	Coite	Brazil	99901,15	1	0	0	0
392	5	72862	Rio Maravilha	Brazil	196476,18	1	0	0	0
393	5	72871	Santo Antonio de Balsas	Brazil	39360,10	1	2	0	2
394	5	72872	Gado Bravo	Brazil	44570,61	1	0	0	0
395	5	72876	Novo Recreio	Brazil	23018,83	1	0	0	0
396	5	72878	Temerante	Brazil	20990,07	1	0	0	0
397	5	72881	Parelhas	Brazil	20506,55	0	1	1	0
398	5	72887	Tem medo	Brazil	12253,19	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
399	5	72889	Mandacaru	Brazil	23154,07	0	1	1	0
400	5	72891	Sul Maranhense	Brazil	49051,01	0	1	1	0
401	5	72911	Benedito Leite	Brazil	7197,00	1	0	0	0
402	5	72922	Riacho da Estiva	Brazil	306192,17	1	0	0	0
403	5	72929	Urucui-preto	Brazil	605948,42	3	0	0	0
404	5	72933	Loreto	Brazil	328118,64	1	1	1	0
405	5	72935	Tasso Fragoso	Brazil	155667,56	1	0	0	0
406	5	72946	EE de Urucui-Una	Brazil	26553,41	1	0	0	0
407	5	72954	Sucuruju	Brazil	88438,62	0	2	2	0
408	5	72963	Medonho	Brazil	34153,50	0	1	0	1
409	5	72982	Alto Parnaiba	Brazil	56622,64	1	0	0	0
410	5	72991	Cachoeira Pedra de Amolar	Brazil	71800,79	1	0	0	0
411	5	72992	PN das Nascentes do Rio Parnaiba	Brazil	279146,20	3	3	0	3
412	5	73111	Ilha Grande	Brazil	16805,03	2	0	0	0
413	5	73114	Luis Correia	Brazil	29222,62	1	0	0	0
414	5	74197	Ilha Mocambo dos Ventos	Brazil	42191,20	0	1	0	1
415	5	74199	APA Dunas e Veredas do Baixo e Medio Sao Francisco	Brazil	66866,63	1	1	0	1
416	5	74222	Cotegipe	Brazil	447915,55	0	1	1	0
417	5	74225	EE Rio Preto	Brazil	790151,49	4	3	0	3
418	5	74226	Formosa do Rio Preto	Brazil	223016,77	3	1	1	0
419	5	74228	APA Rio Preto	Brazil	333804,30	0	1	1	0
420	5	74229	Sapao	Brazil	671061,77	2	0	0	0
421	5	74235	Rio Grande	Brazil	236693,91	1	0	0	0
422	5	74237	Neves	Brazil	73541,55	0	1	1	0
423	5	74243	Rio de Janeiro	Brazil	22856,73	3	0	0	0
424	5	74244	Ponta d'agua	Brazil	63113,22	2	2	2	0
425	5	74245	APA Bacia do Rio de Janeiro	Brazil	30565,97	1	2	2	0
426	5	74255	Extremo Oeste Baiano	Brazil	5575,06	1	0	0	0
427	5	74261	Ondas	Brazil	32669,17	2	3	3	0
428	5	74262	Cabeceira das Lajes	Brazil	63431,96	5	7	6	1
429	5	74263	Tabocas	Brazil	18415,96	1	0	0	0
430	5	74264	Cabeceira de Pedras	Brazil	183637,98	2	0	0	0
431	5	74269	Bora	Brazil	88487,94	0	1	1	0
432	5	74272	Boa Sorte	Brazil	260778,31	2	3	3	0
433	5	74278	FN de Cristopolis	Brazil	459146,44	2	1	1	0
434	5	74281	Vereda Anastacio	Brazil	91985,42	2	0	0	0
435	5	74282	Sao Desiderio	Brazil	43963,38	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
436	5	74283	Porcos	Brazil	3962,71	1	0	0	0
437	5	74292	Triste e Feio	Brazil	271692,55	1	1	1	0
438	5	74317	Ilha da Pica Grande	Brazil	2969,61	1	0	0	0
439	5	74332	Vereda da Canoa	Brazil	47269,28	0	1	0	1
440	5	74394	Serra Dourada	Brazil	174817,78	1	0	0	0
441	5	74397	Ilha da Bananeira	Brazil	29116,15	0	2	0	2
442	5	74411	Sitio do Mato	Brazil	19815,79	1	0	0	0
443	5	74413	Terra Indigena Vargem Alegre	Brazil	121951,67	1	0	0	0
444	5	74414	Pedra Branca	Brazil	70757,44	1	0	0	0
445	5	74415	Santana	Brazil	58635,33	2	0	0	0
446	5	74418	Coribe	Brazil	48288,00	1	0	0	0
447	5	74419	Sao Felix do Coribe	Brazil	7755,45	1	1	1	0
448	5	74421	Rio Formoso	Brazil	96944,95	1	1	0	1
449	5	74422	Alegre	Brazil	65188,30	5	0	0	0
450	5	74423	Jaborandi	Brazil	204555,82	1	0	0	0
451	5	74424	Rodeador	Brazil	228833,92	1	0	0	0
452	5	74426	Vau	Brazil	85184,97	1	0	0	0
453	5	74428	Pratudao	Brazil	109461,42	4	0	0	0
454	5	74429	RVS das Veredas do Oeste Baiano	Brazil	113236,25	2	0	0	0
455	5	74441	Arrojado	Brazil	219421,55	1	1	1	0
456	5	74444	Arrojadinho	Brazil	128973,02	3	0	0	0
457	5	74447	Correntina	Brazil	148151,87	4	3	3	0
458	5	74454	Santa Maria da Vitoria	Brazil	21737,80	1	0	0	0
459	5	74461	Guara	Brazil	129657,93	5	2	2	0
460	5	74471	Riacho de Pedra	Brazil	17897,10	1	0	0	0
461	5	74473	Rio Guara	Brazil	5953,18	1	0	0	0
462	5	74476	Santo Antonio	Brazil	92016,74	2	1	1	0
463	5	74478	Rio dos Angicos	Brazil	138051,90	2	0	0	0
464	5	74485	Riacho do Mato	Brazil	29978,46	1	0	0	0
465	5	74512	TQ Lagoa das Piranhas	Brazil	42362,91	0	2	0	2
466	5	74521	TQ Nova Batalhinha	Brazil	93082,49	0	1	0	1
467	5	74532	Riacho de Mariape	Brazil	36481,54	2	0	0	0
468	5	74544	Lagoas	Brazil	114685,88	1	0	0	0
469	5	74572	Madrugao	Brazil	18309,70	1	0	0	0
470	5	74581	Cariranha	Brazil	76326,17	0	1	1	0
471	5	74582	APA Cocha e Gibao	Brazil	315475,72	1	0	0	0
472	5	74583	Feira da Mata	Brazil	38953,50	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
473	5	74584	PN Grande Sertao Veredas	Brazil	611513,58	6	4	4	0
474	5	74586	Cocos	Brazil	61313,22	4	0	0	0
475	5	74588	Riacho do Meio	Brazil	110645,12	1	0	0	0
476	5	74589	Itaguari	Brazil	456336,02	5	0	0	0
477	5	74596	Calindo	Brazil	185255,28	2	0	0	0
478	5	74622	Aurelio	Brazil	77275,83	1	0	0	0
479	5	74642	Furado Novo	Brazil	146201,65	1	0	0	0
480	5	74646	PE Caminho das Gerais	Brazil	358328,27	3	0	0	0
481	5	74648	Porteirinha	Brazil	126450,15	2	0	0	0
482	5	74649	Gorutuba	Brazil	218787,22	1	3	2	1
483	5	74652	Corrego Escuro	Brazil	37256,83	0	1	0	1
484	5	74654	Macaubas	Brazil	63257,20	2	0	0	0
485	5	74655	Verde Grande	Brazil	28391,09	1	0	0	0
486	5	74668	Quem-quem	Brazil	27092,27	3	1	1	0
487	5	74692	Agua Limpa	Brazil	51581,92	1	0	0	0
488	5	74695	Capitao Eneas	Brazil	95371,43	1	0	0	0
489	5	74697	Vacabrava	Brazil	29244,15	8	1	1	0
490	5	74699	Juramento	Brazil	150028,23	3	2	1	1
491	5	74711	PE Lagoa do Cajueiro	Brazil	270550,49	1	1	0	1
492	5	74712	RB Serra Azul	Brazil	92335,33	3	0	0	0
493	5	74714	PE Veredas do Peruacu	Brazil	138748,80	9	1	1	0
494	5	74715	PN Cavernas do Peruacu	Brazil	238615,50	5	2	2	0
495	5	74717	Cochos	Brazil	93357,59	2	0	0	0
496	5	74718	Japonvar	Brazil	114001,39	1	0	0	0
497	5	74721	Pandeiros	Brazil	38822,12	2	0	0	0
498	5	74727	APA Pandeiros	Brazil	108267,05	1	0	0	0
499	5	74734	RVS Rio Pandeiros	Brazil	38431,58	6	2	2	0
500	5	74744	Sao Joaquim	Brazil	14643,80	1	0	0	0
501	5	74747	PE Serra das Araras	Brazil	52859,97	1	0	0	0
502	5	74749	Chapada Gaucha	Brazil	18317,00	1	0	0	0
503	5	74752	Lagoa da Vaqueta	Brazil	17765,77	0	1	0	1
504	5	74755	Sao Francisco	Brazil	11481,28	2	0	0	0
505	5	74772	Pintopolis	Brazil	23394,11	1	0	0	0
506	5	74781	Urucuia	Brazil	286228,08	1	0	0	0
507	5	74782	Conceicao	Brazil	307694,41	2	0	0	0
508	5	74783	Ribeirao dos Confins	Brazil	447555,85	2	3	1	2
509	5	74784	EE Sagarana	Brazil	331829,06	5	2	0	2

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
510	5	74785	Pacari	Brazil	243748,96	5	0	0	0
511	5	74786	Formoso	Brazil	234918,67	2	0	0	0
512	5	74789	Serra da Sacada	Brazil	324642,82	2	2	2	0
513	5	74795	Sao Romao	Brazil	4221,80	1	0	0	0
514	5	74798	Campo Azul	Brazil	143501,97	2	1	1	0
515	5	74822	Garitas	Brazil	74825,79	1	0	0	0
516	5	74846	Roncador	Brazil	77203,80	1	0	0	0
517	5	74847	Unai	Brazil	289479,47	6	3	3	0
518	5	74848	Bezerra	Brazil	139122,85	2	0	0	0
519	5	74849	APA do Planalto Central	Brazil	166754,34	3	2	2	0
520	5	74862	Vereda Grande	Brazil	32390,79	1	0	0	0
521	5	74868	TQ Amaros	Brazil	28981,38	1	0	0	0
522	5	74873	Ribeirao Bezerra	Brazil	32031,77	1	0	0	0
523	5	74878	RPPN Morro da Cruz das Almas	Brazil	53100,59	4	3	3	0
524	5	74889	Presidente Olegario	Brazil	58305,88	0	1	0	1
525	5	74892	Ribeirao Santa Catarina	Brazil	337167,45	2	3	2	1
526	5	74894	PE de Paracatu	Brazil	204491,69	5	4	4	0
527	5	74896	Guarda-mor	Brazil	77527,76	2	0	0	0
528	5	74918	Barro	Brazil	91747,78	0	2	1	1
529	5	74923	Jequitai	Brazil	99641,82	1	0	0	0
530	5	74925	Francisco Dumont	Brazil	109113,78	5	2	2	0
531	5	74927	Areia	Brazil	37997,57	1	0	0	0
532	5	74928	Imbalacaia	Brazil	82238,24	26	15	15	0
533	5	74929	PN das Sempre-Vivas	Brazil	151545,27	4	2	2	0
534	5	74941	Velhas	Brazil	409807,79	12	5	5	0
535	5	74942	Bicudo	Brazil	215480,27	4	2	2	0
536	5	74944	PE da Serra do Cabral	Brazil	199002,96	26	20	20	0
537	5	74945	Jabuticaba	Brazil	42369,40	0	3	3	0
538	5	74946	Pardo Grande	Brazil	203131,55	64	34	34	0
539	5	74947	Santo Hipolito	Brazil	50516,19	2	3	3	0
540	5	74948	PN da Serra do Cipo	Brazil	449751,89	183	112	112	0
541	5	74949	APA do Carste de Lagoa Santa	Brazil	1155436,39	93	65	55	10
542	5	74951	Pirapora	Brazil	370669,54	10	2	1	1
543	5	74952	Tres Marias	Brazil	119723,29	2	0	0	0
544	5	74954	Tiros	Brazil	586827,90	4	0	0	0
545	5	74955	RPPN Fazenda Lavagem	Brazil	38941,07	3	0	0	0
546	5	74956	Borrachudo	Brazil	172383,66	1	0	0	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
547	5	74957	EE de Pirapitinga	Brazil	98757,64	1	0	0	0
548	5	74958	Indaia	Brazil	264564,50	1	0	0	0
549	5	74959	RPPN Fazenda Barrão	Brazil	231621,58	1	0	0	0
550	5	74961	Felixlandia	Brazil	182046,31	2	0	0	0
551	5	74963	FN de Paraopeba	Brazil	238483,90	9	2	2	0
552	5	74964	Inhauma	Brazil	86763,55	1	1	1	0
553	5	74965	APA Vargem das Flores	Brazil	542949,61	2	1	1	0
554	5	74984	Lambari	Brazil	195817,75	1	0	0	0
555	5	74985	Rio Para	Brazil	46606,88	0	1	1	0
556	5	74986	RPPN Fazenda Samoinho	Brazil	154882,77	1	0	0	0
557	5	74987	Nova Serrana	Brazil	116063,74	1	0	0	0
558	5	74988	Ribeirao Boa Vista	Brazil	214185,28	1	0	0	0
559	5	74993	Luz	Brazil	477741,64	0	1	1	0
560	5	74995	EE Corumba	Brazil	355602,37	3	0	0	0
561	5	74996	Vargem Bonita	Brazil	82883,65	6	2	2	0
562	5	74998	RPPN Fazenda do Lobo	Brazil	81463,37	18	8	8	0
563	5	75789	PE de Montezuma	Brazil	631723,28	4	1	1	0
564	5	75824	Setubal	Brazil	296992,28	1	0	0	0
565	5	75825	Berilo	Brazil	240059,27	2	2	1	1
566	5	75826	Capelinha	Brazil	129816,53	0	2	1	1
567	5	75827	Aracai	Brazil	57325,63	1	0	0	0
568	5	75829	PE Rio Preto	Brazil	464603,31	27	12	12	0
569	5	75854	Vargem da Lapa	Brazil	9822,03	3	0	0	0
570	5	75868	Peixe Bravo	Brazil	53440,71	1	1	1	0
571	5	75869	Vacaria	Brazil	106564,31	0	1	1	0
572	5	75891	EE Acaua	Brazil	336057,41	30	7	7	0
573	5	75892	Itacambira	Brazil	105003,96	5	0	0	0
574	5	75894	Tabatinga	Brazil	78456,53	1	1	1	0
575	5	75897	Olhos d'agua	Brazil	139832,16	0	4	4	0
576	5	75898	Caete-mirim	Brazil	41767,80	9	4	4	0
577	5	75899	PE Biribiri	Brazil	211994,54	145	87	86	1
578	5	76648	Tanque	Brazil	12899,25	2	0	0	0
579	5	76649	PE do Limoeiro	Brazil	14411,10	1	1	1	0
580	5	76684	Rio do Peixe	Brazil	21116,11	2	1	1	0
581	5	76689	Preto do Itambe	Brazil	6858,91	4	2	2	0
582	5	76692	Morro do Pilar	Brazil	12828,87	5	9	9	0
583	5	76693	Rio Picao	Brazil	32849,81	6	7	7	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
584	5	76694	PE Serra do Intendente	Brazil	20957,53	11	5	5	0
585	5	76698	Parauninha	Brazil	16396,48	3	0	0	0
586	5	76889	Bom Jesus do Amparo	Brazil	6419,45	0	1	1	0
587	5	84383	Ivinheima	Brazil	638789,26	1	0	0	0
588	5	84384	Nova Alvorada do Sul	Brazil	670436,25	0	3	3	0
589	5	84386	Terra Indigena Jatayvari	Brazil	923802,25	6	1	1	0
590	5	84389	Rio Brilhante	Brazil	428223,63	1	0	0	0
591	5	84418	Laranja Doce	Brazil	115885,66	1	0	0	0
592	5	84423	RPPN Fazenda Monte Alegre	Brazil	1132734,29	3	0	0	0
593	5	84424	PE do Guartela	Brazil	301801,94	8	1	1	0
594	5	84425	APA da Escarpa Devoniana	Brazil	165010,98	7	1	1	0
595	5	84432	Paraguacu Paulista	Brazil	342102,51	4	0	0	0
596	5	84442	Ventania	Brazil	329193,59	1	0	0	0
597	5	84449	RPPN Fazenda do Tigre	Brazil	216010,98	12	0	0	0
598	5	84454	EE de Assis	Brazil	92597,49	4	0	0	0
599	5	84458	Campos Novos Paulista	Brazil	107567,60	1	0	0	0
600	5	84462	Alambari	Brazil	426391,05	5	0	0	0
601	5	84463	EE Santa Barbara	Brazil	148101,61	4	1	1	0
602	5	84464	EE de Avare	Brazil	97069,61	1	0	0	0
603	5	84465	FE Santa Barbara	Brazil	11147,01	2	0	0	0
604	5	84466	Claro	Brazil	94700,88	3	1	1	0
605	5	84468	Ribeirao das Pedras	Brazil	19934,55	0	1	1	0
606	5	84469	Botucatu	Brazil	55928,61	5	1	1	0
607	5	84482	Itaporanga	Brazil	204923,63	20	5	5	0
608	5	84485	Pescaria	Brazil	61438,12	1	0	0	0
609	5	84486	PE Vale do Codo	Brazil	159363,08	43	6	5	1
610	5	84488	Jaguaricatu	Brazil	77922,34	14	2	2	0
611	5	84489	Itarare	Brazil	88511,73	13	1	1	0
612	5	84491	Paranapanema	Brazil	152323,56	1	0	0	0
613	5	84492	EE de Itabera	Brazil	450705,83	6	2	2	0
614	5	84495	EE Paranapanema	Brazil	123932,04	5	0	0	0
615	5	84496	FN de Capao Bonito	Brazil	281472,99	2	0	0	0
616	5	84498	Itapetininga	Brazil	262097,91	12	4	4	0
617	5	84522	Inhandui	Brazil	1346930,61	13	6	5	1
618	5	84523	Pardo	Brazil	865219,75	0	1	1	0
619	5	84525	Botas	Brazil	31906,75	1	0	0	0
620	5	84539	Parana	Brazil	45697,44	0	1	1	0

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
621	5	84541	Verde	Brazil	243020,57	2	0	0	0
622	5	84548	Sao Domingos	Brazil	25600,41	0	1	0	1
623	5	84589	Sucuriu	Brazil	724212,32	6	3	1	2
624	5	84618	APA Rio Batalha	Brazil	239452,10	4	0	0	0
625	5	84622	Sao Lourenco	Brazil	115526,07	3	0	0	0
626	5	84641	APA Ibitinga	Brazil	15971,91	1	0	0	0
627	5	84644	Itaquere	Brazil	42612,81	2	0	0	0
628	5	84647	Jacare-guacu	Brazil	58103,87	1	0	0	0
629	5	84648	Araraquara	Brazil	47362,78	6	1	1	0
630	5	84649	EE Itirapina	Brazil	142248,46	10	4	4	0
631	5	84652	Jacare-pepira	Brazil	261427,32	5	0	0	0
632	5	84653	Arealva	Brazil	105479,30	3	0	0	0
633	5	84656	FE Pederneiras	Brazil	56369,28	4	0	0	0
634	5	84657	Macatuba	Brazil	107831,92	1	0	0	0
635	5	84659	Araqua	Brazil	87572,52	1	0	0	0
636	5	84661	APA Corumbatai-Botucatu-Tejupa	Brazil	188651,84	14	1	0	1
637	5	84662	Corumbatai	Brazil	163963,72	19	6	5	1
638	5	84663	Piracicaba	Brazil	186079,96	2	0	0	0
639	5	84664	Atibaia	Brazil	293119,35	2	0	0	0
640	5	84665	ARIE Matao de Cosmopolis	Brazil	48859,81	2	0	0	0
641	5	84666	Pirapitingui	Brazil	42869,24	1	0	0	0
642	5	84667	Jaguari	Brazil	15006,39	1	0	0	0
643	5	84672	Vitoria	Brazil	42347,78	4	1	1	0
644	5	84674	Rio Alambari	Brazil	31319,10	1	0	0	0
645	5	84675	EE Barreiro Rico	Brazil	32097,08	2	0	0	0
646	5	84676	Peixe	Brazil	115001,18	2	0	0	0
647	5	84729	Sao Jose dos Dourados	Brazil	231142,97	3	0	0	0
648	5	84768	Inocencia	Brazil	10278,14	0	1	1	0
649	5	84818	Parisi	Brazil	133079,62	1	0	0	0
650	5	84822	Mirassolandia	Brazil	300855,82	1	0	0	0
651	5	84832	Verde ou Feio	Brazil	278177,37	2	1	1	0
652	5	84835	Sao Mateus	Brazil	380500,61	1	1	1	0
653	5	84841	FE de Bebedouro	Brazil	518064,48	4	1	0	1
654	5	84842	FE Cajuru	Brazil	1272296,91	16	8	4	4
655	5	84843	RB de Sertaozinho	Brazil	129316,88	2	0	0	0
656	5	84844	EE de Jatai	Brazil	105491,84	1	0	0	0
657	5	84845	PE de Vassununga	Brazil	609999,22	17	4	3	1

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
658	5	84846	Jaguari-mirim	Brazil	210186,33	1	0	0	0
659	5	84847	RB e EE Mogi-Guaçu	Brazil	359072,05	13	1	1	0
660	5	84852	Uberaba	Brazil	269121,56	3	3	3	0
661	5	84863	Sapucai	Brazil	300475,03	4	0	0	0
662	5	84864	Batatais	Brazil	35900,45	2	0	0	0
663	5	84865	Franca	Brazil	13028,25	1	0	0	0
664	5	84866	Santa Barbara	Brazil	94891,62	1	0	0	0
665	5	84868	RB Sao Sebastiao do Paraiso	Brazil	53741,09	2	1	1	0
666	5	84869	Tomba-perna	Brazil	111519,93	2	1	1	0
667	5	84872	Solapao	Brazil	130194,75	2	0	0	0
668	5	84873	PE das Furnas do Bom Jesus	Brazil	403475,42	10	3	3	0
669	5	84875	Sacramento	Brazil	72306,86	0	1	0	1
670	5	84876	PN da Serra da Canastra	Brazil	64170,90	16	18	17	1
671	5	84877	Cassia	Brazil	50072,47	5	2	2	0
672	5	84879	Alpinopolis	Brazil	304434,46	27	17	16	1
673	5	84881	PE Serra da Boa Esperanca	Brazil	288828,16	0	1	1	0
674	5	84891	Guape	Brazil	157168,41	1	1	1	0
675	5	84892	Formiga	Brazil	223501,99	2	0	0	0
676	5	84912	Rio da Prata	Brazil	696539,03	2	0	0	0
677	5	84914	PN das Emas	Brazil	732349,03	28	4	3	1
678	5	84916	Serranopolis	Brazil	1176832,28	12	3	2	1
679	5	84918	Jatai	Brazil	1368429,45	11	10	9	1
680	5	84924	Ituiutaba	Brazil	591229,68	10	3	3	0
681	5	84925	Tijuco	Brazil	227150,47	3	2	2	0
682	5	84926	Monte Alegre de Minas	Brazil	76231,84	0	1	1	0
683	5	84928	Douradinho	Brazil	96685,46	7	7	7	0
684	5	84944	PE de Parauna	Brazil	1280393,99	3	5	5	0
685	5	84946	Turvo	Brazil	811849,32	0	1	1	0
686	5	84949	APA Serra da Jiboia	Brazil	208479,37	0	1	1	0
687	5	84951	Campanha	Brazil	143579,56	2	1	1	0
688	5	84952	APA Joao Leite	Brazil	1241045,41	9	8	7	1
689	5	84962	Piracanjuba	Brazil	457257,63	1	1	1	0
690	5	84963	PE da Serra de Caldas Novas	Brazil	381097,87	4	7	6	1
691	5	84964	Bois	Brazil	330565,73	1	0	0	0
692	5	84966	FN de Silvania	Brazil	440992,78	1	4	4	0
693	5	84967	Corumba	Brazil	195930,42	0	1	1	0
694	5	84968	EE do Jardim Botanico	Brazil	535582,26	74	59	52	7

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
695	5	84969	RB e PE do Descoberto	Brazil	905371,53	21	32	32	0
696	5	84982	Uberabinha	Brazil	204845,96	2	3	3	0
697	5	84983	PE Pau Furado	Brazil	389669,93	6	1	1	0
698	5	84984	Araguari	Brazil	462663,80	9	2	0	2
699	5	84985	RPPN Galheiros	Brazil	330681,88	12	3	3	0
700	5	84986	Capivara	Brazil	133423,85	5	0	0	0
701	5	84987	Misericordia	Brazil	298195,08	2	1	1	0
702	5	84988	Campos Altos	Brazil	143420,48	0	2	2	0
703	5	84992	Verissimo	Brazil	451851,69	2	1	1	0
704	5	84993	Cascalho Rico	Brazil	480611,13	6	2	2	0
705	5	84994	Monte Carmelo	Brazil	130623,31	1	1	1	0
706	5	84996	Dourados	Brazil	234986,91	2	0	0	0
707	5	84998	Paranaiba	Brazil	1052785,93	5	2	2	0
708	5	84999	Sao Marcos	Brazil	1195052,39	21	16	15	1
709	5	89161	Apa	Brazil	169622,85	5	0	0	0
710	5	89162	Rio Perdido	Brazil	328133,80	4	1	1	0
711	5	89168	Terra Indigena Nande Ru Marangatu	Brazil	135116,05	1	0	0	0
712	5	89176	Progresso	Brazil	144260,37	1	0	0	0
713	5	89191	Taruma	Brazil	255330,23	4	0	0	0
714	5	89195	Rio Branco	Brazil	264320,28	5	1	1	0
715	5	89196	Terra Indigena Kadiweu	Brazil	347362,13	0	1	1	0
716	5	89199	RPPN Tupaciara	Brazil	789120,97	1	0	0	0
717	5	89522	PN da Serra da Bodoquena	Brazil	2008714,06	22	8	5	3
718	5	89523	RPPN Estancia Caiman	Brazil	206695,82	3	0	0	0
719	5	89525	Aquidauana	Brazil	159267,13	4	1	1	0
720	5	89526	Taquarucu	Brazil	242048,48	0	1	1	0
721	5	89527	APA Estadual Estrada-Parque Piraputanga	Brazil	264593,92	3	1	1	0
722	5	89528	Terra Indigena Buriti	Brazil	305354,27	2	2	2	0
723	5	89529	RPPN Fazenda Lageado	Brazil	772628,09	2	0	0	0
724	5	89544	TQ Furnas da Boa Sorte	Brazil	350564,84	2	0	0	0
725	5	89548	Rio Negro	Brazil	327655,98	2	0	0	0
726	5	89549	Anhuma	Brazil	366568,47	5	2	2	0
727	5	89563	Taquari	Brazil	196867,77	5	1	0	1
728	5	89564	PE das Nascentes do Rio Taquari	Brazil	1176513,93	9	4	3	1
729	5	89566	Rio Verde de Mato Grosso	Brazil	143760,33	0	2	2	0
730	5	89569	APA Estadual Rio Cenico Rotas Moncoeiras-Rio Coxim	Brazil	735614,44	1	0	0	0
731	5	89626	Itiquira	Brazil	1038157,94	3	2	1	1

KBA	Ottobacia	COD	Name	Country	Area	Langhamer concept		Number	Number
732	5	89628	Piquiri	Brazil	447788,18	2	0	0	0
733	5	89642	Jaciara	Brazil	753507,46	5	1	1	0
734	5	89645	PE Dom Osorio Stoffel	Brazil	94982,13	2	2	2	0
735	5	89646	Terra Indigena Tadarimana	Brazil	252433,56	1	0	0	0
736	5	89649	Terra Indigena Jarudore	Brazil	613692,75	1	0	0	0
737	5	89668	Santo Antonio do Leverger	Brazil	35286,19	2	0	0	0
738	5	89674	Arica-acu	Brazil	169275,31	8	9	9	0
739	5	89675	PN da Chapada dos Guimaraes	Brazil	576667,35	11	13	10	3
740	5	89679	Cuiaba	Brazil	134196,81	2	1	0	1
741	5	89682	PE Gruta da Lagoa Azul	Brazil	56300,36	1	0	0	0
742	5	89683	Rosario Oeste	Brazil	83835,28	0	1	0	1
743	5	89684	Marzagao	Brazil	59503,57	1	1	0	1
744	5	89686	Agua Fina	Brazil	48197,38	1	0	0	0
745	5	89687	PE Aguas de Cuiaba	Brazil	31382,91	1	0	0	0
746	5	89688	Cuiaba do Bonito	Brazil	43330,73	1	0	0	0
747	5	89691	Manso	Brazil	142520,29	6	0	0	0
748	5	89692	Nova Brasilandia	Brazil	417384,47	2	1	1	0
749	5	89694	APA Estadual da Chapada dos Guimaraes	Brazil	166913,93	19	14	14	0
750	5	89696	Casca	Brazil	115965,82	1	0	0	0
751	5	89698	Jangada	Brazil	62248,63	0	1	1	0
752	5	89699	Chapada dos Guimaraes	Brazil	86793,21	1	0	0	0
753	5	89922	TQ Mata Cavalo	Brazil	521067,24	1	0	0	0
754	5	89926	Mata Grande	Brazil	111828,60	1	0	0	0
755	5	89929	Sangradouro	Brazil	227833,06	2	0	0	0
756	5	89949	Terra Indigena Figueiras	Brazil	420511,40	0	1	1	0
757	5	89969	Cabacal	Brazil	57422,19	0	1	0	1
758	5	89986	Tangara da Serra	Brazil	61661,56	0	1	1	0
759	5	89991	EE Serra das Araras	Brazil	410257,03	4	0	0	0
760	5	89997	Terra Indigena Umutina	Brazil	16753,22	0	1	1	0
761	5	89999	APA Nascentes do Rio Paraguai	Brazil	373149,65	3	0	0	0
762	X	BO020	Noel Kempff Mercado	Bolivia	2251080,00	7	0	0	0
763	X	PY013	Cerrados de Concepción	Paraguay	129805,00	7	0	0	0
764	X	PY012	Estancia Estrella	Paraguay	10954,00	1	0	0	0
765	X	PY014	Arroyo Tagatiya	Paraguay	31566,00	5	0	0	0

Table 2.2. Terrestrial KBA Raw Data for Threatened Fauna

KBA	Ottobacia	COD	Name	Threatened Fauna #					
				National Brazil List- MMA			IUCN		
				Vulnerable	Endangered	Critically Endangered	Vulnerable	Endangered	Critically Endangered
1	56	1	Goiatins	0	0	0	0	0	0
2	56	2	Tres Barras	0	0	0	0	0	0
3	56	3	Aguas do Paulista	0	0	0	0	0	0
4	56	4	Nova Nazare	0	0	0	0	0	0
5	56	5	Natalandia	0	0	0	0	0	0
6	56	6	Unai de Minas	0	0	0	0	0	0
7	56	7	Campinacu	0	0	0	0	0	0
8	56	8	Delgado	0	0	0	0	0	0
9	56	9	Canarana	0	0	0	0	0	0
10	56	10	Aldeia	0	0	0	0	0	0
11	56	11	PE Serra de Sonora	0	0	0	0	0	0
12	56	12	Agua Clara	0	0	0	0	0	0
13	56	13	Paranatinga	0	0	0	0	0	0
14	56	14	Sao Felipe	0	0	0	0	0	0
15	56	15	Man-Azde	0	0	0	0	0	0
16	4	657	Araguaia	0	0	0	0	0	0
17	4	6455	Sao Valerio	0	0	0	0	0	0
18	4	6475	Corriola	0	0	1	0	0	0
19	4	6492	Sao Patricio	0	0	0	0	0	0
20	4	6545	Lajeado	1	0	0	0	0	0
21	4	6591	Santana do Araguaia	0	0	0	0	0	0
22	4	6642	Lagoa da Confusao	1	0	0	0	0	0
23	4	6653	Javaes	0	0	0	0	0	0
24	4	6691	Terra Indigena Kraho-Kanela	0	0	0	0	0	0
25	4	6771	Santa Terezinha	0	0	0	0	0	0
26	4	6773	Aldeia Caraja	2	0	0	1	0	0
27	4	6811	Rio das Mortes	1	0	0	0	0	0
28	4	6828	Piabanha	0	0	0	0	0	0
29	4	6839	Rio dos Patos	1	0	0	0	0	0
30	4	6844	Zacarias	1	0	0	1	0	0
31	4	6847	Insula	0	0	0	0	0	0
32	4	6871	Nova Xavantina	4	1	0	1	1	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
33	4	6882	Suspiro	0	0	0	0	0	0
34	4	6892	Perdidos	0	0	0	0	0	0
35	4	6917	APA Meandros do Rio Araguaia	0	0	0	0	0	0
36	4	6918	Ribeirao Sao Domingos	0	0	0	0	0	0
37	4	6938	Corixo do Cascavel	1	0	0	0	0	0
38	4	6959	Registro do Araguaia	1	0	0	1	1	1
39	4	6966	Rio Bonito	0	0	0	0	0	0
40	4	7483	Joao Pinheiro	0	1	0	0	0	0
41	4	7587	Josenopolis	0	0	0	0	0	0
42	4	7588	Parque Estadual Grao Mogol	0	0	0	1	0	0
43	5	42699	Mariana	0	0	0	0	0	0
44	5	42728	Suiazinho	0	0	0	0	0	0
45	5	42964	Ribeirao Agua Limpa	0	0	0	0	1	0
46	5	42968	Queimada	0	0	0	0	0	0
47	5	42969	Sete de Setembro	0	0	0	1	0	0
48	5	42977	Culuene	0	0	0	0	0	0
49	5	42986	Couto de Magalhaes	1	0	0	0	0	0
50	5	44483	Rio Verde	0	0	0	0	0	0
51	5	44493	APA do Salto Magessi	0	0	0	0	0	0
52	5	44496	Piabas	0	0	0	0	0	0
53	5	44649	Tapurah	0	0	0	0	0	0
54	5	44658	Marape	0	0	0	0	0	0
55	5	44676	Caju Doce	0	0	0	0	0	0
56	5	44688	Agua Verde	0	0	0	0	0	0
57	5	44692	Nova Mutum	0	0	0	0	0	0
58	5	44694	Tres Lagoas	0	0	0	0	0	0
59	5	44696	Rio Preto	0	0	0	0	0	0
60	5	44698	Arinos	0	0	0	0	0	0
61	5	44829	Cravari	0	0	0	0	0	0
62	5	44888	Campo Novo do Parecis	0	0	0	0	0	0
63	5	44946	Terra Indigena Utiariti	0	0	0	0	0	0
64	5	44954	Terra Indigena Enawene-Nawe	1	0	0	0	0	0
65	5	44962	Estacao Ecologica de Ique	0	1	0	0	0	0
66	5	44969	Terra Indigena Pirineus de Souza	0	0	0	0	0	0
67	5	44981	Estacao do Juruena	0	1	0	0	0	0
68	5	44983	Juruena	0	0	0	0	0	0
69	5	44992	Campos de Julio	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
70	5	46299	Terra Indigena Parque do Aripuana	0	0	0	0	0	0
71	5	64113	RESEX Extremo Norte do Estado do Tocantins	0	0	0	0	0	0
72	5	64159	Cachoeira Santana	1	0	0	0	0	0
73	5	64171	Xupe	1	0	0	0	0	0
74	5	64181	Farinha	0	1	0	1	0	0
75	5	64182	Cancela	0	0	0	0	0	0
76	5	64183	Parque Nacional Chapada das Mesas	1	0	0	0	0	0
77	5	64193	Carolina	1	0	0	0	0	0
78	5	64197	Urupuchote	0	0	0	1	0	0
79	5	64225	Rio Itapicuru	0	0	0	1	1	0
80	5	64234	Salobro	0	0	0	1	0	0
81	5	64252	Ribeirao do Maranhao	1	0	0	0	0	0
82	5	64261	Santa Filomena	0	0	0	0	0	0
83	5	64262	Estevao	0	0	0	0	0	0
84	5	64292	Ribeirao Tabocas	0	0	0	1	0	0
85	5	64298	Rio Bonito do Tocantins	0	0	0	0	0	0
86	5	64311	Monumento Natural das Arvores Fossilizadas	0	0	0	1	0	0
87	5	64318	Cana-brava	1	0	0	0	0	0
88	5	64319	Santarosa	1	0	0	0	0	0
89	5	64346	Nova Olinda	1	0	0	0	0	0
90	5	64369	Mato Grande	0	0	0	0	0	0
91	5	64373	Panela de Ferro	0	0	0	0	0	0
92	5	64376	Agua Fria	0	0	0	0	0	0
93	5	64378	Tranqueira	0	0	0	0	0	0
94	5	64429	Perdida	1	1	0	0	0	0
95	5	64444	Ponte Alta	0	0	0	0	1	0
96	5	64447	Pindorama do Tocantins	0	0	0	0	0	0
97	5	64449	Almas	0	0	0	1	0	0
98	5	64454	Soninho	0	1	0	2	0	0
99	5	64459	APA do Jalapao	0	0	0	0	0	0
100	5	64464	Parque Estadual do Jalapao	3	2	1	1	0	0
101	5	64466	Brejao do Jalapao	0	1	1	1	1	0
102	5	64471	Desabuso	0	0	1	0	0	0
103	5	64473	Rio Novo	0	0	1	0	0	0
104	5	64476	Frito gado	0	1	1	0	1	0
105	5	64477	Cortapena	0	0	0	0	0	0
106	5	64478	Toca	0	2	1	2	1	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
107	5	64479	Esteneu	3	0	1	1	1	0
108	5	64483	Jorge	0	0	0	0	0	0
109	5	64487	Verde do Tocantins	0	0	0	0	0	0
110	5	64491	Rio da Volta	0	0	0	1	1	0
111	5	64492	Mateiros	0	0	1	0	1	0
112	5	64493	Pedra de Amolar	0	0	1	1	1	0
113	5	64496	Come Assado	0	0	0	0	0	0
114	5	64497	Galhao	0	0	0	0	0	0
115	5	64513	Parque Estadual do Lajeado	0	0	0	0	0	0
116	5	64514	Santa Luzia	0	0	0	0	0	0
117	5	64515	Taquaracu	4	1	0	2	1	0
118	5	64516	APA Lago de Palmas	0	0	0	0	0	0
119	5	64517	Porto Nacional	0	1	0	2	1	0
120	5	64519	Rio Tocantins	1	0	0	0	0	0
121	5	64521	Brejinho de Nazare	1	0	0	0	0	0
122	5	64524	Alianca do Tocantins	0	0	0	1	0	0
123	5	64539	Surubim	0	0	0	0	0	0
124	5	64541	Apinage	0	0	0	1	0	0
125	5	64542	Pedras	0	0	0	0	0	0
126	5	64544	Rocinha	0	0	0	0	0	0
127	5	64545	Natividade	0	0	0	0	0	0
128	5	64546	Dianopolis	0	0	0	0	0	0
129	5	64548	Itaboca	0	0	0	0	0	0
130	5	64549	Manuel Alves	0	0	0	0	1	0
131	5	64561	Santo Antonio do Tocantins	0	0	0	0	0	0
132	5	64562	Taipoca	0	0	0	0	0	0
133	5	64584	Talisma	0	0	0	0	0	0
134	5	64588	Santa Teresa	0	1	0	0	0	0
135	5	64589	Rio do Ouro	0	0	0	0	0	0
136	5	64593	APA Foz do Rio Santa Tereza	1	0	0	1	0	0
137	5	64596	Rio das Almas	0	0	0	0	0	0
138	5	64621	Palma	0	0	0	0	0	0
139	5	64622	Arraias	0	0	0	1	0	0
140	5	64623	Pau d'arco	0	0	0	0	0	0
141	5	64624	Novo Jardim	1	0	0	0	0	0
142	5	64626	Corcunda	0	0	0	0	0	0
143	5	64628	Sobrado	1	0	0	1	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
144	5	64629	Lavandeira	1	0	0	0	0	0
145	5	64631	Quebra-coco	1	0	0	0	0	0
146	5	64633	TQ Kalungas	0	0	0	1	0	0
147	5	64634	Montes Claros	0	0	0	0	0	0
148	5	64636	Maquine	0	0	0	0	1	0
149	5	64637	Sucuri	1	0	0	0	0	0
150	5	64638	Sao Bartolomeu	0	0	1	0	0	0
151	5	64642	Floresta Nacional da Mata Grande	0	0	0	0	0	0
152	5	64644	Calheiros	2	0	1	1	1	0
153	5	64649	Divinopolis de Goias	0	0	0	0	0	0
154	5	64651	Nova Roma	0	0	2	0	0	0
155	5	64653	Morro Alto	1	0	0	0	0	0
156	5	64654	Parque Estadual de Terra Ronca	0	0	1	0	1	0
157	5	64655	Guatacaba	0	0	1	0	0	0
158	5	64658	Macacao	0	1	2	0	1	0
159	5	64662	Santa Maria	0	0	0	0	0	0
160	5	64664	Baco Pari	0	0	1	0	0	0
161	5	64665	Rio Corrente	0	0	0	0	0	0
162	5	64666	Buriti	1	0	0	0	0	0
163	5	64668	APA das Nascentes do Rio Vermelho	0	0	0	0	0	0
164	5	64669	Sitio da Abadia	0	0	0	1	0	0
165	5	64676	Rio dos Macacos	0	0	0	0	0	0
166	5	64677	Flores de Goias	1	0	0	0	0	0
167	5	64682	Extrema	0	0	0	0	0	0
168	5	64689	Rio Paraim	0	0	0	0	0	0
169	5	64694	Sao Joao d'Alianca	0	0	0	0	0	0
170	5	64695	Crixas	0	0	0	0	0	0
171	5	64699	Entorno de Brasilia	0	0	0	0	0	0
172	5	64711	APA Lago de Peixe-Angical	0	0	0	0	0	0
173	5	64725	Cana-brava de Minacu	1	0	0	0	0	0
174	5	64733	Cavalcante	0	0	0	0	0	0
175	5	64735	Ribeirao Bonito	0	0	0	1	0	0
176	5	64736	Minacu	0	0	0	0	0	0
177	5	64737	Sao Felix	0	1	0	0	0	0
178	5	64738	Laranjal	0	0	0	0	1	0
179	5	64739	Preto	0	0	0	0	0	0
180	5	64741	Serra do Tombador	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
181	5	64742	Sao Bento	0	0	0	0	0	0
182	5	64744	Parque Nacional da Chapada dos Veadeiros	2	4	1	4	2	0
183	5	64746	Corrego Areia	0	0	0	0	0	0
184	5	64747	Muquem	0	0	0	0	0	0
185	5	64748	Ribeirao Santana	5	3	1	2	2	0
186	5	64749	Rio Claro	0	0	0	0	0	0
187	5	64761	Tocantizinho	0	0	1	1	0	0
188	5	64762	Couros	0	0	1	0	0	0
189	5	64764	Morro Tira-chapeu	0	0	0	0	0	0
190	5	64765	Cachoeirinha	0	0	0	0	0	0
191	5	64766	Picarrao	0	0	0	0	0	0
192	5	64768	RPPN Fazenda Branca Terra dos Anões	0	0	0	0	1	0
193	5	64769	Corrego Roncador	2	0	0	0	1	0
194	5	64774	Prata Grande	0	0	0	0	0	0
195	5	64781	Niquelandia	0	0	0	0	0	0
196	5	64782	Bacalhau	0	0	0	1	0	0
197	5	64783	Santa Rita	0	0	0	0	0	0
198	5	64784	Ribeirao Conceicao	0	0	0	0	0	0
199	5	64786	Serra do Passanove	0	0	0	0	0	0
200	5	64791	Rio Palmeira	0	0	0	0	0	0
201	5	64792	Bilhagua	0	0	0	0	0	0
202	5	64797	Rio da Mula	0	0	0	0	0	0
203	5	64798	Passa-tres	0	0	0	1	0	0
204	5	64799	Cafe	0	0	0	1	0	0
205	5	64811	Ribeirao Ponte Alta	0	0	0	0	0	0
206	5	64812	Ribeirao da Laguna	0	0	0	0	0	0
207	5	64815	Cocal	0	0	0	0	0	0
208	5	64821	Patos	0	0	0	0	0	0
209	5	64829	Forquilha	0	0	0	0	0	0
210	5	64841	Pensao Sao Miguel	0	0	0	0	0	0
211	5	64847	Jacare	0	0	0	0	0	0
212	5	64848	Sardinha	0	1	0	0	0	0
213	5	64849	Joao Alves	0	0	0	0	0	0
214	5	64854	RPPN Fazenda Cachoeirinha	0	1	0	0	0	0
215	5	64862	Padre Bernardo	0	0	0	0	0	0
216	5	64866	Rio dos Bois	0	0	0	0	0	0
217	5	64883	Mucungo	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
218	5	64889	Arraial Velho	0	0	0	0	0	0
219	5	64892	APA de Cafuringa	0	1	0	0	0	0
220	5	64894	Corrego Fundo	0	0	0	0	0	0
221	5	64898	Monumento Natural do Conjunto Espeleologico do Morro da Pedreira	0	1	0	0	0	0
222	5	64899	Reserva Biologica da Contagem	3	4	0	2	2	0
223	5	64915	Lavrinha	0	0	0	1	0	0
224	5	64916	Lajes	0	1	0	1	0	0
225	5	64941	Rialma	0	0	0	0	0	0
226	5	64946	Irmaos	0	0	0	0	0	0
227	5	64949	Serra do Cocalzinho	0	0	0	0	0	0
228	5	64982	Canastra	0	0	0	0	0	0
229	5	64986	Uru	0	0	1	0	0	0
230	5	64995	Jaragua	0	0	0	0	0	0
231	5	64996	Parque Estadual da Serra de Jaragua	0	0	0	0	1	0
232	5	64998	APA da Serra dos Pireneus	0	0	0	0	0	0
233	5	64999	Padre Souza	0	0	0	0	0	0
234	5	65116	Piranhas	1	0	0	0	0	0
235	5	65374	Lagoa Preta	0	0	0	0	0	0
236	5	65392	Jenipapo	1	0	0	0	0	0
237	5	65415	APA Ilha do Bananal-Cantao	0	0	0	1	0	0
238	5	65585	Rio Caiapo	1	0	0	0	0	0
239	5	65587	Grotao	1	0	0	0	1	0
240	5	65589	Ribeirao Grande	4	0	0	0	0	0
241	5	65811	Furo do Coco	1	0	0	0	0	0
242	5	65852	Murici	1	0	0	0	0	0
243	5	65855	Rio do Coco	2	0	0	0	0	0
244	5	65972	Furo da Gameleira	7	0	2	1	0	0
245	5	65973	Cicice	2	0	0	0	0	0
246	5	66224	Parque Nacional do Araguaia	7	1	0	2	0	0
247	5	66227	Ariari	1	0	0	0	0	0
248	5	66234	Pium	1	0	0	0	0	0
249	5	66254	Terra Indigena Parque do Araguaia	1	0	0	0	0	0
250	5	66256	Ipuca do Riozinho	1	0	0	0	0	0
251	5	66257	Ilha de Santa Anna	0	0	0	0	0	0
252	5	66261	Riozinho	2	0	0	0	0	0
253	5	66467	Cristalandia	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
254	5	66623	Urubu	1	0	0	0	0	0
255	5	66668	Sandolandia	0	0	0	0	0	0
256	5	66696	Baiao	0	0	0	0	0	0
257	5	66821	Urubu Grande	1	0	0	0	0	0
258	5	66925	Xavante	1	0	0	0	0	0
259	5	66951	Escuro	0	0	0	0	0	0
260	5	67821	Xavantinho	0	0	0	0	0	0
261	5	67822	Terra Indigena Maraiwatsede	0	0	0	0	0	0
262	5	67966	Terra Indigena Cacique Fontoura	0	0	0	0	0	0
263	5	67973	Santa Izabel do Morro	0	0	0	1	0	0
264	5	68141	Novo Santo Antonio	0	0	0	0	0	0
265	5	68255	Sao Joao Grande	1	0	0	0	0	0
266	5	68311	Ribeirao Cascalheira	1	0	0	0	0	0
267	5	68334	Terra Indigena Pimentel Barbosa	0	0	0	1	0	0
268	5	68351	RVS Quelonios do Araguaia	1	0	0	0	0	0
269	5	68353	Cocalinho	4	0	0	0	0	0
270	5	68382	Angico	0	0	0	0	0	0
271	5	68389	Terra Indigena Areoes	0	0	0	0	0	0
272	5	68461	Pindaiba	1	0	0	0	0	0
273	5	68463	Barra do Garças	0	0	0	0	0	0
274	5	68464	Galheiro	0	0	0	0	0	0
275	5	68486	Cava Funda	0	0	0	0	0	0
276	5	68489	PE da Serra Azul	0	0	0	0	0	0
277	5	68497	Corrente	0	0	0	0	0	0
278	5	68622	Cachoeira	1	0	0	0	0	0
279	5	68681	Jau	1	0	0	0	0	0
280	5	68685	Agua Boa	0	0	0	0	0	0
281	5	68695	Areao	0	0	0	0	0	0
282	5	68732	Dom Bosco	0	0	0	0	0	0
283	5	68748	Terra Indigena Sao Marcos	0	0	0	0	0	0
284	5	68756	Paredao Grande	0	0	0	0	0	0
285	5	68757	General Carneiro	1	0	0	0	0	0
286	5	68993	Engano	0	0	0	0	0	0
287	5	68998	Agua Azul	0	0	0	0	0	0
288	5	69133	PE do Araguaia	1	0	0	0	0	0
289	5	69159	Formoso do Araguaia	1	0	0	0	0	0
290	5	69163	APA dos Meandros do Rio Araguaia	1	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
291	5	69166	Chapeu	1	0	0	0	0	0
292	5	69167	Cristalino	1	0	0	0	0	0
293	5	69169	Mata do Inferno	1	0	0	0	0	0
294	5	69223	Crixas-mirim	0	0	0	1	0	0
295	5	69249	Pintado	0	0	0	0	0	0
296	5	69262	Bonopolis	2	0	0	0	0	0
297	5	69286	Barreiro	0	0	0	0	0	0
298	5	69294	Ribeirao d'Anta	0	0	0	1	0	0
299	5	69295	Crixas-acu	0	0	0	0	0	0
300	5	69441	Tesouras	0	0	0	1	0	0
301	5	69443	Alagado	0	0	0	1	0	0
302	5	69449	Braco do Mato	0	0	0	0	0	0
303	5	69462	Pinguela	0	0	0	0	0	0
304	5	69488	Alagadinho	0	0	0	0	0	0
305	5	69494	Cavalo Queimado	0	0	0	0	0	0
306	5	69513	Aruana	1	0	0	0	0	0
307	5	69514	Medio Araguaia	1	0	0	0	0	0
308	5	69516	Brejao	0	0	0	1	0	0
309	5	69519	Terra Indigena Karaja de Aruana	1	0	0	0	0	0
310	5	69521	RPPN Boca da Mata	1	0	0	1	0	0
311	5	69523	Matrincha	0	0	0	0	0	0
312	5	69529	APA da Serra Dourada	1	0	1	2	1	0
313	5	69568	PE da Serra Dourada	0	0	0	0	0	0
314	5	69582	Dom Bill	0	0	0	0	0	0
315	5	69626	Bom Jardim	0	0	0	0	0	0
316	5	69627	Retiro das Piranhas	0	0	0	0	0	0
317	5	69629	Pantano	0	0	0	0	0	0
318	5	69698	Sao Jose	0	0	0	0	0	0
319	5	69811	APA Estadual Pe da Serra Azul	1	0	0	0	0	0
320	5	69861	Bandeira	0	0	0	0	0	0
321	5	69866	Guiratinga	0	0	0	0	0	0
322	5	69886	Alto Garcas	0	0	0	0	0	0
323	5	69946	Sucupira	1	0	0	0	0	0
324	5	69954	Sao Joao	0	0	0	0	0	0
325	5	69966	Diamantino	0	0	0	0	0	0
326	5	69981	Babilonia	0	0	0	0	0	0
327	5	69984	Empantanado	0	0	0	0	1	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
328	5	69985	Mineiros	0	0	0	0	0	0
329	5	69989	Jacu	2	0	0	0	0	0
330	5	69993	Alto Araguaia	0	1	0	0	1	0
331	5	69994	Gordura	0	0	0	0	0	0
332	5	69995	Santa Rita do Araguaia	1	0	0	0	1	0
333	5	69996	Ribeirao do Sapo	1	0	0	0	0	0
334	5	69997	Zeca Nonato	3	0	0	0	1	0
335	5	69998	Queixada	2	0	0	0	0	0
336	5	69999	Araguainha	2	0	0	0	0	0
337	5	71647	Terra Indigena Geralda Toco Preto	0	0	0	0	0	0
338	5	71648	Terra Indigena Krikati	0	0	0	0	0	0
339	5	71652	Ipixuna Acu	0	0	0	0	0	0
340	5	71655	RPPN Fazenda Sao Francisco	0	0	0	0	0	0
341	5	71662	Presidente Dutra	1	0	0	0	0	0
342	5	71666	Rio das Flores	0	0	0	0	0	0
343	5	71687	Terra Indigena Porquinhos	1	0	0	0	0	0
344	5	71691	Terra Indigena Cana Brava/Guajajara	0	0	0	0	0	0
345	5	71831	Itapecuru	1	0	0	0	0	0
346	5	71842	TQ Santa Joana	1	0	0	0	0	0
347	5	71845	PN dos Lençois Maranhenses	0	0	0	0	1	0
348	5	71851	RPPN Fazenda Pantanal	1	0	0	0	0	0
349	5	71853	Itapicuru	1	0	0	0	0	0
350	5	71855	Cajazeira	1	0	0	0	0	0
351	5	71866	Inhumas	0	0	0	0	0	0
352	5	71874	Baixao do Bandeira	0	0	0	0	0	0
353	5	71875	Fortuna	0	0	0	0	0	0
354	5	71884	Mirador	0	0	0	0	0	0
355	5	71886	Alpercatinha	0	0	0	0	1	0
356	5	71899	PE de Mirador	1	0	0	0	0	0
357	5	71929	APA dos Morros Garapenses	0	0	0	0	0	0
358	5	71942	APA Upaon-Açu/Miritiba/Alto Preguicas	0	1	0	0	0	0
359	5	72121	RPPN Fazenda Centro	0	0	0	0	0	0
360	5	72168	Caraiba	0	0	0	0	0	0
361	5	72196	Riachao	0	0	0	0	0	0
362	5	72211	FN de Palmares	2	0	0	0	0	0
363	5	72314	Timon	0	0	0	0	0	0
364	5	72347	Sao Francisco do Maranhao	1	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
365	5	72349	Sucupira do Riachao	0	0	0	0	0	0
366	5	72411	Caninde	1	0	0	0	0	0
367	5	72549	PN da Serra das Confusoes	2	0	0	0	0	0
368	5	72556	Floriano	0	0	0	0	0	0
369	5	72632	Coqueiro	1	0	0	0	0	0
370	5	72643	Riacho de Sant'Ana	0	0	0	1	0	0
371	5	72646	Baliza	0	0	0	0	0	0
372	5	72653	Paraim	0	0	0	1	0	0
373	5	72656	Matoes	0	0	0	0	0	0
374	5	72669	Gurgueia	0	0	0	1	0	0
375	5	72681	APA do Rangel	0	0	0	0	0	0
376	5	72686	Vereda Uniao	0	0	0	0	0	0
377	5	72693	Riacho Frio	2	0	0	0	0	0
378	5	72695	Parnagua	1	0	0	0	0	0
379	5	72696	Malhada da Barra	1	0	0	1	0	0
380	5	72699	Sebastiao Barros	0	0	0	1	0	0
381	5	72724	Cardoso	0	0	0	0	0	0
382	5	72729	Prata	0	0	0	1	0	0
383	5	72733	Riacho do Belem	1	0	0	0	1	0
384	5	72786	Curimata	0	0	0	0	0	0
385	5	72797	Urucui	1	0	0	0	0	0
386	5	72816	Santa Isabel	0	0	0	0	0	0
387	5	72817	Balsas	0	0	0	0	0	0
388	5	72818	Gameleira	0	0	0	0	0	0
389	5	72819	Riacho dos Picos	1	0	0	0	0	0
390	5	72829	Fortaleza dos Nogueiras	0	0	0	0	0	0
391	5	72834	Coite	1	0	0	0	0	0
392	5	72862	Rio Maravilha	0	0	0	0	0	0
393	5	72871	Santo Antonio de Balsas	0	0	0	0	1	0
394	5	72872	Gado Bravo	0	0	0	1	0	0
395	5	72876	Novo Recreio	0	0	0	0	0	0
396	5	72878	Temerante	0	0	0	1	0	0
397	5	72881	Parelhas	0	0	0	0	0	0
398	5	72887	Tem medo	0	0	0	0	0	0
399	5	72889	Mandacaru	0	0	0	0	0	0
400	5	72891	Sul Maranhense	0	0	0	0	0	0
401	5	72911	Benedito Leite	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
402	5	72922	Riacho da Estiva	0	0	0	0	0	0
403	5	72929	Urucui-preto	1	1	0	1	0	0
404	5	72933	Loreto	0	0	0	1	0	0
405	5	72935	Tasso Fragoso	0	0	0	1	0	0
406	5	72946	EE de Urucui-Una	0	0	0	1	0	0
407	5	72954	Sucuruju	0	0	0	0	0	0
408	5	72963	Medonho	0	0	0	0	0	0
409	5	72982	Alto Parnaiba	0	0	0	1	0	0
410	5	72991	Cachoeira Pedra de Amolar	0	0	0	1	0	0
411	5	72992	PN das Nascentes do Rio Parnaiba	3	0	0	0	0	0
412	5	73111	Ilha Grande	1	0	0	1	0	0
413	5	73114	Luis Correia	1	0	0	0	0	0
414	5	74197	Ilha Mocambo dos Ventos	0	0	0	0	0	0
415	5	74199	APA Dunas e Veredas do Baixo e Medio Sao Francisco	1	0	0	0	0	0
416	5	74222	Cotegipe	0	0	0	0	0	0
417	5	74225	EE Rio Preto	1	0	0	0	1	0
418	5	74226	Formosa do Rio Preto	0	0	0	0	0	0
419	5	74228	APA Rio Preto	0	0	0	0	0	0
420	5	74229	Sapao	0	0	0	0	1	0
421	5	74235	Rio Grande	0	0	0	0	0	0
422	5	74237	Neves	0	0	0	0	0	0
423	5	74243	Rio de Janeiro	1	0	1	1	0	0
424	5	74244	Ponta d'agua	1	0	1	0	0	0
425	5	74245	APA Bacia do Rio de Janeiro	0	0	0	0	0	0
426	5	74255	Extremo Oeste Baiano	0	0	1	0	0	0
427	5	74261	Ondas	0	0	0	0	0	0
428	5	74262	Cabeceira das Lajes	0	0	0	0	0	0
429	5	74263	Tabocas	0	0	0	0	0	0
430	5	74264	Cabeceira de Pedras	0	0	1	1	0	0
431	5	74269	Bora	0	0	0	0	0	0
432	5	74272	Boa Sorte	0	0	0	0	0	0
433	5	74278	FN de Cristopolis	0	0	0	0	0	0
434	5	74281	Vereda Anastacio	0	0	1	0	0	0
435	5	74282	Sao Desiderio	0	0	0	0	0	0
436	5	74283	Porcos	0	0	1	0	0	0
437	5	74292	Triste e Feio	0	0	0	0	0	0
438	5	74317	Ilha da Pica Grande	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
439	5	74332	Vereda da Canoa	0	0	0	0	0	0
440	5	74394	Serra Dourada	0	0	0	0	0	0
441	5	74397	Ilha da Bananeira	0	0	0	0	0	0
442	5	74411	Sitio do Mato	0	1	0	0	0	0
443	5	74413	Terra Indigena Vargem Alegre	0	0	0	0	0	0
444	5	74414	Pedra Branca	0	0	0	0	0	0
445	5	74415	Santana	0	0	1	0	0	0
446	5	74418	Coribe	0	0	0	0	0	0
447	5	74419	Sao Felix do Coribe	0	0	1	0	0	0
448	5	74421	Rio Formoso	0	0	0	0	0	0
449	5	74422	Alegre	1	0	1	0	0	0
450	5	74423	Jaborandi	0	1	0	0	0	0
451	5	74424	Rodeador	0	0	1	0	0	0
452	5	74426	Vau	0	0	1	0	0	0
453	5	74428	Pratudao	1	1	1	0	0	0
454	5	74429	RVS das Veredas do Oeste Baiano	1	0	1	0	0	0
455	5	74441	Arrojado	0	0	0	0	0	0
456	5	74444	Arrojadinho	2	1	0	0	0	0
457	5	74447	Correntina	0	1	1	1	1	0
458	5	74454	Santa Maria da Vitoria	0	0	0	0	0	0
459	5	74461	Guara	0	0	1	1	1	0
460	5	74471	Riacho de Pedra	0	0	0	0	0	0
461	5	74473	Rio Guara	0	0	0	0	0	0
462	5	74476	Santo Antonio	0	0	0	0	0	0
463	5	74478	Rio dos Angicos	0	0	0	0	0	0
464	5	74485	Riacho do Mato	0	0	0	0	0	0
465	5	74512	TQ Lagoa das Piranhas	0	0	0	0	0	0
466	5	74521	TQ Nova Batalhinha	0	0	0	0	0	0
467	5	74532	Riacho de Mariape	0	0	0	0	0	0
468	5	74544	Lagoas	0	0	0	0	0	0
469	5	74572	Madrugao	0	0	0	0	0	0
470	5	74581	Cariranha	0	0	0	0	0	0
471	5	74582	APA Cocha e Gibao	0	0	0	0	0	0
472	5	74583	Feira da Mata	0	0	0	0	0	0
473	5	74584	PN Grande Sertao Veredas	3	2	0	0	0	0
474	5	74586	Cocos	0	0	1	0	0	0
475	5	74588	Riacho do Meio	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
476	5	74589	Itaguari	0	0	1	0	0	0
477	5	74596	Calindo	1	0	0	0	0	0
478	5	74622	Aurelio	0	0	0	0	0	0
479	5	74642	Furado Novo	0	1	0	0	0	0
480	5	74646	PE Caminho das Gerais	0	0	0	0	0	0
481	5	74648	Porteirinha	1	0	0	0	0	0
482	5	74649	Gorutuba	0	0	0	0	0	0
483	5	74652	Corrego Escuro	0	0	0	0	0	0
484	5	74654	Macaubas	0	0	0	0	0	0
485	5	74655	Verde Grande	0	0	0	0	0	0
486	5	74668	Quem-quem	0	0	0	0	0	0
487	5	74692	Agua Limpa	0	0	0	0	0	0
488	5	74695	Capitao Eneas	0	0	0	0	0	0
489	5	74697	Vacabrava	0	0	0	0	0	0
490	5	74699	Juramento	0	0	0	0	0	0
491	5	74711	PE Lagoa do Cajueiro	1	0	0	0	0	0
492	5	74712	RB Serra Azul	2	1	0	0	0	0
493	5	74714	PE Veredas do Peruacu	2	1	0	0	0	0
494	5	74715	PN Cavernas do Peruacu	1	1	0	1	0	0
495	5	74717	Cochos	0	0	0	1	0	0
496	5	74718	Japonvar	0	0	0	0	0	0
497	5	74721	Pandeiros	0	1	0	0	0	0
498	5	74727	APA Pandeiros	0	0	0	0	0	0
499	5	74734	RVS Rio Pandeiros	0	0	0	0	0	0
500	5	74744	Sao Joaquim	0	1	0	0	0	0
501	5	74747	PE Serra das Araras	0	0	0	0	0	0
502	5	74749	Chapada Gaucha	1	0	0	0	0	0
503	5	74752	Lagoa da Vaqueta	0	0	0	0	0	0
504	5	74755	Sao Francisco	0	0	0	1	0	0
505	5	74772	Pintopolis	0	0	0	0	0	0
506	5	74781	Urucuia	0	0	0	0	0	0
507	5	74782	Conceicao	1	1	0	0	0	0
508	5	74783	Ribeirao dos Confins	1	0	0	1	0	0
509	5	74784	EE Sagarana	2	1	0	1	1	0
510	5	74785	Pacari	1	0	0	1	0	0
511	5	74786	Formoso	0	0	0	1	0	0
512	5	74789	Serra da Sacada	0	0	0	1	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
513	5	74795	Sao Romao	0	0	0	1	0	0
514	5	74798	Campo Azul	0	0	0	0	0	0
515	5	74822	Garitas	0	0	0	0	0	0
516	5	74846	Roncador	0	0	0	0	0	0
517	5	74847	Unai	1	0	0	1	1	0
518	5	74848	Bezerra	2	0	0	0	0	0
519	5	74849	APA do Planalto Central	0	0	0	0	1	0
520	5	74862	Vereda Grande	0	0	0	1	0	0
521	5	74868	TQ Amaros	0	1	0	0	0	0
522	5	74873	Ribeirao Bezerra	0	1	0	0	0	0
523	5	74878	RPPN Morro da Cruz das Almas	0	1	0	1	0	0
524	5	74889	Presidente Olegario	0	0	0	0	0	0
525	5	74892	Ribeirao Santa Catarina	1	0	0	0	1	0
526	5	74894	PE de Paracatu	0	0	0	0	0	0
527	5	74896	Guarda-mor	0	0	1	0	0	0
528	5	74918	Barro	0	0	0	0	0	0
529	5	74923	Jequitai	0	1	0	0	0	0
530	5	74925	Francisco Dumont	0	1	0	0	0	0
531	5	74927	Areia	0	1	0	0	0	0
532	5	74928	Imbalacaia	0	0	0	1	0	0
533	5	74929	PN das Sempre-Vivas	1	0	0	0	0	0
534	5	74941	Velhas	2	1	0	0	0	0
535	5	74942	Bicudo	0	0	0	0	0	0
536	5	74944	PE da Serra do Cabral	0	0	0	0	0	0
537	5	74945	Jabuticaba	0	0	0	0	0	0
538	5	74946	Pardo Grande	0	0	0	0	0	0
539	5	74947	Santo Hipolito	0	0	0	0	0	0
540	5	74948	PN da Serra do Cipo	3	2	0	2	0	0
541	5	74949	APA do Carste de Lagoa Santa	5	6	1	1	2	1
542	5	74951	Pirapora	3	1	0	3	0	0
543	5	74952	Tres Marias	0	1	0	0	0	0
544	5	74954	Tiros	0	0	0	0	0	0
545	5	74955	RPPN Fazenda Lavagem	3	0	0	0	0	0
546	5	74956	Borrachudo	0	0	0	1	0	0
547	5	74957	EE de Pirapitinga	0	0	0	1	0	0
548	5	74958	Indaia	0	0	0	0	0	0
549	5	74959	RPPN Fazenda Barrão	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
550	5	74961	Felixlandia	0	1	0	0	0	0
551	5	74963	FN de Paraopeba	0	0	0	0	0	0
552	5	74964	Inhauma	0	1	0	0	0	0
553	5	74965	APA Vargem das Flores	0	0	0	0	0	0
554	5	74984	Lambari	0	0	0	0	0	0
555	5	74985	Rio Para	0	0	0	0	0	0
556	5	74986	RPPN Fazenda Samoinho	0	0	0	0	0	0
557	5	74987	Nova Serrana	0	0	0	0	0	0
558	5	74988	Ribeirao Boa Vista	0	0	0	0	0	0
559	5	74993	Luz	0	0	0	0	0	0
560	5	74995	EE Corumba	0	1	0	0	0	0
561	5	74996	Vargem Bonita	1	0	0	1	0	0
562	5	74998	RPPN Fazenda do Lobo	3	3	1	1	1	1
563	5	75789	PE de Montezuma	0	0	0	0	0	0
564	5	75824	Setubal	0	0	0	0	0	0
565	5	75825	Berilo	0	0	0	0	0	0
566	5	75826	Capelinha	0	0	0	0	0	0
567	5	75827	Aracai	0	0	0	0	0	0
568	5	75829	PE Rio Preto	1	1	0	0	0	0
569	5	75854	Vargem da Lapa	0	0	0	0	0	0
570	5	75868	Peixe Bravo	0	0	0	0	0	0
571	5	75869	Vacaria	0	0	0	0	0	0
572	5	75891	EE Acaua	1	0	0	0	0	0
573	5	75892	Itacambira	0	0	0	0	0	0
574	5	75894	Tabatinga	0	0	0	0	0	0
575	5	75897	Olhos d'agua	0	0	0	0	0	0
576	5	75898	Caete-mirim	0	0	0	0	0	0
577	5	75899	PE Biribiri	1	1	0	0	0	0
578	5	76648	Tanque	0	0	0	0	0	0
579	5	76649	PE do Limoeiro	0	0	0	0	0	0
580	5	76684	Rio do Peixe	0	0	0	0	0	0
581	5	76689	Preto do Itambe	0	1	0	1	1	0
582	5	76692	Morro do Pilar	0	2	0	0	0	0
583	5	76693	Rio Picao	0	3	0	0	0	0
584	5	76694	PE Serra do Intendente	0	0	0	0	0	0
585	5	76698	Parauninha	0	0	0	0	0	0
586	5	76889	Bom Jesus do Amparo	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
587	5	84383	Ivinheima	0	0	0	0	0	0
588	5	84384	Nova Alvorada do Sul	0	0	0	0	0	0
589	5	84386	Terra Indigena Jatayvari	1	0	0	1	0	0
590	5	84389	Rio Brilhante	0	1	0	0	0	0
591	5	84418	Laranja Doce	0	1	0	0	0	0
592	5	84423	RPPN Fazenda Monte Alegre	0	0	0	0	0	0
593	5	84424	PE do Guartela	2	0	0	1	1	0
594	5	84425	APA da Escarpa Devoniana	0	0	0	0	0	0
595	5	84432	Paraguacu Paulista	0	0	0	0	0	0
596	5	84442	Ventania	0	0	0	0	0	0
597	5	84449	RPPN Fazenda do Tigre	2	1	0	1	1	0
598	5	84454	EE de Assis	0	0	0	0	0	0
599	5	84458	Campos Novos Paulista	1	0	0	0	0	0
600	5	84462	Alambari	2	1	0	0	0	0
601	5	84463	EE Santa Barbara	1	1	0	0	0	0
602	5	84464	EE de Avare	0	1	0	0	0	0
603	5	84465	FE Santa Barbara	0	1	0	0	0	0
604	5	84466	Claro	0	0	0	0	1	0
605	5	84468	Ribeirao das Pedras	0	0	0	0	0	0
606	5	84469	Botucatu	1	1	0	0	0	0
607	5	84482	Itaporanga	0	0	0	0	0	0
608	5	84485	Pescaria	0	0	0	0	0	0
609	5	84486	PE Vale do Codo	1	1	0	1	1	0
610	5	84488	Jaguaricatu	0	0	0	0	1	0
611	5	84489	Itarare	1	3	1	0	1	1
612	5	84491	Paranapanema	0	0	0	0	1	0
613	5	84492	EE de Itabera	0	0	0	0	0	0
614	5	84495	EE Paranapanema	0	0	0	0	0	0
615	5	84496	FN de Capao Bonito	0	1	0	0	1	0
616	5	84498	Itapetininga	3	3	0	1	0	0
617	5	84522	Inhandui	2	2	1	1	1	0
618	5	84523	Pardo	0	0	0	0	0	0
619	5	84525	Botas	0	0	0	0	0	0
620	5	84539	Parana	0	0	0	0	0	0
621	5	84541	Verde	0	0	0	0	0	0
622	5	84548	Sao Domingos	0	0	0	0	0	0
623	5	84589	Sucuriu	1	1	0	1	2	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
624	5	84618	APA Rio Batalha	0	0	0	0	0	0
625	5	84622	Sao Lourenco	1	0	0	0	0	0
626	5	84641	APA Ibitinga	0	0	0	0	0	0
627	5	84644	Itaquere	0	0	0	0	0	0
628	5	84647	Jacare-guacu	1	0	0	0	0	0
629	5	84648	Araraquara	0	0	0	0	0	0
630	5	84649	EE Itirapina	3	3	0	2	0	0
631	5	84652	Jacare-pepira	0	1	0	0	0	0
632	5	84653	Arealva	0	0	0	1	1	0
633	5	84656	FE Pederneiras	0	0	0	0	0	0
634	5	84657	Macatuba	0	0	0	0	0	0
635	5	84659	Araqua	0	0	0	0	0	1
636	5	84661	APA Corumbatai-Botucatu-Tejupa	0	1	0	0	0	0
637	5	84662	Corumbatai	3	1	0	2	0	0
638	5	84663	Piracicaba	0	0	0	0	0	0
639	5	84664	Atibaia	0	0	0	0	0	0
640	5	84665	ARIE Matao de Cosmopolis	0	0	0	0	0	0
641	5	84666	Pirapitingui	0	1	0	0	0	0
642	5	84667	Jaguari	0	0	0	0	0	0
643	5	84672	Vitoria	1	1	0	0	0	1
644	5	84674	Rio Alambari	0	0	0	0	0	0
645	5	84675	EE Barreiro Rico	0	0	0	0	0	0
646	5	84676	Peixe	0	0	0	0	0	0
647	5	84729	Sao Jose dos Dourados	0	0	0	0	0	0
648	5	84768	Inocencia	0	0	0	0	0	0
649	5	84818	Parisi	0	0	0	0	0	0
650	5	84822	Mirassolandia	0	0	0	0	0	0
651	5	84832	Verde ou Feio	0	0	0	0	0	0
652	5	84835	Sao Mateus	0	0	0	0	0	0
653	5	84841	FE de Bebedouro	0	0	0	0	1	0
654	5	84842	FE Cajuru	2	4	0	0	2	0
655	5	84843	RB de Sertaozinho	0	0	0	0	1	0
656	5	84844	EE de Jatai	0	0	0	0	0	0
657	5	84845	PE de Vassununga	4	1	0	1	1	0
658	5	84846	Jaguari-mirim	0	0	0	0	0	0
659	5	84847	RB e EE Mogi-Guaçu	0	3	0	0	1	0
660	5	84852	Uberaba	1	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
661	5	84863	Sapucai	0	2	0	1	1	0
662	5	84864	Batatais	0	1	0	1	0	0
663	5	84865	Franca	0	0	0	1	0	0
664	5	84866	Santa Barbara	0	0	0	0	0	0
665	5	84868	RB Sao Sebastiao do Paraiso	0	0	0	0	0	0
666	5	84869	Tomba-perna	0	0	0	0	0	0
667	5	84872	Solapao	0	0	0	0	0	0
668	5	84873	PE das Furnas do Bom Jesus	1	0	1	1	1	1
669	5	84875	Sacramento	0	0	0	0	0	0
670	5	84876	PN da Serra da Canastra	4	3	1	1	1	0
671	5	84877	Cassia	0	0	0	0	0	0
672	5	84879	Alpinopolis	2	1	0	0	0	0
673	5	84881	PE Serra da Boa Esperanca	0	0	0	0	0	0
674	5	84891	Guape	0	0	0	0	0	0
675	5	84892	Formiga	0	0	0	0	0	0
676	5	84912	Rio da Prata	0	0	0	1	1	0
677	5	84914	PN das Emas	13	5	1	4	3	0
678	5	84916	Serranopolis	1	3	0	1	3	0
679	5	84918	Jatai	1	0	0	0	0	0
680	5	84924	Ituiutaba	0	0	0	0	0	0
681	5	84925	Tijuco	0	0	0	0	0	0
682	5	84926	Monte Alegre de Minas	0	0	0	0	0	0
683	5	84928	Douradinho	0	0	0	0	0	0
684	5	84944	PE de Parauna	2	0	1	0	0	0
685	5	84946	Turvo	0	0	0	0	0	0
686	5	84949	APA Serra da Jiboia	0	0	0	0	0	0
687	5	84951	Campanha	0	0	0	0	0	0
688	5	84952	APA Joao Leite	1	3	0	1	0	0
689	5	84962	Piracanjuba	0	0	0	0	0	0
690	5	84963	PE da Serra de Caldas Novas	1	1	0	0	0	0
691	5	84964	Bois	0	0	0	0	0	0
692	5	84966	FN de Silvania	0	1	0	0	0	0
693	5	84967	Corumba	0	0	0	0	0	0
694	5	84968	EE do Jardim Botanico	7	6	1	3	2	0
695	5	84969	RB e PE do Descoberto	1	2	0	0	1	0
696	5	84982	Uberabinha	0	0	0	1	0	0
697	5	84983	PE Pau Furado	0	0	0	1	1	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
698	5	84984	Araguari	0	1	0	1	1	0
699	5	84985	RPPN Galheiros	1	1	0	2	0	0
700	5	84986	Capivara	1	1	0	0	0	0
701	5	84987	Misericordia	0	0	1	1	0	0
702	5	84988	Campos Altos	0	0	0	0	0	0
703	5	84992	Verissimo	0	0	0	0	0	0
704	5	84993	Cascalho Rico	1	2	0	1	1	0
705	5	84994	Monte Carmelo	0	0	0	1	0	0
706	5	84996	Dourados	0	1	0	1	0	0
707	5	84998	Paranaiba	0	1	0	2	0	0
708	5	84999	Sao Marcos	1	2	0	1	1	0
709	5	89161	Apa	5	0	0	0	0	0
710	5	89162	Rio Perdido	0	0	0	2	0	0
711	5	89168	Terra Indigena Nande Ru Marangatu	0	0	0	0	0	0
712	5	89176	Progresso	0	0	0	0	0	0
713	5	89191	Taruma	4	0	0	0	0	0
714	5	89195	Rio Branco	0	0	0	1	0	0
715	5	89196	Terra Indigena Kadiweu	0	0	0	0	0	0
716	5	89199	RPPN Tupaciara	0	0	0	0	0	0
717	5	89522	PN da Serra da Bodoquena	7	3	0	4	0	0
718	5	89523	RPPN Estancia Caiman	2	0	0	1	0	0
719	5	89525	Aquidauana	1	0	0	1	0	0
720	5	89526	Taquarucu	0	0	0	0	0	0
721	5	89527	APA Estadual Estrada-Parque Piraputanga	0	0	0	1	0	0
722	5	89528	Terra Indigena Buriti	0	1	0	0	0	0
723	5	89529	RPPN Fazenda Lageado	0	1	0	0	0	0
724	5	89544	TQ Furnas da Boa Sorte	1	0	0	1	0	0
725	5	89548	Rio Negro	1	0	0	1	0	0
726	5	89549	Anhuma	1	0	0	0	0	0
727	5	89563	Taquari	2	1	0	2	0	0
728	5	89564	PE das Nascentes do Rio Taquari	3	1	0	1	1	0
729	5	89566	Rio Verde de Mato Grosso	0	0	0	0	0	0
730	5	89569	APA Estadual Rio Cenico Rotas Moncoeiras-Rio Coxim	0	0	0	0	0	0
731	5	89626	Itiquira	0	0	0	0	0	0
732	5	89628	Piquiri	2	0	0	0	0	0
733	5	89642	Jaciara	0	1	0	1	1	0
734	5	89645	PE Dom Osorio Stoffel	0	0	0	1	0	0

KBA	Ottobacia	COD	Name	Threatened Fauna #					
735	5	89646	Terra Indigena Tadarimana	1	0	0	0	0	0
736	5	89649	Terra Indigena Jarudore	1	0	0	0	0	0
737	5	89668	Santo Antonio do Leverger	0	0	0	0	0	0
738	5	89674	Arica-acu	2	0	0	0	1	0
739	5	89675	PN da Chapada dos Guimaraes	3	0	1	0	1	0
740	5	89679	Cuiaba	0	1	0	0	0	0
741	5	89682	PE Gruta da Lagoa Azul	0	0	0	0	0	0
742	5	89683	Rosario Oeste	0	0	0	0	0	0
743	5	89684	Marzagao	0	0	0	0	0	0
744	5	89686	Agua Fina	0	0	0	0	0	0
745	5	89687	PE Aguas de Cuiaba	0	0	0	0	0	0
746	5	89688	Cuiaba do Bonito	0	0	0	0	0	0
747	5	89691	Manso	4	0	0	0	0	0
748	5	89692	Nova Brasilandia	0	0	0	0	0	0
749	5	89694	APA Estadual da Chapada dos Guimaraes	4	2	0	2	1	0
750	5	89696	Casca	0	0	0	0	0	0
751	5	89698	Jangada	0	0	0	0	0	0
752	5	89699	Chapada dos Guimaraes	0	0	0	0	0	0
753	5	89922	TQ Mata Cavalo	0	0	0	1	0	0
754	5	89926	Mata Grande	1	0	0	0	0	0
755	5	89929	Sangradouro	1	0	0	1	0	0
756	5	89949	Terra Indigena Figueiras	0	0	0	0	0	0
757	5	89969	Cabacal	0	0	0	0	0	0
758	5	89986	Tangara da Serra	0	0	0	0	0	0
759	5	89991	EE Serra das Araras	0	1	1	2	0	0
760	5	89997	Terra Indigena Umutina	0	0	0	0	0	0
761	5	89999	APA Nascentes do Rio Paraguai	0	0	0	0	0	0
762	X	BO020	Noel Kempff Mercado	0	0	0	7	0	0
763	X	PY013	Cerrados de Concepción	0	0	0	5	2	0
764	X	PY012	Estancia Estrella	0	0	0	1	0	0
765	X	PY014	Arroyo Tagatiya	0	0	0	4	1	0

Table 2.3. Terrestrial KBA Raw Data for Threatened Flora

KBA	Ottobacia	COD	Name	Threatened Flora #					
				National Brazil List- CNC Flora/Jardim Botanico			IUCN		
				Vulnerable	Endangered	Critically Endangered	Vulnerable	Endangered	Critically Endangered
1	56	1	Goiatins	0	0	0	0	0	0
2	56	2	Tres Barras	0	0	0	0	0	0
3	56	3	Aguas do Paulista	0	0	0	0	0	0
4	56	4	Nova Nazare	0	0	0	0	0	0
5	56	5	Natalandia	0	0	0	0	0	0
6	56	6	Unai de Minas	0	0	0	0	0	0
7	56	7	Campinacu	0	0	0	0	0	0
8	56	8	Delgado	0	0	0	0	0	0
9	56	9	Canarana	0	0	0	0	0	0
10	56	10	Aldeia	0	0	0	0	0	0
11	56	11	PE Serra de Sonora	0	0	0	0	0	0
12	56	12	Agua Clara	0	0	0	0	0	0
13	56	13	Paranatinga	0	0	0	0	0	0
14	56	14	Sao Felipe	0	0	0	0	0	0
15	56	15	Man-Azde	0	0	0	0	0	0
16	4	657	Araguaia	0	0	0	0	0	0
17	4	6455	Sao Valerio	0	0	0	0	0	0
18	4	6475	Corriola	1	0	0	0	0	0
19	4	6492	Sao Patricio	0	0	0	0	0	0
20	4	6545	Lajeado	0	0	0	0	0	0
21	4	6591	Santana do Araguaia	0	0	0	0	0	0
22	4	6642	Lagoa da Confusao	0	0	0	0	0	0
23	4	6653	Javaes	0	0	0	0	0	0
24	4	6691	Terra Indigena Kraho-Kanela	0	0	0	0	0	0
25	4	6771	Santa Terezinha	0	0	0	0	0	0
26	4	6773	Aldeia Caraja	1	0	0	0	0	0
27	4	6811	Rio das Mortes	0	0	0	0	0	0
28	4	6828	Piabanha	1	1	0	0	0	0
29	4	6839	Rio dos Patos	0	0	0	0	0	0
30	4	6844	Zacarias	4	2	0	0	0	0
31	4	6847	Insula	1	1	0	0	0	0
32	4	6871	Nova Xavantina	3	2	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
33	4	6882	Suspiro	0	0	0	0	0	0
34	4	6892	Perdidos	0	0	0	0	0	0
35	4	6917	APA Meandros do Rio Araguaia	1	0	0	0	0	0
36	4	6918	Ribeirao Sao Domingos	0	0	0	0	0	0
37	4	6938	Corixo do Cascavel	0	0	0	0	0	0
38	4	6959	Registro do Araguaia	0	0	0	0	0	0
39	4	6966	Rio Bonito	3	1	0	0	0	0
40	4	7483	Joao Pinheiro	0	0	0	0	1	0
41	4	7587	Josenopolis	0	0	0	0	0	0
42	4	7588	Parque Estadual Grao Mogol	17	30	10	3	4	0
43	5	42699	Mariana	0	0	0	0	0	0
44	5	42728	Suiazinho	1	1	0	0	0	0
45	5	42964	Ribeirao Agua Limpa	0	0	0	0	0	0
46	5	42968	Queimada	0	1	0	0	0	0
47	5	42969	Sete de Setembro	0	0	0	0	0	0
48	5	42977	Culuene	0	0	0	0	0	0
49	5	42986	Couto de Magalhaes	0	0	0	0	0	0
50	5	44483	Rio Verde	0	0	0	0	0	0
51	5	44493	APA do Salto Magessi	0	0	0	0	0	0
52	5	44496	Piabas	0	1	0	0	0	0
53	5	44649	Tapurah	1	0	0	0	0	0
54	5	44658	Marape	1	0	0	0	0	0
55	5	44676	Caju Doce	1	0	0	0	0	0
56	5	44688	Agua Verde	0	1	0	1	0	0
57	5	44692	Nova Mutum	0	1	0	0	0	0
58	5	44694	Tres Lagoas	0	0	0	0	0	0
59	5	44696	Rio Preto	0	0	0	0	0	0
60	5	44698	Arinos	0	1	0	0	0	0
61	5	44829	Cravari	0	0	0	0	0	0
62	5	44888	Campo Novo do Parecis	0	0	0	0	0	0
63	5	44946	Terra Indigena Utiariti	0	0	0	0	0	0
64	5	44954	Terra Indigena Enawene-Nawe	0	0	0	0	0	0
65	5	44962	Estacao Ecologica de Ique	0	0	0	0	0	0
66	5	44969	Terra Indigena Pirineus de Souza	0	0	0	0	0	0
67	5	44981	Estacao do Juruena	0	0	0	0	0	0
68	5	44983	Juruena	1	0	0	0	0	0
69	5	44992	Campos de Julio	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
70	5	46299	Terra Indigena Parque do Aripuana	0	0	0	0	0	0
71	5	64113	RESEX Extremo Norte do Estado do Tocantins	0	1	0	0	0	0
72	5	64159	Cachoeira Santana	0	0	0	0	0	0
73	5	64171	Xupe	2	0	0	0	0	0
74	5	64181	Farinha	0	0	0	0	0	0
75	5	64182	Cancela	1	1	0	0	0	0
76	5	64183	Parque Nacional Chapada das Mesas	0	0	0	0	0	0
77	5	64193	Carolina	1	0	0	0	0	0
78	5	64197	Urupuchote	0	0	0	0	0	0
79	5	64225	Rio Itapicuru	0	0	0	0	0	0
80	5	64234	Salobro	0	0	0	0	0	0
81	5	64252	Ribeirao do Maranhao	0	0	0	0	0	0
82	5	64261	Santa Filomena	0	1	0	0	1	0
83	5	64262	Estevao	0	0	0	0	1	0
84	5	64292	Ribeirao Tabocas	0	0	0	0	0	0
85	5	64298	Rio Bonito do Tocantins	0	0	0	0	0	0
86	5	64311	Monumento Natural das Arvores Fossilizadas	0	0	0	0	0	0
87	5	64318	Cana-brava	0	0	0	0	0	0
88	5	64319	Santarosa	0	0	0	0	0	0
89	5	64346	Nova Olinda	0	0	0	0	0	0
90	5	64369	Mato Grande	0	0	0	0	0	0
91	5	64373	Panela de Ferro	0	0	0	0	0	0
92	5	64376	Agua Fria	0	0	0	0	1	0
93	5	64378	Tranqueira	1	0	0	0	0	0
94	5	64429	Perdida	0	0	0	0	0	0
95	5	64444	Ponte Alta	0	1	0	0	0	0
96	5	64447	Pindorama do Tocantins	1	0	0	0	0	0
97	5	64449	Almas	1	1	0	0	0	0
98	5	64454	Soninho	0	0	0	0	0	0
99	5	64459	APA do Jalapao	0	0	0	0	0	0
100	5	64464	Parque Estadual do Jalapao	0	0	0	0	0	0
101	5	64466	Brejao do Jalapao	0	0	0	0	0	0
102	5	64471	Desabuso	0	0	0	0	0	0
103	5	64473	Rio Novo	0	0	0	0	0	0
104	5	64476	Frito gado	0	0	0	0	0	0
105	5	64477	Cortapena	0	0	0	0	0	0
106	5	64478	Toca	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
107	5	64479	Esteneu	0	0	0	0	0	0
108	5	64483	Jorge	0	0	0	0	0	0
109	5	64487	Verde do Tocantins	1	0	0	0	0	0
110	5	64491	Rio da Volta	0	0	0	0	0	0
111	5	64492	Mateiros	0	0	0	0	0	0
112	5	64493	Pedra de Amolar	0	0	0	0	0	0
113	5	64496	Come Assado	0	0	0	0	0	0
114	5	64497	Galhao	0	0	0	0	0	0
115	5	64513	Parque Estadual do Lajeado	1	0	0	0	0	0
116	5	64514	Santa Luzia	1	0	0	0	0	0
117	5	64515	Taquaracu	0	0	0	0	0	0
118	5	64516	APA Lago de Palmas	0	1	0	0	1	0
119	5	64517	Porto Nacional	0	0	0	0	0	0
120	5	64519	Rio Tocantins	0	0	0	0	0	0
121	5	64521	Brejinho de Nazare	0	0	0	0	0	0
122	5	64524	Alianca do Tocantins	0	0	0	0	0	0
123	5	64539	Surubim	0	0	0	0	0	0
124	5	64541	Apinage	0	0	0	0	0	0
125	5	64542	Pedras	1	0	1	0	0	0
126	5	64544	Rocinha	0	0	0	0	0	0
127	5	64545	Natividade	0	0	2	0	0	0
128	5	64546	Dianopolis	0	0	0	0	0	0
129	5	64548	Itaboca	0	0	0	0	0	0
130	5	64549	Manuel Alves	0	0	0	0	0	0
131	5	64561	Santo Antonio do Tocantins	0	0	0	0	0	0
132	5	64562	Taipoca	0	0	0	0	0	0
133	5	64584	Talisma	0	0	0	0	0	0
134	5	64588	Santa Teresa	0	0	0	0	0	0
135	5	64589	Rio do Ouro	0	1	0	0	0	0
136	5	64593	APA Foz do Rio Santa Tereza	0	0	0	0	0	0
137	5	64596	Rio das Almas	0	0	0	0	0	0
138	5	64621	Palma	0	0	0	0	0	0
139	5	64622	Arraias	0	0	0	0	0	0
140	5	64623	Pau d'arco	0	0	0	0	0	0
141	5	64624	Novo Jardim	1	0	1	0	0	0
142	5	64626	Corcunda	0	0	0	0	0	0
143	5	64628	Sobrado	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
144	5	64629	Lavandeira	0	0	0	0	1	0
145	5	64631	Quebra-coco	0	0	0	0	0	0
146	5	64633	TQ Kalungas	0	0	0	0	0	0
147	5	64634	Montes Claros	1	1	1	0	0	0
148	5	64636	Maquine	4	10	0	0	0	0
149	5	64637	Sucuri	0	4	0	0	0	0
150	5	64638	Sao Bartolomeu	0	1	0	0	0	0
151	5	64642	Floresta Nacional da Mata Grande	0	0	0	0	0	0
152	5	64644	Calheiros	0	0	0	0	0	0
153	5	64649	Divinopolis de Goias	0	0	0	0	0	0
154	5	64651	Nova Roma	0	0	0	0	0	0
155	5	64653	Morro Alto	0	0	0	0	0	0
156	5	64654	Parque Estadual de Terra Ronca	2	1	1	0	0	0
157	5	64655	Guatacaba	0	0	0	0	0	0
158	5	64658	Macacao	6	19	1	0	0	0
159	5	64662	Santa Maria	0	1	0	0	0	0
160	5	64664	Baco Pari	3	0	0	0	0	0
161	5	64665	Rio Corrente	0	0	0	0	0	0
162	5	64666	Buriti	0	0	0	0	1	0
163	5	64668	APA das Nascentes do Rio Vermelho	1	0	0	0	0	0
164	5	64669	Sitio da Abadia	1	0	0	0	0	0
165	5	64676	Rio dos Macacos	0	0	0	0	0	0
166	5	64677	Flores de Goias	0	0	0	0	0	0
167	5	64682	Extrema	0	0	0	0	0	0
168	5	64689	Rio Paraim	1	0	0	0	0	0
169	5	64694	Sao Joao d'Alianca	2	5	0	0	0	0
170	5	64695	Crixas	0	1	1	0	0	0
171	5	64699	Entorno de Brasilia	1	1	1	0	0	0
172	5	64711	APA Lago de Peixe-Angical	0	0	0	0	0	0
173	5	64725	Cana-brava de Minacu	0	0	0	0	0	0
174	5	64733	Cavalcante	0	0	0	0	0	0
175	5	64735	Ribeirao Bonito	0	0	0	0	0	0
176	5	64736	Minacu	0	1	0	0	0	0
177	5	64737	Sao Felix	0	0	0	0	0	0
178	5	64738	Laranjal	0	0	0	0	0	0
179	5	64739	Preto	0	0	0	0	0	0
180	5	64741	Serra do Tombador	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
181	5	64742	Sao Bento	1	2	0	0	0	0
182	5	64744	Parque Nacional da Chapada dos Veadeiros	5	9	1	0	0	0
183	5	64746	Corrego Areia	2	4	0	0	0	0
184	5	64747	Muquem	4	5	2	0	0	0
185	5	64748	Ribeirao Santana	2	4	0	0	0	0
186	5	64749	Rio Claro	5	19	1	0	0	0
187	5	64761	Tocantizinho	5	9	2	0	0	0
188	5	64762	Couros	6	10	0	0	0	0
189	5	64764	Morro Tira-chapeu	0	1	0	0	0	0
190	5	64765	Cachoeirinha	0	0	0	0	0	0
191	5	64766	Picarrao	10	20	3	0	0	0
192	5	64768	RPPN Fazenda Branca Terra dos Anões	0	2	0	0	0	0
193	5	64769	Corrego Roncador	4	4	1	0	0	0
194	5	64774	Prata Grande	0	0	0	0	0	0
195	5	64781	Niquelandia	1	1	1	0	0	0
196	5	64782	Bacalhau	3	5	2	0	0	0
197	5	64783	Santa Rita	0	0	0	0	0	0
198	5	64784	Ribeirao Conceicao	0	1	0	0	0	0
199	5	64786	Serra do Passanove	0	0	0	0	0	0
200	5	64791	Rio Palmeira	0	0	0	0	0	0
201	5	64792	Bilhagua	1	3	2	0	0	0
202	5	64797	Rio da Mula	2	0	0	0	0	0
203	5	64798	Passa-tres	0	0	0	0	0	0
204	5	64799	Cafe	1	0	0	0	0	0
205	5	64811	Ribeirao Ponte Alta	1	0	0	0	0	0
206	5	64812	Ribeirao da Laguna	0	0	0	0	0	0
207	5	64815	Cocal	0	1	0	0	0	0
208	5	64821	Patos	0	0	0	0	0	0
209	5	64829	Forquilha	0	0	0	0	1	0
210	5	64841	Pensao Sao Miguel	0	1	0	0	0	0
211	5	64847	Jacare	0	1	0	0	1	0
212	5	64848	Sardinha	0	1	0	0	0	0
213	5	64849	Joao Alves	0	1	0	0	0	0
214	5	64854	RPPN Fazenda Cachoeirinha	1	0	0	0	0	0
215	5	64862	Padre Bernardo	0	0	0	0	0	0
216	5	64866	Rio dos Bois	1	0	0	0	0	0
217	5	64883	Mucungo	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
218	5	64889	Arraial Velho	0	0	0	0	0	0
219	5	64892	APA de Cafuringa	0	0	0	0	1	0
220	5	64894	Corrego Fundo	0	3	0	0	0	0
221	5	64898	Monumento Natural do Conjunto Espeleologico do Morro da Pedreira	1	5	0	1	0	0
222	5	64899	Reserva Biologica da Contagem	5	5	0	2	2	0
223	5	64915	Lavrinha	0	0	0	0	0	0
224	5	64916	Lajes	0	0	0	0	0	0
225	5	64941	Rialma	0	0	0	0	0	0
226	5	64946	Irmaos	0	0	0	0	0	0
227	5	64949	Serra do Cocalzinho	0	0	0	0	1	0
228	5	64982	Canastra	0	0	0	0	0	0
229	5	64986	Uru	0	0	0	0	0	0
230	5	64995	Jaragua	0	0	0	0	0	0
231	5	64996	Parque Estadual da Serra de Jaragua	0	0	0	0	0	0
232	5	64998	APA da Serra dos Pireneus	3	4	0	0	0	0
233	5	64999	Padre Souza	0	0	0	0	0	0
234	5	65116	Piranhas	0	0	0	0	0	0
235	5	65374	Lagoa Preta	0	0	0	0	0	0
236	5	65392	Jenipapo	0	0	0	0	0	0
237	5	65415	APA Ilha do Bananal-Cantao	0	0	0	0	0	0
238	5	65585	Rio Caiapo	0	0	0	0	0	0
239	5	65587	Grotao	0	0	0	0	0	0
240	5	65589	Ribeirao Grande	0	0	0	0	0	0
241	5	65811	Furo do Coco	0	0	0	0	0	0
242	5	65852	Murici	0	0	0	0	0	0
243	5	65855	Rio do Coco	0	0	0	0	0	0
244	5	65972	Furo da Gameleira	0	0	0	0	0	0
245	5	65973	Cicice	0	0	0	0	0	0
246	5	66224	Parque Nacional do Araguaia	0	0	0	0	0	0
247	5	66227	Ariari	0	0	0	0	0	0
248	5	66234	Pium	0	0	0	0	0	0
249	5	66254	Terra Indigena Parque do Araguaia	0	0	0	0	0	0
250	5	66256	Ipuca do Riozinho	0	0	0	0	0	0
251	5	66257	Ilha de Santa Anna	0	0	0	0	0	0
252	5	66261	Riozinho	0	0	0	0	0	0
253	5	66467	Cristalandia	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
254	5	66623	Urubu	1	0	0	0	0	0
255	5	66668	Sandolandia	0	0	0	0	0	0
256	5	66696	Baiao	1	0	0	0	0	0
257	5	66821	Urubu Grande	0	0	0	0	0	0
258	5	66925	Xavante	0	0	0	0	0	0
259	5	66951	Escuro	0	0	0	0	0	0
260	5	67821	Xavantinho	1	0	0	0	0	0
261	5	67822	Terra Indigena Maraiwatsede	0	0	0	0	0	0
262	5	67966	Terra Indigena Cacique Fontoura	0	0	0	0	0	0
263	5	67973	Santa Izabel do Morro	0	0	0	0	0	0
264	5	68141	Novo Santo Antonio	0	0	0	0	0	0
265	5	68255	Sao Joao Grande	0	0	0	0	0	0
266	5	68311	Ribeirao Cascalheira	0	0	0	0	0	0
267	5	68334	Terra Indigena Pimentel Barbosa	0	0	0	0	0	0
268	5	68351	RVS Quelonios do Araguaia	0	0	0	0	0	0
269	5	68353	Cocalinho	0	0	0	0	0	0
270	5	68382	Angico	0	0	0	0	0	0
271	5	68389	Terra Indigena Areoes	0	0	0	0	0	0
272	5	68461	Pindaiba	0	0	0	0	0	0
273	5	68463	Barra do Garças	0	0	0	0	0	0
274	5	68464	Galheiro	1	0	0	0	0	0
275	5	68486	Cava Funda	0	1	0	0	0	0
276	5	68489	PE da Serra Azul	0	0	0	0	0	0
277	5	68497	Corrente	0	0	0	0	0	0
278	5	68622	Cachoeira	0	0	0	0	0	0
279	5	68681	Jau	0	0	0	0	0	0
280	5	68685	Agua Boa	0	0	0	0	0	0
281	5	68695	Areao	0	1	0	0	0	0
282	5	68732	Dom Bosco	0	0	0	0	0	0
283	5	68748	Terra Indigena Sao Marcos	3	0	0	0	1	0
284	5	68756	Paredao Grande	1	1	0	0	0	0
285	5	68757	General Carneiro	0	0	0	0	0	0
286	5	68993	Engano	1	0	0	0	0	0
287	5	68998	Agua Azul	0	1	0	0	0	0
288	5	69133	PE do Araguaia	0	0	0	0	0	0
289	5	69159	Formoso do Araguaia	0	0	0	0	0	0
290	5	69163	APA dos Meandros do Rio Araguaia	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
291	5	69166	Chapeu	0	0	0	0	0	0
292	5	69167	Cristalino	0	0	0	0	0	0
293	5	69169	Mata do Inferno	0	0	0	0	0	0
294	5	69223	Crixas-mirim	0	0	0	0	0	0
295	5	69249	Pintado	0	0	0	0	0	0
296	5	69262	Bonopolis	0	0	0	0	0	0
297	5	69286	Barreiro	0	0	0	0	0	0
298	5	69294	Ribeirao d'Anta	0	0	0	0	0	0
299	5	69295	Crixas-acu	0	0	0	0	0	0
300	5	69441	Tesouras	0	0	0	0	0	0
301	5	69443	Alagado	0	0	0	0	0	0
302	5	69449	Braco do Mato	0	1	0	0	0	0
303	5	69462	Pinguela	0	0	0	0	0	0
304	5	69488	Alagadinho	0	0	0	0	0	0
305	5	69494	Cavalo Queimado	0	0	0	0	0	0
306	5	69513	Aruana	0	0	0	0	0	0
307	5	69514	Medio Araguaia	0	0	0	0	0	0
308	5	69516	Brejao	0	0	0	0	0	0
309	5	69519	Terra Indigena Karaja de Aruana	0	0	0	0	0	0
310	5	69521	RPPN Boca da Mata	0	0	0	0	0	0
311	5	69523	Matrincha	0	0	0	0	0	0
312	5	69529	APA da Serra Dourada	0	3	0	0	0	0
313	5	69568	PE da Serra Dourada	1	5	0	0	0	0
314	5	69582	Dom Bill	0	0	0	0	0	0
315	5	69626	Bom Jardim	0	1	0	0	0	0
316	5	69627	Retiro das Piranhas	1	0	0	0	0	0
317	5	69629	Pantano	1	0	0	0	0	0
318	5	69698	Sao Jose	1	0	0	0	0	0
319	5	69811	APA Estadual Pe da Serra Azul	4	0	0	0	0	0
320	5	69861	Bandeira	0	1	0	0	0	0
321	5	69866	Guiratinga	0	0	0	0	0	0
322	5	69886	Alto Garcas	0	0	0	0	0	0
323	5	69946	Sucupira	0	0	0	0	0	0
324	5	69954	Sao Joao	0	0	0	0	0	0
325	5	69966	Diamantino	0	0	0	0	0	0
326	5	69981	Babilonia	0	0	0	0	0	0
327	5	69984	Empantanado	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
328	5	69985	Mineiros	0	0	0	0	1	0
329	5	69989	Jacu	0	0	0	0	0	0
330	5	69993	Alto Araguaia	0	0	0	0	0	0
331	5	69994	Gordura	1	1	0	0	0	0
332	5	69995	Santa Rita do Araguaia	0	0	0	0	0	0
333	5	69996	Ribeirao do Sapo	0	0	0	0	0	0
334	5	69997	Zeca Nonato	0	0	0	0	0	0
335	5	69998	Queixada	0	0	0	0	0	0
336	5	69999	Araguainha	0	0	0	0	0	0
337	5	71647	Terra Indigena Geralda Toco Preto	1	0	0	0	0	0
338	5	71648	Terra Indigena Krikati	0	0	0	1	0	0
339	5	71652	Ipixuna Acu	1	0	0	0	0	0
340	5	71655	RPPN Fazenda Sao Francisco	0	0	0	0	0	0
341	5	71662	Presidente Dutra	0	0	0	0	0	0
342	5	71666	Rio das Flores	1	0	0	1	0	0
343	5	71687	Terra Indigena Porquinhos	0	0	0	1	0	0
344	5	71691	Terra Indigena Cana Brava/Guajajara	1	2	0	0	0	0
345	5	71831	Itapecuru	0	0	0	0	0	0
346	5	71842	TQ Santa Joana	1	0	0	0	0	0
347	5	71845	PN dos Lençois Maranhenses	0	0	0	0	0	0
348	5	71851	RPPN Fazenda Pantanal	0	0	0	0	0	0
349	5	71853	Itapicuru	0	0	0	0	0	0
350	5	71855	Cajazeira	0	0	0	0	0	0
351	5	71866	Inhumas	0	0	0	0	0	0
352	5	71874	Baixao do Bandeira	1	0	0	0	0	0
353	5	71875	Fortuna	0	0	0	2	0	0
354	5	71884	Mirador	0	0	0	1	0	0
355	5	71886	Alpercatinha	0	0	0	0	0	0
356	5	71899	PE de Mirador	0	0	0	0	0	0
357	5	71929	APA dos Morros Garapenses	0	1	0	0	0	0
358	5	71942	APA Upaon-Açu/Miritiba/Alto Preguicas	0	0	0	0	0	0
359	5	72121	RPPN Fazenda Centro	0	1	0	0	0	0
360	5	72168	Caraiba	0	1	0	0	0	0
361	5	72196	Riachao	1	0	0	0	0	0
362	5	72211	FN de Palmares	0	0	0	0	0	0
363	5	72314	Timon	1	0	0	0	0	0
364	5	72347	Sao Francisco do Maranhao	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
365	5	72349	Sucupira do Riachao	0	0	0	0	0	0
366	5	72411	Caninde	0	0	0	0	0	0
367	5	72549	PN da Serra das Confusoes	0	0	0	0	0	0
368	5	72556	Floriano	0	0	0	0	0	0
369	5	72632	Coqueiro	0	0	0	0	0	0
370	5	72643	Riacho de Sant'Ana	0	0	0	0	0	0
371	5	72646	Baliza	1	1	0	1	0	0
372	5	72653	Paraim	0	0	0	0	0	0
373	5	72656	Matoes	2	0	0	1	0	0
374	5	72669	Gurgueia	0	0	0	0	0	0
375	5	72681	APA do Rangel	1	0	0	0	0	0
376	5	72686	Vereda Uniao	0	1	0	0	0	0
377	5	72693	Riacho Frio	0	0	0	0	0	0
378	5	72695	Parnagua	0	0	0	0	0	0
379	5	72696	Malhada da Barra	0	0	0	0	0	0
380	5	72699	Sebastiao Barros	0	0	0	0	0	0
381	5	72724	Cardoso	0	0	0	0	1	0
382	5	72729	Prata	0	0	0	0	0	0
383	5	72733	Riacho do Belem	0	0	0	1	0	0
384	5	72786	Curimata	1	0	0	0	0	0
385	5	72797	Urucui	0	0	0	0	0	0
386	5	72816	Santa Isabel	0	0	0	0	0	0
387	5	72817	Balsas	0	0	0	0	0	0
388	5	72818	Gameleira	0	0	0	0	0	0
389	5	72819	Riacho dos Picos	0	0	0	0	0	0
390	5	72829	Fortaleza dos Nogueiras	1	0	0	0	0	0
391	5	72834	Coite	0	0	0	0	0	0
392	5	72862	Rio Maravilha	1	0	0	0	0	0
393	5	72871	Santo Antonio de Balsas	0	0	0	0	0	0
394	5	72872	Gado Bravo	0	0	0	0	0	0
395	5	72876	Novo Recreio	0	1	0	0	0	0
396	5	72878	Temerante	0	0	0	0	0	0
397	5	72881	Parelhas	0	0	0	0	0	0
398	5	72887	Tem medo	0	0	0	0	0	0
399	5	72889	Mandacaru	0	0	0	0	0	0
400	5	72891	Sul Maranhense	0	0	0	0	0	0
401	5	72911	Benedito Leite	1	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
402	5	72922	Riacho da Estiva	1	0	0	0	0	0
403	5	72929	Urucui-preto	0	0	0	0	0	0
404	5	72933	Loreto	0	0	0	0	0	0
405	5	72935	Tasso Fragoso	0	0	0	0	0	0
406	5	72946	EE de Urucui-Una	0	0	0	0	0	0
407	5	72954	Sucuruju	0	0	0	0	0	0
408	5	72963	Medonho	0	0	0	0	0	0
409	5	72982	Alto Parnaiba	0	0	0	0	0	0
410	5	72991	Cachoeira Pedra de Amolar	0	0	0	0	0	0
411	5	72992	PN das Nascentes do Rio Parnaiba	0	0	0	0	0	0
412	5	73111	Ilha Grande	0	0	0	0	0	0
413	5	73114	Luis Correia	0	0	0	0	0	0
414	5	74197	Ilha Mocambo dos Ventos	0	0	0	0	0	0
415	5	74199	APA Dunas e Veredas do Baixo e Medio Sao Francisco	0	0	0	0	0	0
416	5	74222	Cotegipe	0	0	0	0	0	0
417	5	74225	EE Rio Preto	1	0	0	0	1	0
418	5	74226	Formosa do Rio Preto	0	2	0	0	1	0
419	5	74228	APA Rio Preto	0	0	0	0	0	0
420	5	74229	Sapao	0	0	0	1	0	0
421	5	74235	Rio Grande	0	0	0	0	1	0
422	5	74237	Neves	0	0	0	0	0	0
423	5	74243	Rio de Janeiro	0	0	0	0	0	0
424	5	74244	Ponta d'agua	0	0	0	0	0	0
425	5	74245	APA Bacia do Rio de Janeiro	1	0	0	0	0	0
426	5	74255	Extremo Oeste Baiano	0	0	0	0	0	0
427	5	74261	Ondas	1	0	1	0	0	0
428	5	74262	Cabeceira das Lajes	2	0	1	1	1	0
429	5	74263	Tabocas	1	0	0	0	0	0
430	5	74264	Cabeceira de Pedras	0	0	0	0	0	0
431	5	74269	Bora	0	0	0	0	0	0
432	5	74272	Boa Sorte	2	0	0	0	0	0
433	5	74278	FN de Cristopolis	0	0	1	0	1	0
434	5	74281	Vereda Anastacio	1	0	0	0	0	0
435	5	74282	Sao Desiderio	0	0	0	0	0	0
436	5	74283	Porcos	0	0	0	0	0	0
437	5	74292	Triste e Feio	1	0	0	0	0	0
438	5	74317	Ilha da Pica Grande	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
439	5	74332	Vereda da Canoa	0	0	0	0	0	0
440	5	74394	Serra Dourada	1	0	0	0	0	0
441	5	74397	Ilha da Bananeira	0	0	0	0	0	0
442	5	74411	Sitio do Mato	0	0	0	0	0	0
443	5	74413	Terra Indigena Vargem Alegre	0	1	0	0	0	0
444	5	74414	Pedra Branca	1	0	0	0	0	0
445	5	74415	Santana	1	0	0	0	0	0
446	5	74418	Coribe	0	1	0	0	0	0
447	5	74419	Sao Felix do Coribe	0	0	0	0	0	0
448	5	74421	Rio Formoso	0	0	0	0	1	0
449	5	74422	Alegre	3	0	0	0	0	0
450	5	74423	Jaborandi	0	0	0	0	0	0
451	5	74424	Rodeador	0	0	0	0	0	0
452	5	74426	Vau	0	0	0	0	0	0
453	5	74428	Pratudao	1	0	0	0	0	0
454	5	74429	RVS das Veredas do Oeste Baiano	0	0	0	0	0	0
455	5	74441	Arrojado	0	0	1	0	0	0
456	5	74444	Arrojadinho	0	0	0	0	0	0
457	5	74447	Correntina	0	0	0	0	0	0
458	5	74454	Santa Maria da Vitoria	0	0	0	1	0	0
459	5	74461	Guara	0	1	1	0	0	0
460	5	74471	Riacho de Pedra	0	0	0	1	0	0
461	5	74473	Rio Guara	0	0	0	1	0	0
462	5	74476	Santo Antonio	0	0	1	0	1	0
463	5	74478	Rio dos Angicos	2	0	0	0	0	0
464	5	74485	Riacho do Mato	1	0	0	0	0	0
465	5	74512	TQ Lagoa das Piranhas	0	0	0	0	0	0
466	5	74521	TQ Nova Batalhinha	0	0	0	0	0	0
467	5	74532	Riacho de Mariape	0	1	0	1	0	0
468	5	74544	Lagoas	0	1	0	0	0	0
469	5	74572	Madrugao	0	0	0	0	1	0
470	5	74581	Cariranha	0	0	0	0	0	0
471	5	74582	APA Cocha e Gibao	0	1	0	0	0	0
472	5	74583	Feira da Mata	0	0	0	0	0	0
473	5	74584	PN Grande Sertao Veredas	1	0	0	0	0	0
474	5	74586	Cocos	2	0	1	0	0	0
475	5	74588	Riacho do Meio	1	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
476	5	74589	Itaguari	0	1	1	1	1	0
477	5	74596	Calindo	1	0	0	0	0	0
478	5	74622	Aurelio	0	1	0	0	0	0
479	5	74642	Furado Novo	0	0	0	0	0	0
480	5	74646	PE Caminho das Gerais	1	0	0	1	1	0
481	5	74648	Porteirinha	0	0	0	0	1	0
482	5	74649	Gorutuba	0	1	0	0	0	0
483	5	74652	Corrego Escuro	0	0	0	0	0	0
484	5	74654	Macaubas	0	0	0	1	1	0
485	5	74655	Verde Grande	0	1	0	0	0	0
486	5	74668	Quem-quem	0	3	0	0	0	0
487	5	74692	Agua Limpa	0	0	0	0	1	0
488	5	74695	Capitao Eneas	1	0	0	0	0	0
489	5	74697	Vacabrava	2	5	0	0	1	0
490	5	74699	Juramento	0	3	0	0	0	0
491	5	74711	PE Lagoa do Cajueiro	0	0	0	0	0	0
492	5	74712	RB Serra Azul	0	0	0	0	0	0
493	5	74714	PE Veredas do Peruacu	1	4	0	1	0	0
494	5	74715	PN Cavernas do Peruacu	0	2	0	0	0	0
495	5	74717	Cochos	0	0	0	1	0	0
496	5	74718	Japonvar	0	0	0	0	1	0
497	5	74721	Pandeiros	0	0	0	0	1	0
498	5	74727	APA Pandeiros	0	0	0	1	0	0
499	5	74734	RVS Rio Pandeiros	1	2	0	2	1	0
500	5	74744	Sao Joaquim	0	0	0	0	0	0
501	5	74747	PE Serra das Araras	0	1	0	0	0	0
502	5	74749	Chapada Gaucha	0	0	0	0	0	0
503	5	74752	Lagoa da Vaqueta	0	0	0	0	0	0
504	5	74755	Sao Francisco	0	1	0	0	0	0
505	5	74772	Pintopolis	0	1	0	0	0	0
506	5	74781	Urucuia	1	0	0	0	0	0
507	5	74782	Conceicao	0	0	0	0	0	0
508	5	74783	Ribeirao dos Confins	0	0	0	0	0	0
509	5	74784	EE Sagarana	0	0	0	0	0	0
510	5	74785	Pacari	1	1	0	1	0	0
511	5	74786	Formoso	1	0	0	0	0	0
512	5	74789	Serra da Sacada	0	0	0	1	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
513	5	74795	Sao Romao	0	0	0	0	0	0
514	5	74798	Campo Azul	0	2	0	0	0	0
515	5	74822	Garitas	1	0	0	0	0	0
516	5	74846	Roncador	1	0	0	0	0	0
517	5	74847	Unai	1	0	0	1	1	0
518	5	74848	Bezerra	0	0	0	0	0	0
519	5	74849	APA do Planalto Central	0	2	0	0	0	0
520	5	74862	Vereda Grande	0	0	0	0	0	0
521	5	74868	TQ Amaros	0	0	0	0	0	0
522	5	74873	Ribeirao Bezerra	0	0	0	0	0	0
523	5	74878	RPPN Morro da Cruz das Almas	2	0	0	0	0	0
524	5	74889	Presidente Olegario	0	0	0	0	0	0
525	5	74892	Ribeirao Santa Catarina	0	0	0	0	0	0
526	5	74894	PE de Paracatu	3	1	0	1	0	0
527	5	74896	Guarda-mor	1	0	0	0	0	0
528	5	74918	Barro	0	0	0	0	0	0
529	5	74923	Jequitai	0	0	0	0	0	0
530	5	74925	Francisco Dumont	1	2	0	1	0	0
531	5	74927	Areia	0	0	0	0	0	0
532	5	74928	Imbalacaia	12	12	0	1	0	0
533	5	74929	PN das Sempre-Vivas	2	1	0	0	0	0
534	5	74941	Velhas	5	3	0	1	0	0
535	5	74942	Bicudo	0	4	0	0	0	0
536	5	74944	PE da Serra do Cabral	9	15	0	2	0	0
537	5	74945	Jabuticaba	0	0	0	0	0	0
538	5	74946	Pardo Grande	15	39	8	2	0	0
539	5	74947	Santo Hipolito	0	1	0	0	1	0
540	5	74948	PN da Serra do Cipo	40	105	29	2	0	0
541	5	74949	APA do Carste de Lagoa Santa	25	40	2	6	2	2
542	5	74951	Pirapora	1	0	0	2	0	0
543	5	74952	Tres Marias	0	1	0	0	0	0
544	5	74954	Tiros	2	2	0	0	0	0
545	5	74955	RPPN Fazenda Lavagem	0	0	0	0	0	0
546	5	74956	Borrachudo	0	0	0	0	0	0
547	5	74957	EE de Pirapitinga	0	0	0	0	0	0
548	5	74958	Indaia	0	1	0	0	0	0
549	5	74959	RPPN Fazenda Barrão	0	0	0	0	1	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
550	5	74961	Felixlandia	0	1	0	0	0	0
551	5	74963	FN de Paraopeba	0	4	1	2	1	1
552	5	74964	Inhauma	0	0	0	0	0	0
553	5	74965	APA Vargem das Flores	0	1	0	0	0	1
554	5	74984	Lambari	1	0	0	0	0	0
555	5	74985	Rio Para	0	0	0	0	0	0
556	5	74986	RPPN Fazenda Samoinho	1	0	0	0	0	0
557	5	74987	Nova Serrana	1	0	0	0	0	0
558	5	74988	Ribeirao Boa Vista	1	0	0	0	0	0
559	5	74993	Luz	0	0	0	0	0	0
560	5	74995	EE Corumba	0	1	0	1	0	0
561	5	74996	Vargem Bonita	0	3	1	0	0	0
562	5	74998	RPPN Fazenda do Lobo	4	2	2	0	0	0
563	5	75789	PE de Montezuma	0	2	0	1	1	0
564	5	75824	Setubal	1	0	0	0	0	0
565	5	75825	Berilo	1	1	0	0	0	0
566	5	75826	Capelinha	0	0	0	0	0	0
567	5	75827	Aracai	0	0	0	0	1	0
568	5	75829	PE Rio Preto	8	9	2	3	2	1
569	5	75854	Vargem da Lapa	0	0	0	2	1	0
570	5	75868	Peixe Bravo	0	1	0	0	0	0
571	5	75869	Vacaria	0	0	0	0	0	0
572	5	75891	EE Acaua	11	14	1	1	2	0
573	5	75892	Itacambira	2	2	1	0	0	0
574	5	75894	Tabatinga	1	0	0	0	0	0
575	5	75897	Olhos d'agua	0	0	0	0	0	0
576	5	75898	Caete-mirim	1	7	0	0	1	0
577	5	75899	PE Biribiri	36	86	17	1	3	0
578	5	76648	Tanque	0	1	1	0	0	0
579	5	76649	PE do Limoeiro	0	1	0	0	0	0
580	5	76684	Rio do Peixe	1	1	0	0	0	0
581	5	76689	Preto do Itambe	0	1	0	0	0	0
582	5	76692	Morro do Pilar	1	2	0	0	0	0
583	5	76693	Rio Picao	2	1	0	0	0	0
584	5	76694	PE Serra do Intendente	6	4	0	1	0	0
585	5	76698	Parauninha	0	1	2	0	0	0
586	5	76889	Bom Jesus do Amparo	0	0	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
587	5	84383	Ivinheima	0	1	0	0	0	0
588	5	84384	Nova Alvorada do Sul	0	0	0	0	0	0
589	5	84386	Terra Indigena Jatayvari	1	1	2	0	0	0
590	5	84389	Rio Brilhante	0	0	0	0	0	0
591	5	84418	Laranja Doce	0	0	0	0	0	0
592	5	84423	RPPN Fazenda Monte Alegre	1	0	0	0	1	1
593	5	84424	PE do Guartela	3	1	0	0	0	0
594	5	84425	APA da Escarpa Devoniana	4	2	0	1	0	0
595	5	84432	Paraguacu Paulista	0	1	0	2	1	0
596	5	84442	Ventania	0	1	0	0	0	0
597	5	84449	RPPN Fazenda do Tigre	3	3	1	0	0	0
598	5	84454	EE de Assis	0	1	0	2	1	0
599	5	84458	Campos Novos Paulista	0	0	0	0	0	0
600	5	84462	Alambari	1	0	0	1	0	0
601	5	84463	EE Santa Barbara	0	2	0	0	0	0
602	5	84464	EE de Avare	0	0	0	0	0	0
603	5	84465	FE Santa Barbara	1	0	0	0	0	0
604	5	84466	Claro	1	0	0	1	0	0
605	5	84468	Ribeirao das Pedras	0	0	0	0	0	0
606	5	84469	Botucatu	0	2	0	0	1	0
607	5	84482	Itaporanga	4	10	2	2	1	1
608	5	84485	Pescaria	0	0	0	1	0	0
609	5	84486	PE Vale do Codo	17	16	2	2	2	0
610	5	84488	Jaguaricatu	6	7	0	0	0	0
611	5	84489	Itarare	2	2	0	2	0	0
612	5	84491	Paranapanema	0	0	0	0	0	0
613	5	84492	EE de Itabera	3	3	0	0	0	0
614	5	84495	EE Paranapanema	1	2	1	0	1	0
615	5	84496	FN de Capao Bonito	0	0	0	0	0	0
616	5	84498	Itapetininga	0	4	0	1	0	0
617	5	84522	Inhandui	0	2	2	1	1	0
618	5	84523	Pardo	0	0	0	0	0	0
619	5	84525	Botas	1	0	0	0	0	0
620	5	84539	Parana	0	0	0	0	0	0
621	5	84541	Verde	0	0	0	1	1	0
622	5	84548	Sao Domingos	0	0	0	0	0	0
623	5	84589	Sucuriu	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
624	5	84618	APA Rio Batalha	0	0	0	3	1	0
625	5	84622	Sao Lourenco	0	2	0	0	0	0
626	5	84641	APA Ibitinga	0	1	0	0	0	0
627	5	84644	Itaquere	0	0	0	1	1	0
628	5	84647	Jacare-guacu	0	0	0	0	0	0
629	5	84648	Araraquara	4	1	0	0	1	0
630	5	84649	EE Itirapina	1	1	0	0	0	0
631	5	84652	Jacare-pepira	0	2	1	1	0	0
632	5	84653	Arealva	1	0	0	0	0	0
633	5	84656	FE Pederneiras	1	0	0	2	1	0
634	5	84657	Macatuba	0	0	0	1	0	0
635	5	84659	Araqua	0	0	0	0	0	0
636	5	84661	APA Corumbatai-Botucatu-Tejupa	3	4	0	4	1	1
637	5	84662	Corumbatai	4	4	3	1	1	0
638	5	84663	Piracicaba	0	2	0	0	0	0
639	5	84664	Atibaia	1	1	0	0	0	0
640	5	84665	ARIE Matao de Cosmopolis	0	2	0	0	0	0
641	5	84666	Pirapitingui	0	0	0	0	0	0
642	5	84667	Jaguari	0	1	0	0	0	0
643	5	84672	Vitoria	0	1	0	0	0	0
644	5	84674	Rio Alambari	0	0	0	1	0	0
645	5	84675	EE Barreiro Rico	0	1	0	1	0	0
646	5	84676	Peixe	1	0	0	0	1	0
647	5	84729	Sao Jose dos Dourados	2	0	0	1	0	0
648	5	84768	Inocencia	0	0	0	0	0	0
649	5	84818	Parisi	0	0	0	0	1	0
650	5	84822	Mirassolandia	0	0	0	0	1	0
651	5	84832	Verde ou Feio	0	2	0	0	0	0
652	5	84835	Sao Mateus	0	1	0	0	0	0
653	5	84841	FE de Bebedouro	1	0	0	1	1	0
654	5	84842	FE Cajuru	3	2	0	2	1	0
655	5	84843	RB de Sertaozinho	0	0	0	0	1	0
656	5	84844	EE de Jatai	0	0	0	1	0	0
657	5	84845	PE de Vassununga	7	2	0	0	1	0
658	5	84846	Jaguari-mirim	1	0	0	0	0	0
659	5	84847	RB e EE Mogi-Guaçu	3	4	0	2	0	0
660	5	84852	Uberaba	0	2	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
661	5	84863	Sapucai	0	0	0	0	0	0
662	5	84864	Batatais	0	0	0	0	0	0
663	5	84865	Franca	0	0	0	0	0	0
664	5	84866	Santa Barbara	0	1	0	0	0	0
665	5	84868	RB Sao Sebastiao do Paraiso	1	1	0	0	0	0
666	5	84869	Tomba-perna	1	1	0	0	0	0
667	5	84872	Solapao	1	1	0	0	0	0
668	5	84873	PE das Furnas do Bom Jesus	1	3	0	0	1	0
669	5	84875	Sacramento	0	0	0	0	0	0
670	5	84876	PN da Serra da Canastra	2	4	0	0	0	0
671	5	84877	Cassia	3	2	0	0	0	0
672	5	84879	Alpinopolis	8	11	5	0	0	0
673	5	84881	PE Serra da Boa Esperanca	0	0	0	0	0	0
674	5	84891	Guape	0	1	0	0	0	0
675	5	84892	Formiga	0	2	0	0	0	0
676	5	84912	Rio da Prata	0	0	0	0	0	0
677	5	84914	PN das Emas	1	1	0	0	0	0
678	5	84916	Serranopolis	1	2	1	0	0	0
679	5	84918	Jatai	4	5	0	1	0	0
680	5	84924	Ituiutaba	4	2	2	1	1	0
681	5	84925	Tijuco	1	2	0	0	0	0
682	5	84926	Monte Alegre de Minas	0	0	0	0	0	0
683	5	84928	Douradinho	3	3	0	1	0	0
684	5	84944	PE de Parauna	0	0	0	0	0	0
685	5	84946	Turvo	0	0	0	0	0	0
686	5	84949	APA Serra da Jiboia	0	0	0	0	0	0
687	5	84951	Campanha	1	0	1	0	0	0
688	5	84952	APA Joao Leite	2	2	0	0	0	0
689	5	84962	Piracanjuba	0	1	0	0	0	0
690	5	84963	PE da Serra de Caldas Novas	1	0	0	1	0	0
691	5	84964	Bois	1	0	0	0	0	0
692	5	84966	FN de Silvania	0	0	0	0	0	0
693	5	84967	Corumba	0	0	0	0	0	0
694	5	84968	EE do Jardim Botanico	18	26	5	4	2	0
695	5	84969	RB e PE do Descoberto	6	8	1	1	1	0
696	5	84982	Uberabinha	0	1	0	0	0	0
697	5	84983	PE Pau Furado	2	1	0	0	1	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
698	5	84984	Araguari	2	1	0	2	1	0
699	5	84985	RPPN Galheiros	5	2	0	1	0	0
700	5	84986	Capivara	1	1	1	0	0	0
701	5	84987	Misericordia	0	0	0	0	0	0
702	5	84988	Campos Altos	0	0	0	0	0	0
703	5	84992	Verissimo	1	1	0	0	0	0
704	5	84993	Cascalho Rico	0	1	0	0	0	0
705	5	84994	Monte Carmelo	0	0	0	0	0	0
706	5	84996	Dourados	0	0	0	0	0	0
707	5	84998	Paranaiba	1	1	0	0	0	0
708	5	84999	Sao Marcos	5	7	3	1	0	0
709	5	89161	Apa	0	0	0	0	0	0
710	5	89162	Rio Perdido	0	2	0	0	0	0
711	5	89168	Terra Indigena Nande Ru Marangatu	0	1	0	0	0	0
712	5	89176	Progresso	1	0	0	0	0	0
713	5	89191	Taruma	0	0	0	0	0	0
714	5	89195	Rio Branco	2	2	0	0	0	0
715	5	89196	Terra Indigena Kadiweu	0	0	0	0	0	0
716	5	89199	RPPN Tupaciara	0	1	0	0	0	0
717	5	89522	PN da Serra da Bodoquena	5	2	0	0	1	0
718	5	89523	RPPN Estancia Caiman	0	0	0	0	0	0
719	5	89525	Aquidauana	1	1	0	0	0	0
720	5	89526	Taquarucu	0	0	0	0	0	0
721	5	89527	APA Estadual Estrada-Parque Piraputanga	1	1	0	0	0	0
722	5	89528	Terra Indigena Buriti	1	0	0	0	0	0
723	5	89529	RPPN Fazenda Lageado	0	1	0	0	0	0
724	5	89544	TQ Furnas da Boa Sorte	0	0	0	0	0	0
725	5	89548	Rio Negro	0	0	0	0	0	0
726	5	89549	Anhuma	0	3	1	0	0	0
727	5	89563	Taquari	0	0	0	0	0	0
728	5	89564	PE das Nascentes do Rio Taquari	1	1	1	0	0	0
729	5	89566	Rio Verde de Mato Grosso	0	0	0	0	0	0
730	5	89569	APA Estadual Rio Cenico Rotas Moncoeiras-Rio Coxim	0	1	0	0	0	0
731	5	89626	Itiquira	1	2	0	0	0	0
732	5	89628	Piquiri	0	0	0	0	0	0
733	5	89642	Jaciara	1	1	0	0	0	0
734	5	89645	PE Dom Osorio Stoffel	0	1	0	0	0	0

KBA	Ottobacia	COD	Name	Threatened Flora #					
735	5	89646	Terra Indigena Tadarimana	0	0	0	0	0	0
736	5	89649	Terra Indigena Jarudore	0	0	0	0	0	0
737	5	89668	Santo Antonio do Leverger	1	1	0	0	0	0
738	5	89674	Arica-acu	2	3	0	0	0	0
739	5	89675	PN da Chapada dos Guimaraes	2	4	0	0	0	0
740	5	89679	Cuiaba	0	1	0	0	0	0
741	5	89682	PE Gruta da Lagoa Azul	0	1	0	0	0	0
742	5	89683	Rosario Oeste	0	0	0	0	0	0
743	5	89684	Marzagao	0	1	0	0	0	0
744	5	89686	Agua Fina	0	1	0	0	0	0
745	5	89687	PE Aguas de Cuiaba	0	1	0	0	0	0
746	5	89688	Cuiaba do Bonito	0	1	0	0	0	0
747	5	89691	Manso	2	0	0	0	0	0
748	5	89692	Nova Brasilandia	1	1	0	0	0	0
749	5	89694	APA Estadual da Chapada dos Guimaraes	4	5	0	0	1	0
750	5	89696	Casca	0	1	0	0	0	0
751	5	89698	Jangada	0	0	0	0	0	0
752	5	89699	Chapada dos Guimaraes	1	0	0	0	0	0
753	5	89922	TQ Mata Cavalo	0	0	0	0	0	0
754	5	89926	Mata Grande	0	0	0	0	0	0
755	5	89929	Sangradouro	0	0	0	0	0	0
756	5	89949	Terra Indigena Figueiras	0	0	0	0	0	0
757	5	89969	Cabacal	0	0	0	0	0	0
758	5	89986	Tangara da Serra	0	0	0	0	0	0
759	5	89991	EE Serra das Araras	0	0	0	0	0	0
760	5	89997	Terra Indigena Umutina	0	0	0	0	0	0
761	5	89999	APA Nascentes do Rio Paraguai	0	2	0	1	0	0
762	X	BO020	Noel Kempff Mercado	0	0	0	0	0	0
763	X	PY013	Cerrados de Concepción	0	0	0	0	0	0
764	X	PY012	Estancia Estrella	0	0	0	0	0	0
765	X	PY014	Arroyo Tagatiya	0	0	0	0	0	0

Table 2.3. Terrestrial KBA Raw Data for irrepleaceble spceis, natural vegetation cover, threat level, civil society capacity, water consumption demand, protected and priority areas

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority

			Species (occur in only 1 KBA)	Vegetation Cover (%)	Level (IPA index)	Society Capacity	Comsuption Demand	Areas (hectar)	Areas (%)	Areas (hectar)	Areas (%)
1	56	1	1	99,98	0,5	2	0,0000	20409,68	100,00	20409,68	100,00
2	56	2	1	71,01	0,6	3	0,0039	0,00	0,00	24316,96	100,00
3	56	3	1	22,89	0,4	2	0,0008	0,00	0,00	0,00	0,00
4	56	4	1	58,72	0,5	3	0,0016	989,24	9,78	7720,18	76,30
5	56	5	2	53,55	0,6	5	0,0155	0,00	0,00	25240,90	65,70
6	56	6	1	52,04	0,6	5	0,0437	0,00	0,00	619,14	3,59
7	56	7	1	39,16	0,6	3	0,0032	0,00	0,00	22712,94	93,20
8	56	8	3	37,98	0,6	3	0,0030	0,00	0,00	22026,18	98,10
9	56	9	1	21,08	0,6	3	0,0037	0,00	0,00	29002,52	95,77
10	56	10	1	28,06	0,5	2	0,0071	0,00	0,00	19206,95	50,66
11	56	11	1	19,96	0,6	2	0,0283	4432,66	3,67	102254,02	84,58
12	56	12	1	53,69	0,6	3	0,0067	0,00	0,00	12386,13	73,78
13	56	13	1	73,67	0,6	3	0,0014	2041,23	3,67	54626,29	98,14
14	56	14	3	69,87	0,5	2	0,0008	0,00	0,00	11218,39	59,56
15	56	15	1	70,73	0,6	3	0,0033	20306,70	62,17	26394,21	80,81
16	4	657	1	50,64	0,5	2	0,0073	4442,24	1,44	264205,60	85,41
17	4	6455	1	63,97	0,5	2	0,0071	54179,58	40,31	89085,21	66,29
18	4	6475	6	79,11	0,5	3	0,0016	1692,91	0,86	4033,14	2,05
19	4	6492	1	19,42	0,6	3	0,0190	10571,87	100,00	10571,87	100,00
20	4	6545	0	74,85	0,5	2	0,0022	3496,52	33,34	6092,23	58,09
21	4	6591	0	22,01	0,5	2	0,0021	0,00	0,00	15686,29	17,21
22	4	6642	0	49,77	0,5	3	0,1120	8139,92	45,17	18018,32	100,00
23	4	6653	1	73,50	0,4	3	0,0392	3154,60	2,71	57443,71	49,29
24	4	6691	1	74,06	0,6	2	0,1687	4884,92	53,88	6116,82	67,47
25	4	6771	0	65,49	0,4	3	0,0044	3864,57	43,01	8493,40	94,54
26	4	6773	0	71,49	0,4	3	0,0053	0,00	0,00	2524,87	86,41
27	4	6811	0	80,82	0,5	5	0,0003	0,00	0,00	75322,69	73,85
28	4	6828	2	67,12	0,5	3	0,0027	62860,63	51,85	107756,44	88,89
29	4	6839	2	80,67	0,5	3	0,0032	0,00	0,00	79950,33	62,34
30	4	6844	1	26,75	0,6	3	0,0080	0,00	0,00	80934,49	98,38
31	4	6847	1	34,98	0,6	4	0,0040	11,06	0,01	62817,94	36,49
32	4	6871	3	38,28	0,6	3	0,0055	0,00	0,00	6007,36	6,19
33	4	6882	1	23,90	0,6	2	0,0384	0,00	0,00	36827,36	96,04
34	4	6892	1	15,50	0,6	2	0,0354	102212,15	92,84	98452,86	89,43
35	4	6917	1	88,37	0,5	3	0,0150	5,24	0,01	6093,38	16,09
36	4	6918	1	25,98	0,6	3	0,0098	0,00	0,00	143826,89	100,00

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
37	4	6938	1	55,46	0,4	3	0,0037	0,00	0,00	17341,96	93,03
38	4	6959	2	22,78	0,5	3	0,0050	0,00	0,00	152327,10	77,96
39	4	6966	1	42,25	0,8	3	0,0093	0,00	0,00	204665,67	31,59
40	4	7483	3	41,42	0,6	5	0,0234	0,00	0,00	0,00	0,00
41	4	7587	1	70,77	0,4	5	0,0011	33591,29	6,60	65281,79	12,83
42	4	7588	27	51,21	0,4	5	0,0047	0,00	0,00	0,00	0,00
43	5	42699	0	8,44	0,6	3	0,0091	0,00	0,00	1086,23	0,31
44	5	42728	0	0,97	0,6	3	0,0030	77,85	0,06	10648,68	8,26
45	5	42964	0	25,59	0,6	5	0,0034	0,00	0,00	0,00	0,00
46	5	42968	0	38,22	0,6	3	0,0067	0,00	0,00	1502,27	3,06
47	5	42969	0	20,65	0,6	3	0,0177	0,00	0,00	0,00	0,00
48	5	42977	1	18,04	0,5	5	0,0011	21135,61	39,41	51999,74	96,95
49	5	42986	0	55,42	0,5	3	0,0049	0,00	0,00	0,00	0,00
50	5	44483	0	19,02	0,6	3	0,0071	7845,62	1,26	251811,33	40,31
51	5	44493	0	33,58	0,6	3	0,0173	88571,11	59,80	6758,48	4,56
52	5	44496	0	55,30	0,4	3	0,0034	0,00	0,00	0,00	0,00
53	5	44649	1	37,61	0,6	3	0,0051	0,00	0,00	0,00	0,00
54	5	44658	0	33,53	0,6	3	0,0092	0,00	0,00	0,00	0,00
55	5	44676	0	28,80	0,6	3	0,0047	0,00	0,00	18054,55	21,41
56	5	44688	0	21,09	0,6	3	0,0487	0,00	0,00	17675,26	8,86
57	5	44692	0	32,85	0,6	3	0,0230	0,00	0,00	1646,12	3,73
58	5	44694	0	34,79	0,6	3	0,0440	0,00	0,00	74770,78	79,47
59	5	44696	4	46,29	0,6	3	0,0098	6979,51	7,24	96440,51	100,00
60	5	44698	0	50,52	0,6	3	0,0135	0,00	0,00	12660,62	22,22
61	5	44829	1	22,52	0,6	3	0,0150	0,00	0,00	819,91	3,47
62	5	44888	0	14,43	0,6	3	0,0112	354879,79	80,91	376924,57	85,93
63	5	44946	1	85,84	0,6	3	0,0145	26979,11	84,05	26976,33	84,05
64	5	44954	0	99,99	0,5	3	0,0002	79261,95	98,35	79261,49	98,35
65	5	44962	0	99,42	0,5	3	0,0000	124825,29	92,08	124830,54	92,08
66	5	44969	3	79,91	0,6	3	0,0012	188820,46	76,57	188845,94	76,58
67	5	44981	0	70,51	0,6	3	0,0072	1100,65	0,42	3679,82	1,41
68	5	44983	0	40,80	0,6	3	0,0158	0,00	0,00	0,00	0,00
69	5	44992	1	47,58	0,6	3	0,0176	0,00	0,00	23585,47	11,38
70	5	46299	0	40,26	0,5	3	0,0008	316044,50	53,86	346550,19	59,06
71	5	64113	1	19,43	0,7	3	0,0107	9124,98	1,84	1167,90	0,24
72	5	64159	0	40,69	0,6	5	0,0022	0,00	0,00	0,00	0,00
73	5	64171	2	44,61	0,6	5	0,0036	0,00	0,00	0,00	0,00

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
74	5	64181	0	89,12	0,6	5	0,0019	14720,77	22,24	47394,97	71,59
75	5	64182	0	96,86	0,5	5	0,0006	23374,11	65,20	35850,51	100,00
76	5	64183	0	92,35	0,6	5	0,0021	37307,25	45,17	37079,53	44,89
77	5	64193	0	87,65	0,6	5	0,0013	327,49	0,19	176294,03	99,65
78	5	64197	0	75,05	0,5	5	0,0034	576,65	1,27	45294,26	100,00
79	5	64225	0	91,50	0,5	5	0,0004	0,00	0,00	3049,23	99,97
80	5	64234	0	81,79	0,5	2	0,0004	0,00	0,00	242,77	1,71
81	5	64252	0	87,82	0,5	5	0,0010	0,00	0,00	0,00	0,00
82	5	64261	0	81,03	0,5	5	0,0009	0,00	0,00	0,00	0,00
83	5	64262	0	62,78	0,5	5	0,0008	0,00	0,00	0,00	0,00
84	5	64292	0	91,44	0,6	2	0,0003	0,00	0,00	982,34	1,36
85	5	64298	0	95,83	0,5	2	0,0004	0,00	0,00	71740,18	91,32
86	5	64311	0	80,70	0,6	5	0,0015	13669,84	18,74	48440,73	66,42
87	5	64318	0	90,49	0,6	5	0,0026	0,00	0,00	0,00	0,00
88	5	64319	0	80,96	0,5	2	0,0005	0,00	0,00	0,00	0,00
89	5	64346	0	45,80	0,7	5	0,0157	0,00	0,00	813,36	1,99
90	5	64369	0	38,08	0,7	5	0,0203	0,00	0,00	0,00	0,00
91	5	64373	0	70,63	0,6	2	0,0021	0,00	0,00	9907,85	14,70
92	5	64376	0	60,07	0,6	2	0,0236	0,00	0,00	66237,82	69,59
93	5	64378	0	58,51	0,6	2	0,0169	0,00	0,00	73490,57	63,84
94	5	64429	1	95,60	0,4	2	0,0002	0,00	0,00	255417,16	98,01
95	5	64444	0	97,28	0,4	4	0,0005	134931,62	40,86	330253,98	100,00
96	5	64447	1	90,73	0,4	2	0,0009	0,00	0,00	166069,71	86,24
97	5	64449	0	95,13	0,4	2	0,0003	58904,99	57,35	101260,75	98,59
98	5	64454	0	97,52	0,4	4	0,0006	69840,78	35,20	198297,46	99,93
99	5	64459	0	98,34	0,4	4	0,0004	45813,18	62,64	55663,27	76,10
100	5	64464	0	100,00	0,5	4	0,0000	21481,73	100,00	21481,73	100,00
101	5	64466	0	99,34	0,5	4	0,0002	78780,45	99,76	76188,39	96,48
102	5	64471	0	99,47	0,5	4	0,0002	8962,28	99,96	8965,92	100,00
103	5	64473	0	100,00	0,5	4	0,0001	4013,70	99,95	4015,69	100,00
104	5	64476	0	97,67	0,5	4	0,0003	38650,67	100,00	38644,19	99,98
105	5	64477	0	99,97	0,5	4	0,0000	22222,16	99,99	22218,93	99,97
106	5	64478	0	100,00	0,5	4	0,0000	24823,21	99,99	24825,51	100,00
107	5	64479	0	100,00	0,5	4	0,0001	27075,27	100,00	27075,35	100,00
108	5	64483	0	100,00	0,5	4	0,0000	36506,77	100,00	36506,77	100,00
109	5	64487	0	99,99	0,5	4	0,0000	23456,61	100,00	23456,61	100,00
110	5	64491	0	100,00	0,5	4	0,0003	24229,66	99,97	24151,01	99,64

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
111	5	64492	0	98,73	0,5	4	0,0010	11765,86	100,00	1441,53	12,25
112	5	64493	0	99,78	0,5	4	0,0001	36675,54	100,00	35336,85	96,35
113	5	64496	0	91,84	0,5	4	0,0005	33173,85	49,05	65766,79	97,25
114	5	64497	0	94,82	0,5	4	0,0018	1092,22	2,43	44815,71	99,89
115	5	64513	0	53,44	0,6	2	0,0099	76552,59	35,91	75913,35	35,61
116	5	64514	0	50,46	0,6	2	0,0148	21198,83	13,87	20213,98	13,22
117	5	64515	1	51,47	0,7	2	0,0386	55509,75	52,24	55162,74	51,91
118	5	64516	2	45,26	0,6	2	0,0232	21357,36	7,15	13044,62	4,37
119	5	64517	1	56,01	0,7	2	0,0333	460,75	0,14	75084,14	23,47
120	5	64519	0	56,50	0,6	2	0,0726	0,00	0,00	31696,48	44,78
121	5	64521	2	43,49	0,6	2	0,1036	0,00	0,00	1822,67	11,18
122	5	64524	0	39,96	0,6	2	0,0120	0,00	0,00	1801,41	2,03
123	5	64539	0	58,53	0,6	2	0,0157	0,00	0,00	1719,42	77,93
124	5	64541	0	59,52	0,5	2	0,0019	0,00	0,00	18646,13	16,24
125	5	64542	1	79,23	0,5	2	0,0048	0,00	0,00	71364,97	35,58
126	5	64544	0	82,98	0,5	2	0,0008	0,00	0,00	72374,79	93,30
127	5	64545	3	85,19	0,4	2	0,0018	0,00	0,00	72189,83	30,62
128	5	64546	0	90,88	0,4	2	0,0006	0,00	0,00	132597,73	47,35
129	5	64548	2	95,34	0,4	2	0,0064	0,00	0,00	21895,89	11,79
130	5	64549	0	92,33	0,5	2	0,0075	38126,61	11,96	112543,49	35,31
131	5	64561	0	44,86	0,6	2	0,0159	0,00	0,00	2529,61	4,19
132	5	64562	0	32,61	0,6	2	0,0261	0,00	0,00	0,00	0,00
133	5	64584	2	29,69	0,6	3	0,0038	0,00	0,00	200214,70	50,17
134	5	64588	0	41,38	0,6	3	0,0025	0,00	0,00	0,00	0,00
135	5	64589	0	25,38	0,6	3	0,0041	0,00	0,00	0,00	0,00
136	5	64593	0	39,36	0,6	2	0,0092	12347,77	64,92	18638,58	98,00
137	5	64596	0	76,49	0,5	2	0,0008	588,71	0,44	1952,63	1,46
138	5	64621	0	91,29	0,4	2	0,0013	1819,65	0,57	280129,94	88,37
139	5	64622	0	88,93	0,4	2	0,0026	0,00	0,00	78475,18	51,22
140	5	64623	0	89,32	0,4	2	0,0017	0,00	0,00	139057,33	89,54
141	5	64624	3	83,17	0,5	2	0,0067	132,61	0,03	329569,88	77,45
142	5	64626	0	79,49	0,5	2	0,0027	0,00	0,00	189437,57	81,44
143	5	64628	1	59,12	0,5	2	0,0026	0,00	0,00	68518,41	61,67
144	5	64629	0	54,62	0,6	2	0,0036	0,00	0,00	107868,05	48,18
145	5	64631	0	94,13	0,4	2	0,0020	905,75	0,43	208533,39	100,00
146	5	64633	0	95,34	0,4	3	0,0015	123736,13	54,28	194362,43	85,27
147	5	64634	1	81,47	0,5	2	0,0057	28880,10	14,57	39797,73	20,08

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
148	5	64636	2	90,92	0,4	1	0,0019	125085,42	100,00	124972,49	99,91
149	5	64637	0	87,17	0,5	3	0,0028	62399,63	36,65	166500,37	97,80
150	5	64638	0	96,66	0,5	3	0,0018	61512,89	61,99	81929,94	82,56
151	5	64642	4	54,53	0,5	3	0,0039	39588,30	38,77	34347,46	33,63
152	5	64644	0	70,07	0,5	3	0,0033	6569,72	5,21	82349,20	65,27
153	5	64649	1	68,73	0,6	3	0,0022	0,00	0,00	3704,72	9,86
154	5	64651	0	25,49	0,6	3	0,0031	0,00	0,00	4634,71	26,92
155	5	64653	0	29,75	0,6	3	0,0043	0,00	0,00	1555,43	12,61
156	5	64654	4	54,64	0,5	3	0,0043	58426,32	21,76	140451,06	52,30
157	5	64655	0	32,74	0,6	3	0,0032	0,00	0,00	6780,19	18,63
158	5	64658	1	74,65	0,6	3	0,0066	92281,82	57,02	106522,49	65,82
159	5	64662	1	63,03	0,6	3	0,0220	0,00	0,00	172208,08	77,38
160	5	64664	2	37,45	0,6	3	0,0062	3426,44	2,62	125218,15	95,65
161	5	64665	1	45,58	0,6	3	0,0087	0,00	0,00	74478,29	97,46
162	5	64666	0	71,66	0,5	3	0,0029	83033,73	69,70	118771,95	99,70
163	5	64668	3	70,68	0,5	3	0,0024	72655,21	97,49	74489,58	99,95
164	5	64669	0	64,24	0,6	3	0,0015	18667,47	12,03	139908,05	90,14
165	5	64676	0	51,51	0,6	3	0,0237	0,00	0,00	6008,44	4,43
166	5	64677	0	46,77	0,6	3	0,0099	0,00	0,00	93,01	1,25
167	5	64682	1	49,74	0,7	3	0,0149	0,00	0,00	86139,33	76,64
168	5	64689	0	35,04	0,6	3	0,0050	0,00	0,00	35324,04	62,95
169	5	64694	0	74,80	0,6	3	0,0035	0,00	0,00	20750,30	100,00
170	5	64695	0	52,40	0,6	3	0,0051	0,00	0,00	87347,69	64,11
171	5	64699	3	33,86	0,6	3	0,0072	407,50	0,73	2099,96	3,74
172	5	64711	0	80,64	0,4	2	0,0005	19651,53	20,55	47203,74	49,35
173	5	64725	0	36,57	0,6	3	0,0007	0,00	0,00	13104,62	88,58
174	5	64733	1	85,25	0,5	1	0,0008	13,01	0,07	12937,68	73,05
175	5	64735	0	69,33	0,6	3	0,0028	0,00	0,00	15564,86	98,84
176	5	64736	1	67,04	0,6	3	0,0024	0,00	0,00	23285,30	91,28
177	5	64737	0	87,43	0,5	3	0,0010	2,79	0,02	13872,18	100,00
178	5	64738	1	98,41	0,4	1	0,0010	60571,13	44,32	20574,98	15,05
179	5	64739	1	71,54	0,4	1	0,0005	10368,09	79,93	11138,79	85,87
180	5	64741	0	93,95	0,4	1	0,0006	37140,81	100,00	4858,09	13,08
181	5	64742	0	88,64	0,4	3	0,0017	18056,59	100,00	3374,25	18,69
182	5	64744	1	81,76	0,4	1	0,0006	132516,41	99,99	127684,84	96,35
183	5	64746	1	96,00	0,4	1	0,0008	21568,74	100,00	19682,76	91,26
184	5	64747	0	88,66	0,4	1	0,0005	35175,29	100,00	11089,20	31,53

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
185	5	64748	1	94,96	0,4	1	0,0011	37822,39	100,00	36311,92	96,01
186	5	64749	0	94,82	0,4	1	0,0022	65747,88	100,00	65660,91	99,87
187	5	64761	3	84,84	0,5	3	0,0021	50409,96	46,45	98309,30	90,58
188	5	64762	2	93,33	0,5	1	0,0004	47832,45	99,99	47835,13	100,00
189	5	64764	0	71,32	0,6	3	0,0136	0,00	0,00	1941,98	2,06
190	5	64765	1	96,53	0,5	1	0,0032	15183,01	55,97	25625,27	94,47
191	5	64766	2	65,75	0,5	1	0,0008	40859,84	100,00	24269,75	59,40
192	5	64768	0	55,62	0,6	3	0,0056	34466,02	51,53	8612,05	12,88
193	5	64769	3	62,39	0,6	3	0,0115	0,00	0,00	96670,29	77,56
194	5	64774	0	70,92	0,6	3	0,0019	0,00	0,00	15505,69	81,01
195	5	64781	0	46,87	0,6	3	0,0057	0,00	0,00	58259,67	100,00
196	5	64782	1	62,30	0,6	3	0,0057	0,00	0,00	61378,63	100,00
197	5	64783	0	81,48	0,6	3	0,0052	0,00	0,00	52358,89	81,31
198	5	64784	0	88,63	0,6	3	0,0044	0,00	0,00	926,12	1,72
199	5	64786	0	87,59	0,6	3	0,0015	0,00	0,00	755,68	1,71
200	5	64791	2	60,09	0,6	3	0,0018	0,00	0,00	51746,19	90,89
201	5	64792	0	52,81	0,6	3	0,0039	0,00	0,00	115093,30	99,36
202	5	64797	0	31,68	0,6	3	0,0040	0,00	0,00	39036,54	30,05
203	5	64798	0	63,98	0,6	3	0,0078	0,00	0,00	54007,05	94,18
204	5	64799	0	37,46	0,6	3	0,0122	0,00	0,00	9727,91	99,81
205	5	64811	0	55,82	0,6	3	0,0024	0,00	0,00	29410,87	69,17
206	5	64812	0	46,69	0,6	3	0,0107	0,00	0,00	914,49	4,66
207	5	64815	0	39,72	0,6	3	0,0035	0,00	0,00	2190,75	13,42
208	5	64821	1	30,49	0,6	3	0,0030	0,00	0,00	297,55	1,93
209	5	64829	0	29,23	0,7	3	0,0024	0,00	0,00	2473,07	5,71
210	5	64841	0	25,66	0,7	3	0,0025	0,00	0,00	4567,78	11,56
211	5	64847	0	41,62	0,8	3	0,0028	0,00	0,00	34894,85	91,53
212	5	64848	0	20,22	0,8	3	0,0035	0,00	0,00	25207,76	98,37
213	5	64849	0	31,46	0,8	3	0,0037	1222,16	4,29	28227,58	99,12
214	5	64854	0	12,55	0,8	3	0,0041	0,00	0,00	12091,96	47,84
215	5	64862	0	17,42	0,8	3	0,0017	0,00	0,00	2582,03	49,95
216	5	64866	0	32,03	0,8	3	0,0017	0,00	0,00	4255,88	81,74
217	5	64883	0	84,35	0,8	3	0,0100	0,00	0,00	30095,48	93,37
218	5	64889	0	39,44	0,7	3	0,0202	0,00	0,00	1265,44	3,67
219	5	64892	0	80,23	0,8	3	0,0158	26957,99	53,58	49970,26	99,32
220	5	64894	0	72,73	0,8	3	0,0045	17608,15	88,90	17673,43	89,23
221	5	64898	0	79,89	0,8	1	0,0299	41409,85	99,94	40551,53	97,87

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
222	5	64899	1	62,22	0,8	3	0,0216	75394,08	82,58	79005,45	86,54
223	5	64915	0	23,65	0,6	3	0,0034	0,00	0,00	588,18	1,55
224	5	64916	0	36,60	0,7	3	0,0047	0,00	0,00	2660,61	3,49
225	5	64941	0	11,56	0,6	3	0,0185	0,00	0,00	0,00	0,00
226	5	64946	0	63,15	0,8	5	0,0063	46,21	0,24	19390,74	99,18
227	5	64949	0	71,18	0,8	5	0,0037	0,00	0,00	16456,20	93,40
228	5	64982	0	12,29	0,6	3	0,0063	0,00	0,00	0,00	0,00
229	5	64986	0	20,21	0,7	3	0,0117	3340,56	4,56	65789,98	89,84
230	5	64995	0	13,31	0,8	3	0,0033	0,00	0,00	0,00	0,00
231	5	64996	0	11,74	0,7	3	0,0101	2828,82	2,80	2225,02	2,20
232	5	64998	1	44,26	0,8	5	0,0055	11624,66	22,79	50350,19	98,70
233	5	64999	0	24,96	0,7	5	0,0082	345,12	0,33	5283,07	5,07
234	5	65116	0	50,21	0,5	5	0,0018	89,16	0,05	1961,55	1,09
235	5	65374	0	66,25	0,5	2	0,0036	0,00	0,00	55757,67	96,99
236	5	65392	0	0,00	0,4	2	0,0050	0,00	0,00	560,66	1,32
237	5	65415	0	70,04	0,4	2	0,0008	5031,33	100,00	5031,33	100,00
238	5	65585	0	49,00	0,4	3	0,0031	21675,37	100,00	10511,58	48,50
239	5	65587	0	44,92	0,4	3	0,0043	88635,10	100,00	12121,85	13,68
240	5	65589	0	33,70	0,5	2	0,0035	64363,23	100,00	214,40	0,33
241	5	65811	0	55,29	0,4	3	0,0032	13602,38	99,83	13625,26	100,00
242	5	65852	0	56,97	0,4	3	0,0488	29269,04	100,00	25744,35	87,96
243	5	65855	0	28,77	0,5	2	0,0264	18522,07	100,00	9054,41	48,88
244	5	65972	1	93,54	0,4	3	0,0000	9237,25	99,89	9238,48	99,91
245	5	65973	0	53,06	0,5	3	0,0033	16634,38	59,67	16822,74	60,35
246	5	66224	0	99,32	0,4	3	0,0000	16212,80	100,00	16212,86	100,00
247	5	66227	0	98,06	0,4	3	0,0000	35631,83	100,00	35631,83	100,00
248	5	66234	0	100,00	0,4	3	0,0000	5268,93	100,00	5268,93	100,00
249	5	66254	0	100,00	0,5	3	0,0000	12356,31	100,00	12356,31	100,00
250	5	66256	0	99,97	0,5	3	0,0000	22953,18	100,00	22953,18	100,00
251	5	66257	0	98,82	0,5	3	0,0000	14159,57	100,00	14159,57	100,00
252	5	66261	0	99,36	0,5	3	0,0000	2003,17	100,00	2003,17	100,00
253	5	66467	0	68,23	0,5	2	0,0131	0,00	0,00	967,13	14,74
254	5	66623	0	99,51	0,5	3	0,0000	72097,98	100,00	72097,99	100,00
255	5	66668	0	64,64	0,5	2	0,0031	794,35	4,47	14951,04	84,13
256	5	66696	0	21,43	0,6	3	0,0107	0,00	0,00	3250,20	5,46
257	5	66821	0	39,70	0,5	3	0,1998	0,00	0,00	23051,71	70,68
258	5	66925	0	46,32	0,5	3	0,1440	0,00	0,00	0,00	0,00

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
259	5	66951	0	41,07	0,5	3	0,1427	0,00	0,00	97240,40	38,20
260	5	67821	0	82,72	0,4	3	0,0016	12493,48	5,82	21420,80	9,98
261	5	67822	0	50,30	0,5	3	0,0021	40675,94	35,62	52085,62	45,62
262	5	67966	0	74,70	0,5	5	0,0009	3110,82	49,55	3112,91	49,58
263	5	67973	1	71,79	0,5	5	0,0125	10995,88	57,64	19075,18	100,00
264	5	68141	0	90,70	0,5	5	0,0015	22,09	0,21	6204,60	59,52
265	5	68255	0	66,80	0,5	3	0,0018	0,00	0,00	0,00	0,00
266	5	68311	0	71,11	0,4	3	0,0009	7240,08	65,15	11112,42	100,00
267	5	68334	0	99,96	0,5	3	0,0000	43647,20	100,00	43647,20	100,00
268	5	68351	0	85,06	0,4	3	0,0003	2345,09	45,51	4993,16	96,89
269	5	68353	0	74,82	0,4	3	0,0009	2663,76	29,33	8817,24	97,09
270	5	68382	0	37,29	0,5	3	0,0037	0,00	0,00	1241,91	4,96
271	5	68389	0	93,02	0,5	3	0,0081	9142,35	31,07	27440,86	93,26
272	5	68461	0	40,23	0,6	4	0,0102	0,00	0,00	10162,02	65,83
273	5	68463	1	25,94	0,6	4	0,0034	0,00	0,00	10315,29	91,49
274	5	68464	0	60,14	0,6	4	0,0039	0,00	0,00	39610,69	99,58
275	5	68486	0	19,03	0,6	4	0,0067	0,00	0,00	10050,37	100,00
276	5	68489	0	49,94	0,6	4	0,0044	4219,40	24,20	17434,43	100,00
277	5	68497	1	16,68	0,6	4	0,0030	0,00	0,00	5665,54	100,00
278	5	68622	0	32,80	0,6	3	0,0068	0,00	0,00	0,00	0,00
279	5	68681	0	50,73	0,6	3	0,0044	0,00	0,00	0,00	0,00
280	5	68685	1	21,31	0,6	3	0,0172	0,00	0,00	0,00	0,00
281	5	68695	0	35,49	0,6	3	0,0049	0,00	0,00	13120,68	100,00
282	5	68732	1	57,21	0,6	3	0,0018	13691,59	35,04	18102,81	46,34
283	5	68748	1	100,00	0,6	4	0,0000	7084,43	100,00	7084,43	100,00
284	5	68756	0	48,50	0,6	2	0,0016	69,60	0,15	817,69	1,79
285	5	68757	0	25,81	0,6	2	0,0016	1,75	0,00	12735,47	9,31
286	5	68993	0	14,53	0,6	2	0,0054	0,00	0,00	1831,41	7,75
287	5	68998	0	11,23	0,6	2	0,0078	0,00	0,00	375,32	2,87
288	5	69133	0	91,60	0,5	3	0,0000	27127,18	95,70	28347,53	100,00
289	5	69159	0	81,08	0,5	3	0,0000	1734,00	99,98	1734,43	100,00
290	5	69163	0	86,84	0,4	3	0,0028	52692,03	58,91	89447,90	100,00
291	5	69166	0	74,18	0,4	3	0,0285	0,00	0,00	46426,20	26,98
292	5	69167	0	78,03	0,4	3	0,0102	0,00	0,00	119565,63	58,55
293	5	69169	0	77,92	0,4	3	0,0098	0,00	0,00	135981,24	86,41
294	5	69223	0	21,14	0,6	3	0,0082	0,00	0,00	0,00	0,00
295	5	69249	1	23,51	0,6	3	0,0065	0,00	0,00	88274,37	90,33

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
296	5	69262	0	16,59	0,6	3	0,0164	0,00	0,00	0,00	0,00
297	5	69286	0	40,96	0,6	3	0,0026	0,00	0,00	0,00	0,00
298	5	69294	0	41,26	0,5	3	0,0040	0,00	0,00	2212,64	2,08
299	5	69295	0	31,25	0,6	3	0,0024	0,00	0,00	0,00	0,00
300	5	69441	0	39,49	0,6	3	0,0211	0,00	0,00	15290,20	94,26
301	5	69443	0	17,55	0,5	3	0,0153	0,00	0,00	57021,51	74,88
302	5	69449	0	96,22	0,6	3	0,0045	86,97	0,45	18828,66	96,98
303	5	69462	4	32,07	0,6	3	0,0093	764,77	1,78	5269,95	12,25
304	5	69488	0	5,50	0,5	3	0,0038	0,00	0,00	0,00	0,00
305	5	69494	0	16,43	0,6	3	0,0024	0,00	0,00	445,03	0,64
306	5	69513	0	74,45	0,5	3	0,0050	0,00	0,00	10847,57	95,20
307	5	69514	0	24,60	0,4	3	0,0047	0,00	0,00	15978,43	100,00
308	5	69516	0	35,27	0,4	3	0,0068	0,00	0,00	40690,77	100,00
309	5	69519	0	53,84	0,5	3	0,0016	821,22	29,83	2653,61	96,39
310	5	69521	1	28,84	0,6	3	0,0065	3,94	0,01	23056,17	67,18
311	5	69523	1	20,85	0,6	3	0,0132	0,00	0,00	60517,24	40,16
312	5	69529	3	36,15	0,6	3	0,0078	21113,21	27,19	70952,69	91,38
313	5	69568	1	14,82	0,6	3	0,0074	10388,65	11,85	11224,27	12,80
314	5	69582	1	13,09	0,6	3	0,0226	0,00	0,00	3694,03	8,02
315	5	69626	0	43,84	0,6	3	0,0070	0,00	0,00	153012,33	98,77
316	5	69627	0	30,42	0,6	3	0,0090	0,00	0,00	15972,71	98,82
317	5	69629	0	42,04	0,7	3	0,0095	0,00	0,00	114823,03	88,96
318	5	69698	0	77,19	0,8	3	0,0038	0,00	0,00	27881,49	100,00
319	5	69811	0	46,64	0,5	4	0,0071	8167,34	18,01	45359,72	100,00
320	5	69861	0	51,25	0,6	2	0,0008	0,00	0,00	0,00	0,00
321	5	69866	0	59,30	0,6	2	0,0007	0,00	0,00	0,00	0,00
322	5	69886	1	42,00	0,5	2	0,0045	0,00	0,00	0,00	0,00
323	5	69946	0	43,08	0,8	3	0,0050	0,00	0,00	123619,23	67,84
324	5	69954	0	63,40	0,4	2	0,0009	0,00	0,00	23,83	0,05
325	5	69966	0	37,59	0,8	3	0,0017	0,00	0,00	0,00	0,00
326	5	69981	2	23,44	0,8	3	0,0009	0,00	0,00	26556,07	95,17
327	5	69984	0	36,42	0,8	4	0,0022	0,00	0,00	24708,34	93,11
328	5	69985	0	31,91	0,8	4	0,0017	0,00	0,00	10681,42	23,59
329	5	69989	0	46,39	0,8	4	0,0024	0,00	0,00	1523,81	8,39
330	5	69993	0	7,22	0,7	3	0,0004	0,00	0,00	1896,95	100,00
331	5	69994	1	25,87	0,5	2	0,0010	0,00	0,00	27129,84	96,79
332	5	69995	3	30,19	0,7	3	0,0029	0,00	0,00	24569,29	99,76

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
333	5	69996	3	25,36	0,4	2	0,0013	0,00	0,00	7212,62	26,66
334	5	69997	1	39,78	0,6	4	0,0024	0,00	0,00	54930,42	80,91
335	5	69998	0	40,29	0,8	4	0,0041	0,00	0,00	17239,27	73,54
336	5	69999	0	21,01	0,7	4	0,0019	889,65	1,82	30905,72	63,15
337	5	71647	0	27,94	0,7	3	0,0031	43109,34	8,27	59517,50	11,42
338	5	71648	0	61,83	0,6	3	0,0028	29952,25	8,50	29937,28	8,50
339	5	71652	0	33,53	0,8	4	0,0115	0,00	0,00	0,00	0,00
340	5	71655	0	22,25	0,8	4	0,0152	0,00	0,00	0,00	0,00
341	5	71662	0	43,84	0,7	3	0,0106	0,00	0,00	0,00	0,00
342	5	71666	0	76,96	0,7	3	0,0042	0,00	0,00	0,00	0,00
343	5	71687	0	93,33	0,5	3	0,0007	30083,75	66,32	45359,60	100,00
344	5	71691	0	73,25	0,6	3	0,0018	4369,35	25,55	9417,61	55,07
345	5	71831	0	66,95	0,7	3	0,0053	0,00	0,00	0,00	0,00
346	5	71842	0	68,87	0,6	3	0,0027	1109,91	0,69	26845,24	16,81
347	5	71845	1	69,22	0,5	3	0,0032	21697,29	100,00	6246,46	28,79
348	5	71851	0	67,87	0,6	3	0,0148	0,00	0,00	517,98	1,29
349	5	71853	0	86,00	0,6	3	0,0127	0,00	0,00	0,00	0,00
350	5	71855	0	69,18	0,7	3	0,0067	0,00	0,00	18,07	0,08
351	5	71866	0	69,47	0,6	3	0,0013	0,00	0,00	0,00	0,00
352	5	71874	0	68,05	0,7	3	0,0135	0,00	0,00	0,00	0,00
353	5	71875	0	75,37	0,7	3	0,0036	0,00	0,00	0,00	0,00
354	5	71884	0	99,96	0,6	3	0,0000	30144,31	100,00	30144,31	100,00
355	5	71886	0	99,77	0,6	3	0,0000	70229,14	99,98	70226,79	99,98
356	5	71899	0	87,21	0,6	3	0,0019	141686,06	59,93	200267,94	84,71
357	5	71929	0	72,92	0,7	3	0,0094	47567,11	19,93	237619,62	99,53
358	5	71942	1	91,81	0,5	3	0,0013	137098,75	100,00	1963,51	1,43
359	5	72121	2	13,63	0,7	3	0,0274	0,00	0,00	0,00	0,00
360	5	72168	0	77,96	0,6	3	0,0217	0,00	0,00	42674,34	100,00
361	5	72196	0	89,66	0,7	3	0,0091	0,00	0,00	1085,79	1,44
362	5	72211	4	38,45	0,7	2	0,0830	148,39	0,26	32905,13	57,51
363	5	72314	0	42,79	0,7	3	0,0023	0,00	0,00	24659,99	81,45
364	5	72347	0	90,98	0,6	3	0,0026	0,00	0,00	0,00	0,00
365	5	72349	0	81,57	0,6	3	0,0024	0,00	0,00	0,00	0,00
366	5	72411	0	0,92	0,4	2	0,0019	0,00	0,00	0,00	0,00
367	5	72549	1	61,56	0,4	2	0,0018	168690,41	67,33	172458,81	68,84
368	5	72556	0	98,57	0,4	2	0,0023	0,00	0,00	0,00	0,00
369	5	72632	0	78,10	0,4	2	0,0006	0,00	0,00	53645,56	85,77

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
370	5	72643	0	89,10	0,4	2	0,0127	0,00	0,00	45189,85	99,47
371	5	72646	0	99,50	0,4	2	0,0008	21392,61	68,43	31216,76	99,86
372	5	72653	0	83,13	0,5	2	0,0617	547,06	0,23	85244,00	35,54
373	5	72656	0	73,04	0,5	2	0,0788	0,00	0,00	76918,67	71,64
374	5	72669	0	96,77	0,4	2	0,0005	34505,59	25,05	36457,72	26,47
375	5	72681	0	82,93	0,4	2	0,0003	3955,34	11,38	0,00	0,00
376	5	72686	0	71,98	0,4	2	0,0006	0,00	0,00	1231,22	1,35
377	5	72693	0	89,46	0,4	2	0,0007	0,00	0,00	0,00	0,00
378	5	72695	0	72,83	0,5	2	0,0011	0,00	0,00	227,16	0,14
379	5	72696	0	73,78	0,5	2	0,0013	16394,97	21,64	12485,63	16,48
380	5	72699	0	69,07	0,5	2	0,0019	18,11	0,01	821,47	0,50
381	5	72724	0	93,16	0,4	2	0,0016	0,00	0,00	0,00	0,00
382	5	72729	0	70,53	0,4	2	0,0018	0,00	0,00	0,00	0,00
383	5	72733	0	71,24	0,6	3	0,0009	0,00	0,00	0,00	0,00
384	5	72786	0	99,12	0,4	3	0,0002	0,00	0,00	0,00	0,00
385	5	72797	0	68,28	0,5	2	0,0105	0,00	0,00	0,00	0,00
386	5	72816	0	82,06	0,5	3	0,0007	0,00	0,00	824,31	3,15
387	5	72817	1	87,52	0,5	3	0,0045	0,00	0,00	0,00	0,00
388	5	72818	0	97,23	0,5	3	0,0019	0,00	0,00	202,56	0,62
389	5	72819	0	89,62	0,5	3	0,0011	0,00	0,00	108,90	0,31
390	5	72829	0	75,96	0,6	3	0,0037	0,00	0,00	7599,76	15,27
391	5	72834	0	77,94	0,5	3	0,0013	0,00	0,00	8502,86	8,51
392	5	72862	0	58,39	0,6	3	0,0064	0,00	0,00	7844,54	3,99
393	5	72871	2	68,34	0,6	3	0,0238	0,00	0,00	33767,84	85,79
394	5	72872	0	75,39	0,6	3	0,0049	0,00	0,00	35791,88	80,30
395	5	72876	0	90,96	0,6	3	0,0048	0,00	0,00	21511,29	93,45
396	5	72878	0	66,48	0,6	3	0,0051	0,00	0,00	15455,73	73,63
397	5	72881	0	93,73	0,6	3	0,0029	0,00	0,00	19964,99	97,36
398	5	72887	0	82,98	0,6	3	0,0112	0,00	0,00	11069,82	90,34
399	5	72889	0	24,73	0,6	3	0,0211	0,00	0,00	6407,00	27,67
400	5	72891	0	82,95	0,6	3	0,0073	0,00	0,00	38740,73	78,98
401	5	72911	0	86,13	0,5	2	0,0002	0,00	0,00	0,00	0,00
402	5	72922	0	71,00	0,5	2	0,0008	0,00	0,00	1580,23	0,52
403	5	72929	0	80,69	0,5	2	0,0253	64842,40	10,70	109243,23	18,03
404	5	72933	0	82,57	0,5	3	0,0013	0,00	0,00	271328,97	82,69
405	5	72935	0	78,67	0,6	2	0,0002	0,00	0,00	141500,87	90,90
406	5	72946	0	97,96	0,5	2	0,0000	26553,41	100,00	26553,41	100,00

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
407	5	72954	1	85,98	0,5	2	0,0001	0,00	0,00	88438,84	100,00
408	5	72963	1	71,12	0,6	2	0,0004	0,00	0,00	33355,82	97,66
409	5	72982	0	97,03	0,6	2	0,0001	0,00	0,00	3845,83	6,79
410	5	72991	0	90,85	0,5	2	0,0001	10838,39	15,10	71800,78	100,00
411	5	72992	3	99,36	0,5	2	0,0000	261980,07	93,85	262787,42	94,14
412	5	73111	0	77,62	0,6	3	0,0310	0,00	0,00	0,00	0,00
413	5	73114	0	21,01	0,6	3	0,0021	0,00	0,00	0,00	0,00
414	5	74197	1	51,99	0,4	2	0,0307	41343,89	97,99	15888,97	37,66
415	5	74199	1	30,63	0,4	2	0,0374	66356,16	99,24	276,68	0,41
416	5	74222	1	88,27	0,4	2	0,0049	73184,91	16,34	315496,43	70,44
417	5	74225	3	74,43	0,5	3	0,0105	290763,53	36,80	615012,07	77,83
418	5	74226	1	56,98	0,6	3	0,0330	123660,42	55,45	138233,95	61,98
419	5	74228	0	63,65	0,6	3	0,0319	196350,60	58,82	222692,67	66,71
420	5	74229	0	65,51	0,6	3	0,0635	416725,87	62,10	419856,03	62,57
421	5	74235	0	56,53	0,4	2	0,0088	0,00	0,00	68396,86	28,90
422	5	74237	0	52,86	0,6	2	0,0055	0,00	0,00	3546,57	4,82
423	5	74243	0	76,99	0,6	4	0,1434	21885,74	95,75	22703,10	99,33
424	5	74244	0	42,47	0,7	4	0,2763	60846,89	96,41	5844,47	9,26
425	5	74245	0	67,99	0,6	4	0,1918	22921,86	74,99	20810,89	68,09
426	5	74255	0	54,38	0,6	4	0,0512	0,00	0,00	257,27	4,61
427	5	74261	0	76,15	0,6	4	0,0716	0,00	0,00	26907,98	82,37
428	5	74262	1	70,59	0,6	4	0,0942	4279,37	6,75	46444,86	73,22
429	5	74263	0	88,19	0,6	4	0,1157	0,00	0,00	18404,35	99,94
430	5	74264	0	40,27	0,7	4	0,0408	2314,37	1,26	69160,84	37,66
431	5	74269	0	33,24	0,8	4	0,0016	0,00	0,00	305,62	0,35
432	5	74272	0	73,28	0,5	2	0,1015	1776,31	0,68	178309,46	68,38
433	5	74278	0	77,39	0,6	2	0,0247	22144,47	4,82	150174,77	32,71
434	5	74281	0	85,17	0,6	3	0,0908	0,00	0,00	34277,28	37,26
435	5	74282	0	77,37	0,6	3	0,0215	0,00	0,00	29646,51	67,43
436	5	74283	0	81,58	0,6	3	0,0115	0,00	0,00	3945,00	99,55
437	5	74292	0	41,65	0,6	3	0,2318	0,00	0,00	1483,80	0,55
438	5	74317	0	34,68	0,4	2	0,0043	0,00	0,00	2079,43	70,02
439	5	74332	1	74,22	0,4	2	0,0122	0,00	0,00	1161,33	2,46
440	5	74394	0	39,52	0,5	2	0,0232	0,00	0,00	9241,63	5,29
441	5	74397	2	35,66	0,4	2	0,0277	0,00	0,00	12958,89	44,51
442	5	74411	0	43,92	0,4	2	0,0247	2144,19	10,82	5,63	0,03
443	5	74413	0	47,58	0,6	2	0,0230	980,91	0,80	1721,65	1,41

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
444	5	74414	0	67,34	0,5	2	0,0125	0,00	0,00	40802,59	57,67
445	5	74415	0	58,68	0,6	2	0,0199	0,00	0,00	18906,35	32,24
446	5	74418	0	55,78	0,6	2	0,0252	0,00	0,00	6434,80	13,33
447	5	74419	0	26,62	0,6	2	0,0399	0,00	0,00	1055,40	13,61
448	5	74421	1	51,20	0,6	2	0,0123	0,00	0,00	58779,15	60,63
449	5	74422	0	64,21	0,6	2	0,0081	0,00	0,00	53525,84	82,11
450	5	74423	0	83,18	0,5	2	0,0130	18,78	0,01	148242,91	72,47
451	5	74424	0	62,49	0,4	2	0,0407	10729,91	4,69	105763,04	46,22
452	5	74426	0	60,04	0,5	2	0,1148	17699,23	20,78	31391,99	36,85
453	5	74428	0	71,12	0,5	2	0,1569	18024,67	16,47	31125,16	28,43
454	5	74429	0	65,48	0,5	2	0,1141	46982,42	41,49	98522,60	87,01
455	5	74441	0	68,90	0,5	3	0,0097	0,00	0,00	87197,85	39,74
456	5	74444	0	51,70	0,5	2	0,1236	0,00	0,00	78452,05	60,83
457	5	74447	0	54,60	0,5	3	0,0383	0,00	0,00	86996,83	58,72
458	5	74454	0	67,29	0,6	2	0,0150	0,00	0,00	16218,87	74,61
459	5	74461	0	83,20	0,5	3	0,0098	0,00	0,00	119651,67	92,28
460	5	74471	0	25,97	0,5	3	0,0098	0,00	0,00	5104,33	28,52
461	5	74473	0	11,54	0,6	2	0,0050	0,00	0,00	981,41	16,49
462	5	74476	0	78,33	0,5	3	0,0619	0,00	0,00	91349,04	99,27
463	5	74478	0	82,48	0,6	2	0,0477	0,00	0,00	17547,61	12,71
464	5	74485	0	79,99	0,5	3	0,0087	0,00	0,00	29978,46	100,00
465	5	74512	2	19,14	0,4	2	0,0454	7327,15	17,30	2027,74	4,79
466	5	74521	1	42,21	0,5	2	0,0170	27891,39	29,96	21898,14	23,53
467	5	74532	0	3,15	0,5	2	0,0237	0,00	0,00	3241,00	8,88
468	5	74544	0	52,85	0,6	2	0,0246	0,00	0,00	11511,56	10,04
469	5	74572	0	66,29	0,6	2	0,0064	0,00	0,00	3426,90	18,72
470	5	74581	1	62,04	0,6	2	0,0105	0,00	0,00	65597,68	85,94
471	5	74582	1	76,67	0,5	5	0,0095	121664,17	38,57	61760,88	19,58
472	5	74583	0	46,50	0,5	2	0,0064	0,00	0,00	16804,42	43,14
473	5	74584	0	87,00	0,5	2	0,0031	302952,22	49,54	465510,08	76,12
474	5	74586	0	42,26	0,5	2	0,0078	0,00	0,00	26946,60	43,95
475	5	74588	0	74,98	0,4	2	0,0042	0,00	0,00	4997,92	4,52
476	5	74589	0	84,12	0,4	2	0,0023	58840,97	12,89	362664,41	79,47
477	5	74596	0	44,60	0,6	5	0,0503	2154,71	1,16	2226,37	1,20
478	5	74622	1	19,65	0,5	2	0,0324	0,00	0,00	19802,03	25,63
479	5	74642	0	26,99	0,6	5	0,0706	0,00	0,00	2853,71	1,95
480	5	74646	0	18,26	0,6	5	0,0183	46708,75	13,04	179310,64	50,04

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
481	5	74648	0	30,91	0,6	5	0,0381	11142,44	8,81	78648,58	62,20
482	5	74649	1	44,53	0,6	5	0,0395	0,00	0,00	68020,99	31,09
483	5	74652	1	18,59	0,6	5	0,0553	10950,19	29,39	0,00	0,00
484	5	74654	0	21,27	0,6	5	0,0121	25,05	0,04	18863,24	29,82
485	5	74655	1	20,91	0,6	5	0,0163	0,00	0,00	5710,81	20,11
486	5	74668	1	35,15	0,7	5	0,0018	0,00	0,00	15634,87	57,71
487	5	74692	0	44,87	0,6	5	0,0288	0,00	0,00	324,00	0,63
488	5	74695	0	34,82	0,7	5	0,0114	0,00	0,00	63391,53	66,47
489	5	74697	1	36,98	0,7	1	0,0172	0,00	0,00	28750,51	98,31
490	5	74699	1	28,19	0,7	5	0,0075	0,00	0,00	138221,81	92,13
491	5	74711	1	39,81	0,6	5	0,0556	87474,64	32,33	110277,31	40,76
492	5	74712	0	43,23	0,6	5	0,0467	64624,54	69,99	8575,13	9,29
493	5	74714	0	72,34	0,5	5	0,0105	135364,15	97,56	113946,17	82,12
494	5	74715	3	52,81	0,5	5	0,0114	39520,39	16,56	51576,04	21,61
495	5	74717	0	54,96	0,5	5	0,0134	2447,69	2,62	23597,23	25,28
496	5	74718	0	54,14	0,7	5	0,0165	0,00	0,00	97405,03	85,44
497	5	74721	0	82,23	0,5	5	0,0138	27083,64	69,76	31297,97	80,62
498	5	74727	0	97,16	0,5	5	0,0024	105715,84	97,64	81571,42	75,34
499	5	74734	0	73,29	0,5	5	0,0107	7646,27	19,90	32214,06	83,82
500	5	74744	0	85,37	0,5	5	0,0087	505,18	3,45	70,73	0,48
501	5	74747	0	92,94	0,6	1	0,0021	10147,19	19,20	51162,93	96,79
502	5	74749	0	74,39	0,6	1	0,0041	0,00	0,00	13554,28	74,00
503	5	74752	1	34,00	0,6	5	0,0051	0,00	0,00	6028,69	33,93
504	5	74755	0	38,98	0,6	5	0,0049	0,00	0,00	6418,04	55,90
505	5	74772	0	58,63	0,6	5	0,0023	0,00	0,00	18408,50	78,69
506	5	74781	0	82,78	0,5	5	0,0032	0,00	0,00	193813,93	67,71
507	5	74782	0	67,96	0,5	5	0,0277	0,00	0,00	233446,80	75,87
508	5	74783	2	67,47	0,5	5	0,0066	10001,68	2,23	220243,29	49,21
509	5	74784	2	46,33	0,6	5	0,0289	2319,07	0,70	135289,06	40,77
510	5	74785	0	66,54	0,5	5	0,0028	408,73	0,17	133783,44	54,89
511	5	74786	0	68,55	0,5	5	0,0063	16382,36	6,97	200832,48	85,49
512	5	74789	0	47,34	0,6	5	0,0079	0,00	0,00	43517,25	13,40
513	5	74795	0	50,98	0,5	5	0,0064	0,00	0,00	0,00	0,00
514	5	74798	1	47,47	0,7	5	0,0181	0,00	0,00	92104,25	64,18
515	5	74822	0	61,20	0,5	5	0,0043	0,00	0,00	54370,01	72,66
516	5	74846	0	34,63	0,6	5	0,0322	0,00	0,00	2024,27	2,62
517	5	74847	1	45,66	0,6	5	0,0280	12257,60	4,23	122320,47	42,26

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
518	5	74848	0	59,41	0,7	3	0,0105	0,00	0,00	86798,43	62,39
519	5	74849	0	26,54	0,7	1	0,0319	123391,46	74,00	73057,82	43,81
520	5	74862	0	8,52	0,7	5	0,0513	0,00	0,00	0,00	0,00
521	5	74868	0	50,59	0,7	5	0,0182	2880,16	9,94	28058,17	96,81
522	5	74873	0	17,48	0,7	5	0,0307	0,00	0,00	6859,20	21,41
523	5	74878	0	52,86	0,7	5	0,0351	953,93	1,80	45405,22	85,51
524	5	74889	1	58,65	0,6	5	0,0118	0,00	0,00	52732,49	90,44
525	5	74892	1	52,13	0,6	5	0,0091	0,00	0,00	118601,96	35,18
526	5	74894	0	46,98	0,7	5	0,0338	4765,24	2,33	31899,38	15,60
527	5	74896	0	43,57	0,8	5	0,0305	0,00	0,00	76772,12	99,03
528	5	74918	1	35,55	0,6	5	0,0094	0,00	0,00	60322,44	65,75
529	5	74923	0	39,14	0,5	5	0,0142	0,00	0,00	39171,49	39,31
530	5	74925	0	39,72	0,4	5	0,0055	0,00	0,00	66844,82	61,26
531	5	74927	0	59,54	0,4	5	0,0052	0,00	0,00	37997,57	100,00
532	5	74928	4	50,30	0,5	5	0,0029	6709,50	8,16	70107,59	85,25
533	5	74929	0	56,23	0,5	5	0,0007	40799,14	26,92	119444,19	78,82
534	5	74941	2	50,59	0,5	5	0,0160	268,09	0,07	316112,19	77,14
535	5	74942	1	46,64	0,4	5	0,0019	0,00	0,00	83644,76	38,82
536	5	74944	1	56,71	0,5	5	0,0020	38448,39	19,32	129939,62	65,30
537	5	74945	0	7,77	0,4	5	0,0046	0,00	0,00	3,00	0,01
538	5	74946	11	72,78	0,4	5	0,0013	0,00	0,00	169661,57	83,52
539	5	74947	0	15,26	0,5	5	0,0058	0,00	0,00	1176,10	2,33
540	5	74948	92	70,20	0,5	5	0,0017	67783,38	15,07	392658,37	87,31
541	5	74949	28	37,45	0,6	1	0,0479	60446,29	5,23	530549,58	45,92
542	5	74951	1	43,04	0,5	5	0,0202	0,00	0,00	216964,56	58,53
543	5	74952	0	45,17	0,4	5	0,0018	0,00	0,00	116196,29	97,05
544	5	74954	1	65,92	0,7	5	0,0077	0,00	0,00	315996,22	53,85
545	5	74955	0	57,09	0,4	5	0,0115	0,00	0,00	19658,24	50,48
546	5	74956	0	75,69	0,6	5	0,0073	0,00	0,00	168893,70	97,98
547	5	74957	0	48,39	0,4	5	0,0044	1384,49	1,40	32082,49	32,49
548	5	74958	0	68,63	0,6	5	0,0086	0,00	0,00	236516,22	89,40
549	5	74959	0	34,75	0,4	5	0,0128	0,00	0,00	34830,61	15,04
550	5	74961	0	43,26	0,4	5	0,0031	0,00	0,00	74253,53	40,79
551	5	74963	2	31,16	0,6	5	0,0168	203,29	0,09	37138,34	15,57
552	5	74964	0	39,19	0,6	5	0,0231	49,75	0,06	75295,49	86,78
553	5	74965	1	9,50	0,6	5	0,0379	12065,35	2,22	104525,01	19,25
554	5	74984	0	21,89	0,6	5	0,0061	0,00	0,00	65525,20	33,46

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
555	5	74985	0	29,96	0,6	5	0,0063	0,00	0,00	10770,01	23,11
556	5	74986	0	6,84	0,6	5	0,0382	0,00	0,00	6634,99	4,28
557	5	74987	0	24,18	0,7	5	0,0092	0,00	0,00	59660,53	51,40
558	5	74988	0	9,42	0,6	5	0,0173	0,00	0,00	13190,00	6,16
559	5	74993	0	16,08	0,6	5	0,0166	0,00	0,00	9444,27	1,98
560	5	74995	1	8,87	0,6	5	0,0060	5911,46	1,66	89531,63	25,18
561	5	74996	2	32,74	0,5	5	0,0013	27193,78	32,81	27061,46	32,65
562	5	74998	3	43,35	0,5	5	0,0015	25968,22	31,88	35995,65	44,19
563	5	75789	0	34,36	0,5	5	0,0061	16990,26	2,69	271067,36	42,91
564	5	75824	0	11,77	0,5	5	0,0026	0,00	0,00	0,00	0,00
565	5	75825	3	59,65	0,5	5	0,0012	0,00	0,00	0,00	0,00
566	5	75826	2	49,01	0,5	5	0,0025	0,00	0,00	0,00	0,00
567	5	75827	1	54,13	0,5	5	0,0026	4383,38	7,65	4391,84	7,66
568	5	75829	7	53,22	0,4	5	0,0007	12527,91	2,70	14558,32	3,13
569	5	75854	0	55,47	0,4	5	0,0008	0,00	0,00	0,00	0,00
570	5	75868	0	71,91	0,5	5	0,0085	5416,60	10,14	5397,78	10,10
571	5	75869	1	61,68	0,5	5	0,0018	1436,59	1,35	2012,64	1,89
572	5	75891	0	74,54	0,4	5	0,0076	2071,94	0,62	2063,40	0,61
573	5	75892	1	86,65	0,4	5	0,0007	0,00	0,00	664,84	0,63
574	5	75894	0	32,05	0,4	5	0,0005	0,00	0,00	1905,09	2,43
575	5	75897	0	85,95	0,4	5	0,0004	47121,40	33,70	128254,68	91,72
576	5	75898	1	92,04	0,4	5	0,0005	12650,19	30,29	41767,80	100,00
577	5	75899	51	72,74	0,4	5	0,0010	18229,71	8,60	164260,73	77,48
578	5	76648	1	57,80	0,6	5	0,0016	11301,84	87,62	12250,03	94,97
579	5	76649	0	29,90	0,6	5	0,0031	1955,74	13,57	10692,00	74,19
580	5	76684	0	56,85	0,4	5	0,0006	8242,56	39,03	17938,92	84,95
581	5	76689	0	91,89	0,4	5	0,0008	6649,13	96,94	6858,91	100,00
582	5	76692	1	66,38	0,4	5	0,0010	6940,56	54,10	10071,15	78,50
583	5	76693	0	33,41	0,4	5	0,0011	4131,97	12,58	18233,67	55,51
584	5	76694	1	70,84	0,4	5	0,0005	8841,04	42,19	19051,16	90,90
585	5	76698	1	47,45	0,4	5	0,0003	4989,15	30,43	8442,05	51,49
586	5	76889	0	40,23	0,8	5	0,0050	0,00	0,00	4638,68	72,26
587	5	84383	0	5,01	0,6	2	0,0100	0,00	0,00	21710,77	3,40
588	5	84384	0	13,96	0,7	3	0,0159	10,19	0,00	225241,63	33,60
589	5	84386	3	6,94	0,8	3	0,0089	8830,20	0,96	43614,58	4,72
590	5	84389	0	15,67	0,8	3	0,0307	535,19	0,12	2261,67	0,53
591	5	84418	0	8,46	0,6	1	0,0183	0,00	0,00	0,00	0,00

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
592	5	84423	1	0,35	0,6	1	0,0085	1480,12	0,13	3751,03	0,33
593	5	84424	0	17,06	0,7	1	0,0070	97847,93	32,42	76576,42	25,37
594	5	84425	1	1,62	0,6	1	0,0013	47937,51	29,05	1285,79	0,78
595	5	84432	0	4,12	0,6	1	0,0140	293,51	0,09	677,91	0,20
596	5	84442	0	0,14	0,6	1	0,0122	0,00	0,00	174,34	0,05
597	5	84449	0	10,08	0,6	1	0,0071	45722,74	21,17	37015,45	17,14
598	5	84454	0	5,39	0,6	1	0,0055	993,80	1,07	1089,30	1,18
599	5	84458	0	5,35	0,6	1	0,0047	0,00	0,00	0,00	0,00
600	5	84462	0	6,99	0,7	1	0,0033	1854,08	0,43	90189,03	21,15
601	5	84463	0	1,87	0,6	1	0,0334	1267,20	0,86	1593,15	1,08
602	5	84464	0	5,36	0,6	1	0,0139	4833,31	4,98	720,09	0,74
603	5	84465	0	3,95	0,5	1	0,0021	3122,75	28,01	2108,92	18,92
604	5	84466	0	6,57	0,5	1	0,0111	0,00	0,00	1228,41	1,30
605	5	84468	0	0,47	0,5	1	0,0185	4348,97	21,82	0,00	0,00
606	5	84469	0	7,60	0,5	1	0,0077	8531,57	15,25	133,98	0,24
607	5	84482	6	3,58	0,6	1	0,0102	0,00	0,00	173,79	0,08
608	5	84485	0	0,74	0,7	1	0,0147	0,00	0,00	0,00	0,00
609	5	84486	14	7,56	0,6	1	0,0035	49594,39	31,12	28181,28	17,68
610	5	84488	3	9,73	0,6	1	0,0052	28928,41	37,12	1906,86	2,45
611	5	84489	2	20,74	0,6	1	0,0046	8558,67	9,67	18318,22	20,70
612	5	84491	0	1,60	0,7	1	0,0336	0,00	0,00	0,00	0,00
613	5	84492	1	5,67	0,6	1	0,0273	282,56	0,06	611,25	0,14
614	5	84495	2	0,98	0,7	1	0,0094	8984,96	7,25	1427,14	1,15
615	5	84496	0	0,96	0,6	1	0,0219	3924,61	1,39	0,00	0,00
616	5	84498	1	2,13	0,6	1	0,0508	0,00	0,00	755,14	0,29
617	5	84522	3	17,08	0,7	5	0,0224	42,97	0,00	254114,02	18,87
618	5	84523	0	16,84	0,6	2	0,0053	0,00	0,00	60719,31	7,02
619	5	84525	1	13,53	0,6	2	0,0048	0,00	0,00	0,00	0,00
620	5	84539	0	1,37	0,6	2	0,0302	403,16	0,88	0,00	0,00
621	5	84541	0	17,14	0,6	2	0,0077	478,25	0,20	88661,54	36,48
622	5	84548	1	14,26	0,6	2	0,0051	0,00	0,00	23467,64	91,67
623	5	84589	2	18,31	0,6	2	0,0088	4962,64	0,69	425862,15	58,80
624	5	84618	0	8,06	0,7	1	0,0043	225664,76	94,24	52303,32	21,84
625	5	84622	1	6,99	0,5	1	0,0104	9340,13	8,08	337,68	0,29
626	5	84641	0	4,66	0,6	1	0,0378	15867,03	99,34	10487,06	65,66
627	5	84644	0	8,57	0,5	1	0,0038	0,90	0,00	2920,20	6,85
628	5	84647	0	9,36	0,5	1	0,0152	0,00	0,00	37430,08	64,42

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
629	5	84648	2	10,31	0,6	1	0,0539	0,00	0,00	3096,57	6,54
630	5	84649	0	14,49	0,5	1	0,0700	48488,94	34,09	44971,61	31,61
631	5	84652	2	12,90	0,5	1	0,0076	57028,30	21,81	150351,54	57,51
632	5	84653	2	2,89	0,7	1	0,0137	1243,92	1,18	397,58	0,38
633	5	84656	0	4,74	0,7	1	0,0493	2280,32	4,05	1194,35	2,12
634	5	84657	0	1,65	0,6	1	0,0546	1144,87	1,06	0,00	0,00
635	5	84659	1	7,10	0,4	1	0,0270	21934,22	25,05	39562,32	45,18
636	5	84661	5	11,00	0,6	1	0,0100	93155,20	49,38	123640,92	65,54
637	5	84662	4	8,77	0,6	1	0,0583	110794,70	67,57	47151,71	28,76
638	5	84663	0	0,62	0,6	1	0,1355	0,00	0,00	159,09	0,09
639	5	84664	0	0,34	0,7	1	0,0855	25,08	0,01	0,00	0,00
640	5	84665	0	3,35	0,8	1	0,0277	91,72	0,19	0,00	0,00
641	5	84666	0	2,90	0,7	1	0,0191	137,72	0,32	0,00	0,00
642	5	84667	0	4,44	0,6	1	0,0673	0,00	0,00	0,00	0,00
643	5	84672	1	16,68	0,5	1	0,0138	19879,89	46,94	3513,24	8,30
644	5	84674	0	15,98	0,5	1	0,0045	12292,95	39,25	25670,03	81,96
645	5	84675	1	10,11	0,5	1	0,0058	278,65	0,87	31064,90	96,78
646	5	84676	0	4,18	0,6	1	0,0050	32652,42	28,39	733,42	0,64
647	5	84729	1	4,18	0,5	1	0,0055	0,00	0,00	66406,18	28,73
648	5	84768	0	12,48	0,5	2	0,0036	0,00	0,00	0,00	0,00
649	5	84818	0	0,34	0,5	1	0,0107	0,00	0,00	1860,07	1,40
650	5	84822	0	4,11	0,6	1	0,0081	0,00	0,00	64494,56	21,44
651	5	84832	0	15,92	0,6	5	0,0037	0,00	0,00	100325,25	36,07
652	5	84835	0	5,09	0,6	5	0,0094	0,00	0,00	1942,19	0,51
653	5	84841	1	8,08	0,5	1	0,0311	103,05	0,02	114397,86	22,08
654	5	84842	5	8,15	0,6	1	0,0601	3196,68	0,25	297734,51	23,40
655	5	84843	0	5,86	0,5	1	0,1327	738,81	0,57	37107,34	28,69
656	5	84844	0	11,71	0,5	1	0,0342	2266,50	2,15	11660,34	11,05
657	5	84845	3	12,58	0,5	1	0,0427	10967,07	1,80	268541,95	44,02
658	5	84846	0	6,37	0,6	1	0,0784	0,00	0,00	0,00	0,00
659	5	84847	1	5,84	0,6	1	0,0486	5187,32	1,44	1523,19	0,42
660	5	84852	0	15,94	0,7	5	0,0135	0,00	0,00	9416,77	3,50
661	5	84863	0	5,67	0,5	1	0,0475	0,00	0,00	153822,14	51,19
662	5	84864	0	5,05	0,5	1	0,0415	727,22	2,03	3339,72	9,30
663	5	84865	0	6,94	0,6	1	0,0098	0,00	0,00	9002,18	69,10
664	5	84866	0	11,66	0,6	1	0,0199	0,00	0,00	1783,80	1,88
665	5	84868	0	11,59	0,6	5	0,0023	372,77	0,69	3012,39	5,61

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
666	5	84869	1	19,69	0,5	1	0,0069	0,00	0,00	108827,45	97,59
667	5	84872	0	5,68	0,5	1	0,0224	14,43	0,01	474,82	0,36
668	5	84873	0	16,16	0,6	5	0,0252	2134,07	0,53	74174,39	18,38
669	5	84875	1	43,20	0,6	5	0,0038	4095,95	5,66	39029,91	53,98
670	5	84876	2	83,56	0,6	5	0,0004	51512,06	80,27	51649,54	80,49
671	5	84877	0	21,58	0,6	5	0,0036	6501,22	12,98	6613,43	13,21
672	5	84879	7	27,06	0,7	5	0,0053	62198,89	20,43	140911,08	46,29
673	5	84881	0	11,88	0,6	5	0,0081	2805,02	0,97	79752,07	27,61
674	5	84891	0	21,88	0,6	5	0,0081	0,00	0,00	30032,65	19,11
675	5	84892	1	3,85	0,5	5	0,0068	0,00	0,00	1954,54	0,87
676	5	84912	0	14,92	0,5	3	0,0176	0,00	0,00	281910,07	40,47
677	5	84914	3	33,47	0,6	3	0,0122	127033,58	17,35	518987,46	70,87
678	5	84916	2	25,32	0,7	3	0,0117	0,00	0,00	700837,01	59,55
679	5	84918	5	20,19	0,7	3	0,0149	0,00	0,00	493400,89	36,06
680	5	84924	1	20,27	0,7	5	0,0043	0,00	0,00	409187,89	69,21
681	5	84925	0	14,87	0,7	5	0,0340	0,00	0,00	72017,71	31,70
682	5	84926	0	12,40	0,8	5	0,0359	0,00	0,00	1782,44	2,34
683	5	84928	1	18,82	0,9	5	0,0200	0,00	0,00	88004,44	91,02
684	5	84944	1	16,07	0,7	3	0,0404	42197,66	3,30	304070,28	23,75
685	5	84946	0	16,07	0,6	3	0,0219	0,00	0,00	243388,78	29,98
686	5	84949	0	11,15	0,7	3	0,0154	9109,70	4,37	43582,93	20,91
687	5	84951	0	3,58	0,7	3	0,0109	0,00	0,00	494,85	0,34
688	5	84952	1	12,27	0,7	3	0,0272	74417,39	6,00	455469,19	36,70
689	5	84962	0	12,08	0,8	3	0,0177	6419,08	1,40	9348,98	2,04
690	5	84963	1	23,24	0,8	3	0,0111	5739,96	1,51	100294,75	26,32
691	5	84964	0	25,77	0,6	3	0,0241	0,00	0,00	107420,75	32,50
692	5	84966	0	19,69	0,7	3	0,0163	486,37	0,11	105300,11	23,88
693	5	84967	0	46,68	0,8	3	0,0196	0,00	0,00	156193,79	79,72
694	5	84968	17	38,23	0,8	1	0,0757	228854,45	42,73	370653,22	69,21
695	5	84969	0	23,30	0,8	3	0,0219	114359,15	12,63	495943,29	54,78
696	5	84982	0	16,34	0,9	5	0,0712	0,00	0,00	90571,50	44,21
697	5	84983	1	13,12	0,8	5	0,0388	2181,81	0,56	246424,32	63,24
698	5	84984	3	48,56	0,7	5	0,0307	14774,86	3,19	330629,64	71,46
699	5	84985	1	20,07	0,7	5	0,0248	0,00	0,00	183763,69	55,57
700	5	84986	1	21,50	0,7	5	0,0235	0,00	0,00	109233,24	81,87
701	5	84987	1	25,57	0,7	5	0,0397	0,00	0,00	60407,67	20,26
702	5	84988	0	26,96	0,7	5	0,0227	0,00	0,00	3720,13	2,59

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
703	5	84992	0	35,78	0,7	3	0,0246	0,00	0,00	306201,08	67,77
704	5	84993	1	15,19	0,7	5	0,0706	0,00	0,00	104,52	0,02
705	5	84994	0	10,51	0,7	5	0,0496	0,00	0,00	0,00	0,00
706	5	84996	0	15,73	0,7	5	0,0263	0,00	0,00	0,00	0,00
707	5	84998	1	21,45	0,7	5	0,0215	0,00	0,00	213868,14	20,31
708	5	84999	5	34,54	0,7	5	0,0395	8401,69	0,70	290616,49	24,32
709	5	89161	0	14,21	0,5	3	0,0030	0,00	0,00	2156,99	1,27
710	5	89162	0	41,60	0,5	3	0,0069	30932,35	9,43	250602,40	76,37
711	5	89168	1	10,18	0,7	3	0,0083	9322,32	6,90	47931,21	35,47
712	5	89176	0	12,57	0,5	3	0,0042	0,00	0,00	7060,10	4,89
713	5	89191	0	17,06	0,5	3	0,0034	0,00	0,00	197199,21	77,23
714	5	89195	2	32,64	0,5	3	0,0064	998,08	0,38	161709,05	61,18
715	5	89196	0	54,45	0,5	3	0,0044	169113,48	48,69	317764,40	91,48
716	5	89199	1	6,15	0,6	3	0,0052	0,00	0,00	212735,60	26,96
717	5	89522	8	29,92	0,6	5	0,0143	76927,97	3,83	1313714,76	65,40
718	5	89523	0	16,58	0,5	3	0,0088	22507,91	10,89	179585,62	86,88
719	5	89525	1	9,37	0,5	3	0,0167	3708,52	2,33	98972,48	62,14
720	5	89526	0	27,65	0,6	3	0,0119	0,00	0,00	103775,05	42,87
721	5	89527	1	26,08	0,5	3	0,0093	11648,35	4,40	63930,17	24,16
722	5	89528	2	23,91	0,7	3	0,0129	17177,58	5,63	100221,51	32,82
723	5	89529	0	26,47	0,7	3	0,0076	1099,86	0,14	438466,15	56,75
724	5	89544	0	28,55	0,5	3	0,0051	1403,84	0,40	260603,40	74,34
725	5	89548	0	31,07	0,6	3	0,0059	0,00	0,00	121095,79	36,96
726	5	89549	2	10,30	0,6	2	0,0195	0,00	0,00	24360,82	6,65
727	5	89563	1	20,63	0,6	2	0,0289	0,00	0,00	133095,06	67,61
728	5	89564	3	36,24	0,6	2	0,0062	30362,65	2,58	624645,30	53,09
729	5	89566	0	27,09	0,6	2	0,0088	0,00	0,00	83944,44	58,39
730	5	89569	0	30,16	0,6	2	0,0074	16786,25	2,28	238744,31	32,46
731	5	89626	1	19,27	0,6	2	0,0128	0,00	0,00	315703,22	30,41
732	5	89628	0	25,59	0,6	2	0,0151	0,00	0,00	222894,86	49,78
733	5	89642	1	32,80	0,7	2	0,0096	0,00	0,00	340194,67	45,15
734	5	89645	0	17,13	0,8	2	0,0146	1231,72	1,30	10904,29	11,48
735	5	89646	0	33,55	0,7	2	0,0109	4262,65	1,69	64473,59	25,54
736	5	89649	0	46,15	0,6	2	0,0151	4769,13	0,78	316871,32	51,63
737	5	89668	0	55,58	0,6	4	0,0028	0,00	0,00	29549,98	83,74
738	5	89674	1	42,91	0,6	4	0,0065	50056,16	29,57	136712,08	80,76
739	5	89675	8	45,32	0,6	4	0,0235	72801,98	12,62	351399,27	60,94

KBA	Ottobacia	COD	Irreplaceable	Natural	Threat	Civil	Water	Protected	Protected	Priority	Priority
740	5	89679	1	56,08	0,5	4	0,0053	9197,60	6,85	101853,83	75,90
741	5	89682	0	58,42	0,6	3	0,0088	433,40	0,77	55866,54	99,23
742	5	89683	1	65,65	0,5	4	0,0047	94,37	0,11	83741,32	99,89
743	5	89684	0	53,82	0,4	4	0,0022	35394,03	59,48	59503,57	100,00
744	5	89686	0	84,09	0,4	4	0,0020	48197,38	100,00	48197,38	100,00
745	5	89687	0	88,12	0,5	4	0,0044	31382,91	100,00	31382,92	100,00
746	5	89688	0	84,80	0,4	4	0,0025	43330,73	100,00	43271,55	99,86
747	5	89691	1	77,94	0,5	4	0,0031	352,03	0,25	138190,54	96,96
748	5	89692	0	58,01	0,5	3	0,0031	59836,25	14,34	307826,85	73,75
749	5	89694	2	47,90	0,7	4	0,0026	95239,68	57,06	119704,02	71,72
750	5	89696	1	34,24	0,7	4	0,0096	6375,86	5,50	111024,39	95,74
751	5	89698	0	58,33	0,7	4	0,0083	0,00	0,00	49333,35	79,25
752	5	89699	0	52,53	0,7	4	0,0110	0,00	0,00	68054,38	78,41
753	5	89922	0	11,90	0,5	4	0,0040	14758,84	2,83	491207,04	94,27
754	5	89926	0	9,88	0,6	4	0,0044	0,00	0,00	97810,25	87,46
755	5	89929	0	47,40	0,6	4	0,0037	0,00	0,00	174890,36	76,76
756	5	89949	0	35,52	0,5	4	0,0057	12533,16	2,98	168198,05	40,00
757	5	89969	1	56,30	0,4	4	0,0028	0,00	0,00	42115,74	73,34
758	5	89986	0	0,00	0,6	4	0,0039	0,00	0,00	0,00	0,00
759	5	89991	0	20,24	0,6	4	0,0045	24418,29	5,95	79092,54	19,28
760	5	89997	0	85,33	0,6	4	0,0017	7662,29	45,74	16753,22	100,00
761	5	89999	0	26,97	0,5	4	0,0054	53512,85	14,34	144490,93	38,72
762	X	BO020	Unknown	Unknown	Unknown	Unknown	Unknown	2251080,00	100,00	Unknown	Unknown
763	X	PY013	Unknown	Unknown	Unknown	Unknown	Unknown	103885,00	80,03	Unknown	Unknown
764	X	PY012	Unknown	Unknown	Unknown	Unknown	Unknown	0,00	0,00	Unknown	Unknown
765	X	PY014	Unknown	Unknown	Unknown	Unknown	Unknown	0,00	0,00	Unknown	Unknown

APPENDIX 3. RANKING KBAS AHP DATA

Table 3.1. Variables description

Variable Name	Description
P_P_Ra	Rare Plants
P_Pe_Ra	Rare Fish
Fa_VU	National RedList of Fauna- Vulnerable
Fa_EN	National RedList of Fauna- Endangered
Fa_CR	National RedList of Fauna- Critically Endangered
Fa_I_VU	IUCN RedList of Fauna- Vulnerable
Fa_I_EN	IUCN RedList of Fauna- Endangered
Fa_I_CR	IUCN RedList of Fauna- Critically Endangered
Flo_VU	National RedList of Flora- Vulnerable
Flo_EN	National RedList of Flora- Endangered
Flo_CR	National RedList of Flora- Critically Endangered
Irre_TT	Irreapleaceable Species
Flo_I_VU	IUCN RedList of Flora- Vulnerable
Flo_I_EN	IUCN RedList of Flora- Endangered
Flo_I_CR	IUCN RedList of Flora- Critically Endangered
PC_P_Ra	Weight Rare Plants
PC_Pe_Ra	Weight Rare Fish
PC_Fa_VU	Weight National RedList of Fauna- Vulnerable
PC_Fa_CR	Weight National RedList of Fauna- Endangered
PC_Fa_EN	Weight National RedList of Fauna- Critically Endangered
G_Fa_MMA	Degree of National RedList of Fauna
PC_G_Fa_MM	Weight + Degree of National RedList of Fauna
PC_I_Fa_VU	Weight of IUCN RedList of Fauna- Vulnerable
PC_I_Fa_CR	Weight of IUCN RedList of Fauna- Critically Endangered
PC_I_Fa_EN	Weight of IUCN RedList of Fauna- Endangered
G_Fa_IUCN	Degree of IUCN RedList of Fauna
PC_G_Fa_IU	Weight + Degree of IUCN RedList of Fauna
G_Fa_MM_IU	Degree of IUCN and National RedList of Fauna
PC_G_MM_IU	Weight + Degree of IUCN and National RedList of Fauna
PC_Fl_VU	Weight National RedList of Flora- Vulnerable
PC_Fl_EN	Weight National RedList of Flora- Endangered
PC_Fl_CR	Weight National RedList of Flora- Critically Endangered
G_Fl_CNC	Degree of National RedList of Flora
PC_G_Fl_CN	Weight + Degree of National RedList of Flora
PC_I_Fl_VU	Weight IUCN RedList of Flora- Vulnerable
PC_I_Fl_EN	Weight IUCN RedList of Flora- Endangered
PC_I_Fl_CR	Weight IUCN RedList of Flora- Critically Endangered
G_Fl_IUCN	Degree of IUCN RedList of Flora
PC_G_Fl_IU	Weight + Degree of IUCN RedList of Flora
G_Fl_CN_IU	Degree of IUCN and National RedList of Flora
PC_G_CN_IU	Weight + Degree of IUCN and National RedList of Flora
PC_Irre	Weight Irreapleaceable Species
Biologico	AHP Biological Criteria
P_Biologic	Weight Biological Criteria
Reman	Percentage of Natural Vegetation Cover
IPA	Threat Level (IPA index)
CSC	Civil Society Capacity
Agua	Consumptive Water demand
PC_Reman	Weight of Natural Vegetation Cover
PC_IPA	Weight Threat Level (IPA index)
PC_CSC	Weight Civil Society Capacity

Variable Name	Description
PC_Agua	Weight Consumptive Water demand
G_Pro_Pri	Degree of Protected Areas & Priority Areas (Alignment with National Policies criteria)
PC_Pro_Pri	Weight + Degree of Protected Areas & Priority Areas (Alignment with National Policies criteria)
Paisagem	AHP Landscape
P_Paisagem	Weight Landscape
G_Bio_Pais	Degree AHP Biological + Landscape
FIM_BIO_PA	5 Final Classes of KBA Prioritization

Table 3.2. Part 1

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
1	Goiatins	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
2	Tres Barras	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
3	Aguas do Paulista	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
4	Nova Nazare	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
5	Natalandia	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6	Unai de Minas	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
7	Campinacu	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
8	Delgado	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
9	Canarana	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
10	Aldeia	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
11	PE Serra de Sonora	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
12	Agua Clara	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
13	Paranatinga	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
14	Sao Felipe	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
15	Man-Azde	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
657	Araguaia	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6455	Sao Valerio	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6475	Corriola	3,00	6,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	6,00	0,00	0,00	0,00	0,18	0,47	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
6492	Sao Patricio	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6545	Lajeado	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
6591	Santana do Araguaia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6642	Lagoa da Confusao	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
6653	Javaes	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6691	Terra Indigena Kraho-Kanela	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6771	Santa Terezinha	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6773	Aldeia Caraja	1,00	0,00	2,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,17	0,05	0,03	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15
6811	Rio das Mortes	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
6828	Piabanha	5,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	2,00	0,00	0,00	0,00	0,18	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6839	Rio dos Patos	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
6844	Zacarias	6,00	1,00	1,00	0,00	0,00	1,00	0,00	0,00	4,00	2,00	0,00	1,00	0,00	0,00	0,00	0,27	0,20	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
6847	Insula	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6871	Nova Xavantina	4,00	1,00	4,00	1,00	0,00	1,00	1,00	0,00	3,00	2,00	0,00	3,00	0,00	0,00	0,00	0,18	0,20	0,27	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
6882	Suspiro	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
6892	Perdidos	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6917	APA Meandros do Rio Araguaia	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6918	Ribeirao Sao Domingos	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
6938	Corixo do Cascavel	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
6959	Registro do Araguaia	0,00	1,00	1,00	0,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,20	0,12	0,05	0,03	0,02	0,07	0,37	0,90	0,37	0,23	0,46	0,12	0,46
6966	Rio Bonito	8,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	1,00	0,00	1,00	0,00	0,00	0,00	0,27	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
7483	Joao Pinheiro	3,00	3,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	1,00	0,00	0,18	0,30	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
7587	Josenopolis	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
7588	Parque Estadual Grao Mogol	28,00	2,00	0,00	0,00	0,00	1,00	0,00	0,00	17,00	30,00	10,00	27,00	3,00	4,00	0,00	0,42	0,30	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
42699	Mariana	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
42728	Suiazinho	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
42964	Ribeirao Agua Limpa	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
42968	Queimada	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
42969	Sete de Setembro	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
42977	Culuene	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
42986	Couto de Magalhaes	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
44483	Rio Verde	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44493	APA do Salto Magessi	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44496	Piabas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44649	Tapurah	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44658	Marape	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44676	Caju Doce	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44688	Agua Verde	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44692	Nova Mutum	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44694	Tres Lagoas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44696	Rio Preto	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44698	Arinos	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44829	Cravari	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44888	Campo Novo do Parecis	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44946	Terra Indigena Utiariti	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44954	Terra Indigena Enawene-Nawe	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
44962	Estacao Ecologica de Ique	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
44969	Terra Indigena Pirineus de Souza	1,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,11	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
44981	Estacao do Juruena	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
44983	Juruena	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
44992	Campos de Julio	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
46299	Terra Indigena Parque do Aripuana	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64113	RESEX Extremo Norte do Estado do Tocantins	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64159	Cachoeira Santana	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64171	Xupe	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64181	Farinha	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15
64182	Cancela	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64183	Parque Nacional Chapada das Mesas	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64193	Carolina	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64197	Urupuchote	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64225	Rio Itapicuru	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,37	0,07	0,30	0,07	0,30
64234	Salobro	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64252	Ribeirao do Maranhao	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64261	Santa Filomena	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64262	Estevao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64292	Ribeirao Tabocas	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64298	Rio Bonito do Tocantins	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64311	Monumento Natural das Arvores Fossilizadas	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64318	Cana-brava	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64319	Santarosa	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64346	Nova Olinda	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64369	Mato Grande	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64373	Panela de Ferro	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64376	Agua Fria	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64378	Tranqueira	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64429	Perdida	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64444	Ponte Alta	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64447	Pindorama do Tocantins	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64449	Almas	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64454	Soninho	1,00	0,00	0,00	1,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,58	0,10	0,05	0,04	0,15	0,07	0,30
64459	APA do Jalapao	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64464	Parque Estadual do Jalapao	0,00	0,00	3,00	2,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,37	0,17	0,10	0,46	0,37	0,10	0,05	0,04	0,07	0,14	0,46
64466	Brejao do Jalapao	1,00	0,00	0,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,12	0,09	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
64471	Desabuso	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_M M	PC_I_Fa_V U	PC_I_Fa_C R	PC_I_Fa_E N	G_Fa_IUCN	PC_G_Fa_I U	G_Fa_MM_I U	PC_G_MM_ IU
64473	Rio Novo	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64476	Frito gado	0,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,12	0,09	0,46	0,05	0,10	0,37	0,06	0,30	0,19	0,46
64477	Cortapena	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64478	Toca	1,00	0,00	0,00	2,00	1,00	2,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,17	0,09	0,46	0,58	0,10	0,37	0,07	0,46	0,23	0,46
64479	Esteneu	1,00	0,00	3,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,17	0,37	0,03	0,08	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
64483	Jorge	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64487	Verde do Tocantins	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64491	Rio da Volta	1,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,37	0,07	0,30	0,07	0,30
64492	Mateiros	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,37	0,06	0,30	0,15	0,46
64493	Pedra de Amolar	1,00	0,00	0,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,03	0,08	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
64496	Come Assado	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64497	Galhao	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64513	Parque Estadual do Lajeado	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64514	Santa Luzia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64515	Taquaracu	0,00	0,00	4,00	1,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,12	0,03	0,30	0,58	0,10	0,37	0,07	0,46	0,18	0,46
64516	APA Lago de Palmas	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	2,00	0,00	1,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64517	Porto Nacional	4,00	0,00	0,00	1,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,12	0,02	0,15	0,58	0,10	0,37	0,07	0,46	0,14	0,46
64519	Rio Tocantins	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64521	Brejinho de Nazare	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64524	Alianca do Tocantins	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64539	Surubim	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64541	Apinage	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64542	Pedras	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64544	Rocinha	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64545	Natividade	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	3,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64546	Dianopolis	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64548	Itaboca	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64549	Manuel Alves	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64561	Santo Antonio do Tocantins	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64562	Taipoca	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64584	Talisma	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64588	Santa Teresa	2,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64589	Rio do Ouro	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64593	APA Foz do Rio Santa Tereza	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
64596	Rio das Almas	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64621	Palma	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
64622	Arraias	3,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64623	Pau d'arco	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64624	Novo Jardim	3,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	3,00	0,00	0,00	0,00	0,18	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64626	Corcunda	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64628	Sobrado	1,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
64629	Lavandeira	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64631	Quebra-coco	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64633	TQ Kalungas	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64634	Montes Claros	6,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,27	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64636	Maquine	17,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	4,00	10,00	0,00	2,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64637	Sucuri	12,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,42	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64638	Sao Bartolomeu	8,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,27	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64642	Floresta Nacional da Mata Grande	1,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,11	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64644	Calheiros	0,00	0,00	2,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,37	0,03	0,08	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
64649	Divinopolis de Goias	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64651	Nova Roma	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,58	0,03	0,12	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
64653	Morro Alto	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64654	Parque Estadual de Terra Ronca	3,00	3,00	0,00	0,00	1,00	0,00	1,00	0,00	2,00	1,00	1,00	4,00	0,00	0,00	0,00	0,18	0,30	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,37	0,06	0,30	0,15	0,46
64655	Guatacaba	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64658	Macacao	44,00	0,00	0,00	1,00	2,00	0,00	1,00	0,00	6,00	19,00	1,00	1,00	0,00	0,00	0,00	0,42	0,04	0,03	0,58	0,12	0,13	0,46	0,05	0,10	0,37	0,06	0,30	0,19	0,46
64662	Santa Maria	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64664	Baco Pari	4,00	2,00	0,00	0,00	1,00	0,00	0,00	0,00	3,00	0,00	0,00	2,00	0,00	0,00	0,00	0,18	0,30	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64665	Rio Corrente	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64666	Buriti	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64668	APA das Nascentes do Rio Vermelho	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64669	Sitio da Abadia	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64676	Rio dos Macacos	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64677	Flores de Goias	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64682	Extrema	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64689	Rio Paraim	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64694	Sao Joao d'Alianca	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	5,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64695	Crixas	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64699	Entorno de Brasilia	4,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	3,00	0,00	0,00	0,00	0,18	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64711	APA Lago de Peixe-Angical	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
64725	Cana-brava de Minacu	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
64733	Cavalcante	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64735	Ribeirao Bonito	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64736	Minacu	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64737	Sao Felix	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64738	Laranjal	4,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64739	Preto	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64741	Serra do Tombador	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64742	Sao Bento	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64744	Parque Nacional da Chapada dos Veadeiros	28,00	0,00	2,00	4,00	1,00	4,00	2,00	0,00	5,00	9,00	1,00	1,00	0,00	0,00	0,00	0,42	0,04	0,17	0,37	0,41	0,12	0,46	0,58	0,10	0,58	0,09	0,46	0,23	0,46
64746	Corrego Areia	9,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	4,00	0,00	1,00	0,00	0,00	0,00	0,27	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64747	Muquem	17,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	5,00	2,00	0,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64748	Ribeirao Santana	7,00	1,00	5,00	3,00	1,00	2,00	2,00	0,00	2,00	4,00	0,00	1,00	0,00	0,00	0,00	0,27	0,20	0,27	0,37	0,27	0,11	0,46	0,58	0,10	0,58	0,09	0,46	0,23	0,46
64749	Rio Claro	39,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	5,00	19,00	1,00	0,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64761	Tocantizinho	20,00	1,00	0,00	0,00	1,00	1,00	0,00	0,00	5,00	9,00	2,00	3,00	0,00	0,00	0,00	0,42	0,20	0,03	0,37	0,03	0,08	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
64762	Couros	32,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	6,00	10,00	0,00	2,00	0,00	0,00	0,00	0,42	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64764	Morro Tira-chapeu	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64765	Cachoeirinha	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64766	Picarrao	46,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	10,00	20,00	3,00	2,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64768	RPPN Fazenda Branca Terra dos Anões	5,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64769	Corrego Roncador	15,00	1,00	2,00	0,00	0,00	0,00	1,00	0,00	4,00	4,00	1,00	3,00	0,00	0,00	0,00	0,42	0,20	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,37	0,06	0,30	0,11	0,46
64774	Prata Grande	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64781	Niquelandia	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64782	Bacalhau	15,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	3,00	5,00	2,00	1,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64783	Santa Rita	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64784	Ribeirao Conceicao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64786	Serra do Passanove	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64791	Rio Palmeira	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64792	Bilhagua	11,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	3,00	2,00	0,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64797	Rio da Mula	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64798	Passa-tres	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64799	Cafe	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64811	Ribeirao Ponte Alta	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
64812	Ribeirao da Laguna	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64815	Cocal	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64821	Patos	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64829	Forquilha	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64841	Pensao Sao Miguel	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64847	Jacare	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64848	Sardinha	6,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,27	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64849	Joao Alves	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64854	RPPN Fazenda Cachoeirinha	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64862	Padre Bernardo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64866	Rio dos Bois	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64883	Mucungo	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64889	Arraial Velho	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64892	APA de Cafuringa	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64894	Corrego Fundo	6,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,27	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64898	Monumento Natural do Conjunto Espeleologico do Morro da Pedreira	7,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	5,00	0,00	0,00	1,00	0,00	0,00	0,27	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
64899	Reserva Biologica da Contagem	9,00	0,00	3,00	4,00	0,00	2,00	2,00	0,00	5,00	5,00	0,00	1,00	2,00	2,00	0,00	0,27	0,04	0,17	0,05	0,41	0,06	0,30	0,58	0,10	0,58	0,09	0,46	0,18	0,46
64915	Lavrinha	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
64916	Lajes	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15
64941	Rialma	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64946	Irmaos	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64949	Serra do Cocalzinho	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64982	Canastra	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64986	Uru	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
64995	Jaragua	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64996	Parque Estadual da Serra de Jaragua	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
64998	APA da Serra dos Pireneus	20,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	4,00	0,00	1,00	0,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
64999	Padre Souza	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
65116	Piranhas	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
65374	Lagoa Preta	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
65392	Jenipapo	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
65415	APA Ilha do Bananal-Cantao	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
65585	Rio Caiapo	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
65587	Grotao	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,37	0,06	0,30	0,08	0,30

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
65589	Ribeirao Grande	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
65811	Furo do Coco	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
65852	Murici	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
65855	Rio do Coco	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
65972	Furo da Gameleira	0,00	0,00	7,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,27	0,58	0,03	0,13	0,46	0,37	0,10	0,05	0,04	0,07	0,14	0,46
65973	Cicice	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
66224	Parque Nacional do Araguaia	0,00	0,00	7,00	1,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,12	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
66227	Ariari	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66234	Pium	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66254	Terra Indigena Parque do Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66256	Ipuca do Riozinho	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66257	Ilha de Santa Anna	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
66261	Riozinho	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
66467	Cristalandia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
66623	Urubu	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66668	Sandolandia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
66696	Baiao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
66821	Urubu Grande	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66925	Xavante	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
66951	Escuro	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
67821	Xavantinho	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
67822	Terra Indigena Maraiwatsede	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
67966	Terra Indigena Cacique Fontoura	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
67973	Santa Izabel do Morro	2,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
68141	Novo Santo Antonio	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68255	Sao Joao Grande	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68311	Ribeirao Cascalheira	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68334	Terra Indigena Pimentel Barbosa	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
68351	RVS Quelonios do Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68353	Cocalinho	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
68382	Angico	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68389	Terra Indigena Areoes	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68461	Pindaiba	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68463	Barra do Garças	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68464	Galheiro	5,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68486	Cava Funda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
68489	PE da Serra Azul	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68497	Corrente	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68622	Cachoeira	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68681	Jau	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68685	Agua Boa	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68695	Areao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68732	Dom Bosco	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68748	Terra Indigena Sao Marcos	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	1,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68756	Paredao Grande	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68757	General Carneiro	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
68993	Engano	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
68998	Agua Azul	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69133	PE do Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69159	Formoso do Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69163	APA dos Meandros do Rio Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69166	Chapeu	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69167	Cristalino	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69169	Mata do Inferno	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69223	Crixas-mirim	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
69249	Pintado	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69262	Bonopolis	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
69286	Barreiro	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69294	Ribeirao d'Anta	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
69295	Crixas-acu	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69441	Tesouras	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
69443	Alagado	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
69449	Braco do Mato	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69462	Pinguela	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69488	Alagadinho	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69494	Cavalo Queimado	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69513	Aruana	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69514	Medio Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69516	Brejao	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
69519	Terra Indigena Karaja de Aruana	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69521	RPPN Boca da Mata	0,00	1,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
69523	Matrincha	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69529	APA da Serra Dourada	4,00	3,00	1,00	0,00	1,00	2,00	1,00	0,00	0,00	3,00	0,00	3,00	0,00	0,00	0,00	0,18	0,30	0,12	0,37	0,03	0,08	0,46	0,58	0,10	0,37	0,07	0,46	0,23	0,46
69568	PE da Serra Dourada	7,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	5,00	0,00	1,00	0,00	0,00	0,00	0,27	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69582	Dom Bill	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69626	Bom Jardim	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69627	Retiro das Piranhas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69629	Pantano	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69698	Sao Jose	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69811	APA Estadual Pe da Serra Azul	3,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69861	Bandeira	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69866	Guiratinga	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69886	Alto Garcas	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69946	Sucupira	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69954	Sao Joao	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69966	Diamantino	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69981	Babilonia	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69984	Empantanado	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
69985	Mineiros	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69989	Jacu	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
69993	Alto Araguaia	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,37	0,06	0,30	0,11	0,46
69994	Gordura	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
69995	Santa Rita do Araguaia	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,37	0,06	0,30	0,08	0,30
69996	Ribeirao do Sapo	0,00	3,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,30	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
69997	Zeca Nonato	0,00	1,00	3,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,37	0,06	0,30	0,11	0,46
69998	Queixada	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
69999	Araguainha	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
71647	Terra Indigena Geralda Toco Preto	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71648	Terra Indigena Krikati	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71652	Ipixuna Acu	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71655	RPPN Fazenda Sao Francisco	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71662	Presidente Dutra	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71666	Rio das Flores	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71687	Terra Indigena Porquinhos	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71691	Terra Indigena Cana Brava/Guajajara	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71831	Itapecuru	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
71842	TQ Santa Joana	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71845	PN dos Lençois Maranhenses	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
71851	RPPN Fazenda Pantanal	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71853	Itapicuru	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71855	Cajazeira	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71866	Inhumas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71874	Baixao do Bandeira	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71875	Fortuna	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71884	Mirador	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71886	Alpercatinha	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
71899	PE de Mirador	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
71929	APA dos Morros Garapenses	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
71942	APA Upaon-Açu/Miritiba/Alto Preguicas	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
72121	RPPN Fazenda Centro	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	2,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72168	Caraiba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72196	Riachao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72211	FN de Palmares	0,00	4,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	0,00	0,00	0,03	0,30	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
72314	Timon	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72347	Sao Francisco do Maranhao	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72349	Sucupira do Riachao	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72411	Caninde	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72549	PN da Serra das Confusoes	2,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
72556	Floriano	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72632	Coqueiro	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72643	Riacho de Sant'Ana	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72646	Baliza	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72653	Paraim	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72656	Matoes	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72669	Gurgueia	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72681	APA do Rangel	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72686	Vereda Uniao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72693	Riacho Frio	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
72695	Parnagua	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72696	Malhada da Barra	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
72699	Sebastiao Barros	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
72724	Cardoso	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72729	Prata	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72733	Riacho do Belem	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,37	0,06	0,30	0,08	0,30
72786	Curimata	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72797	Urucui	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72816	Santa Isabel	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72817	Balsas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72818	Gameleira	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72819	Riacho dos Picos	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72829	Fortaleza dos Nogueiras	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72834	Coite	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
72862	Rio Maravilha	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72871	Santo Antonio de Balsas	0,00	2,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
72872	Gado Bravo	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72876	Novo Recreio	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72878	Temerante	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72881	Parelhas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72887	Tem medo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72889	Mandacaru	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72891	Sul Maranhense	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72911	Benedito Leite	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72922	Riacho da Estiva	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72929	Urucui-preto	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,12	0,03	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
72933	Loreto	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72935	Tasso Fragoso	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72946	EE de Urucui-Una	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72954	Sucuruju	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72963	Medonho	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
72982	Alto Parnaiba	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72991	Cachoeira Pedra de Amolar	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
72992	PN das Nascentes do Rio Parnaiba	0,00	3,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,03	0,30	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
73111	Ilha Grande	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
73114	Luis Correia	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74197	Ilha Mocambo dos Ventos	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74199	APA Dunas e Veredas do Baixo e Medio Sao Francisco	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
74222	Cotegipe	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74225	EE Rio Preto	0,00	3,00	1,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	3,00	0,00	1,00	0,00	0,03	0,30	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,37	0,06	0,30	0,08	0,30
74226	Formosa do Rio Preto	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	1,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74228	APA Rio Preto	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74229	Sapao	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
74235	Rio Grande	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74237	Neves	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74243	Rio de Janeiro	0,00	0,00	1,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,37	0,03	0,08	0,46	0,37	0,10	0,05	0,04	0,07	0,14	0,46
74244	Ponta d'agua	2,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,37	0,03	0,08	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
74245	APA Bacia do Rio de Janeiro	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74255	Extremo Oeste Baiano	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74261	Ondas	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74262	Cabeceira das Lajes	6,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	1,00	1,00	1,00	1,00	0,00	0,27	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74263	Tabocas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74264	Cabeceira de Pedras	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
74269	Bora	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74272	Boa Sorte	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74278	FN de Cristopolis	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74281	Vereda Anastacio	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74282	Sao Desiderio	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74283	Porcos	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74292	Triste e Feio	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74317	Ilha da Pica Grande	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74332	Vereda da Canoa	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74394	Serra Dourada	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74397	Ilha da Bananeira	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74411	Sitio do Mato	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74413	Terra Indigena Vargem Alegre	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74414	Pedra Branca	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74415	Santana	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74418	Coribe	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74419	Sao Felix do Coribe	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74421	Rio Formoso	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74422	Alegre	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,37	0,03	0,08	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
74423	Jaborandi	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74424	Rodeador	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
74426	Vau	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74428	Pratudao	0,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,37	0,12	0,09	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
74429	RVS das Veredas do Oeste Baiano	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,37	0,03	0,08	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
74441	Arrojado	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74444	Arrojadinho	0,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74447	Correntina	3,00	0,00	0,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,37	0,12	0,09	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
74454	Santa Maria da Vitoria	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74461	Guara	2,00	0,00	0,00	0,00	1,00	1,00	1,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,03	0,08	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
74471	Riacho de Pedra	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74473	Rio Guara	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74476	Santo Antonio	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74478	Rio dos Angicos	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74485	Riacho do Mato	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74512	TQ Lagoa das Piranhas	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74521	TQ Nova Batalhinha	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74532	Riacho de Mariape	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74544	Lagoas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74572	Madrugao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74581	Cariranha	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74582	APA Cocha e Gibao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74583	Feira da Mata	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74584	PN Grande Sertao Veredas	4,00	0,00	3,00	2,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,17	0,05	0,17	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74586	Cocos	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74588	Riacho do Meio	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74589	Itaguari	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	1,00	1,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74596	Calindo	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74622	Aurelio	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74642	Furado Novo	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74646	PE Caminho das Gerais	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74648	Porteirinha	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74649	Gorutuba	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74652	Corrego Escuro	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74654	Macaubas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74655	Verde Grande	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74668	Quem-quem	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74692	Agua Limpa	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
74695	Capitao Eneas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74697	Vacabrava	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	5,00	0,00	1,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74699	Juramento	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74711	PE Lagoa do Cajueiro	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74712	RB Serra Azul	0,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74714	PE Veredas do Peruacu	1,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	1,00	4,00	0,00	0,00	1,00	0,00	0,00	0,11	0,04	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74715	PN Cavernas do Peruacu	2,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	2,00	0,00	3,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,12	0,03	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
74717	Cochos	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74718	Japonvar	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74721	Pandeiros	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74727	APA Pandeiros	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74734	RVS Rio Pandeiros	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	0,00	2,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74744	Sao Joaquim	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74747	PE Serra das Araras	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74749	Chapada Gaucha	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74752	Lagoa da Vaqueta	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74755	Sao Francisco	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74772	Pintopolis	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74781	Urucuia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74782	Conceicao	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74783	Ribeirao dos Confins	1,00	2,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,30	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
74784	EE Sagarana	0,00	2,00	2,00	1,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,30	0,17	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
74785	Pacari	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
74786	Formoso	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74789	Serra da Sacada	2,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74795	Sao Romao	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74798	Campo Azul	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74822	Garitas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74846	Roncador	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74847	Unai	3,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	1,00	1,00	1,00	0,00	0,18	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,37	0,07	0,30	0,08	0,30
74848	Bezerra	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74849	APA do Planalto Central	2,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
74862	Vereda Grande	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74868	TQ Amaros	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74873	Ribeirao Bezerra	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74878	RPPN Morro da Cruz das Almas	3,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
74889	Presidente Olegario	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74892	Ribeirao Santa Catarina	2,00	1,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,37	0,06	0,30	0,08	0,30
74894	PE de Paracatu	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	1,00	0,00	0,00	1,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74896	Guarda-mor	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,03	0,08	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74918	Barro	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74923	Jequitai	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74925	Francisco Dumont	2,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	0,00	1,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74927	Areia	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74928	Imbalacaia	15,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	12,00	12,00	0,00	4,00	1,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74929	PN das Sempre-Vivas	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
74941	Velhas	5,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	5,00	3,00	0,00	2,00	1,00	0,00	0,00	0,18	0,04	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
74942	Bicudo	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74944	PE da Serra do Cabral	20,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	9,00	15,00	0,00	1,00	2,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74945	Jabuticaba	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74946	Pardo Grande	34,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	15,00	39,00	8,00	11,00	2,00	0,00	0,00	0,42	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74947	Santo Hipolito	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74948	PN da Serra do Cipo	112,00	0,00	3,00	2,00	0,00	2,00	0,00	0,00	40,00	105,00	29,00	92,00	2,00	0,00	0,00	0,42	0,04	0,17	0,05	0,17	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
74949	APA do Carste de Lagoa Santa	55,00	10,00	5,00	6,00	1,00	1,00	2,00	1,00	25,00	40,00	2,00	28,00	6,00	2,00	2,00	0,42	0,47	0,27	0,37	0,41	0,12	0,46	0,37	0,90	0,58	0,25	0,46	0,23	0,46
74951	Pirapora	1,00	1,00	3,00	1,00	0,00	3,00	0,00	0,00	1,00	0,00	0,00	1,00	2,00	0,00	0,00	0,11	0,20	0,17	0,05	0,12	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
74952	Tres Marias	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74954	Tiros	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	2,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74955	RPPN Fazenda Lavagem	0,00	0,00	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74956	Borrachudo	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74957	EE de Pirapitinga	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
74958	Indaia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74959	RPPN Fazenda Barrão	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74961	Felixlandia	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74963	FN de Paraopeba	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	1,00	2,00	2,00	1,00	1,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74964	Inhauma	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74965	APA Vargem das Flores	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	1,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74984	Lambari	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74985	Rio Para	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74986	RPPN Fazenda Samoinho	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
74987	Nova Serrana	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74988	Ribeirao Boa Vista	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74993	Luz	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
74995	EE Corumba	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
74996	Vargem Bonita	2,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	3,00	1,00	2,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
74998	RPPN Fazenda do Lobo	8,00	0,00	3,00	3,00	1,00	1,00	1,00	1,00	4,00	2,00	2,00	3,00	0,00	0,00	0,00	0,27	0,04	0,17	0,37	0,27	0,11	0,46	0,37	0,90	0,37	0,23	0,46	0,23	0,46
75789	PE de Montezuma	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	1,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75824	Setubal	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75825	Berilo	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	3,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75826	Capelinha	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75827	Aracai	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75829	PE Rio Preto	12,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	8,00	9,00	2,00	7,00	3,00	2,00	1,00	0,42	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
75854	Vargem da Lapa	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75868	Peixe Bravo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75869	Vacaria	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75891	EE Acaua	7,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	11,00	14,00	1,00	0,00	1,00	2,00	0,00	0,27	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
75892	Itacambira	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	2,00	1,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75894	Tabatinga	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75897	Olhos d'agua	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75898	Caete-mirim	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	7,00	0,00	1,00	0,00	1,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
75899	PE Biribiri	86,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	36,00	86,00	17,00	51,00	1,00	3,00	0,00	0,42	0,20	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
76648	Tanque	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
76649	PE do Limoeiro	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
76684	Rio do Peixe	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
76689	Preto do Itambe	2,00	0,00	0,00	1,00	0,00	1,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,37	0,07	0,30	0,11	0,46
76692	Morro do Pilar	9,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	1,00	0,00	0,00	0,00	0,27	0,04	0,03	0,05	0,17	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
76693	Rio Picao	7,00	0,00	0,00	3,00	0,00	0,00	0,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	0,00	0,27	0,04	0,03	0,05	0,27	0,04	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
76694	PE Serra do Intendente	5,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6,00	4,00	0,00	1,00	1,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
76698	Parauninha	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
76889	Bom Jesus do Amparo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84383	Ivinheima	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84384	Nova Alvorada do Sul	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84386	Terra Indigena Jatayvari	1,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	2,00	3,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
84389	Rio Brilhante	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84418	Laranja Doce	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
84423	RPPN Fazenda Monte Alegre	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	1,00	1,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84424	PE do Guartela	1,00	0,00	2,00	0,00	0,00	1,00	1,00	0,00	3,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,17	0,05	0,03	0,02	0,15	0,37	0,10	0,37	0,07	0,30	0,11	0,46
84425	APA da Escarpa Devoniana	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	2,00	0,00	1,00	1,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84432	Paraguacu Paulista	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84442	Ventania	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84449	RPPN Fazenda do Tigre	0,00	0,00	2,00	1,00	0,00	1,00	1,00	0,00	3,00	3,00	1,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
84454	EE de Assis	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84458	Campos Novos Paulista	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
84462	Alambari	0,00	0,00	2,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84463	EE Santa Barbara	1,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84464	EE de Avare	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84465	FE Santa Barbara	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84466	Claro	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
84468	Ribeirao das Pedras	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84469	Botucatu	1,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	1,00	0,00	0,11	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84482	Itaporanga	5,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	10,00	2,00	6,00	2,00	1,00	1,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84485	Pescaria	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84486	PE Vale do Codo	5,00	1,00	1,00	1,00	0,00	1,00	1,00	0,00	17,00	16,00	2,00	14,00	2,00	2,00	0,00	0,18	0,20	0,12	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
84488	Jaguaricatu	2,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	6,00	7,00	0,00	3,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
84489	Itarare	1,00	0,00	1,00	3,00	1,00	0,00	1,00	1,00	2,00	2,00	0,00	2,00	2,00	0,00	0,00	0,11	0,04	0,12	0,37	0,27	0,10	0,46	0,05	0,90	0,37	0,22	0,46	0,23	0,46
84491	Paranapanema	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
84492	EE de Itabera	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	3,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84495	EE Paranapanema	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	1,00	2,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84496	FN de Capao Bonito	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,37	0,06	0,30	0,11	0,46
84498	Itapetininga	4,00	0,00	3,00	3,00	0,00	1,00	0,00	0,00	0,00	4,00	0,00	1,00	1,00	0,00	0,00	0,18	0,04	0,17	0,05	0,27	0,04	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
84522	Inhandui	5,00	1,00	2,00	2,00	1,00	1,00	1,00	0,00	0,00	2,00	2,00	3,00	1,00	1,00	0,00	0,18	0,20	0,17	0,37	0,17	0,10	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
84523	Pardo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84525	Botas	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84539	Parana	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84541	Verde	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84548	Sao Domingos	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84589	Sucuriu	1,00	2,00	1,00	1,00	0,00	1,00	2,00	0,00	0,00	1,00	0,00	2,00	0,00	0,00	0,00	0,11	0,30	0,12	0,05	0,12	0,03	0,30	0,37	0,10	0,58	0,09	0,46	0,18	0,46
84618	APA Rio Batalha	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84622	Sao Lourenco	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
84641	APA Ibitinga	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
84644	Itaquere	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84647	Jacare-guacu	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
84648	Araraquara	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	1,00	0,00	2,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84649	EE Itirapina	4,00	0,00	3,00	3,00	0,00	2,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,17	0,05	0,27	0,04	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
84652	Jacare-pepira	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	2,00	1,00	2,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84653	Arealva	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	2,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,37	0,07	0,30	0,07	0,30
84656	FE Pederneiras	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	2,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84657	Macatuba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84659	Araqua	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,90	0,05	0,19	0,46	0,11	0,46
84661	APA Corumbatai-Botucatu-Tejupa	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	3,00	4,00	0,00	5,00	4,00	1,00	1,00	0,03	0,20	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84662	Corumbatai	5,00	1,00	3,00	1,00	0,00	2,00	0,00	0,00	4,00	4,00	3,00	4,00	1,00	1,00	0,00	0,18	0,20	0,17	0,05	0,12	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
84663	Piracicaba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84664	Atibaia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84665	ARIE Matao de Cosmopolis	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84666	Pirapitingui	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84667	Jaguari	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84672	Vitoria	1,00	0,00	1,00	1,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,90	0,05	0,19	0,46	0,18	0,46
84674	Rio Alambari	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84675	EE Barreiro Rico	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84676	Peixe	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84729	Sao Jose dos Dourados	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	1,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84768	Inocencia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84818	Parisi	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84822	Mirassolandia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84832	Verde ou Feio	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84835	Sao Mateus	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84841	FE de Bebedouro	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	1,00	1,00	1,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
84842	FE Cajuru	4,00	4,00	2,00	4,00	0,00	0,00	2,00	0,00	3,00	2,00	0,00	5,00	2,00	1,00	0,00	0,18	0,30	0,17	0,05	0,41	0,06	0,30	0,05	0,10	0,58	0,08	0,46	0,18	0,46
84843	RB de Sertaozinho	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,37	0,06	0,30	0,07	0,30
84844	EE de Jatai	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84845	PE de Vassununga	3,00	1,00	4,00	1,00	0,00	1,00	1,00	0,00	7,00	2,00	0,00	3,00	0,00	1,00	0,00	0,18	0,20	0,27	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
84846	Jaguari-mirim	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84847	RB e EE Mogi-Guaçu	1,00	0,00	0,00	3,00	0,00	0,00	1,00	0,00	3,00	4,00	0,00	1,00	2,00	0,00	0,00	0,11	0,04	0,03	0,05	0,27	0,04	0,30	0,05	0,10	0,37	0,06	0,30	0,15	0,46
84852	Uberaba	3,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
84863	Sapucai	0,00	0,00	0,00	2,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,17	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
84864	Batatais	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
84865	Franca	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
84866	Santa Barbara	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84868	RB Sao Sebastiao do Paraiso	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84869	Tomba-perna	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84872	Solapao	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84873	PE das Furnas do Bom Jesus	3,00	0,00	1,00	0,00	1,00	1,00	1,00	1,00	1,00	3,00	0,00	0,00	0,00	1,00	0,00	0,18	0,04	0,12	0,37	0,03	0,08	0,46	0,37	0,90	0,37	0,23	0,46	0,23	0,46
84875	Sacramento	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84876	PN da Serra da Canastra	17,00	1,00	4,00	3,00	1,00	1,00	1,00	0,00	2,00	4,00	0,00	2,00	0,00	0,00	0,00	0,42	0,20	0,27	0,37	0,27	0,11	0,46	0,37	0,10	0,37	0,07	0,30	0,19	0,46
84877	Cassia	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84879	Alpinopolis	16,00	1,00	2,00	1,00	0,00	0,00	0,00	0,00	8,00	11,00	5,00	7,00	0,00	0,00	0,00	0,42	0,20	0,17	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84881	PE Serra da Boa Esperanca	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84891	Guape	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84892	Formiga	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84912	Rio da Prata	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,37	0,07	0,30	0,07	0,30
84914	PN das Emas	3,00	1,00	13,00	5,00	1,00	4,00	3,00	0,00	1,00	1,00	0,00	3,00	0,00	0,00	0,00	0,18	0,20	0,41	0,37	0,41	0,13	0,46	0,58	0,10	0,58	0,09	0,46	0,23	0,46
84916	Serranopolis	2,00	1,00	1,00	3,00	0,00	1,00	3,00	0,00	1,00	2,00	1,00	2,00	0,00	0,00	0,00	0,11	0,20	0,12	0,05	0,27	0,04	0,30	0,37	0,10	0,58	0,09	0,46	0,18	0,46
84918	Jatai	9,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	4,00	5,00	0,00	5,00	1,00	0,00	0,00	0,27	0,20	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
84924	Ituiutaba	3,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	2,00	2,00	1,00	1,00	1,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84925	Tijuco	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84926	Monte Alegre de Minas	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84928	Douradinho	7,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	3,00	0,00	1,00	1,00	0,00	0,00	0,27	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84944	PE de Parauna	5,00	0,00	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,18	0,04	0,17	0,37	0,03	0,08	0,46	0,05	0,10	0,05	0,03	0,03	0,14	0,46
84946	Turvo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84949	APA Serra da Jiboia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84951	Campanha	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84952	APA Joao Leite	7,00	1,00	1,00	3,00	0,00	1,00	0,00	0,00	2,00	2,00	0,00	1,00	0,00	0,00	0,00	0,27	0,20	0,12	0,05	0,27	0,04	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
84962	Piracanjuba	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84963	PE da Serra de Caldas Novas	6,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	0,00	0,27	0,20	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84964	Bois	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84966	FN de Silvania	4,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
84967	Corumba	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84968	EE do Jardim Botanico	52,00	7,00	7,00	6,00	1,00	3,00	2,00	0,00	18,00	26,00	5,00	17,00	4,00	2,00	0,00	0,42	0,47	0,27	0,37	0,41	0,12	0,46	0,58	0,10	0,58	0,09	0,46	0,23	0,46
84969	RB e PE do Descoberto	32,00	0,00	1,00	2,00	0,00	0,00	1,00	0,00	6,00	8,00	1,00	0,00	1,00	1,00	0,00	0,42	0,04	0,12	0,05	0,17	0,03	0,30	0,05	0,10	0,37	0,06	0,30	0,15	0,46
84982	Uberabinha	3,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,18	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
84983	PE Pau Furado	1,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	2,00	1,00	0,00	1,00	0,00	1,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,37	0,07	0,30	0,07	0,30
84984	Araguari	0,00	2,00	0,00	1,00	0,00	1,00	1,00	0,00	2,00	1,00	0,00	3,00	2,00	1,00	0,00	0,03	0,30	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,37	0,07	0,30	0,11	0,46
84985	RPPN Galheiros	3,00	0,00	1,00	1,00	0,00	2,00	0,00	0,00	5,00	2,00	0,00	1,00	1,00	0,00	0,00	0,18	0,04	0,12	0,05	0,12	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
84986	Capivara	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,12	0,03	0,30	0,05	0,10	0,05	0,03	0,03	0,09	0,30
84987	Misericordia	1,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,37	0,03	0,08	0,30	0,37	0,10	0,05	0,04	0,07	0,10	0,30
84988	Campos Altos	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84992	Verissimo	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
84993	Cascalho Rico	2,00	0,00	1,00	2,00	0,00	1,00	1,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,17	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
84994	Monte Carmelo	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
84996	Dourados	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15
84998	Paranaiba	2,00	0,00	0,00	1,00	0,00	2,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,58	0,10	0,05	0,04	0,15	0,07	0,30
84999	Sao Marcos	15,00	1,00	1,00	2,00	0,00	1,00	1,00	0,00	5,00	7,00	3,00	5,00	1,00	0,00	0,00	0,42	0,20	0,12	0,05	0,17	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
89161	Apa	0,00	0,00	5,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89162	Rio Perdido	1,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,58	0,10	0,05	0,04	0,15	0,04	0,15
89168	Terra Indigena Nande Ru Marangatu	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89176	Progresso	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89191	Taruma	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89195	Rio Branco	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	2,00	0,00	2,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
89196	Terra Indigena Kadiweu	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89199	RPPN Tupaciara	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89522	PN da Serra da Bodoquena	5,00	3,00	7,00	3,00	0,00	4,00	0,00	0,00	5,00	2,00	0,00	8,00	0,00	1,00	0,00	0,18	0,30	0,27	0,05	0,27	0,04	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
89523	RPPN Estancia Caiman	0,00	0,00	2,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,37	0,10	0,05	0,04	0,07	0,06	0,15
89525	Aquidauana	1,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
89526	Taquarucu	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89527	APA Estadual Estrada-Parque Piraputanga	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
89528	Terra Indigena Buriti	2,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	2,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89529	RPPN Fazenda Lageado	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89544	TQ Furnas da Boa Sorte	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
89548	Rio Negro	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
89549	Anhuma	2,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	3,00	1,00	2,00	0,00	0,00	0,00	0,11	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
89563	Taquari	0,00	1,00	2,00	1,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,17	0,05	0,12	0,03	0,30	0,58	0,10	0,05	0,04	0,15	0,11	0,46
89564	PE das Nascentes do Rio Taquari	3,00	1,00	3,00	1,00	0,00	1,00	1,00	0,00	1,00	1,00	1,00	3,00	0,00	0,00	0,00	0,18	0,20	0,17	0,05	0,12	0,03	0,30	0,37	0,10	0,37	0,07	0,30	0,15	0,46
89566	Rio Verde de Mato Grosso	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89569	APA Estadual Rio Cenico Rotas Moncoeiras-Rio Coxim	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

COD	Nome	P_P_Ra	P_Pe_Ra	Fa_VU	Fa_EN	Fa_CR	Fa_I_VU	Fa_I_EN	Fa_I_CR	Flo_VU	Flo_EN	Flo_CR	Irre_TT	Flo_I_VU	Flo_I_EN	Flo_I_CR	PC_P_Ra	PC_Pe_Ra	PC_Fa_VU	PC_Fa_CR	PC_Fa_EN	G_Fa_MMA	PC_G_Fa_MM	PC_I_Fa_VU	PC_I_Fa_CR	PC_I_Fa_EN	G_Fa_IUCN	PC_G_Fa_IU	G_Fa_MM_IU	PC_G_MM_IU
89626	Itiquira	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	2,00	0,00	1,00	0,00	0,00	0,00	0,11	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89628	Piquiri	0,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89642	Jaciara	1,00	0,00	0,00	1,00	0,00	1,00	1,00	0,00	1,00	1,00	0,00	1,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,12	0,02	0,15	0,37	0,10	0,37	0,07	0,30	0,11	0,46
89645	PE Dom Osorio Stoffel	2,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
89646	Terra Indigena Tadarimana	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
89649	Terra Indigena Jarudore	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
89668	Santo Antonio do Leverger	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89674	Arica-acu	9,00	0,00	2,00	0,00	0,00	0,00	1,00	0,00	2,00	3,00	0,00	1,00	0,00	0,00	0,00	0,27	0,04	0,17	0,05	0,03	0,02	0,15	0,05	0,10	0,37	0,06	0,30	0,11	0,46
89675	PN da Chapada dos Guimaraes	10,00	3,00	3,00	0,00	1,00	0,00	1,00	0,00	2,00	4,00	0,00	8,00	0,00	0,00	0,00	0,27	0,30	0,17	0,37	0,03	0,08	0,46	0,05	0,10	0,37	0,06	0,30	0,19	0,46
89679	Cuiaba	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,12	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89682	PE Gruta da Lagoa Azul	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89683	Rosario Oeste	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89684	Marzagao	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89686	Agua Fina	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89687	PE Aguas de Cuiaba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89688	Cuiaba do Bonito	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89691	Manso	0,00	0,00	4,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,27	0,05	0,03	0,02	0,15	0,05	0,10	0,05	0,03	0,03	0,05	0,15
89692	Nova Brasilandia	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89694	APA Estadual da Chapada dos Guimaraes	14,00	0,00	4,00	2,00	0,00	2,00	1,00	0,00	4,00	5,00	0,00	2,00	0,00	1,00	0,00	0,42	0,04	0,27	0,05	0,17	0,04	0,30	0,58	0,10	0,37	0,07	0,46	0,18	0,46
89696	Casca	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	1,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89698	Jangada	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89699	Chapada dos Guimaraes	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89922	TQ Mata Cavalo	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,37	0,10	0,05	0,04	0,07	0,02	0,07
89926	Mata Grande	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,05	0,10	0,05	0,03	0,03	0,03	0,07
89929	Sangradouro	0,00	0,00	1,00	0,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,12	0,05	0,03	0,02	0,07	0,37	0,10	0,05	0,04	0,07	0,03	0,15
89949	Terra Indigena Figueiras	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89969	Cabacal	0,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	0,03	0,20	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89986	Tangara da Serra	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89991	EE Serra das Araras	0,00	0,00	0,00	1,00	1,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,04	0,03	0,37	0,12	0,09	0,46	0,58	0,10	0,05	0,04	0,15	0,16	0,46
89997	Terra Indigena Umutina	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03
89999	APA Nascentes do Rio Paraguai	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	0,00	0,00	1,00	0,00	0,00	0,03	0,04	0,03	0,05	0,03	0,01	0,03	0,05	0,10	0,05	0,03	0,03	0,02	0,03

Table 3.3. Part 2

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
1	Goiatins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	99,98	0,50	2,00	0,00	0,46	0,26	0,03	0,09	0,22	0,44	0,06	0,44	0,14	High
2	Tres Barras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	71,01	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,08	Lowest
3	Aguas do Paulista	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	22,89	0,40	2,00	0,00	0,07	0,42	0,03	0,09	0,01	0,03	0,03	0,10	0,07	Lowest
4	Nova Nazare	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	58,72	0,50	3,00	0,00	0,29	0,26	0,27	0,09	0,09	0,17	0,05	0,29	0,11	Medium
5	Natalandia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,16	53,55	0,60	5,00	0,02	0,29	0,16	0,35	0,25	0,05	0,06	0,04	0,14	0,08	Lowest
6	Unai de Minas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	52,04	0,60	5,00	0,04	0,29	0,16	0,35	0,36	0,01	0,03	0,04	0,29	0,11	Medium
7	Campinacu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	39,16	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,07	0,17	0,03	0,10	0,07	Lowest
8	Delgado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,27	0,02	0,30	37,98	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,07	0,17	0,03	0,10	0,11	Medium
9	Canarana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	21,08	0,60	3,00	0,00	0,07	0,16	0,27	0,12	0,07	0,17	0,03	0,10	0,07	Lowest
10	Aldeia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	28,06	0,52	2,00	0,01	0,14	0,26	0,03	0,18	0,03	0,03	0,03	0,10	0,07	Lowest
11	PE Serra de Sonora	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	19,96	0,60	2,00	0,03	0,07	0,16	0,03	0,36	0,09	0,17	0,03	0,10	0,07	Lowest
12	Agua Clara	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	53,69	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,05	0,06	0,04	0,14	0,08	Lowest
13	Paranatinga	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	73,67	0,60	3,00	0,00	0,29	0,10	0,27	0,09	0,12	0,30	0,04	0,14	0,08	Lowest
14	Sao Felipe	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,27	0,02	0,30	69,87	0,50	2,00	0,00	0,29	0,26	0,03	0,09	0,03	0,03	0,04	0,14	0,12	High
15	Man-Azde	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	70,73	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,22	0,44	0,05	0,29	0,11	Medium
657	Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	50,64	0,47	2,00	0,01	0,29	0,42	0,03	0,18	0,20	0,44	0,06	0,44	0,14	High
6455	Sao Valerio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	63,97	0,54	2,00	0,01	0,29	0,26	0,03	0,18	0,08	0,17	0,04	0,29	0,11	Medium
6475	Corriola	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,42	0,05	0,45	79,11	0,54	3,00	0,00	0,46	0,26	0,27	0,09	0,15	0,30	0,06	0,44	0,22	Very High
6492	Sao Patricio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	19,42	0,59	3,00	0,02	0,07	0,16	0,27	0,25	0,04	0,06	0,03	0,10	0,07	Lowest
6545	Lajeado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	74,85	0,50	2,00	0,00	0,29	0,26	0,03	0,12	0,22	0,44	0,05	0,29	0,07	Lowest
6591	Santana do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	22,01	0,54	2,00	0,00	0,07	0,16	0,03	0,12	0,12	0,30	0,03	0,10	0,04	Lower
6642	Lagoa da Confusao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	49,77	0,48	3,00	0,11	0,14	0,42	0,27	0,36	0,02	0,03	0,05	0,29	0,07	Lowest
6653	Javaes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	73,50	0,41	3,00	0,04	0,29	0,42	0,27	0,36	0,17	0,44	0,07	0,44	0,14	High
6691	Terra Indigena Kraho-Kanela	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	74,06	0,56	2,00	0,17	0,29	0,16	0,03	0,36	0,07	0,17	0,04	0,29	0,11	Medium
6771	Santa Terezinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	65,49	0,44	3,00	0,00	0,29	0,42	0,27	0,18	0,15	0,30	0,06	0,44	0,11	High
6773	Aldeia Caraja	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,04	0,07	0,01	0,15	0,03	0,02	0,30	71,49	0,45	3,00	0,01	0,29	0,42	0,27	0,18	0,17	0,44	0,07	0,44	0,18	Very High
6811	Rio das Mortes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	80,82	0,48	5,00	0,00	0,46	0,42	0,35	0,09	0,07	0,17	0,07	0,44	0,11	Medium
6828	Piabanha	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,18	0,03	0,30	67,12	0,50	3,00	0,00	0,29	0,26	0,27	0,12	0,05	0,06	0,04	0,14	0,12	High
6839	Rio dos Patos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,30	80,67	0,46	3,00	0,00	0,46	0,42	0,27	0,12	0,17	0,44	0,08	0,44	0,18	Very High
6844	Zacarias	0,27	0,30	0,05	0,05	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,11	0,04	0,45	26,75	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,03	0,03	0,03	0,10	0,15	High
6847	Insula	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,11	0,02	0,30	34,98	0,57	4,00	0,00	0,14	0,16	0,31	0,12	0,07	0,17	0,03	0,14	0,12	High
6871	Nova Xavantina	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,07	0,30	0,03	0,46	0,27	0,07	0,45	38,28	0,58	3,00	0,01	0,14	0,16	0,27	0,18	0,05	0,06	0,03	0,10	0,15	High
6882	Suspiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	23,90	0,60	2,00	0,04	0,07	0,16	0,03	0,36	0,01	0,03	0,02	0,03	0,05	Lowest
6892	Perdidos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	15,50	0,60	2,00	0,04	0,07	0,16	0,03	0,36	0,07	0,17	0,03	0,10	0,07	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
6917	APA Meandros do Rio Araguaia	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,02	0,16	88,37	0,46	3,00	0,02	0,46	0,42	0,27	0,25	0,22	0,44	0,08	0,44	0,14	High
6918	Ribeirao Sao Domingos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	25,98	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,05	0,06	0,03	0,10	0,07	Lowest
6938	Corixo do Cascavel	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	55,46	0,40	3,00	0,00	0,29	0,42	0,27	0,12	0,07	0,17	0,05	0,29	0,11	Medium
6959	Registro do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,23	0,46	0,06	0,46	0,18	0,06	0,45	22,78	0,54	3,00	0,00	0,07	0,16	0,27	0,18	0,07	0,17	0,03	0,10	0,15	High
6966	Rio Bonito	0,17	0,20	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,04	0,45	42,25	0,79	3,00	0,01	0,14	0,06	0,27	0,25	0,05	0,06	0,03	0,10	0,15	High
7483	Joao Pinheiro	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,27	0,03	0,30	41,42	0,60	5,00	0,02	0,14	0,16	0,35	0,36	0,02	0,03	0,03	0,14	0,12	High
7587	Josenopolis	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	70,77	0,42	5,00	0,00	0,29	0,42	0,35	0,09	0,01	0,03	0,05	0,29	0,11	Medium
7588	Parque Estadual Grao Mogol	0,41	0,47	0,58	0,18	0,46	0,63	0,63	0,05	0,04	0,07	0,06	0,46	0,42	0,06	0,45	51,21	0,40	5,00	0,00	0,29	0,42	0,35	0,18	0,05	0,06	0,05	0,29	0,19	Very High
42699	Mariana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	8,44	0,60	3,00	0,01	0,04	0,16	0,27	0,25	0,01	0,03	0,02	0,03	0,02	Lower
42728	Suiazinho	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	0,97	0,56	3,00	0,00	0,04	0,16	0,27	0,12	0,01	0,03	0,02	0,03	0,02	Lower
42964	Ribeirao Agua Limpa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	25,59	0,60	5,00	0,00	0,14	0,16	0,35	0,12	0,04	0,06	0,03	0,10	0,15	High
42968	Queimada	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	38,22	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,01	0,03	0,03	0,10	0,04	Lower
42969	Sete de Setembro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	20,65	0,60	3,00	0,02	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,01	Lower
42977	Culuene	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	18,04	0,49	5,00	0,00	0,07	0,26	0,35	0,09	0,01	0,03	0,03	0,10	0,07	Lowest
42986	Couto de Magalhaes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	55,42	0,54	3,00	0,00	0,29	0,26	0,27	0,18	0,17	0,44	0,06	0,44	0,11	Medium
44483	Rio Verde	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	19,02	0,60	3,00	0,01	0,07	0,16	0,27	0,18	0,01	0,03	0,02	0,03	0,02	Lower
44493	APA do Salto Magessi	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	33,58	0,62	3,00	0,02	0,14	0,10	0,27	0,25	0,06	0,06	0,03	0,10	0,04	Lower
44496	Piabas	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	55,30	0,40	3,00	0,00	0,29	0,42	0,27	0,12	0,11	0,30	0,06	0,44	0,11	High
44649	Tapurah	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,02	0,30	37,61	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,01	0,03	0,03	0,10	0,11	Medium
44658	Marape	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	33,53	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,01	0,03	0,03	0,10	0,03	Lower
44676	Caju Doce	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	28,80	0,60	3,00	0,00	0,14	0,16	0,27	0,18	0,01	0,03	0,03	0,10	0,03	Lower
44688	Agua Verde	0,03	0,20	0,05	0,03	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	21,09	0,60	3,00	0,05	0,07	0,16	0,27	0,36	0,02	0,03	0,03	0,10	0,04	Lower
44692	Nova Mutum	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	32,85	0,60	3,00	0,02	0,14	0,16	0,27	0,36	0,01	0,03	0,03	0,10	0,04	Lower
44694	Tres Lagoas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	34,79	0,60	3,00	0,04	0,14	0,16	0,27	0,36	0,01	0,03	0,03	0,10	0,04	Lower
44696	Rio Preto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,42	0,01	0,16	46,29	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,05	0,06	0,03	0,10	0,07	Lowest
44698	Arinos	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	50,52	0,60	3,00	0,01	0,29	0,16	0,27	0,25	0,12	0,30	0,05	0,29	0,08	Medium
44829	Cravari	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	22,52	0,60	3,00	0,02	0,07	0,16	0,27	0,25	0,02	0,03	0,03	0,03	0,05	Lowest
44888	Campo Novo do Parecis	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	14,43	0,60	3,00	0,01	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,02	Lower
44946	Terra Indigena Utiariti	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	85,84	0,60	3,00	0,01	0,46	0,16	0,27	0,25	0,22	0,44	0,07	0,44	0,14	High
44954	Terra Indigena Enawene-Nawe	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	99,99	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,20	0,44	0,07	0,44	0,11	Medium
44962	Estacao Ecologica de Ique	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	99,42	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	High
44969	Terra Indigena Pirineus de Souza	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,27	0,02	0,30	79,91	0,60	3,00	0,00	0,46	0,16	0,27	0,09	0,20	0,44	0,06	0,44	0,18	Very High
44981	Estacao do Juruena	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	70,51	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,04	0,06	0,04	0,14	0,08	Lowest
44983	Juruena	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	40,80	0,60	3,00	0,02	0,14	0,16	0,27	0,25	0,01	0,03	0,03	0,10	0,03	Lower

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
44992	Campos de Julio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	47,58	0,60	3,00	0,02	0,14	0,16	0,27	0,25	0,01	0,03	0,03	0,10	0,07	Lowest
46299	Terra Indigena Parque do Aripuana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	40,26	0,50	3,00	0,00	0,14	0,26	0,27	0,09	0,12	0,30	0,04	0,14	0,05	Lowest
64113	RESEX Extremo Norte do Estado do Tocantins	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,02	0,30	19,43	0,66	3,00	0,01	0,07	0,10	0,27	0,25	0,05	0,06	0,02	0,03	0,09	Medium
64159	Cachoeira Santana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	40,69	0,56	5,00	0,00	0,14	0,16	0,35	0,12	0,01	0,03	0,03	0,10	0,04	Lower
64171	Xupe	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,18	0,01	0,16	44,61	0,60	5,00	0,00	0,14	0,16	0,35	0,12	0,01	0,03	0,03	0,10	0,07	Lowest
64181	Farinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	89,12	0,57	5,00	0,00	0,46	0,16	0,35	0,12	0,15	0,30	0,06	0,44	0,14	High
64182	Cancela	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,02	0,16	96,86	0,50	5,00	0,00	0,46	0,26	0,35	0,09	0,22	0,44	0,07	0,44	0,14	High
64183	Parque Nacional Chapada das Mesas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	92,35	0,55	5,00	0,00	0,46	0,16	0,35	0,12	0,12	0,30	0,06	0,44	0,11	Medium
64193	Carolina	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,16	87,65	0,56	5,00	0,00	0,46	0,16	0,35	0,09	0,10	0,17	0,05	0,29	0,11	Medium
64197	Urupuchote	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	75,05	0,54	5,00	0,00	0,46	0,16	0,35	0,12	0,10	0,17	0,05	0,29	0,07	Lowest
64225	Rio Itapicuru	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,03	0,30	91,50	0,50	5,00	0,00	0,46	0,26	0,35	0,09	0,07	0,17	0,06	0,44	0,18	Very High
64234	Salobro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	81,79	0,53	2,00	0,00	0,46	0,26	0,03	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
64252	Ribeirao do Maranhao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	87,82	0,50	5,00	0,00	0,46	0,26	0,35	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
64261	Santa Filomena	0,03	0,20	0,05	0,03	0,14	0,05	0,32	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	81,03	0,50	5,00	0,00	0,46	0,26	0,35	0,09	0,01	0,03	0,05	0,29	0,08	Medium
64262	Estevao	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	62,78	0,50	5,00	0,00	0,29	0,26	0,35	0,09	0,01	0,03	0,04	0,14	0,04	Lower
64292	Ribeirao Tabocas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	91,44	0,60	2,00	0,00	0,46	0,16	0,03	0,09	0,01	0,03	0,04	0,14	0,08	Lowest
64298	Rio Bonito do Tocantins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	95,83	0,47	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,11	High
64311	Monumento Natural das Arvores Fossilizadas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	80,70	0,60	5,00	0,00	0,46	0,16	0,35	0,09	0,09	0,17	0,05	0,29	0,07	Lowest
64318	Cana-brava	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	90,49	0,60	5,00	0,00	0,46	0,10	0,35	0,12	0,01	0,03	0,04	0,29	0,07	Lowest
64319	Santarosa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	80,96	0,55	2,00	0,00	0,46	0,16	0,03	0,09	0,01	0,03	0,04	0,14	0,04	Lower
64346	Nova Olinda	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	45,80	0,69	5,00	0,02	0,14	0,06	0,35	0,25	0,01	0,03	0,03	0,10	0,03	Lower
64369	Mato Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	38,08	0,68	5,00	0,02	0,14	0,10	0,35	0,36	0,01	0,03	0,03	0,10	0,04	Lower
64373	Panela de Ferro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	70,63	0,58	2,00	0,00	0,29	0,16	0,03	0,12	0,02	0,03	0,03	0,10	0,04	Lower
64376	Agua Fria	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	60,07	0,60	2,00	0,02	0,29	0,16	0,03	0,36	0,05	0,06	0,04	0,14	0,04	Lower
64378	Tranqueira	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	58,51	0,59	2,00	0,02	0,29	0,16	0,03	0,25	0,05	0,06	0,04	0,14	0,05	Lowest
64429	Perdida	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,30	95,60	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,18	Very High
64444	Ponte Alta	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	97,28	0,41	4,00	0,00	0,46	0,42	0,31	0,09	0,17	0,44	0,08	0,44	0,22	Very High
64447	Pindorama do Tocantins	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,01	0,03	90,73	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,11	Medium
64449	Almas	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,03	0,02	0,30	95,13	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,17	0,44	0,07	0,44	0,18	Very High
64454	Soninho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,14	0,01	0,15	0,03	0,03	0,30	97,52	0,42	4,00	0,00	0,46	0,42	0,31	0,09	0,17	0,44	0,08	0,44	0,18	Very High
64459	APA do Jalapao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	98,34	0,41	4,00	0,00	0,46	0,42	0,31	0,09	0,20	0,44	0,08	0,44	0,11	High
64464	Parque Estadual do Jalapao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,03	0,30	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,18	Very High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
64466	Brejao do Jalapao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,05	0,45	99,34	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64471	Desabuso	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	99,47	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,18	Very High
64473	Rio Novo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,18	Very High
64476	Frito gado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	97,67	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64477	Cortapena	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	99,97	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,11	High
64478	Toca	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,07	0,46	0,02	0,46	0,03	0,05	0,45	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64479	Esteneu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,05	0,45	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64483	Jorge	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,11	High
64487	Verde do Tocantins	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	99,99	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,11	Medium
64491	Rio da Volta	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,04	0,45	100,00	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64492	Mateiros	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	98,73	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,16	0,30	0,06	0,44	0,22	Very High
64493	Pedra de Amolar	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,05	0,45	99,78	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64496	Come Assado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	91,84	0,50	4,00	0,00	0,46	0,26	0,31	0,09	0,17	0,44	0,07	0,44	0,11	High
64497	Galhao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	94,82	0,50	4,00	0,00	0,46	0,26	0,31	0,12	0,12	0,30	0,06	0,44	0,11	High
64513	Parque Estadual do Lajeado	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	53,44	0,62	2,00	0,01	0,29	0,10	0,03	0,25	0,12	0,30	0,04	0,14	0,04	Lower
64514	Santa Luzia	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	50,46	0,61	2,00	0,01	0,29	0,10	0,03	0,25	0,05	0,06	0,03	0,10	0,03	Lower
64515	Taquaracu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,46	0,02	0,30	0,11	0,04	0,45	51,47	0,70	2,00	0,04	0,29	0,06	0,03	0,36	0,12	0,30	0,04	0,29	0,19	Very High
64516	APA Lago de Palmas	0,03	0,20	0,05	0,03	0,14	0,05	0,32	0,05	0,03	0,03	0,01	0,15	0,18	0,02	0,30	45,26	0,60	2,00	0,02	0,14	0,16	0,03	0,36	0,05	0,06	0,03	0,10	0,11	Medium
64517	Porto Nacional	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,46	0,02	0,30	0,11	0,05	0,45	56,01	0,69	2,00	0,03	0,29	0,06	0,03	0,36	0,05	0,06	0,03	0,14	0,16	Very High
64519	Rio Tocantins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	56,50	0,62	2,00	0,07	0,29	0,10	0,03	0,36	0,03	0,03	0,03	0,14	0,04	Lower
64521	Brejinho de Nazare	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,30	43,49	0,60	2,00	0,10	0,14	0,16	0,03	0,36	0,01	0,03	0,03	0,10	0,11	Medium
64524	Alianca do Tocantins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	39,96	0,60	2,00	0,01	0,14	0,16	0,03	0,25	0,01	0,03	0,03	0,03	0,01	Lower
64539	Surubim	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	58,53	0,56	2,00	0,02	0,29	0,16	0,03	0,25	0,05	0,06	0,04	0,14	0,05	Lowest
64541	Apinage	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	59,52	0,50	2,00	0,00	0,29	0,26	0,03	0,12	0,02	0,03	0,04	0,14	0,04	Lower
64542	Pedras	0,12	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,03	0,30	79,23	0,47	2,00	0,00	0,46	0,42	0,03	0,18	0,02	0,03	0,06	0,29	0,15	High
64544	Rocinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	82,98	0,47	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,14	High
64545	Natividade	0,03	0,04	0,58	0,12	0,46	0,05	0,05	0,05	0,03	0,03	0,04	0,46	0,27	0,04	0,45	85,19	0,42	2,00	0,00	0,46	0,42	0,03	0,12	0,02	0,03	0,05	0,29	0,19	Very High
64546	Dianopolis	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	90,88	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,03	0,03	0,05	0,29	0,08	Medium
64548	Itaboca	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,01	0,06	95,34	0,42	2,00	0,01	0,46	0,42	0,03	0,18	0,01	0,03	0,06	0,29	0,08	Medium
64549	Manuel Alves	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	92,33	0,46	2,00	0,01	0,46	0,42	0,03	0,18	0,07	0,17	0,06	0,44	0,22	Very High
64561	Santo Antonio do Tocantins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	44,86	0,60	2,00	0,02	0,14	0,16	0,03	0,25	0,01	0,03	0,03	0,03	0,02	Lower
64562	Taipoca	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	32,61	0,60	2,00	0,03	0,14	0,16	0,03	0,36	0,01	0,03	0,03	0,10	0,04	Lower
64584	Talisma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,30	29,69	0,62	3,00	0,00	0,14	0,10	0,27	0,12	0,03	0,03	0,02	0,03	0,09	Medium
64588	Santa Teresa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	41,38	0,59	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,07	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
64589	Rio do Ouro	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	25,38	0,59	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower
64593	APA Foz do Rio Santa Tereza	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	39,36	0,60	2,00	0,01	0,14	0,16	0,03	0,25	0,22	0,44	0,04	0,14	0,08	Lowest
64596	Rio das Almas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	76,49	0,52	2,00	0,00	0,46	0,26	0,03	0,09	0,04	0,06	0,05	0,29	0,08	Medium
64621	Palma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	91,29	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,10	0,17	0,06	0,44	0,11	High
64622	Arraias	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,02	0,16	88,93	0,40	2,00	0,00	0,46	0,42	0,03	0,12	0,03	0,03	0,05	0,29	0,11	Medium
64623	Pau d'arco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	89,32	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,11	High
64624	Novo Jardim	0,12	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,27	0,04	0,45	83,17	0,46	2,00	0,01	0,46	0,42	0,03	0,18	0,08	0,17	0,06	0,44	0,22	Very High
64626	Corcunda	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	79,49	0,50	2,00	0,00	0,46	0,26	0,03	0,12	0,05	0,06	0,05	0,29	0,08	Medium
64628	Sobrado	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,11	0,03	0,30	59,12	0,53	2,00	0,00	0,29	0,26	0,03	0,12	0,03	0,03	0,04	0,14	0,12	High
64629	Lavandeira	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	54,62	0,58	2,00	0,00	0,29	0,16	0,03	0,12	0,03	0,03	0,03	0,10	0,04	Lower
64631	Quebra-coco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	94,13	0,40	2,00	0,00	0,46	0,42	0,03	0,12	0,10	0,17	0,06	0,44	0,11	High
64633	TQ Kalungas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	95,34	0,40	3,00	0,00	0,46	0,42	0,27	0,09	0,15	0,30	0,07	0,44	0,11	Medium
64634	Montes Claros	0,12	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,05	0,45	81,47	0,46	2,00	0,01	0,46	0,42	0,03	0,18	0,07	0,17	0,06	0,44	0,22	Very High
64636	Maquine	0,27	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,06	0,30	0,03	0,46	0,18	0,06	0,45	90,92	0,41	1,00	0,00	0,46	0,42	0,03	0,12	0,22	0,44	0,07	0,44	0,22	Very High
64637	Sucuri	0,03	0,47	0,05	0,06	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	87,17	0,47	3,00	0,00	0,46	0,42	0,27	0,12	0,17	0,44	0,08	0,44	0,22	Very High
64638	Sao Bartolomeu	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,04	0,45	96,66	0,54	3,00	0,00	0,46	0,16	0,27	0,12	0,15	0,30	0,06	0,44	0,22	Very High
64642	Floresta Nacional da Mata Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,42	0,02	0,30	54,53	0,50	3,00	0,00	0,29	0,26	0,27	0,12	0,12	0,30	0,05	0,29	0,15	High
64644	Calheiros	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,04	0,45	70,07	0,52	3,00	0,00	0,29	0,26	0,27	0,12	0,09	0,17	0,05	0,29	0,19	Very High
64649	Divinopolis de Goias	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	68,73	0,56	3,00	0,00	0,29	0,16	0,27	0,12	0,01	0,03	0,04	0,14	0,05	Lowest
64651	Nova Roma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,03	0,30	25,49	0,55	3,00	0,00	0,14	0,16	0,27	0,12	0,02	0,03	0,03	0,10	0,11	Medium
64653	Morro Alto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	29,75	0,56	3,00	0,00	0,14	0,16	0,27	0,18	0,01	0,03	0,03	0,10	0,03	Lower
64654	Parque Estadual de Terra Ronca	0,17	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,06	0,30	0,04	0,46	0,42	0,07	0,45	54,64	0,53	3,00	0,00	0,29	0,26	0,27	0,18	0,12	0,30	0,05	0,29	0,19	Very High
64655	Guatacaba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	32,74	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,02	0,03	0,03	0,10	0,11	Medium
64658	Macacao	0,41	0,47	0,37	0,13	0,46	0,05	0,05	0,05	0,06	0,30	0,05	0,46	0,11	0,07	0,45	74,65	0,56	3,00	0,01	0,29	0,16	0,27	0,18	0,15	0,30	0,05	0,29	0,19	Very High
64662	Santa Maria	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,02	0,30	63,03	0,60	3,00	0,02	0,29	0,10	0,27	0,36	0,05	0,06	0,04	0,14	0,12	High
64664	Baco Pari	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,18	0,04	0,45	37,45	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,12	0,30	0,04	0,14	0,16	Very High
64665	Rio Corrente	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	45,58	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,07	0,17	0,03	0,14	0,05	Lowest
64666	Buriti	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	71,66	0,52	3,00	0,00	0,29	0,26	0,27	0,12	0,22	0,44	0,06	0,44	0,11	High
64668	APA das Nascentes do Rio Vermelho	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,27	0,02	0,30	70,68	0,49	3,00	0,00	0,29	0,42	0,27	0,12	0,22	0,44	0,07	0,44	0,18	Very High
64669	Sitio da Abadia	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,04	0,07	0,01	0,15	0,03	0,01	0,16	64,24	0,60	3,00	0,00	0,29	0,16	0,27	0,09	0,12	0,30	0,05	0,29	0,11	Medium
64676	Rio dos Macacos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	51,51	0,60	3,00	0,02	0,29	0,10	0,27	0,36	0,01	0,03	0,04	0,14	0,05	Lowest
64677	Flores de Goias	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	46,77	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,01	0,03	0,03	0,10	0,03	Lower
64682	Extrema	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	49,74	0,67	3,00	0,01	0,14	0,10	0,27	0,25	0,05	0,06	0,03	0,10	0,07	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
64689	Rio Paraim	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	35,04	0,60	3,00	0,01	0,14	0,10	0,27	0,18	0,05	0,06	0,03	0,03	0,01	Lower
64694	Sao Joao d'Alianca	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	74,80	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,12	High
64695	Crixas	0,03	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,04	0,30	52,40	0,61	3,00	0,01	0,29	0,10	0,27	0,18	0,05	0,06	0,04	0,14	0,12	High
64699	Entorno de Brasilia	0,12	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,27	0,04	0,45	33,86	0,60	3,00	0,01	0,14	0,10	0,27	0,18	0,04	0,06	0,03	0,03	0,13	High
64711	APA Lago de Peixe-Angical	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	80,64	0,42	2,00	0,00	0,46	0,42	0,03	0,09	0,12	0,30	0,06	0,44	0,11	High
64725	Cana-brava de Minacu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	36,57	0,60	3,00	0,00	0,14	0,16	0,27	0,09	0,07	0,17	0,03	0,10	0,03	Lower
64733	Cavalcante	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	85,25	0,46	1,00	0,00	0,46	0,42	0,03	0,09	0,08	0,17	0,06	0,44	0,14	High
64735	Ribeirao Bonito	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	69,33	0,55	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,04	Lower
64736	Minacu	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,02	0,30	67,04	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,12	High
64737	Sao Felix	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	87,43	0,52	3,00	0,00	0,46	0,26	0,27	0,09	0,10	0,17	0,06	0,29	0,11	Medium
64738	Laranjal	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,11	0,04	0,45	98,41	0,40	1,00	0,00	0,46	0,42	0,03	0,09	0,12	0,30	0,06	0,44	0,22	Very High
64739	Preto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	71,54	0,43	1,00	0,00	0,29	0,42	0,03	0,09	0,22	0,44	0,06	0,44	0,11	High
64741	Serra do Tombador	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	93,95	0,40	1,00	0,00	0,46	0,42	0,03	0,09	0,16	0,30	0,06	0,44	0,11	High
64742	Sao Bento	0,12	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	88,64	0,40	3,00	0,00	0,46	0,42	0,27	0,09	0,17	0,44	0,08	0,44	0,18	Very High
64744	Parque Nacional da Chapada dos Veadeiros	0,27	0,47	0,37	0,13	0,46	0,05	0,05	0,05	0,09	0,46	0,06	0,46	0,11	0,07	0,45	81,76	0,42	1,00	0,00	0,46	0,42	0,03	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64746	Corrego Areia	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,04	0,45	96,00	0,40	1,00	0,00	0,46	0,42	0,03	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64747	Muquem	0,27	0,47	0,58	0,17	0,46	0,05	0,05	0,05	0,03	0,03	0,05	0,46	0,03	0,04	0,45	88,66	0,40	1,00	0,00	0,46	0,42	0,03	0,09	0,17	0,44	0,07	0,44	0,22	Very High
64748	Ribeirao Santana	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,09	0,46	0,04	0,46	0,11	0,07	0,45	94,96	0,40	1,00	0,00	0,46	0,42	0,03	0,09	0,22	0,44	0,07	0,44	0,22	Very High
64749	Rio Claro	0,27	0,47	0,37	0,13	0,46	0,05	0,05	0,05	0,03	0,03	0,04	0,46	0,03	0,04	0,45	94,82	0,40	1,00	0,00	0,46	0,42	0,03	0,12	0,22	0,44	0,07	0,44	0,22	Very High
64761	Tocantizinho	0,27	0,47	0,58	0,17	0,46	0,05	0,05	0,05	0,04	0,07	0,06	0,46	0,27	0,07	0,45	84,84	0,52	3,00	0,00	0,46	0,26	0,27	0,12	0,17	0,44	0,07	0,44	0,22	Very High
64762	Couros	0,41	0,47	0,05	0,07	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,18	0,06	0,45	93,33	0,50	1,00	0,00	0,46	0,26	0,03	0,09	0,22	0,44	0,06	0,44	0,22	Very High
64764	Morro Tira-chapeu	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	71,32	0,64	3,00	0,01	0,29	0,10	0,27	0,25	0,01	0,03	0,04	0,14	0,05	Lowest
64765	Cachoeirinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	96,53	0,54	1,00	0,00	0,46	0,16	0,03	0,12	0,17	0,44	0,06	0,44	0,14	High
64766	Picarrao	0,41	0,47	0,58	0,18	0,46	0,05	0,05	0,05	0,03	0,03	0,06	0,46	0,18	0,05	0,45	65,75	0,50	1,00	0,00	0,29	0,26	0,03	0,09	0,17	0,44	0,05	0,29	0,19	Very High
64768	RPPN Fazenda Branca Terra dos Anões	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,06	0,30	0,02	0,46	0,03	0,05	0,45	55,62	0,56	3,00	0,01	0,29	0,16	0,27	0,18	0,11	0,30	0,05	0,29	0,19	Very High
64769	Corrego Roncador	0,27	0,47	0,37	0,13	0,46	0,05	0,05	0,05	0,06	0,30	0,05	0,46	0,27	0,08	0,45	62,39	0,63	3,00	0,01	0,29	0,10	0,27	0,25	0,05	0,06	0,04	0,14	0,16	Very High
64774	Prata Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	70,92	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,05	0,06	0,04	0,14	0,05	Lowest
64781	Niquelandia	0,12	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,04	0,30	46,87	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,07	0,17	0,03	0,14	0,12	High
64782	Bacalhau	0,17	0,47	0,58	0,17	0,46	0,05	0,05	0,05	0,04	0,07	0,06	0,46	0,11	0,05	0,45	62,30	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,07	0,17	0,04	0,14	0,16	Very High
64783	Santa Rita	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	81,48	0,60	3,00	0,01	0,46	0,16	0,27	0,18	0,05	0,06	0,05	0,29	0,08	Medium
64784	Ribeirao Conceicao	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	88,63	0,60	3,00	0,00	0,46	0,16	0,27	0,18	0,01	0,03	0,05	0,29	0,08	Medium
64786	Serra do Passanove	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	87,59	0,61	3,00	0,00	0,46	0,10	0,27	0,09	0,01	0,03	0,04	0,14	0,05	Lowest
64791	Rio Palmeira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,16	60,09	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,08	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
64792	Bilhagua	0,12	0,30	0,58	0,15	0,46	0,05	0,05	0,05	0,03	0,03	0,05	0,46	0,03	0,04	0,45	52,81	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,07	0,17	0,04	0,14	0,16	Very High
64797	Rio da Mula	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	31,68	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,02	0,03	0,03	0,10	0,03	Lower
64798	Passa-tres	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	63,98	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,07	0,17	0,04	0,14	0,08	Lowest
64799	Cafe	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,04	0,07	0,01	0,15	0,03	0,02	0,16	37,46	0,60	3,00	0,01	0,14	0,10	0,27	0,25	0,07	0,17	0,03	0,10	0,07	Lowest
64811	Ribeirao Ponte Alta	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	55,82	0,62	3,00	0,00	0,29	0,10	0,27	0,12	0,05	0,06	0,03	0,14	0,05	Lowest
64812	Ribeirao da Laguna	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	46,69	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,01	0,03	0,03	0,10	0,04	Lower
64815	Cocal	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	39,72	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower
64821	Patos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	30,49	0,64	3,00	0,00	0,14	0,10	0,27	0,12	0,01	0,03	0,02	0,03	0,05	Lowest
64829	Forquilha	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	29,23	0,71	3,00	0,00	0,14	0,06	0,27	0,12	0,01	0,03	0,02	0,03	0,02	Lower
64841	Pensao Sao Miguel	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	25,66	0,71	3,00	0,00	0,14	0,06	0,27	0,12	0,01	0,03	0,02	0,03	0,05	Lowest
64847	Jacare	0,03	0,20	0,05	0,03	0,14	0,05	0,32	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	41,62	0,80	3,00	0,00	0,14	0,06	0,27	0,12	0,07	0,17	0,03	0,10	0,07	Lowest
64848	Sardinha	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,03	0,30	20,22	0,80	3,00	0,00	0,07	0,06	0,27	0,12	0,07	0,17	0,02	0,03	0,09	Medium
64849	Joao Alves	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	31,46	0,79	3,00	0,00	0,14	0,06	0,27	0,12	0,12	0,30	0,03	0,10	0,07	Lowest
64854	RPPN Fazenda Cachoeirinha	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,16	12,55	0,80	3,00	0,00	0,07	0,06	0,27	0,12	0,03	0,03	0,02	0,03	0,05	Lowest
64862	Padre Bernardo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	17,42	0,80	3,00	0,00	0,07	0,06	0,27	0,09	0,03	0,03	0,02	0,03	0,02	Lower
64866	Rio dos Bois	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	32,03	0,80	3,00	0,00	0,14	0,06	0,27	0,09	0,05	0,06	0,02	0,03	0,01	Lower
64883	Mucungo	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	84,35	0,76	3,00	0,01	0,46	0,06	0,27	0,25	0,07	0,17	0,05	0,29	0,08	Medium
64889	Arraial Velho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	39,44	0,70	3,00	0,02	0,14	0,06	0,27	0,25	0,01	0,03	0,03	0,03	0,05	Lowest
64892	APA de Cafuringa	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	80,23	0,80	3,00	0,02	0,46	0,06	0,27	0,25	0,17	0,44	0,06	0,44	0,14	High
64894	Corrego Fundo	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,03	0,30	72,73	0,80	3,00	0,00	0,29	0,06	0,27	0,18	0,22	0,44	0,05	0,29	0,15	High
64898	Monumento Natural do Conjunto Espeleologico do Morro da Pedreira	0,12	0,47	0,05	0,06	0,46	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	79,89	0,80	1,00	0,03	0,46	0,06	0,03	0,36	0,22	0,44	0,06	0,44	0,22	Very High
64899	Reserva Biologica da Contagem	0,27	0,47	0,05	0,06	0,46	0,63	0,63	0,05	0,09	0,46	0,04	0,46	0,11	0,06	0,45	62,22	0,80	3,00	0,02	0,29	0,06	0,27	0,36	0,22	0,44	0,05	0,29	0,19	Very High
64915	Lavrinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	23,65	0,63	3,00	0,00	0,07	0,10	0,27	0,12	0,01	0,03	0,02	0,03	0,01	Lower
64916	Lajes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	36,60	0,65	3,00	0,00	0,14	0,10	0,27	0,18	0,01	0,03	0,03	0,03	0,05	Lowest
64941	Rialma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	11,56	0,60	3,00	0,02	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,02	Lower
64946	Irmaos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	63,15	0,80	5,00	0,01	0,29	0,06	0,35	0,18	0,10	0,17	0,04	0,14	0,05	Lowest
64949	Serra do Cocalzinho	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	71,18	0,80	5,00	0,00	0,29	0,06	0,35	0,12	0,07	0,17	0,04	0,14	0,04	Lower
64982	Canastra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	12,29	0,60	3,00	0,01	0,07	0,10	0,27	0,18	0,01	0,03	0,02	0,03	0,02	Lower
64986	Uru	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	20,21	0,65	3,00	0,01	0,07	0,10	0,27	0,25	0,12	0,30	0,03	0,14	0,12	High
64995	Jaragua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	13,31	0,80	3,00	0,00	0,07	0,06	0,27	0,12	0,01	0,03	0,02	0,03	0,02	Lower
64996	Parque Estadual da Serra de Jaragua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	11,74	0,74	3,00	0,01	0,07	0,06	0,27	0,25	0,05	0,06	0,02	0,03	0,09	Medium
64998	APA da Serra dos Pireneus	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,04	0,45	44,26	0,80	5,00	0,01	0,14	0,06	0,35	0,18	0,17	0,44	0,04	0,14	0,16	Very High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
64999	Padre Souza	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	24,96	0,74	5,00	0,01	0,07	0,06	0,35	0,18	0,04	0,06	0,02	0,03	0,02	Lower
65116	Piranhas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	50,21	0,49	5,00	0,00	0,29	0,42	0,35	0,12	0,04	0,06	0,05	0,29	0,07	Lowest
65374	Lagoa Preta	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	66,25	0,51	2,00	0,00	0,29	0,26	0,03	0,12	0,07	0,17	0,04	0,14	0,05	Lowest
65392	Jenipapo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	0,00	0,40	2,00	0,01	0,04	0,42	0,03	0,18	0,01	0,03	0,03	0,10	0,03	Lower
65415	APA Ilha do Bananal-Cantao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	70,04	0,40	2,00	0,00	0,29	0,42	0,03	0,09	0,22	0,44	0,06	0,44	0,11	Medium
65585	Rio Caiapo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	49,00	0,40	3,00	0,00	0,14	0,42	0,27	0,12	0,17	0,44	0,06	0,44	0,11	Medium
65587	Grotao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	44,92	0,45	3,00	0,00	0,14	0,42	0,27	0,18	0,16	0,30	0,05	0,29	0,15	High
65589	Ribeirao Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	33,70	0,49	2,00	0,00	0,14	0,26	0,03	0,12	0,16	0,30	0,04	0,14	0,05	Lowest
65811	Furo do Coco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	55,29	0,41	3,00	0,00	0,29	0,42	0,27	0,12	0,22	0,44	0,07	0,44	0,11	Medium
65852	Murici	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	56,97	0,40	3,00	0,05	0,29	0,42	0,27	0,36	0,22	0,44	0,07	0,44	0,11	Medium
65855	Rio do Coco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	28,77	0,46	2,00	0,03	0,14	0,42	0,03	0,36	0,17	0,44	0,06	0,44	0,11	High
65972	Furo da Gameleira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,11	0,03	0,30	93,54	0,40	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,18	Very High
65973	Cicice	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	53,06	0,48	3,00	0,00	0,29	0,42	0,27	0,12	0,12	0,30	0,06	0,44	0,11	High
66224	Parque Nacional do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,14	0,01	0,15	0,03	0,03	0,30	99,32	0,40	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,18	Very High
66227	Ariari	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	98,06	0,44	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,11	Medium
66234	Pium	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	100,00	0,40	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,11	Medium
66254	Terra Indigena Parque do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	100,00	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium
66256	Ipuca do Riozinho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	99,97	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium
66257	Ilha de Santa Anna	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	98,82	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	High
66261	Riozinho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	99,36	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	High
66467	Cristalandia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	68,23	0,50	2,00	0,01	0,29	0,26	0,03	0,25	0,02	0,03	0,04	0,14	0,05	Lowest
66623	Urubu	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	99,51	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium
66668	Sandolandia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	64,64	0,50	2,00	0,00	0,29	0,26	0,03	0,12	0,09	0,17	0,04	0,14	0,05	Lowest
66696	Baiao	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	21,43	0,60	3,00	0,01	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,01	Lower
66821	Urubu Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	39,70	0,50	3,00	0,20	0,14	0,26	0,27	0,36	0,05	0,06	0,04	0,14	0,04	Lower
66925	Xavante	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	46,32	0,53	3,00	0,14	0,14	0,26	0,27	0,36	0,01	0,03	0,04	0,14	0,04	Lower
66951	Escuro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	41,07	0,52	3,00	0,14	0,14	0,26	0,27	0,36	0,02	0,03	0,04	0,14	0,08	Lowest
67821	Xavantinho	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	82,72	0,41	3,00	0,00	0,46	0,42	0,27	0,09	0,05	0,06	0,06	0,44	0,11	Medium
67822	Terra Indigena Maraiwatsede	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	50,30	0,50	3,00	0,00	0,29	0,26	0,27	0,12	0,12	0,30	0,05	0,29	0,11	Medium
67966	Terra Indigena Cacique Fontoura	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	74,70	0,50	5,00	0,00	0,29	0,26	0,35	0,09	0,12	0,30	0,05	0,29	0,08	Medium
67973	Santa Izabel do Morro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,11	0,01	0,16	71,79	0,50	5,00	0,01	0,29	0,26	0,35	0,25	0,17	0,44	0,06	0,44	0,14	High
68141	Novo Santo Antonio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	90,70	0,48	5,00	0,00	0,46	0,42	0,35	0,09	0,06	0,06	0,06	0,44	0,11	High
68255	Sao Joao Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	66,80	0,50	3,00	0,00	0,29	0,26	0,27	0,12	0,01	0,03	0,04	0,14	0,04	Lower
68311	Ribeirao Cascalheira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	71,11	0,44	3,00	0,00	0,29	0,42	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
68334	Terra Indigena Pimentel Barbosa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	99,96	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium
68351	RVS Quelonios do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	85,06	0,43	3,00	0,00	0,46	0,42	0,27	0,09	0,17	0,44	0,08	0,44	0,11	Medium
68353	Cocalinho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	74,82	0,43	3,00	0,00	0,29	0,42	0,27	0,09	0,17	0,44	0,07	0,44	0,11	High
68382	Angico	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	37,29	0,54	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower
68389	Terra Indigena Areoes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	93,02	0,50	3,00	0,01	0,46	0,26	0,27	0,18	0,17	0,44	0,07	0,44	0,11	High
68461	Pindaiba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	40,23	0,60	4,00	0,01	0,14	0,16	0,31	0,25	0,05	0,06	0,03	0,10	0,03	Lower
68463	Barra do Garças	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	25,94	0,60	4,00	0,00	0,14	0,16	0,31	0,12	0,07	0,17	0,03	0,14	0,08	Lowest
68464	Galheiro	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,16	60,14	0,60	4,00	0,00	0,29	0,16	0,31	0,12	0,07	0,17	0,04	0,14	0,08	Lowest
68486	Cava Funda	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	19,03	0,60	4,00	0,01	0,07	0,16	0,31	0,18	0,07	0,17	0,03	0,10	0,04	Lower
68489	PE da Serra Azul	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	49,94	0,60	4,00	0,00	0,14	0,16	0,31	0,18	0,17	0,44	0,05	0,29	0,08	Medium
68497	Corrente	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	16,68	0,60	4,00	0,00	0,07	0,16	0,31	0,12	0,07	0,17	0,03	0,10	0,07	Lowest
68622	Cachoeira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	32,80	0,57	3,00	0,01	0,14	0,16	0,27	0,18	0,01	0,03	0,03	0,10	0,03	Lower
68681	Jau	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	50,73	0,60	3,00	0,00	0,29	0,16	0,27	0,18	0,01	0,03	0,04	0,14	0,04	Lower
68685	Agua Boa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	21,31	0,60	3,00	0,02	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,05	Lowest
68695	Areao	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	35,49	0,60	3,00	0,00	0,14	0,16	0,27	0,18	0,07	0,17	0,03	0,14	0,05	Lowest
68732	Dom Bosco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	57,21	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,12	0,30	0,05	0,29	0,11	Medium
68748	Terra Indigena Sao Marcos	0,17	0,04	0,05	0,02	0,14	0,05	0,32	0,05	0,03	0,03	0,01	0,07	0,11	0,01	0,06	100,00	0,60	4,00	0,00	0,46	0,16	0,31	0,09	0,22	0,44	0,06	0,44	0,11	High
68756	Paredao Grande	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	48,50	0,60	2,00	0,00	0,14	0,16	0,03	0,09	0,04	0,06	0,02	0,03	0,02	Lower
68757	General Carneiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	25,81	0,60	2,00	0,00	0,14	0,16	0,03	0,09	0,04	0,06	0,02	0,03	0,01	Lower
68993	Engano	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	14,53	0,60	2,00	0,01	0,07	0,16	0,03	0,18	0,01	0,03	0,02	0,03	0,01	Lower
68998	Agua Azul	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	11,23	0,60	2,00	0,01	0,07	0,16	0,03	0,18	0,01	0,03	0,02	0,03	0,02	Lower
69133	PE do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	91,60	0,47	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,11	Medium
69159	Formoso do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	81,08	0,47	3,00	0,00	0,46	0,42	0,27	0,09	0,22	0,44	0,08	0,44	0,11	Medium
69163	APA dos Meandros do Rio Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	86,84	0,40	3,00	0,00	0,46	0,42	0,27	0,12	0,17	0,44	0,08	0,44	0,11	Medium
69166	Chapeu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	74,18	0,40	3,00	0,03	0,29	0,42	0,27	0,36	0,02	0,03	0,06	0,29	0,07	Lowest
69167	Cristalino	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	78,03	0,41	3,00	0,01	0,46	0,42	0,27	0,25	0,03	0,03	0,06	0,44	0,11	High
69169	Mata do Inferno	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	77,92	0,45	3,00	0,01	0,46	0,42	0,27	0,25	0,07	0,17	0,07	0,44	0,11	Medium
69223	Crixas-mirim	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	21,14	0,60	3,00	0,01	0,07	0,16	0,27	0,18	0,01	0,03	0,02	0,03	0,01	Lower
69249	Pintado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	23,51	0,60	3,00	0,01	0,07	0,16	0,27	0,18	0,07	0,17	0,03	0,10	0,07	Lowest
69262	Bonopolis	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	16,59	0,60	3,00	0,02	0,07	0,16	0,27	0,25	0,01	0,03	0,03	0,03	0,02	Lower
69286	Barreiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	40,96	0,60	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower
69294	Ribeirao d'Anta	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	41,26	0,53	3,00	0,00	0,14	0,26	0,27	0,12	0,01	0,03	0,03	0,10	0,03	Lower
69295	Crixas-acu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	31,25	0,57	3,00	0,00	0,14	0,16	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
69441	Tesouras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	39,49	0,56	3,00	0,02	0,14	0,16	0,27	0,36	0,07	0,17	0,04	0,14	0,04	Lower
69443	Alagado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	17,55	0,55	3,00	0,02	0,07	0,16	0,27	0,25	0,05	0,06	0,03	0,10	0,03	Lower
69449	Braco do Mato	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	96,22	0,55	3,00	0,00	0,46	0,16	0,27	0,18	0,10	0,17	0,05	0,29	0,08	Medium
69462	Pinguela	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,42	0,02	0,30	32,07	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,04	0,06	0,03	0,10	0,11	Medium
69488	Alagadinho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	5,50	0,50	3,00	0,00	0,04	0,26	0,27	0,12	0,01	0,03	0,03	0,03	0,02	Lower
69494	Cavalo Queimado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	16,43	0,60	3,00	0,00	0,07	0,16	0,27	0,12	0,01	0,03	0,02	0,03	0,02	Lower
69513	Aruana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	74,45	0,49	3,00	0,01	0,29	0,42	0,27	0,18	0,07	0,17	0,06	0,29	0,07	Lowest
69514	Medio Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	24,60	0,40	3,00	0,00	0,07	0,42	0,27	0,18	0,07	0,17	0,04	0,14	0,04	Lower
69516	Brejao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	35,27	0,40	3,00	0,01	0,14	0,42	0,27	0,18	0,07	0,17	0,05	0,29	0,07	Lowest
69519	Terra Indigena Karaja de Aruana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	53,84	0,53	3,00	0,00	0,29	0,26	0,27	0,09	0,17	0,44	0,06	0,44	0,11	Medium
69521	RPPN Boca da Mata	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,11	0,02	0,30	28,84	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,08	0,17	0,03	0,14	0,12	High
69523	Matrincha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	20,85	0,60	3,00	0,01	0,07	0,16	0,27	0,25	0,03	0,03	0,03	0,03	0,05	Lowest
69529	APA da Serra Dourada	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,07	0,46	0,03	0,46	0,27	0,07	0,45	36,15	0,60	3,00	0,01	0,14	0,16	0,27	0,18	0,17	0,44	0,05	0,29	0,19	Very High
69568	PE da Serra Dourada	0,12	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,03	0,30	14,82	0,60	3,00	0,01	0,07	0,16	0,27	0,18	0,05	0,06	0,02	0,03	0,09	Medium
69582	Dom Bill	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	13,09	0,60	3,00	0,02	0,07	0,16	0,27	0,36	0,01	0,03	0,03	0,10	0,04	Lower
69626	Bom Jardim	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	43,84	0,60	3,00	0,01	0,14	0,10	0,27	0,18	0,07	0,17	0,03	0,10	0,07	Lowest
69627	Retiro das Piranhas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	30,42	0,60	3,00	0,01	0,14	0,16	0,27	0,25	0,07	0,17	0,04	0,14	0,05	Lowest
69629	Pantano	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	42,04	0,73	3,00	0,01	0,14	0,06	0,27	0,25	0,07	0,17	0,03	0,10	0,04	Lower
69698	Sao Jose	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	77,19	0,80	3,00	0,00	0,46	0,06	0,27	0,12	0,07	0,17	0,05	0,29	0,07	Lowest
69811	APA Estadual Pe da Serra Azul	0,27	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,16	46,64	0,52	4,00	0,01	0,14	0,26	0,31	0,18	0,12	0,30	0,05	0,29	0,11	Medium
69861	Bandeira	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	51,25	0,60	2,00	0,00	0,29	0,16	0,03	0,09	0,01	0,03	0,03	0,10	0,04	Lower
69866	Guiratinga	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	59,30	0,60	2,00	0,00	0,29	0,16	0,03	0,09	0,01	0,03	0,03	0,10	0,04	Lower
69886	Alto Garcas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	42,00	0,50	2,00	0,00	0,14	0,26	0,03	0,18	0,01	0,03	0,03	0,10	0,07	Lowest
69946	Sucupira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	43,08	0,79	3,00	0,01	0,14	0,06	0,27	0,18	0,05	0,06	0,02	0,03	0,01	Lower
69954	Sao Joao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	63,40	0,45	2,00	0,00	0,29	0,42	0,03	0,09	0,01	0,03	0,04	0,14	0,05	Lowest
69966	Diamantino	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	37,59	0,80	3,00	0,00	0,14	0,06	0,27	0,09	0,01	0,03	0,02	0,03	0,02	Lower
69981	Babilonia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,30	23,44	0,80	3,00	0,00	0,07	0,06	0,27	0,09	0,07	0,17	0,02	0,03	0,09	Medium
69984	Empantanado	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	36,42	0,80	4,00	0,00	0,14	0,06	0,31	0,12	0,07	0,17	0,03	0,10	0,15	High
69985	Mineiros	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	31,91	0,80	4,00	0,00	0,14	0,06	0,31	0,09	0,02	0,03	0,02	0,03	0,05	Lowest
69989	Jacu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	46,39	0,80	4,00	0,00	0,14	0,06	0,31	0,12	0,01	0,03	0,02	0,03	0,02	Lower
69993	Alto Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	7,22	0,68	3,00	0,00	0,04	0,06	0,27	0,09	0,07	0,17	0,02	0,03	0,13	High
69994	Gordura	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,11	0,01	0,16	25,87	0,50	2,00	0,00	0,14	0,26	0,03	0,09	0,07	0,17	0,03	0,10	0,07	Lowest
69995	Santa Rita do Araguaia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,27	0,04	0,45	30,19	0,68	3,00	0,00	0,14	0,06	0,27	0,12	0,07	0,17	0,03	0,10	0,15	High
69996	Ribeirao do Sapo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,27	0,02	0,30	25,36	0,44	2,00	0,00	0,14	0,42	0,03	0,09	0,02	0,03	0,03	0,14	0,12	High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
69997	Zeca Nonato	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,11	0,05	0,45	39,78	0,57	4,00	0,00	0,14	0,16	0,31	0,12	0,05	0,06	0,03	0,10	0,15	High
69998	Queixada	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	40,29	0,80	4,00	0,00	0,14	0,06	0,31	0,12	0,05	0,06	0,02	0,03	0,02	Lower
69999	Araguainha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	21,01	0,65	4,00	0,00	0,07	0,10	0,31	0,12	0,08	0,17	0,03	0,03	0,02	Lower
71647	Terra Indigena Geralda Toco Preto	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	27,94	0,65	3,00	0,00	0,14	0,10	0,27	0,12	0,05	0,06	0,02	0,03	0,01	Lower
71648	Terra Indigena Krikati	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	61,83	0,56	3,00	0,00	0,29	0,16	0,27	0,12	0,05	0,06	0,04	0,14	0,04	Lower
71652	Ipixuna Acu	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	33,53	0,76	4,00	0,01	0,14	0,06	0,31	0,25	0,01	0,03	0,03	0,03	0,01	Lower
71655	RPPN Fazenda Sao Francisco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	22,25	0,75	4,00	0,02	0,07	0,06	0,31	0,25	0,01	0,03	0,02	0,03	0,02	Lower
71662	Presidente Dutra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	43,84	0,70	3,00	0,01	0,14	0,06	0,27	0,25	0,01	0,03	0,03	0,03	0,01	Lower
71666	Rio das Flores	0,12	0,04	0,05	0,02	0,07	0,32	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	76,96	0,70	3,00	0,00	0,46	0,06	0,27	0,12	0,01	0,03	0,04	0,14	0,04	Lower
71687	Terra Indigena Porquinhos	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	93,33	0,53	3,00	0,00	0,46	0,26	0,27	0,09	0,22	0,44	0,07	0,44	0,11	Medium
71691	Terra Indigena Cana Brava/Guajajara	0,12	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	73,25	0,60	3,00	0,00	0,29	0,16	0,27	0,12	0,12	0,30	0,05	0,29	0,15	High
71831	Itapecuru	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	66,95	0,67	3,00	0,01	0,29	0,10	0,27	0,18	0,01	0,03	0,03	0,14	0,04	Lower
71842	TQ Santa Joana	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	68,87	0,60	3,00	0,00	0,29	0,10	0,27	0,12	0,05	0,06	0,03	0,14	0,04	Lower
71845	PN dos Lençois Maranhenses	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,11	0,03	0,30	69,22	0,50	3,00	0,00	0,29	0,26	0,27	0,12	0,17	0,44	0,06	0,44	0,18	Very High
71851	RPPN Fazenda Pantanal	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	67,87	0,60	3,00	0,01	0,29	0,16	0,27	0,25	0,01	0,03	0,04	0,14	0,04	Lower
71853	Itapicuru	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	86,00	0,63	3,00	0,01	0,46	0,10	0,27	0,25	0,01	0,03	0,05	0,29	0,07	Lowest
71855	Cajazeira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	69,18	0,70	3,00	0,01	0,29	0,06	0,27	0,18	0,01	0,03	0,03	0,10	0,03	Lower
71866	Inhumas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	69,47	0,61	3,00	0,00	0,29	0,10	0,27	0,09	0,01	0,03	0,03	0,10	0,04	Lower
71874	Baixao do Bandeira	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	68,05	0,70	3,00	0,01	0,29	0,06	0,27	0,25	0,01	0,03	0,03	0,14	0,04	Lower
71875	Fortuna	0,03	0,04	0,05	0,01	0,03	0,63	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	75,37	0,70	3,00	0,00	0,46	0,06	0,27	0,12	0,01	0,03	0,04	0,14	0,04	Lower
71884	Mirador	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	99,96	0,60	3,00	0,00	0,46	0,16	0,27	0,09	0,22	0,44	0,06	0,44	0,11	Medium
71886	Alpercatinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	99,77	0,60	3,00	0,00	0,46	0,16	0,27	0,09	0,22	0,44	0,06	0,44	0,18	Very High
71899	PE de Mirador	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	87,21	0,56	3,00	0,00	0,46	0,16	0,27	0,12	0,15	0,30	0,06	0,44	0,11	Medium
71929	APA dos Morros Garapenses	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	72,92	0,68	3,00	0,01	0,29	0,06	0,27	0,25	0,17	0,44	0,05	0,29	0,08	Medium
71942	APA Upaon-Açu/Miritiba/Alto Preguicas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	91,81	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,16	0,30	0,06	0,44	0,14	High
72121	RPPN Fazenda Centro	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,18	0,02	0,30	13,63	0,69	3,00	0,03	0,07	0,06	0,27	0,36	0,01	0,03	0,02	0,03	0,09	Medium
72168	Caraiba	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	77,96	0,60	3,00	0,02	0,46	0,10	0,27	0,36	0,07	0,17	0,05	0,29	0,08	Medium
72196	Riachao	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	89,66	0,70	3,00	0,01	0,46	0,06	0,27	0,25	0,01	0,03	0,04	0,29	0,07	Lowest
72211	FN de Palmares	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,42	0,03	0,30	38,45	0,69	2,00	0,08	0,14	0,06	0,03	0,36	0,06	0,06	0,02	0,03	0,09	Medium
72314	Timon	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	42,79	0,70	3,00	0,00	0,14	0,06	0,27	0,12	0,05	0,06	0,02	0,03	0,01	Lower
72347	Sao Francisco do Maranhao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	90,98	0,58	3,00	0,00	0,46	0,16	0,27	0,12	0,01	0,03	0,05	0,29	0,07	Lowest
72349	Sucupira do Riachao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	81,57	0,60	3,00	0,00	0,46	0,16	0,27	0,12	0,01	0,03	0,05	0,29	0,08	Medium
72411	Caninde	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	0,92	0,40	2,00	0,00	0,04	0,42	0,03	0,12	0,01	0,03	0,03	0,10	0,03	Lower

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
72549	PN da Serra das Confusoes	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	61,56	0,44	2,00	0,00	0,29	0,42	0,03	0,12	0,20	0,44	0,06	0,44	0,14	High
72556	Floriano	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	98,57	0,40	2,00	0,00	0,46	0,42	0,03	0,12	0,01	0,03	0,05	0,29	0,08	Medium
72632	Coqueiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	78,10	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,07	0,17	0,06	0,44	0,11	Medium
72643	Riacho de Sant'Ana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	89,10	0,40	2,00	0,01	0,46	0,42	0,03	0,25	0,07	0,17	0,06	0,44	0,11	Medium
72646	Baliza	0,12	0,20	0,05	0,03	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	99,50	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,22	0,44	0,07	0,44	0,11	High
72653	Paraim	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	83,13	0,50	2,00	0,06	0,46	0,26	0,03	0,36	0,05	0,06	0,05	0,29	0,07	Lowest
72656	Matoes	0,17	0,04	0,05	0,02	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	73,04	0,50	2,00	0,08	0,29	0,26	0,03	0,36	0,05	0,06	0,04	0,29	0,07	Lowest
72669	Gurgueia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	96,77	0,44	2,00	0,00	0,46	0,42	0,03	0,09	0,12	0,30	0,06	0,44	0,11	Medium
72681	APA do Rangel	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	82,93	0,40	2,00	0,00	0,46	0,42	0,03	0,09	0,05	0,06	0,05	0,29	0,07	Lowest
72686	Vereda Uniao	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	71,98	0,40	2,00	0,00	0,29	0,42	0,03	0,09	0,01	0,03	0,04	0,14	0,05	Lowest
72693	Riacho Frio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	89,46	0,43	2,00	0,00	0,46	0,42	0,03	0,09	0,01	0,03	0,05	0,29	0,08	Medium
72695	Parnagua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	72,83	0,46	2,00	0,00	0,29	0,42	0,03	0,09	0,01	0,03	0,04	0,14	0,04	Lower
72696	Malhada da Barra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	73,78	0,50	2,00	0,00	0,29	0,26	0,03	0,09	0,12	0,30	0,05	0,29	0,11	Medium
72699	Sebastiao Barros	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	69,07	0,49	2,00	0,00	0,29	0,42	0,03	0,12	0,04	0,06	0,05	0,29	0,07	Lowest
72724	Cardoso	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	93,16	0,36	2,00	0,00	0,46	0,42	0,03	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
72729	Prata	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	70,53	0,42	2,00	0,00	0,29	0,42	0,03	0,12	0,01	0,03	0,04	0,29	0,07	Lowest
72733	Riacho do Belem	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	71,24	0,57	3,00	0,00	0,29	0,16	0,27	0,09	0,01	0,03	0,03	0,14	0,12	High
72786	Curimata	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	99,12	0,45	3,00	0,00	0,46	0,42	0,27	0,09	0,01	0,03	0,06	0,44	0,11	Medium
72797	Urucui	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	68,28	0,46	2,00	0,01	0,29	0,42	0,03	0,25	0,01	0,03	0,05	0,29	0,07	Lowest
72816	Santa Isabel	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	82,06	0,46	3,00	0,00	0,46	0,42	0,27	0,09	0,01	0,03	0,06	0,44	0,11	High
72817	Balsas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	87,52	0,50	3,00	0,00	0,46	0,26	0,27	0,18	0,01	0,03	0,05	0,29	0,08	Medium
72818	Gameleira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	97,23	0,50	3,00	0,00	0,46	0,26	0,27	0,12	0,01	0,03	0,05	0,29	0,08	Medium
72819	Riacho dos Picos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	89,62	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
72829	Fortaleza dos Nogueiras	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	75,96	0,56	3,00	0,00	0,46	0,16	0,27	0,12	0,02	0,03	0,05	0,29	0,07	Lowest
72834	Coite	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	77,94	0,50	3,00	0,00	0,46	0,26	0,27	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
72862	Rio Maravilha	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	58,39	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,01	0,03	0,04	0,14	0,04	Lower
72871	Santo Antonio de Balsas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,18	0,05	0,45	68,34	0,60	3,00	0,02	0,29	0,16	0,27	0,36	0,07	0,17	0,05	0,29	0,19	Very High
72872	Gado Bravo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	75,39	0,60	3,00	0,00	0,46	0,16	0,27	0,18	0,05	0,06	0,05	0,29	0,07	Lowest
72876	Novo Recreio	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	90,96	0,60	3,00	0,00	0,46	0,16	0,27	0,18	0,07	0,17	0,05	0,29	0,08	Medium
72878	Temerante	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	66,48	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,05	0,06	0,04	0,14	0,04	Lower
72881	Parelhas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	93,73	0,60	3,00	0,00	0,46	0,16	0,27	0,12	0,07	0,17	0,05	0,29	0,08	Medium
72887	Tem medo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	82,98	0,60	3,00	0,01	0,46	0,16	0,27	0,25	0,07	0,17	0,06	0,29	0,08	Medium
72889	Mandacaru	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	24,73	0,60	3,00	0,02	0,07	0,16	0,27	0,36	0,02	0,03	0,03	0,10	0,04	Lower
72891	Sul Maranhense	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	82,95	0,60	3,00	0,01	0,46	0,16	0,27	0,18	0,05	0,06	0,05	0,29	0,08	Medium

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
72911	Benedito Leite	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	86,13	0,48	2,00	0,00	0,46	0,42	0,03	0,09	0,01	0,03	0,05	0,29	0,07	Lowest
72922	Riacho da Estiva	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	71,00	0,49	2,00	0,00	0,29	0,42	0,03	0,09	0,01	0,03	0,04	0,14	0,04	Lower
72929	Urucui-preto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,02	0,30	80,69	0,50	2,00	0,03	0,46	0,26	0,03	0,36	0,07	0,17	0,06	0,44	0,18	Very High
72933	Loreto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	82,57	0,49	3,00	0,00	0,46	0,42	0,27	0,09	0,05	0,06	0,06	0,44	0,14	High
72935	Tasso Fragoso	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	78,67	0,55	2,00	0,00	0,46	0,16	0,03	0,09	0,07	0,17	0,05	0,29	0,07	Lowest
72946	EE de Urucui-Una	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	97,96	0,50	2,00	0,00	0,46	0,26	0,03	0,09	0,22	0,44	0,06	0,44	0,11	Medium
72954	Sucuruju	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	85,98	0,50	2,00	0,00	0,46	0,26	0,03	0,09	0,07	0,17	0,05	0,29	0,08	Medium
72963	Medonho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	71,12	0,60	2,00	0,00	0,29	0,16	0,03	0,09	0,07	0,17	0,04	0,14	0,08	Lowest
72982	Alto Parnaiba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	97,03	0,60	2,00	0,00	0,46	0,16	0,03	0,09	0,01	0,03	0,04	0,14	0,04	Lower
72991	Cachoeira Pedra de Amolar	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	90,85	0,54	2,00	0,00	0,46	0,26	0,03	0,09	0,12	0,30	0,06	0,29	0,07	Lowest
72992	PN das Nascentes do Rio Parnaiba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,27	0,03	0,30	99,36	0,45	2,00	0,00	0,46	0,42	0,03	0,09	0,22	0,44	0,07	0,44	0,18	Very High
73111	Ilha Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	77,62	0,63	3,00	0,03	0,46	0,10	0,27	0,36	0,01	0,03	0,05	0,29	0,11	Medium
73114	Luis Correia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	21,01	0,60	3,00	0,00	0,07	0,16	0,27	0,12	0,01	0,03	0,02	0,03	0,01	Lower
74197	Ilha Mocambo dos Ventos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	51,99	0,40	2,00	0,03	0,29	0,42	0,03	0,36	0,17	0,44	0,07	0,44	0,14	High
74199	APA Dunas e Veredas do Baixo e Medio Sao Francisco	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	30,63	0,40	2,00	0,04	0,14	0,42	0,03	0,36	0,16	0,30	0,05	0,29	0,11	Medium
74222	Cotegipe	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	88,27	0,42	2,00	0,00	0,46	0,42	0,03	0,18	0,09	0,17	0,06	0,44	0,11	High
74225	EE Rio Preto	0,12	0,04	0,05	0,02	0,07	0,05	0,32	0,05	0,06	0,30	0,02	0,30	0,27	0,05	0,45	74,43	0,50	3,00	0,01	0,29	0,26	0,27	0,25	0,15	0,30	0,06	0,29	0,19	Very High
74226	Formosa do Rio Preto	0,03	0,30	0,05	0,04	0,30	0,05	0,32	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	56,98	0,60	3,00	0,03	0,29	0,16	0,27	0,36	0,12	0,30	0,05	0,29	0,15	High
74228	APA Rio Preto	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	63,65	0,60	3,00	0,03	0,29	0,16	0,27	0,36	0,15	0,30	0,05	0,29	0,08	Medium
74229	Sapao	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	65,51	0,60	3,00	0,06	0,29	0,16	0,27	0,36	0,15	0,30	0,05	0,29	0,15	High
74235	Rio Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	56,53	0,44	2,00	0,01	0,29	0,42	0,03	0,25	0,02	0,03	0,05	0,29	0,07	Lowest
74237	Neves	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	52,86	0,60	2,00	0,01	0,29	0,16	0,03	0,18	0,01	0,03	0,03	0,10	0,04	Lower
74243	Rio de Janeiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,03	0,30	76,99	0,60	4,00	0,14	0,46	0,16	0,31	0,36	0,22	0,44	0,07	0,44	0,18	Very High
74244	Ponta d'agua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,03	0,30	42,47	0,68	4,00	0,28	0,14	0,06	0,31	0,36	0,16	0,30	0,04	0,14	0,12	High
74245	APA Bacia do Rio de Janeiro	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	67,99	0,60	4,00	0,19	0,29	0,16	0,31	0,36	0,20	0,44	0,06	0,44	0,11	High
74255	Extremo Oeste Baiano	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	54,38	0,60	4,00	0,05	0,29	0,16	0,31	0,36	0,01	0,03	0,04	0,14	0,12	High
74261	Ondas	0,12	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,04	0,30	76,15	0,60	4,00	0,07	0,46	0,16	0,31	0,36	0,05	0,06	0,05	0,29	0,15	High
74262	Cabeceira das Lajes	0,17	0,04	0,37	0,08	0,46	0,32	0,32	0,05	0,03	0,03	0,03	0,46	0,11	0,05	0,45	70,59	0,60	4,00	0,09	0,29	0,16	0,31	0,36	0,09	0,17	0,05	0,29	0,19	Very High
74263	Tabocas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	88,19	0,60	4,00	0,12	0,46	0,16	0,31	0,36	0,07	0,17	0,06	0,44	0,11	Medium
74264	Cabeceira de Pedras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,02	0,30	40,27	0,71	4,00	0,04	0,14	0,06	0,31	0,36	0,05	0,06	0,03	0,10	0,11	Medium
74269	Bora	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	33,24	0,80	4,00	0,00	0,14	0,06	0,31	0,09	0,01	0,03	0,02	0,03	0,02	Lower
74272	Boa Sorte	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,16	73,28	0,49	2,00	0,10	0,29	0,26	0,03	0,36	0,08	0,17	0,05	0,29	0,11	Medium
74278	FN de Cristopolis	0,03	0,04	0,37	0,08	0,46	0,05	0,32	0,05	0,03	0,03	0,03	0,46	0,03	0,03	0,30	77,39	0,57	2,00	0,02	0,46	0,16	0,03	0,36	0,07	0,17	0,05	0,29	0,15	High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
74281	Vereda Anastacio	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,30	85,17	0,60	3,00	0,09	0,46	0,16	0,27	0,36	0,02	0,03	0,05	0,29	0,15	High
74282	Sao Desiderio	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	77,37	0,60	3,00	0,02	0,46	0,16	0,27	0,36	0,05	0,06	0,05	0,29	0,08	Medium
74283	Porcos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	81,58	0,60	3,00	0,01	0,46	0,16	0,27	0,25	0,07	0,17	0,06	0,29	0,15	High
74292	Triste e Feio	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	41,65	0,60	3,00	0,23	0,14	0,16	0,27	0,36	0,01	0,03	0,03	0,10	0,04	Lower
74317	Ilha da Pica Grande	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	34,68	0,40	2,00	0,00	0,14	0,42	0,03	0,18	0,05	0,06	0,04	0,14	0,05	Lowest
74332	Vereda da Canoa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	74,22	0,40	2,00	0,01	0,29	0,42	0,03	0,25	0,01	0,03	0,05	0,29	0,11	Medium
74394	Serra Dourada	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	39,52	0,54	2,00	0,02	0,14	0,16	0,03	0,36	0,01	0,03	0,03	0,10	0,03	Lower
74397	Ilha da Bananeira	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,16	35,66	0,40	2,00	0,03	0,14	0,42	0,03	0,36	0,03	0,03	0,04	0,14	0,08	Lowest
74411	Sitio do Mato	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	43,92	0,40	2,00	0,02	0,14	0,42	0,03	0,36	0,05	0,06	0,04	0,14	0,05	Lowest
74413	Terra Indigena Vargem Alegre	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	47,58	0,56	2,00	0,02	0,14	0,16	0,03	0,36	0,04	0,06	0,03	0,10	0,04	Lower
74414	Pedra Branca	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	67,34	0,54	2,00	0,01	0,29	0,16	0,03	0,25	0,03	0,03	0,03	0,14	0,04	Lower
74415	Santana	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,30	58,68	0,60	2,00	0,02	0,29	0,16	0,03	0,25	0,02	0,03	0,03	0,14	0,12	High
74418	Coribe	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	55,78	0,60	2,00	0,03	0,29	0,16	0,03	0,36	0,01	0,03	0,04	0,14	0,05	Lowest
74419	Sao Felix do Coribe	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	26,62	0,60	2,00	0,04	0,14	0,16	0,03	0,36	0,01	0,03	0,03	0,10	0,11	Medium
74421	Rio Formoso	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	51,20	0,57	2,00	0,01	0,29	0,16	0,03	0,25	0,03	0,03	0,03	0,14	0,08	Lowest
74422	Alegre	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,03	0,30	64,21	0,60	2,00	0,01	0,29	0,16	0,03	0,18	0,05	0,06	0,03	0,14	0,12	High
74423	Jaborandi	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	83,18	0,52	2,00	0,01	0,46	0,26	0,03	0,25	0,08	0,17	0,06	0,29	0,08	Medium
74424	Rodeador	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	62,49	0,44	2,00	0,04	0,29	0,42	0,03	0,36	0,07	0,17	0,06	0,29	0,15	High
74426	Vau	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	60,04	0,50	2,00	0,11	0,29	0,26	0,03	0,36	0,12	0,30	0,05	0,29	0,15	High
74428	Pratudao	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,03	0,30	71,12	0,50	2,00	0,16	0,29	0,26	0,03	0,36	0,07	0,17	0,05	0,29	0,15	High
74429	RVS das Veredas do Oeste Baiano	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,03	0,30	65,48	0,50	2,00	0,11	0,29	0,26	0,03	0,36	0,17	0,44	0,06	0,44	0,18	Very High
74441	Arrojado	0,03	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,03	0,30	68,90	0,50	3,00	0,01	0,29	0,26	0,27	0,25	0,03	0,03	0,04	0,29	0,15	High
74444	Arrojadinho	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	51,70	0,50	2,00	0,12	0,29	0,26	0,03	0,36	0,03	0,03	0,04	0,14	0,12	High
74447	Correntina	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,05	0,45	54,60	0,50	3,00	0,04	0,29	0,26	0,27	0,36	0,03	0,03	0,05	0,29	0,19	Very High
74454	Santa Maria da Vitoria	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	67,29	0,60	2,00	0,01	0,29	0,16	0,03	0,25	0,05	0,06	0,04	0,14	0,04	Lower
74461	Guara	0,03	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,07	0,30	0,04	0,46	0,03	0,05	0,45	83,20	0,50	3,00	0,01	0,46	0,26	0,27	0,25	0,07	0,17	0,06	0,44	0,22	Very High
74471	Riacho de Pedra	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	25,97	0,54	3,00	0,01	0,14	0,16	0,27	0,25	0,02	0,03	0,03	0,10	0,03	Lower
74473	Rio Guara	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	11,54	0,57	2,00	0,00	0,07	0,16	0,03	0,18	0,02	0,03	0,02	0,03	0,01	Lower
74476	Santo Antonio	0,03	0,04	0,37	0,08	0,46	0,05	0,32	0,05	0,03	0,03	0,03	0,46	0,03	0,03	0,30	78,33	0,50	3,00	0,06	0,46	0,26	0,27	0,36	0,07	0,17	0,06	0,44	0,18	Very High
74478	Rio dos Angicos	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	82,48	0,60	2,00	0,05	0,46	0,16	0,03	0,36	0,01	0,03	0,05	0,29	0,07	Lowest
74485	Riacho do Mato	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	79,99	0,54	3,00	0,01	0,46	0,26	0,27	0,18	0,07	0,17	0,06	0,44	0,11	Medium
74512	TQ Lagoa das Piranhas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,16	19,14	0,45	2,00	0,05	0,07	0,42	0,03	0,36	0,05	0,06	0,04	0,14	0,08	Lowest
74521	TQ Nova Batalhinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	42,21	0,52	2,00	0,02	0,14	0,26	0,03	0,25	0,12	0,30	0,04	0,14	0,08	Lowest
74532	Riacho de Mariape	0,03	0,20	0,05	0,03	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	3,15	0,50	2,00	0,02	0,04	0,26	0,03	0,36	0,01	0,03	0,03	0,10	0,04	Lower

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
74544	Lagoas	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	52,85	0,57	2,00	0,02	0,29	0,16	0,03	0,36	0,01	0,03	0,04	0,14	0,05	Lowest
74572	Madrugao	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	66,29	0,60	2,00	0,01	0,29	0,16	0,03	0,18	0,02	0,03	0,03	0,10	0,03	Lower
74581	Cariranha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	62,04	0,55	2,00	0,01	0,29	0,16	0,03	0,25	0,07	0,17	0,04	0,14	0,05	Lowest
74582	APA Cocha e Gibao	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	76,67	0,55	5,00	0,01	0,46	0,16	0,35	0,25	0,12	0,30	0,06	0,44	0,14	High
74583	Feira da Mata	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	46,50	0,52	2,00	0,01	0,14	0,26	0,03	0,18	0,03	0,03	0,03	0,10	0,04	Lower
74584	PN Grande Sertao Veredas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,03	0,30	87,00	0,48	2,00	0,00	0,46	0,42	0,03	0,12	0,15	0,30	0,07	0,44	0,18	Very High
74586	Cocos	0,17	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,04	0,45	42,26	0,47	2,00	0,01	0,14	0,42	0,03	0,18	0,03	0,03	0,04	0,14	0,16	Very High
74588	Riacho do Meio	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	74,98	0,40	2,00	0,00	0,29	0,42	0,03	0,18	0,01	0,03	0,05	0,29	0,07	Lowest
74589	Itaguari	0,03	0,20	0,37	0,10	0,46	0,32	0,32	0,05	0,03	0,03	0,03	0,46	0,03	0,04	0,45	84,12	0,40	2,00	0,00	0,46	0,42	0,03	0,12	0,09	0,17	0,06	0,44	0,22	Very High
74596	Calindo	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	44,60	0,65	5,00	0,05	0,14	0,10	0,35	0,36	0,04	0,06	0,03	0,10	0,03	Lower
74622	Aurelio	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	19,65	0,51	2,00	0,03	0,07	0,26	0,03	0,36	0,02	0,03	0,03	0,10	0,07	Lowest
74642	Furado Novo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	26,99	0,60	5,00	0,07	0,14	0,16	0,35	0,36	0,01	0,03	0,03	0,14	0,05	Lowest
74646	PE Caminho das Gerais	0,12	0,04	0,05	0,02	0,07	0,32	0,32	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	18,26	0,60	5,00	0,02	0,07	0,16	0,35	0,25	0,07	0,17	0,03	0,14	0,04	Lower
74648	Porteirinha	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	30,91	0,61	5,00	0,04	0,14	0,10	0,35	0,36	0,07	0,17	0,04	0,14	0,04	Lower
74649	Gorutuba	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,02	0,30	44,53	0,63	5,00	0,04	0,14	0,10	0,35	0,36	0,02	0,03	0,03	0,10	0,11	Medium
74652	Corrego Escuro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	18,59	0,60	5,00	0,06	0,07	0,16	0,35	0,36	0,11	0,30	0,04	0,14	0,08	Lowest
74654	Macaubas	0,03	0,04	0,05	0,01	0,03	0,32	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	21,27	0,60	5,00	0,01	0,07	0,16	0,35	0,25	0,05	0,06	0,03	0,10	0,03	Lower
74655	Verde Grande	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	20,91	0,60	5,00	0,02	0,07	0,16	0,35	0,25	0,02	0,03	0,03	0,10	0,07	Lowest
74668	Quem-quem	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	35,15	0,70	5,00	0,00	0,14	0,06	0,35	0,12	0,03	0,03	0,02	0,03	0,09	Medium
74692	Agua Limpa	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	44,87	0,64	5,00	0,03	0,14	0,10	0,35	0,36	0,01	0,03	0,03	0,10	0,03	Lower
74695	Capitao Eneas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	34,82	0,72	5,00	0,01	0,14	0,06	0,35	0,25	0,05	0,06	0,03	0,10	0,03	Lower
74697	Vacabrava	0,17	0,47	0,05	0,06	0,46	0,05	0,32	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	36,98	0,70	1,00	0,02	0,14	0,06	0,03	0,25	0,07	0,17	0,03	0,10	0,11	Medium
74699	Juramento	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,03	0,30	28,19	0,70	5,00	0,01	0,14	0,06	0,35	0,18	0,07	0,17	0,03	0,10	0,11	Medium
74711	PE Lagoa do Cajueiro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	39,81	0,62	5,00	0,06	0,14	0,10	0,35	0,36	0,12	0,30	0,04	0,14	0,08	Lowest
74712	RB Serra Azul	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	43,23	0,55	5,00	0,05	0,14	0,16	0,35	0,36	0,16	0,30	0,05	0,29	0,15	High
74714	PE Veredas do Peruacu	0,12	0,47	0,05	0,06	0,46	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	72,34	0,50	5,00	0,01	0,29	0,26	0,35	0,25	0,20	0,44	0,06	0,44	0,22	Very High
74715	PN Cavernas do Peruacu	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,27	0,04	0,45	52,81	0,53	5,00	0,01	0,29	0,26	0,35	0,25	0,07	0,17	0,05	0,29	0,19	Very High
74717	Cochos	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	54,96	0,53	5,00	0,01	0,29	0,26	0,35	0,25	0,07	0,17	0,05	0,29	0,07	Lowest
74718	Japonvar	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	54,14	0,67	5,00	0,02	0,29	0,10	0,35	0,25	0,05	0,06	0,04	0,14	0,04	Lower
74721	Pandeiros	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	82,23	0,50	5,00	0,01	0,46	0,26	0,35	0,25	0,20	0,44	0,07	0,44	0,11	High
74727	APA Pandeiros	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	97,16	0,50	5,00	0,00	0,46	0,26	0,35	0,12	0,20	0,44	0,07	0,44	0,11	Medium
74734	RVS Rio Pandeiros	0,12	0,30	0,05	0,04	0,30	0,63	0,32	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	73,29	0,50	5,00	0,01	0,29	0,26	0,35	0,25	0,15	0,30	0,06	0,44	0,18	Very High
74744	Sao Joaquim	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	85,37	0,50	5,00	0,01	0,46	0,26	0,35	0,18	0,05	0,06	0,06	0,29	0,08	Medium
74747	PE Serra das Araras	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	92,94	0,55	1,00	0,00	0,46	0,16	0,03	0,12	0,12	0,30	0,05	0,29	0,08	Medium

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
74749	Chapada Gaucha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	74,39	0,60	1,00	0,00	0,29	0,16	0,03	0,12	0,05	0,06	0,03	0,10	0,03	Lower
74752	Lagoa da Vaqueta	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	34,00	0,60	5,00	0,01	0,14	0,16	0,35	0,18	0,02	0,03	0,03	0,10	0,07	Lowest
74755	Sao Francisco	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,03	0,02	0,30	38,98	0,60	5,00	0,00	0,14	0,16	0,35	0,18	0,03	0,03	0,03	0,10	0,11	Medium
74772	Pintopolis	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	58,63	0,60	5,00	0,00	0,29	0,16	0,35	0,12	0,05	0,06	0,04	0,14	0,05	Lowest
74781	Urucuia	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	82,78	0,54	5,00	0,00	0,46	0,16	0,35	0,12	0,05	0,06	0,05	0,29	0,07	Lowest
74782	Conceicao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,30	67,96	0,54	5,00	0,03	0,29	0,16	0,35	0,36	0,05	0,06	0,04	0,29	0,15	High
74783	Ribeirao dos Confins	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,18	0,03	0,30	67,47	0,54	5,00	0,01	0,29	0,16	0,35	0,18	0,07	0,17	0,04	0,29	0,15	High
74784	EE Sagarana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,18	0,05	0,45	46,33	0,57	5,00	0,03	0,14	0,16	0,35	0,36	0,06	0,06	0,04	0,14	0,16	Very High
74785	Pacari	0,12	0,20	0,05	0,03	0,30	0,32	0,05	0,05	0,04	0,07	0,02	0,30	0,03	0,03	0,30	66,54	0,50	5,00	0,00	0,29	0,26	0,35	0,12	0,06	0,06	0,04	0,29	0,15	High
74786	Formoso	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,04	0,07	0,01	0,15	0,03	0,01	0,16	68,55	0,50	5,00	0,01	0,29	0,26	0,35	0,18	0,09	0,17	0,05	0,29	0,11	Medium
74789	Serra da Sacada	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	47,34	0,63	5,00	0,01	0,14	0,10	0,35	0,18	0,01	0,03	0,03	0,10	0,07	Lowest
74795	Sao Romao	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	50,98	0,54	5,00	0,01	0,29	0,26	0,35	0,18	0,01	0,03	0,04	0,29	0,07	Lowest
74798	Campo Azul	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	47,47	0,69	5,00	0,02	0,14	0,06	0,35	0,25	0,05	0,06	0,03	0,10	0,11	Medium
74822	Garitas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	61,20	0,50	5,00	0,00	0,29	0,26	0,35	0,18	0,05	0,06	0,05	0,29	0,07	Lowest
74846	Roncador	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	34,63	0,64	5,00	0,03	0,14	0,10	0,35	0,36	0,01	0,03	0,03	0,10	0,03	Lower
74847	Unai	0,12	0,04	0,05	0,02	0,07	0,32	0,32	0,05	0,07	0,30	0,02	0,30	0,11	0,04	0,45	45,66	0,63	5,00	0,03	0,14	0,10	0,35	0,36	0,07	0,17	0,04	0,14	0,16	Very High
74848	Bezerra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	59,41	0,65	3,00	0,01	0,29	0,10	0,27	0,25	0,03	0,03	0,04	0,14	0,05	Lowest
74849	APA do Planalto Central	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,06	0,30	0,02	0,46	0,03	0,05	0,45	26,54	0,75	1,00	0,03	0,14	0,06	0,03	0,36	0,17	0,44	0,04	0,14	0,16	Very High
74862	Vereda Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	8,52	0,70	5,00	0,05	0,04	0,06	0,35	0,36	0,01	0,03	0,02	0,03	0,01	Lower
74868	TQ Amaros	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	50,59	0,70	5,00	0,02	0,29	0,06	0,35	0,25	0,12	0,30	0,05	0,29	0,08	Medium
74873	Ribeirao Bezerra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	17,48	0,68	5,00	0,03	0,07	0,06	0,35	0,36	0,02	0,03	0,03	0,03	0,02	Lower
74878	RPPN Morro da Cruz das Almas	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,04	0,07	0,01	0,15	0,03	0,02	0,30	52,86	0,70	5,00	0,04	0,29	0,06	0,35	0,36	0,10	0,17	0,04	0,29	0,15	High
74889	Presidente Olegario	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	58,65	0,63	5,00	0,01	0,29	0,10	0,35	0,25	0,07	0,17	0,04	0,29	0,11	Medium
74892	Ribeirao Santa Catarina	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,11	0,04	0,45	52,13	0,63	5,00	0,01	0,29	0,10	0,35	0,25	0,02	0,03	0,04	0,14	0,16	Very High
74894	PE de Paracatu	0,17	0,20	0,05	0,04	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,03	0,30	46,98	0,71	5,00	0,03	0,14	0,06	0,35	0,36	0,07	0,17	0,04	0,14	0,12	High
74896	Guarda-mor	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,30	43,57	0,80	5,00	0,03	0,14	0,06	0,35	0,36	0,07	0,17	0,04	0,14	0,12	High
74918	Barro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,02	0,16	35,55	0,57	5,00	0,01	0,14	0,16	0,35	0,25	0,05	0,06	0,03	0,10	0,07	Lowest
74923	Jequitai	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	39,14	0,50	5,00	0,01	0,14	0,26	0,35	0,25	0,03	0,03	0,04	0,14	0,05	Lowest
74925	Francisco Dumont	0,12	0,30	0,05	0,04	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,03	0,30	39,72	0,43	5,00	0,01	0,14	0,42	0,35	0,18	0,03	0,03	0,04	0,14	0,12	High
74927	Areia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	59,54	0,43	5,00	0,01	0,29	0,42	0,35	0,18	0,07	0,17	0,06	0,44	0,11	High
74928	Imbalacaia	0,41	0,47	0,05	0,07	0,46	0,32	0,05	0,05	0,04	0,07	0,03	0,46	0,42	0,05	0,45	50,30	0,47	5,00	0,00	0,29	0,42	0,35	0,12	0,09	0,17	0,06	0,29	0,19	Very High
74929	PN das Sempre-Vivas	0,17	0,20	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	56,23	0,50	5,00	0,00	0,29	0,26	0,35	0,09	0,15	0,30	0,05	0,29	0,15	High
74941	Velhas	0,27	0,30	0,05	0,05	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,18	0,04	0,45	50,59	0,48	5,00	0,02	0,29	0,42	0,35	0,25	0,08	0,17	0,06	0,44	0,22	Very High
74942	Bicudo	0,03	0,47	0,05	0,06	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	46,64	0,42	5,00	0,00	0,14	0,42	0,35	0,12	0,03	0,03	0,04	0,14	0,12	High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
74944	PE da Serra do Cabral	0,41	0,47	0,05	0,07	0,46	0,63	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,05	0,45	56,71	0,50	5,00	0,00	0,29	0,26	0,35	0,12	0,15	0,30	0,05	0,29	0,19	Very High
74945	Jabuticaba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	7,77	0,41	5,00	0,00	0,04	0,42	0,35	0,18	0,01	0,03	0,04	0,14	0,08	Lowest
74946	Pardo Grande	0,41	0,47	0,58	0,18	0,46	0,63	0,05	0,05	0,03	0,03	0,06	0,46	0,42	0,05	0,45	72,78	0,43	5,00	0,00	0,29	0,42	0,35	0,09	0,05	0,06	0,05	0,29	0,19	Very High
74947	Santo Hipolito	0,03	0,20	0,05	0,03	0,14	0,05	0,32	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	15,26	0,49	5,00	0,01	0,07	0,42	0,35	0,18	0,01	0,03	0,04	0,14	0,08	Lowest
74948	PN da Serra do Cipo	0,41	0,47	0,58	0,18	0,46	0,63	0,05	0,05	0,04	0,14	0,06	0,46	0,42	0,07	0,45	70,20	0,50	5,00	0,00	0,29	0,26	0,35	0,09	0,12	0,30	0,05	0,29	0,19	Very High
74949	APA do Carste de Lagoa Santa	0,41	0,47	0,58	0,18	0,46	0,63	0,63	0,63	0,25	0,46	0,11	0,46	0,42	0,09	0,45	37,45	0,58	1,00	0,05	0,14	0,16	0,03	0,36	0,07	0,17	0,03	0,14	0,16	Very High
74951	Pirapora	0,12	0,04	0,05	0,02	0,07	0,63	0,05	0,05	0,04	0,14	0,01	0,15	0,11	0,05	0,45	43,04	0,49	5,00	0,02	0,14	0,42	0,35	0,36	0,03	0,03	0,05	0,29	0,19	Very High
74952	Tres Marias	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	45,17	0,40	5,00	0,00	0,14	0,42	0,35	0,12	0,07	0,17	0,05	0,29	0,11	Medium
74954	Tiros	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	65,92	0,66	5,00	0,01	0,29	0,10	0,35	0,18	0,03	0,03	0,04	0,14	0,12	High
74955	RPPN Fazenda Lavagem	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	57,09	0,44	5,00	0,01	0,29	0,42	0,35	0,25	0,03	0,03	0,05	0,29	0,08	Medium
74956	Borrachudo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	75,69	0,56	5,00	0,01	0,46	0,16	0,35	0,18	0,07	0,17	0,05	0,29	0,07	Lowest
74957	EE de Pirapitinga	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	48,39	0,40	5,00	0,00	0,14	0,42	0,35	0,18	0,05	0,06	0,04	0,29	0,07	Lowest
74958	Indaia	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	68,63	0,58	5,00	0,01	0,29	0,16	0,35	0,18	0,07	0,17	0,04	0,29	0,08	Medium
74959	RPPN Fazenda Barrão	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	34,75	0,41	5,00	0,01	0,14	0,42	0,35	0,25	0,02	0,03	0,04	0,29	0,07	Lowest
74961	Felixlandia	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	43,26	0,44	5,00	0,00	0,14	0,42	0,35	0,12	0,03	0,03	0,04	0,14	0,08	Lowest
74963	FN de Paraopeba	0,03	0,47	0,37	0,12	0,46	0,63	0,32	0,32	0,03	0,03	0,04	0,46	0,18	0,03	0,30	31,16	0,59	5,00	0,02	0,14	0,16	0,35	0,25	0,05	0,06	0,03	0,10	0,11	Medium
74964	Inhauma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	39,19	0,61	5,00	0,02	0,14	0,10	0,35	0,36	0,10	0,17	0,04	0,14	0,08	Lowest
74965	APA Vargem das Flores	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,32	0,03	0,03	0,01	0,15	0,11	0,02	0,16	9,50	0,57	5,00	0,04	0,04	0,16	0,35	0,36	0,07	0,17	0,03	0,14	0,08	Lowest
74984	Lambari	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	21,89	0,57	5,00	0,01	0,07	0,16	0,35	0,18	0,02	0,03	0,03	0,03	0,01	Lower
74985	Rio Para	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	29,96	0,61	5,00	0,01	0,14	0,10	0,35	0,18	0,02	0,03	0,03	0,10	0,04	Lower
74986	RPPN Fazenda Samoinho	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	6,84	0,58	5,00	0,04	0,04	0,16	0,35	0,36	0,01	0,03	0,03	0,10	0,03	Lower
74987	Nova Serrana	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	24,18	0,67	5,00	0,01	0,07	0,10	0,35	0,25	0,03	0,03	0,02	0,03	0,01	Lower
74988	Ribeirao Boa Vista	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	9,42	0,58	5,00	0,02	0,04	0,16	0,35	0,25	0,01	0,03	0,03	0,03	0,01	Lower
74993	Luz	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	16,08	0,63	5,00	0,02	0,07	0,10	0,35	0,25	0,01	0,03	0,02	0,03	0,02	Lower
74995	EE Corumba	0,03	0,20	0,05	0,03	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,02	0,16	8,87	0,59	5,00	0,01	0,04	0,16	0,35	0,18	0,05	0,06	0,02	0,03	0,05	Lowest
74996	Vargem Bonita	0,03	0,30	0,37	0,10	0,46	0,05	0,05	0,05	0,04	0,07	0,04	0,46	0,18	0,04	0,45	32,74	0,55	5,00	0,00	0,14	0,16	0,35	0,09	0,12	0,30	0,04	0,14	0,16	Very High
74998	RPPN Fazenda do Lobo	0,27	0,30	0,58	0,16	0,46	0,05	0,05	0,05	0,23	0,46	0,09	0,46	0,27	0,06	0,45	43,35	0,50	5,00	0,00	0,14	0,26	0,35	0,09	0,12	0,30	0,04	0,29	0,19	Very High
75789	PE de Montezuma	0,03	0,30	0,05	0,04	0,30	0,32	0,32	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	34,36	0,52	5,00	0,01	0,14	0,26	0,35	0,18	0,07	0,17	0,04	0,14	0,12	High
75824	Setubal	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	11,77	0,50	5,00	0,00	0,07	0,26	0,35	0,12	0,01	0,03	0,03	0,10	0,03	Lower
75825	Berilo	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,27	0,02	0,30	59,65	0,48	5,00	0,00	0,29	0,42	0,35	0,09	0,01	0,03	0,05	0,29	0,15	High
75826	Capelinha	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,18	0,02	0,16	49,01	0,51	5,00	0,00	0,14	0,26	0,35	0,12	0,01	0,03	0,03	0,14	0,08	Lowest
75827	Aracai	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,03	54,13	0,50	5,00	0,00	0,29	0,26	0,35	0,12	0,05	0,06	0,04	0,29	0,07	Lowest
75829	PE Rio Preto	0,41	0,47	0,58	0,18	0,46	0,63	0,63	0,32	0,03	0,03	0,06	0,46	0,42	0,06	0,45	53,22	0,44	5,00	0,00	0,29	0,42	0,35	0,09	0,05	0,06	0,05	0,29	0,19	Very High
75854	Vargem da Lapa	0,03	0,04	0,05	0,01	0,03	0,63	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	55,47	0,40	5,00	0,00	0,29	0,42	0,35	0,09	0,01	0,03	0,05	0,29	0,07	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
75868	Peixe Bravo	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	71,91	0,53	5,00	0,01	0,29	0,26	0,35	0,18	0,05	0,06	0,05	0,29	0,11	Medium
75869	Vacaria	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,06	61,68	0,50	5,00	0,00	0,29	0,26	0,35	0,12	0,04	0,06	0,04	0,29	0,08	Medium
75891	EE Acaua	0,41	0,47	0,37	0,13	0,46	0,32	0,63	0,05	0,03	0,03	0,04	0,46	0,03	0,04	0,45	74,54	0,44	5,00	0,01	0,29	0,42	0,35	0,18	0,04	0,06	0,05	0,29	0,19	Very High
75892	Itacambira	0,17	0,30	0,37	0,11	0,46	0,05	0,05	0,05	0,03	0,03	0,04	0,46	0,11	0,03	0,30	86,65	0,43	5,00	0,00	0,46	0,42	0,35	0,09	0,01	0,03	0,06	0,44	0,18	Very High
75894	Tabatinga	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,06	32,05	0,43	5,00	0,00	0,14	0,42	0,35	0,09	0,01	0,03	0,04	0,14	0,05	Lowest
75897	Olhos d'agua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	85,95	0,40	5,00	0,00	0,46	0,42	0,35	0,09	0,17	0,44	0,08	0,44	0,14	High
75898	Caete-mirim	0,12	0,47	0,05	0,06	0,46	0,05	0,32	0,05	0,03	0,03	0,02	0,30	0,11	0,03	0,30	92,04	0,40	5,00	0,00	0,46	0,42	0,35	0,09	0,17	0,44	0,08	0,44	0,18	Very High
75899	PE Biribiri	0,41	0,47	0,58	0,18	0,46	0,32	0,63	0,05	0,03	0,03	0,06	0,46	0,42	0,07	0,45	72,74	0,43	5,00	0,00	0,29	0,42	0,35	0,09	0,09	0,17	0,06	0,29	0,19	Very High
76648	Tanque	0,03	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,03	0,30	57,80	0,60	5,00	0,00	0,29	0,16	0,35	0,09	0,22	0,44	0,05	0,29	0,15	High
76649	PE do Limoeiro	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	29,90	0,60	5,00	0,00	0,14	0,10	0,35	0,12	0,09	0,17	0,03	0,10	0,07	Lowest
76684	Rio do Peixe	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,02	0,16	56,85	0,42	5,00	0,00	0,29	0,42	0,35	0,09	0,15	0,30	0,06	0,44	0,14	High
76689	Preto do Itambe	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,07	0,30	0,02	0,46	0,03	0,05	0,45	91,89	0,44	5,00	0,00	0,46	0,42	0,35	0,09	0,22	0,44	0,08	0,44	0,22	Very High
76692	Morro do Pilar	0,12	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,04	0,45	66,38	0,41	5,00	0,00	0,29	0,42	0,35	0,09	0,15	0,30	0,06	0,44	0,22	Very High
76693	Rio Picao	0,17	0,20	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	33,41	0,40	5,00	0,00	0,14	0,42	0,35	0,09	0,07	0,17	0,05	0,29	0,19	Very High
76694	PE Serra do Intendente	0,41	0,47	0,05	0,07	0,46	0,32	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,04	0,45	70,84	0,41	5,00	0,00	0,29	0,42	0,35	0,09	0,17	0,44	0,07	0,44	0,22	Very High
76698	Parauninha	0,03	0,20	0,58	0,14	0,46	0,05	0,05	0,05	0,03	0,03	0,04	0,46	0,11	0,03	0,30	47,45	0,40	5,00	0,00	0,14	0,42	0,35	0,09	0,12	0,30	0,05	0,29	0,15	High
76889	Bom Jesus do Amparo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	40,23	0,77	5,00	0,01	0,14	0,06	0,35	0,18	0,05	0,06	0,03	0,03	0,02	Lower
84383	Ivinheima	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	5,01	0,56	2,00	0,01	0,04	0,16	0,03	0,25	0,01	0,03	0,02	0,03	0,02	Lower
84384	Nova Alvorada do Sul	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,16	13,96	0,74	3,00	0,02	0,07	0,06	0,27	0,25	0,05	0,06	0,02	0,03	0,05	Lowest
84386	Terra Indigena Jatayvari	0,12	0,20	0,58	0,14	0,46	0,05	0,05	0,05	0,04	0,07	0,05	0,46	0,27	0,04	0,45	6,94	0,78	3,00	0,01	0,04	0,06	0,27	0,25	0,04	0,06	0,02	0,03	0,13	High
84389	Rio Brilhante	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	15,67	0,79	3,00	0,03	0,07	0,06	0,27	0,36	0,04	0,06	0,02	0,03	0,02	Lower
84418	Laranja Doce	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	8,46	0,61	1,00	0,02	0,04	0,10	0,03	0,25	0,01	0,03	0,02	0,03	0,02	Lower
84423	RPPN Fazenda Monte Alegre	0,12	0,04	0,05	0,02	0,07	0,05	0,32	0,32	0,03	0,03	0,01	0,07	0,11	0,01	0,03	0,35	0,62	1,00	0,01	0,04	0,10	0,03	0,18	0,04	0,06	0,02	0,03	0,01	Lower
84424	PE do Guartela	0,17	0,20	0,05	0,04	0,30	0,05	0,05	0,05	0,07	0,30	0,02	0,46	0,03	0,05	0,45	17,06	0,65	1,00	0,01	0,07	0,10	0,03	0,18	0,12	0,30	0,03	0,10	0,15	High
84425	APA da Escarpa Devoniana	0,27	0,30	0,05	0,05	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	1,62	0,63	1,00	0,00	0,04	0,10	0,03	0,09	0,11	0,30	0,02	0,03	0,09	Medium
84432	Paraguacu Paulista	0,03	0,20	0,05	0,03	0,14	0,63	0,32	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	4,12	0,62	1,00	0,01	0,04	0,10	0,03	0,25	0,04	0,06	0,02	0,03	0,02	Lower
84442	Ventania	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	0,14	0,62	1,00	0,01	0,04	0,10	0,03	0,25	0,01	0,03	0,02	0,03	0,02	Lower
84449	RPPN Fazenda do Tigre	0,17	0,30	0,37	0,11	0,46	0,05	0,05	0,05	0,07	0,30	0,05	0,46	0,03	0,05	0,45	10,08	0,61	1,00	0,01	0,07	0,10	0,03	0,18	0,12	0,30	0,03	0,10	0,15	High
84454	EE de Assis	0,03	0,20	0,05	0,03	0,14	0,63	0,32	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	5,39	0,55	1,00	0,01	0,04	0,16	0,03	0,18	0,04	0,06	0,02	0,03	0,02	Lower
84458	Campos Novos Paulista	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	5,35	0,59	1,00	0,00	0,04	0,16	0,03	0,18	0,01	0,03	0,02	0,03	0,01	Lower
84462	Alambari	0,12	0,04	0,05	0,02	0,07	0,32	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,02	0,30	6,99	0,66	1,00	0,00	0,04	0,10	0,03	0,12	0,05	0,06	0,01	0,03	0,09	Medium
84463	EE Santa Barbara	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	1,87	0,63	1,00	0,03	0,04	0,10	0,03	0,36	0,04	0,06	0,02	0,03	0,13	High
84464	EE de Avare	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	5,36	0,58	1,00	0,01	0,04	0,16	0,03	0,25	0,05	0,06	0,02	0,03	0,02	Lower
84465	FE Santa Barbara	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,16	3,95	0,54	1,00	0,00	0,04	0,16	0,03	0,12	0,12	0,30	0,03	0,10	0,07	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
84466	Claro	0,12	0,04	0,05	0,02	0,07	0,32	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	6,57	0,54	1,00	0,01	0,04	0,16	0,03	0,25	0,01	0,03	0,02	0,03	0,13	High
84468	Ribeirao das Pedras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	0,47	0,51	1,00	0,02	0,04	0,26	0,03	0,25	0,11	0,30	0,04	0,14	0,05	Lowest
84469	Botucatu	0,03	0,30	0,05	0,04	0,30	0,05	0,32	0,05	0,03	0,03	0,02	0,30	0,03	0,04	0,45	7,60	0,52	1,00	0,01	0,04	0,26	0,03	0,18	0,05	0,06	0,02	0,03	0,13	High
84482	Itaporanga	0,27	0,47	0,58	0,17	0,46	0,63	0,32	0,32	0,03	0,03	0,05	0,46	0,42	0,04	0,45	3,58	0,60	1,00	0,01	0,04	0,10	0,03	0,25	0,01	0,03	0,02	0,03	0,13	High
84485	Pescaria	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	0,74	0,66	1,00	0,01	0,04	0,10	0,03	0,25	0,01	0,03	0,02	0,03	0,01	Lower
84486	PE Vale do Codo	0,41	0,47	0,58	0,18	0,46	0,63	0,63	0,05	0,07	0,30	0,06	0,46	0,42	0,07	0,45	7,56	0,60	1,00	0,00	0,04	0,16	0,03	0,12	0,12	0,30	0,03	0,10	0,15	High
84488	Jaguaricatu	0,41	0,47	0,05	0,07	0,46	0,05	0,05	0,05	0,06	0,30	0,03	0,46	0,27	0,05	0,45	9,73	0,60	1,00	0,01	0,04	0,16	0,03	0,18	0,11	0,30	0,03	0,10	0,15	High
84489	Itarare	0,17	0,30	0,05	0,04	0,30	0,63	0,05	0,05	0,22	0,46	0,06	0,46	0,18	0,06	0,45	20,74	0,60	1,00	0,00	0,07	0,16	0,03	0,18	0,07	0,17	0,02	0,03	0,13	High
84491	Paranapanema	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	1,60	0,67	1,00	0,03	0,04	0,10	0,03	0,36	0,01	0,03	0,02	0,03	0,09	Medium
84492	EE de Itabera	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	5,67	0,62	1,00	0,03	0,04	0,10	0,03	0,36	0,04	0,06	0,02	0,03	0,09	Medium
84495	EE Paranapanema	0,12	0,30	0,37	0,11	0,46	0,05	0,32	0,05	0,03	0,03	0,04	0,46	0,18	0,03	0,30	0,98	0,73	1,00	0,01	0,04	0,06	0,03	0,25	0,05	0,06	0,02	0,03	0,09	Medium
84496	FN de Capao Bonito	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,06	0,30	0,02	0,30	0,03	0,04	0,45	0,96	0,57	1,00	0,02	0,04	0,16	0,03	0,36	0,04	0,06	0,02	0,03	0,13	High
84498	Itapetininga	0,03	0,47	0,05	0,06	0,30	0,32	0,05	0,05	0,04	0,07	0,02	0,46	0,11	0,05	0,45	2,13	0,61	1,00	0,05	0,04	0,10	0,03	0,36	0,01	0,03	0,02	0,03	0,13	High
84522	Inhandui	0,03	0,30	0,58	0,15	0,46	0,32	0,32	0,05	0,07	0,30	0,06	0,46	0,27	0,07	0,45	17,08	0,71	5,00	0,02	0,07	0,06	0,35	0,36	0,05	0,06	0,03	0,10	0,15	High
84523	Pardo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	16,84	0,60	2,00	0,01	0,07	0,16	0,03	0,18	0,01	0,03	0,02	0,03	0,02	Lower
84525	Botas	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,01	0,03	13,53	0,60	2,00	0,00	0,07	0,16	0,03	0,18	0,01	0,03	0,02	0,03	0,01	Lower
84539	Parana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	1,37	0,55	2,00	0,03	0,04	0,16	0,03	0,36	0,04	0,06	0,02	0,03	0,02	Lower
84541	Verde	0,03	0,04	0,05	0,01	0,03	0,32	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	17,14	0,60	2,00	0,01	0,07	0,16	0,03	0,18	0,05	0,06	0,02	0,03	0,01	Lower
84548	Sao Domingos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	14,26	0,60	2,00	0,01	0,07	0,16	0,03	0,18	0,07	0,17	0,02	0,03	0,05	Lowest
84589	Sucuriu	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,09	0,46	0,03	0,46	0,18	0,07	0,45	18,31	0,57	2,00	0,01	0,07	0,16	0,03	0,25	0,06	0,06	0,02	0,03	0,13	High
84618	APA Rio Batalha	0,03	0,04	0,05	0,01	0,03	0,63	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	8,06	0,69	1,00	0,00	0,04	0,06	0,03	0,18	0,17	0,44	0,03	0,10	0,03	Lower
84622	Sao Lourenco	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	6,99	0,51	1,00	0,01	0,04	0,26	0,03	0,25	0,05	0,06	0,03	0,03	0,09	Medium
84641	APA Ibitinga	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	4,66	0,60	1,00	0,04	0,04	0,16	0,03	0,36	0,20	0,44	0,04	0,14	0,05	Lowest
84644	Itaquere	0,03	0,04	0,05	0,01	0,03	0,32	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	8,57	0,50	1,00	0,00	0,04	0,26	0,03	0,12	0,04	0,06	0,02	0,03	0,01	Lower
84647	Jacare-guacu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	9,36	0,51	1,00	0,02	0,04	0,26	0,03	0,25	0,05	0,06	0,03	0,03	0,01	Lower
84648	Araraquara	0,27	0,20	0,05	0,04	0,30	0,05	0,32	0,05	0,03	0,03	0,02	0,30	0,18	0,02	0,30	10,31	0,60	1,00	0,05	0,07	0,16	0,03	0,36	0,01	0,03	0,02	0,03	0,09	Medium
84649	EE Itirapina	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,04	0,14	0,02	0,30	0,03	0,05	0,45	14,49	0,54	1,00	0,07	0,07	0,26	0,03	0,36	0,12	0,30	0,04	0,14	0,16	Very High
84652	Jacare-pepira	0,03	0,30	0,37	0,10	0,46	0,32	0,05	0,05	0,03	0,03	0,04	0,46	0,18	0,04	0,45	12,90	0,49	1,00	0,01	0,07	0,42	0,03	0,18	0,12	0,30	0,04	0,29	0,19	Very High
84653	Arealva	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,18	0,04	0,30	2,89	0,65	1,00	0,01	0,04	0,10	0,03	0,25	0,04	0,06	0,02	0,03	0,09	Medium
84656	FE Pederneiras	0,12	0,04	0,05	0,02	0,07	0,63	0,32	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	4,74	0,68	1,00	0,05	0,04	0,10	0,03	0,36	0,05	0,06	0,02	0,03	0,01	Lower
84657	Macatuba	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	1,65	0,59	1,00	0,05	0,04	0,16	0,03	0,36	0,04	0,06	0,02	0,03	0,01	Lower
84659	Araqua	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,19	0,46	0,05	0,46	0,11	0,05	0,45	7,10	0,45	1,00	0,03	0,04	0,42	0,03	0,36	0,12	0,30	0,05	0,29	0,19	Very High
84661	APA Corumbatai-Botucatu-Tejupa	0,17	0,47	0,05	0,06	0,46	0,63	0,32	0,32	0,03	0,03	0,02	0,30	0,42	0,04	0,45	11,00	0,61	1,00	0,01	0,07	0,10	0,03	0,25	0,15	0,30	0,03	0,10	0,15	High
84662	Corumbatai	0,27	0,47	0,58	0,17	0,46	0,32	0,32	0,05	0,04	0,14	0,06	0,46	0,42	0,07	0,45	8,77	0,61	1,00	0,06	0,04	0,10	0,03	0,36	0,17	0,44	0,04	0,14	0,16	Very High

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
84663	Piracicaba	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	0,62	0,61	1,00	0,14	0,04	0,10	0,03	0,36	0,01	0,03	0,02	0,03	0,09	Medium
84664	Atibaia	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	0,34	0,69	1,00	0,09	0,04	0,06	0,03	0,36	0,04	0,06	0,02	0,03	0,02	Lower
84665	ARIE Matao de Cosmopolis	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	3,35	0,76	1,00	0,03	0,04	0,06	0,03	0,36	0,04	0,06	0,02	0,03	0,09	Medium
84666	Pirapitingui	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	2,90	0,66	1,00	0,02	0,04	0,10	0,03	0,25	0,04	0,06	0,02	0,03	0,02	Lower
84667	Jaguari	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	4,44	0,58	1,00	0,07	0,04	0,16	0,03	0,36	0,01	0,03	0,02	0,03	0,02	Lower
84672	Vitoria	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,19	0,46	0,05	0,46	0,11	0,05	0,45	16,68	0,50	1,00	0,01	0,07	0,26	0,03	0,25	0,11	0,30	0,04	0,14	0,16	Very High
84674	Rio Alambari	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	15,98	0,51	1,00	0,00	0,07	0,26	0,03	0,18	0,15	0,30	0,04	0,14	0,04	Lower
84675	EE Barreiro Rico	0,03	0,20	0,05	0,03	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	10,11	0,50	1,00	0,01	0,07	0,26	0,03	0,18	0,10	0,17	0,03	0,10	0,07	Lowest
84676	Peixe	0,12	0,04	0,05	0,02	0,07	0,05	0,32	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	4,18	0,62	1,00	0,00	0,04	0,10	0,03	0,18	0,11	0,30	0,03	0,03	0,01	Lower
84729	Sao Jose dos Dourados	0,17	0,04	0,05	0,02	0,14	0,32	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,01	0,03	4,18	0,46	1,00	0,01	0,04	0,42	0,03	0,18	0,02	0,03	0,03	0,10	0,03	Lower
84768	Inocencia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	12,48	0,50	2,00	0,00	0,07	0,26	0,03	0,12	0,01	0,03	0,02	0,03	0,02	Lower
84818	Parisi	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	0,34	0,49	1,00	0,01	0,04	0,26	0,03	0,25	0,01	0,03	0,02	0,03	0,01	Lower
84822	Mirassolandia	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	4,11	0,61	1,00	0,01	0,04	0,10	0,03	0,18	0,02	0,03	0,01	0,03	0,01	Lower
84832	Verde ou Feio	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	15,92	0,65	5,00	0,00	0,07	0,10	0,35	0,12	0,02	0,03	0,02	0,03	0,09	Medium
84835	Sao Mateus	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	5,09	0,61	5,00	0,01	0,04	0,10	0,35	0,25	0,01	0,03	0,02	0,03	0,05	Lowest
84841	FE de Bebedouro	0,12	0,04	0,05	0,02	0,07	0,32	0,32	0,05	0,06	0,30	0,02	0,30	0,11	0,04	0,45	8,08	0,46	1,00	0,03	0,04	0,42	0,03	0,36	0,05	0,06	0,04	0,14	0,16	Very High
84842	FE Cajuru	0,17	0,30	0,05	0,04	0,30	0,63	0,32	0,05	0,08	0,46	0,03	0,46	0,42	0,07	0,45	8,15	0,59	1,00	0,06	0,04	0,16	0,03	0,36	0,05	0,06	0,02	0,03	0,13	High
84843	RB de Sertaozinho	0,03	0,04	0,05	0,01	0,03	0,05	0,32	0,05	0,06	0,30	0,02	0,30	0,03	0,03	0,30	5,86	0,53	1,00	0,13	0,04	0,26	0,03	0,36	0,05	0,06	0,03	0,10	0,11	Medium
84844	EE de Jatai	0,03	0,04	0,05	0,01	0,03	0,32	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	11,71	0,53	1,00	0,03	0,07	0,26	0,03	0,36	0,05	0,06	0,03	0,10	0,03	Lower
84845	PE de Vassununga	0,41	0,30	0,05	0,05	0,30	0,05	0,32	0,05	0,07	0,30	0,03	0,46	0,27	0,07	0,45	12,58	0,55	1,00	0,04	0,07	0,16	0,03	0,36	0,06	0,06	0,03	0,03	0,13	High
84846	Jaguari-mirim	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	6,37	0,61	1,00	0,08	0,04	0,10	0,03	0,36	0,01	0,03	0,02	0,03	0,01	Lower
84847	RB e EE Mogi-Guaçu	0,17	0,47	0,05	0,06	0,46	0,63	0,05	0,05	0,06	0,30	0,03	0,46	0,11	0,05	0,45	5,84	0,59	1,00	0,05	0,04	0,16	0,03	0,36	0,04	0,06	0,02	0,03	0,13	High
84852	Uberaba	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,03	0,30	15,94	0,66	5,00	0,01	0,07	0,10	0,35	0,25	0,01	0,03	0,02	0,03	0,09	Medium
84863	Sapucai	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,04	0,45	5,67	0,52	1,00	0,05	0,04	0,26	0,03	0,36	0,03	0,03	0,03	0,10	0,15	High
84864	Batatais	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	5,05	0,49	1,00	0,04	0,04	0,42	0,03	0,36	0,05	0,06	0,04	0,14	0,08	Lowest
84865	Franca	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	6,94	0,60	1,00	0,01	0,04	0,16	0,03	0,25	0,05	0,06	0,02	0,03	0,01	Lower
84866	Santa Barbara	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	11,66	0,61	1,00	0,02	0,07	0,10	0,03	0,25	0,01	0,03	0,02	0,03	0,02	Lower
84868	RB Sao Sebastiao do Paraiso	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,02	0,16	11,59	0,58	5,00	0,00	0,07	0,16	0,35	0,12	0,04	0,06	0,03	0,03	0,05	Lowest
84869	Tomba-perna	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,11	0,02	0,16	19,69	0,52	1,00	0,01	0,07	0,26	0,03	0,18	0,07	0,17	0,03	0,10	0,07	Lowest
84872	Solapao	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	5,68	0,51	1,00	0,02	0,04	0,26	0,03	0,36	0,04	0,06	0,03	0,10	0,04	Lower
84873	PE das Furnas do Bom Jesus	0,12	0,30	0,05	0,04	0,30	0,05	0,32	0,05	0,23	0,46	0,06	0,46	0,03	0,06	0,45	16,16	0,60	5,00	0,03	0,07	0,16	0,35	0,36	0,05	0,06	0,03	0,10	0,15	High
84875	Sacramento	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	43,20	0,62	5,00	0,00	0,14	0,10	0,35	0,12	0,07	0,17	0,03	0,10	0,07	Lowest
84876	PN da Serra da Canastra	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,07	0,30	0,03	0,46	0,18	0,08	0,45	83,56	0,55	5,00	0,00	0,46	0,16	0,35	0,09	0,20	0,44	0,06	0,44	0,22	Very High
84877	Cassia	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	21,58	0,65	5,00	0,00	0,07	0,10	0,35	0,12	0,05	0,06	0,02	0,03	0,09	Medium

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
84879	Alpinopolis	0,41	0,47	0,58	0,18	0,46	0,05	0,05	0,05	0,03	0,03	0,06	0,46	0,42	0,07	0,45	27,06	0,66	5,00	0,01	0,14	0,10	0,35	0,18	0,12	0,30	0,04	0,14	0,16	Very High
84881	PE Serra da Boa Esperanca	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	11,88	0,63	5,00	0,01	0,07	0,10	0,35	0,18	0,05	0,06	0,02	0,03	0,02	Lower
84891	Guape	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	21,88	0,63	5,00	0,01	0,07	0,10	0,35	0,18	0,02	0,03	0,02	0,03	0,05	Lowest
84892	Formiga	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,02	0,30	3,85	0,52	5,00	0,01	0,04	0,26	0,35	0,18	0,01	0,03	0,03	0,10	0,11	Medium
84912	Rio da Prata	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,07	0,30	0,02	0,30	0,03	0,03	0,30	14,92	0,54	3,00	0,02	0,07	0,26	0,27	0,25	0,03	0,03	0,03	0,10	0,11	Medium
84914	PN das Emas	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,09	0,46	0,03	0,46	0,27	0,07	0,45	33,47	0,61	3,00	0,01	0,14	0,10	0,27	0,25	0,09	0,17	0,03	0,10	0,15	High
84916	Serranopolis	0,12	0,30	0,37	0,11	0,46	0,05	0,05	0,05	0,09	0,46	0,05	0,46	0,18	0,06	0,45	25,32	0,67	3,00	0,01	0,14	0,10	0,27	0,25	0,03	0,03	0,03	0,10	0,15	High
84918	Jatai	0,27	0,47	0,05	0,06	0,46	0,32	0,05	0,05	0,03	0,03	0,02	0,46	0,42	0,05	0,45	20,19	0,74	3,00	0,01	0,07	0,06	0,27	0,25	0,02	0,03	0,02	0,03	0,13	High
84924	Ituiutaba	0,27	0,30	0,58	0,16	0,46	0,32	0,32	0,05	0,03	0,03	0,05	0,46	0,11	0,04	0,45	20,27	0,71	5,00	0,00	0,07	0,06	0,35	0,18	0,05	0,06	0,02	0,03	0,13	High
84925	Tijuco	0,12	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	14,87	0,67	5,00	0,03	0,07	0,10	0,35	0,36	0,02	0,03	0,03	0,10	0,11	Medium
84926	Monte Alegre de Minas	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	12,40	0,83	5,00	0,04	0,07	0,06	0,35	0,36	0,01	0,03	0,03	0,03	0,02	Lower
84928	Douradinho	0,17	0,30	0,05	0,04	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,03	0,30	18,82	0,89	5,00	0,02	0,07	0,06	0,35	0,25	0,07	0,17	0,03	0,10	0,11	Medium
84944	PE de Parauna	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,04	0,45	16,07	0,74	3,00	0,04	0,07	0,06	0,27	0,36	0,07	0,17	0,03	0,10	0,15	High
84946	Turvo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	16,07	0,60	3,00	0,02	0,07	0,16	0,27	0,36	0,02	0,03	0,03	0,10	0,04	Lower
84949	APA Serra da Jiboia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	11,15	0,70	3,00	0,02	0,07	0,06	0,27	0,25	0,07	0,17	0,03	0,10	0,04	Lower
84951	Campanha	0,12	0,04	0,37	0,08	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,03	0,03	0,30	3,58	0,65	3,00	0,01	0,04	0,10	0,27	0,25	0,01	0,03	0,02	0,03	0,09	Medium
84952	APA Joao Leite	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,11	0,05	0,45	12,27	0,74	3,00	0,03	0,07	0,06	0,27	0,36	0,07	0,17	0,03	0,10	0,15	High
84962	Piracanjuba	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	12,08	0,79	3,00	0,02	0,07	0,06	0,27	0,25	0,04	0,06	0,02	0,03	0,05	Lowest
84963	PE da Serra de Caldas Novas	0,12	0,04	0,05	0,02	0,07	0,32	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,04	0,45	23,24	0,75	3,00	0,01	0,07	0,06	0,27	0,25	0,05	0,06	0,02	0,03	0,13	High
84964	Bois	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	25,77	0,63	3,00	0,02	0,14	0,10	0,27	0,36	0,02	0,03	0,03	0,10	0,03	Lower
84966	FN de Silvania	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,02	0,16	19,69	0,66	3,00	0,02	0,07	0,10	0,27	0,25	0,05	0,06	0,02	0,03	0,05	Lowest
84967	Corumba	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	46,68	0,78	3,00	0,02	0,14	0,06	0,27	0,25	0,05	0,06	0,03	0,10	0,04	Lower
84968	EE do Jardim Botanico	0,41	0,47	0,58	0,18	0,46	0,63	0,63	0,05	0,09	0,46	0,07	0,46	0,42	0,09	0,45	38,23	0,80	1,00	0,08	0,14	0,06	0,03	0,36	0,15	0,30	0,03	0,14	0,16	Very High
84969	RB e PE do Descoberto	0,41	0,47	0,37	0,13	0,46	0,32	0,32	0,05	0,06	0,30	0,05	0,46	0,03	0,07	0,45	23,30	0,78	3,00	0,02	0,07	0,06	0,27	0,36	0,07	0,17	0,03	0,10	0,15	High
84982	Uberabinha	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,03	0,03	0,30	16,34	0,85	5,00	0,07	0,07	0,06	0,35	0,36	0,03	0,03	0,03	0,03	0,09	Medium
84983	PE Pau Furado	0,17	0,20	0,05	0,04	0,30	0,05	0,32	0,05	0,07	0,30	0,02	0,46	0,11	0,05	0,45	13,12	0,76	5,00	0,04	0,07	0,06	0,35	0,36	0,08	0,17	0,03	0,10	0,15	High
84984	Araguari	0,17	0,20	0,05	0,04	0,30	0,63	0,32	0,05	0,07	0,30	0,02	0,46	0,27	0,06	0,45	48,56	0,65	5,00	0,03	0,14	0,10	0,35	0,36	0,09	0,17	0,04	0,14	0,16	Very High
84985	RPPN Galheiros	0,27	0,30	0,05	0,05	0,30	0,32	0,05	0,05	0,04	0,14	0,02	0,30	0,11	0,05	0,45	20,07	0,75	5,00	0,02	0,07	0,06	0,35	0,36	0,03	0,03	0,03	0,03	0,13	High
84986	Capivara	0,12	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,03	0,46	0,11	0,04	0,45	21,50	0,73	5,00	0,02	0,07	0,06	0,35	0,36	0,05	0,06	0,03	0,10	0,15	High
84987	Misericordia	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,11	0,03	0,30	25,57	0,71	5,00	0,04	0,14	0,06	0,35	0,36	0,02	0,03	0,03	0,10	0,11	Medium
84988	Campos Altos	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	26,96	0,66	5,00	0,02	0,14	0,10	0,35	0,36	0,01	0,03	0,03	0,10	0,04	Lower
84992	Verissimo	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,02	0,16	35,78	0,73	3,00	0,02	0,14	0,06	0,27	0,36	0,05	0,06	0,03	0,10	0,07	Lowest
84993	Cascalho Rico	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,07	0,30	0,02	0,46	0,11	0,05	0,45	15,19	0,73	5,00	0,07	0,07	0,06	0,35	0,36	0,01	0,03	0,03	0,03	0,13	High
84994	Monte Carmelo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	10,51	0,68	5,00	0,05	0,07	0,06	0,35	0,36	0,01	0,03	0,03	0,03	0,05	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
84996	Dourados	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	15,73	0,69	5,00	0,03	0,07	0,06	0,35	0,36	0,01	0,03	0,03	0,03	0,05	Lowest
84998	Paranaiba	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,04	0,14	0,02	0,30	0,11	0,04	0,45	21,45	0,71	5,00	0,02	0,07	0,06	0,35	0,36	0,02	0,03	0,03	0,03	0,13	High
84999	Sao Marcos	0,27	0,47	0,58	0,17	0,46	0,32	0,05	0,05	0,07	0,30	0,06	0,46	0,42	0,08	0,45	34,54	0,73	5,00	0,04	0,14	0,06	0,35	0,36	0,05	0,06	0,03	0,10	0,15	High
89161	Apa	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	14,21	0,50	3,00	0,00	0,07	0,26	0,27	0,12	0,01	0,03	0,03	0,10	0,04	Lower
89162	Rio Perdido	0,03	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,04	0,14	0,02	0,30	0,03	0,03	0,30	41,60	0,55	3,00	0,01	0,14	0,16	0,27	0,18	0,09	0,17	0,03	0,14	0,12	High
89168	Terra Indigena Nande Ru Marangatu	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	10,18	0,72	3,00	0,01	0,07	0,06	0,27	0,18	0,07	0,17	0,02	0,03	0,05	Lowest
89176	Progresso	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	12,57	0,50	3,00	0,00	0,07	0,26	0,27	0,18	0,01	0,03	0,03	0,10	0,03	Lower
89191	Taruma	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	17,06	0,50	3,00	0,00	0,07	0,26	0,27	0,12	0,05	0,06	0,03	0,10	0,04	Lower
89195	Rio Branco	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,18	0,03	0,30	32,64	0,50	3,00	0,01	0,14	0,26	0,27	0,18	0,06	0,06	0,03	0,14	0,12	High
89196	Terra Indigena Kadiweu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	54,45	0,50	3,00	0,00	0,29	0,26	0,27	0,18	0,17	0,44	0,06	0,44	0,11	High
89199	RPPN Tupaciara	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	6,15	0,59	3,00	0,01	0,04	0,16	0,27	0,18	0,02	0,03	0,02	0,03	0,05	Lowest
89522	PN da Serra da Bodoquena	0,27	0,30	0,05	0,05	0,30	0,05	0,32	0,05	0,04	0,14	0,02	0,30	0,42	0,06	0,45	29,92	0,58	5,00	0,01	0,14	0,16	0,35	0,25	0,09	0,17	0,04	0,14	0,16	Very High
89523	RPPN Estancia Caiman	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	16,58	0,50	3,00	0,01	0,07	0,26	0,27	0,25	0,12	0,30	0,04	0,14	0,08	Lowest
89525	Aquidauana	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,11	0,03	0,30	9,37	0,52	3,00	0,02	0,04	0,26	0,27	0,25	0,07	0,17	0,03	0,14	0,12	High
89526	Taquarucu	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	27,65	0,64	3,00	0,01	0,14	0,10	0,27	0,25	0,03	0,03	0,03	0,10	0,04	Lower
89527	APA Estadual Estrada-Parque Piraputanga	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,11	0,03	0,30	26,08	0,52	3,00	0,01	0,14	0,26	0,27	0,25	0,07	0,17	0,04	0,14	0,12	High
89528	Terra Indigena Buriti	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,18	0,02	0,16	23,91	0,74	3,00	0,01	0,07	0,06	0,27	0,25	0,07	0,17	0,03	0,10	0,07	Lowest
89529	RPPN Fazenda Lageado	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,16	26,47	0,67	3,00	0,01	0,14	0,10	0,27	0,18	0,06	0,06	0,03	0,03	0,05	Lowest
89544	TQ Furnas da Boa Sorte	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	28,55	0,53	3,00	0,01	0,14	0,26	0,27	0,18	0,08	0,17	0,04	0,14	0,08	Lowest
89548	Rio Negro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	31,07	0,59	3,00	0,01	0,14	0,16	0,27	0,18	0,02	0,03	0,03	0,10	0,07	Lowest
89549	Anhuma	0,03	0,30	0,37	0,10	0,46	0,05	0,05	0,05	0,03	0,03	0,04	0,46	0,18	0,04	0,30	10,30	0,60	2,00	0,02	0,07	0,16	0,03	0,25	0,01	0,03	0,02	0,03	0,09	Medium
89563	Taquari	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,14	0,01	0,15	0,11	0,04	0,45	20,63	0,60	2,00	0,03	0,07	0,16	0,03	0,36	0,05	0,06	0,03	0,03	0,13	High
89564	PE das Nascentes do Rio Taquari	0,12	0,20	0,37	0,10	0,46	0,05	0,05	0,05	0,07	0,30	0,04	0,46	0,27	0,07	0,45	36,24	0,56	2,00	0,01	0,14	0,16	0,03	0,18	0,07	0,17	0,03	0,10	0,15	High
89566	Rio Verde de Mato Grosso	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	27,09	0,60	2,00	0,01	0,14	0,16	0,03	0,25	0,03	0,03	0,03	0,03	0,02	Lower
89569	APA Estadual Rio Cenico Rotas Moncoeiras-Rio Coxim	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	30,16	0,60	2,00	0,01	0,14	0,10	0,03	0,18	0,07	0,17	0,03	0,03	0,02	Lower
89626	Itiquira	0,12	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,30	0,11	0,03	0,30	19,27	0,58	2,00	0,01	0,07	0,16	0,03	0,25	0,02	0,03	0,02	0,03	0,09	Medium
89628	Piquiri	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	25,59	0,60	2,00	0,02	0,14	0,16	0,03	0,25	0,03	0,03	0,03	0,03	0,02	Lower
89642	Jaciara	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,07	0,30	0,02	0,46	0,11	0,05	0,45	32,80	0,71	2,00	0,01	0,14	0,06	0,03	0,25	0,03	0,03	0,02	0,03	0,13	High
89645	PE Dom Osorio Stoffel	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,04	0,07	0,02	0,30	0,03	0,02	0,30	17,13	0,80	2,00	0,01	0,07	0,06	0,03	0,25	0,04	0,06	0,02	0,03	0,09	Medium
89646	Terra Indigena Tadarimana	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	33,55	0,71	2,00	0,01	0,14	0,06	0,03	0,25	0,05	0,06	0,02	0,03	0,01	Lower
89649	Terra Indigena Jarudore	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	46,15	0,62	2,00	0,02	0,14	0,10	0,03	0,25	0,06	0,06	0,02	0,03	0,01	Lower
89668	Santo Antonio do Leverger	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,01	0,06	55,58	0,60	4,00	0,00	0,29	0,16	0,31	0,12	0,05	0,06	0,04	0,14	0,05	Lowest

COD	Nome	PC_Fl_VU	PC_Fl_EN	PC_Fl_CR	G_Fl_CNC	PC_G_Fl_CN	PC_I_Fl_VU	PC_I_Fl_EN	PC_I_Fl_CR	G_Fl_IUCN	PC_G_Fl_IU	G_Fl_CN_IU	PC_G_CN_IU	PC_Irre	Biologico	P_Biologic	Reman	IPA	CSC	Agua	PC_Reman	PC_IPA	PC_CSC	PC_Agua	G_Pro_Pri	PC_Pro_Pri	Paisagem	P_Paisagem	G_Bio_Pais	FIM_BIO_PA
89674	Arica-acu	0,17	0,30	0,05	0,04	0,30	0,05	0,05	0,05	0,06	0,30	0,03	0,46	0,11	0,06	0,45	42,91	0,60	4,00	0,01	0,14	0,10	0,31	0,18	0,15	0,30	0,04	0,14	0,16	Very High
89675	PN da Chapada dos Guimaraes	0,17	0,47	0,05	0,06	0,46	0,05	0,05	0,05	0,06	0,30	0,03	0,46	0,42	0,08	0,45	45,32	0,58	4,00	0,02	0,14	0,16	0,31	0,36	0,07	0,17	0,04	0,14	0,16	Very High
89679	Cuiaba	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,03	0,30	56,08	0,48	4,00	0,01	0,29	0,42	0,31	0,18	0,09	0,17	0,06	0,29	0,15	High
89682	PE Gruta da Lagoa Azul	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	58,42	0,60	3,00	0,01	0,29	0,16	0,27	0,18	0,10	0,17	0,04	0,14	0,05	Lowest
89683	Rosario Oeste	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	65,65	0,47	4,00	0,00	0,29	0,42	0,31	0,18	0,10	0,17	0,06	0,29	0,11	Medium
89684	Marzagao	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,02	0,30	53,82	0,41	4,00	0,00	0,29	0,42	0,31	0,12	0,17	0,44	0,07	0,44	0,18	Very High
89686	Agua Fina	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	84,09	0,40	4,00	0,00	0,46	0,42	0,31	0,12	0,22	0,44	0,08	0,44	0,11	High
89687	PE Aguas de Cuiaba	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	88,12	0,49	4,00	0,00	0,46	0,42	0,31	0,18	0,22	0,44	0,08	0,44	0,11	High
89688	Cuiaba do Bonito	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,03	0,01	0,06	84,80	0,40	4,00	0,00	0,46	0,42	0,31	0,12	0,22	0,44	0,08	0,44	0,11	High
89691	Manso	0,17	0,04	0,05	0,02	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,11	0,01	0,16	77,94	0,51	4,00	0,00	0,46	0,26	0,31	0,12	0,10	0,17	0,06	0,44	0,14	High
89692	Nova Brasilandia	0,12	0,20	0,05	0,03	0,30	0,05	0,05	0,05	0,03	0,03	0,02	0,15	0,03	0,02	0,16	58,01	0,49	3,00	0,00	0,29	0,42	0,27	0,12	0,09	0,17	0,05	0,29	0,11	Medium
89694	APA Estadual da Chapada dos Guimaraes	0,27	0,47	0,05	0,06	0,46	0,05	0,32	0,05	0,07	0,46	0,03	0,46	0,18	0,07	0,45	47,90	0,70	4,00	0,00	0,14	0,06	0,31	0,12	0,15	0,30	0,03	0,14	0,16	Very High
89696	Casca	0,03	0,20	0,05	0,03	0,14	0,05	0,05	0,05	0,03	0,03	0,01	0,15	0,11	0,01	0,16	34,24	0,67	4,00	0,01	0,14	0,10	0,31	0,25	0,12	0,30	0,04	0,14	0,08	Lowest
89698	Jangada	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	58,33	0,67	4,00	0,01	0,29	0,10	0,31	0,18	0,05	0,06	0,04	0,14	0,05	Lowest
89699	Chapada dos Guimaraes	0,12	0,04	0,05	0,02	0,07	0,05	0,05	0,05	0,03	0,03	0,01	0,07	0,03	0,01	0,03	52,53	0,66	4,00	0,01	0,29	0,10	0,31	0,25	0,05	0,06	0,04	0,14	0,04	Lower
89922	TQ Mata Cavalo	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,03	11,90	0,52	4,00	0,00	0,07	0,26	0,31	0,12	0,12	0,30	0,04	0,14	0,04	Lower
89926	Mata Grande	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,03	9,88	0,60	4,00	0,00	0,04	0,16	0,31	0,18	0,07	0,17	0,03	0,10	0,03	Lower
89929	Sangradouro	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,07	0,01	0,07	0,03	0,01	0,16	47,40	0,55	4,00	0,00	0,14	0,16	0,31	0,12	0,05	0,06	0,03	0,10	0,07	Lowest
89949	Terra Indigena Figueiras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	35,52	0,54	4,00	0,01	0,14	0,16	0,31	0,18	0,07	0,17	0,03	0,14	0,05	Lowest
89969	Cabacal	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,11	0,01	0,16	56,30	0,42	4,00	0,00	0,29	0,42	0,31	0,12	0,05	0,06	0,05	0,29	0,11	Medium
89986	Tangara da Serra	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	0,00	0,60	4,00	0,00	0,04	0,16	0,31	0,12	0,01	0,03	0,02	0,03	0,02	Lower
89991	EE Serra das Araras	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,04	0,14	0,01	0,15	0,03	0,03	0,30	20,24	0,60	4,00	0,00	0,07	0,16	0,31	0,18	0,07	0,17	0,03	0,10	0,11	Medium
89997	Terra Indigena Umutina	0,03	0,04	0,05	0,01	0,03	0,05	0,05	0,05	0,03	0,03	0,01	0,03	0,03	0,01	0,06	85,33	0,60	4,00	0,00	0,46	0,16	0,31	0,09	0,17	0,44	0,06	0,44	0,11	High
89999	APA Nascentes do Rio Paraguai	0,03	0,30	0,05	0,04	0,30	0,32	0,05	0,05	0,03	0,03	0,02	0,30	0,03	0,02	0,30	26,97	0,52	4,00	0,01	0,14	0,26	0,31	0,18	0,07	0,17	0,04	0,14	0,12	High

APPENDIX 4. KBA PRIORITIZATION: CRITERIA DESCRIPTION AND PRIORITIZATION METHODOLOGY

Criteria description

1- Biological Priority: the relative importance of biodiversity in each KBA was determined by two sub criteria according to Langhammer (2007): *irreplaceability*, meaning the presence of restricted range species (plants and fishes- see chapter 5, for species outcomes details), and also the site irreplaceability; and *vulnerability*, meaning the presence of threatened species, weighted by the status on the Brazilian National RedList and IUCN Redlist, The final result of all the sub criteria combined is showed in Figure 1.

i. Irrepleaceability: restricted range species (geographic area < 10Km2)

- Number of Restricted Range Fishes (Rare Plants species, Giulietti et al, 2010; Martinelli et al, 2014) in each KBA
- Number of Restricted Range Plants (Rare Fish species, Nogueira et al 2010) in each KBA;
- Site Irreplaceability: number of species that occur in only one KBA, per each KBA
-

ii. Vulnerability: species from de International and National RedLists (IUCN and MMA, 2014).

- Number of Threatened Fauna species (in each KBA) (National RedList MMA,2014 and International RedList IUCN - different weights according to the threat level: vulnerable, endangered, critically endangered)
- Number of Threatened Flora species (in each KBA) (National RedList MMA/ CNCFlora, 2014 - different weights according to the threat level: vulnerable, endangered, critically endangered)

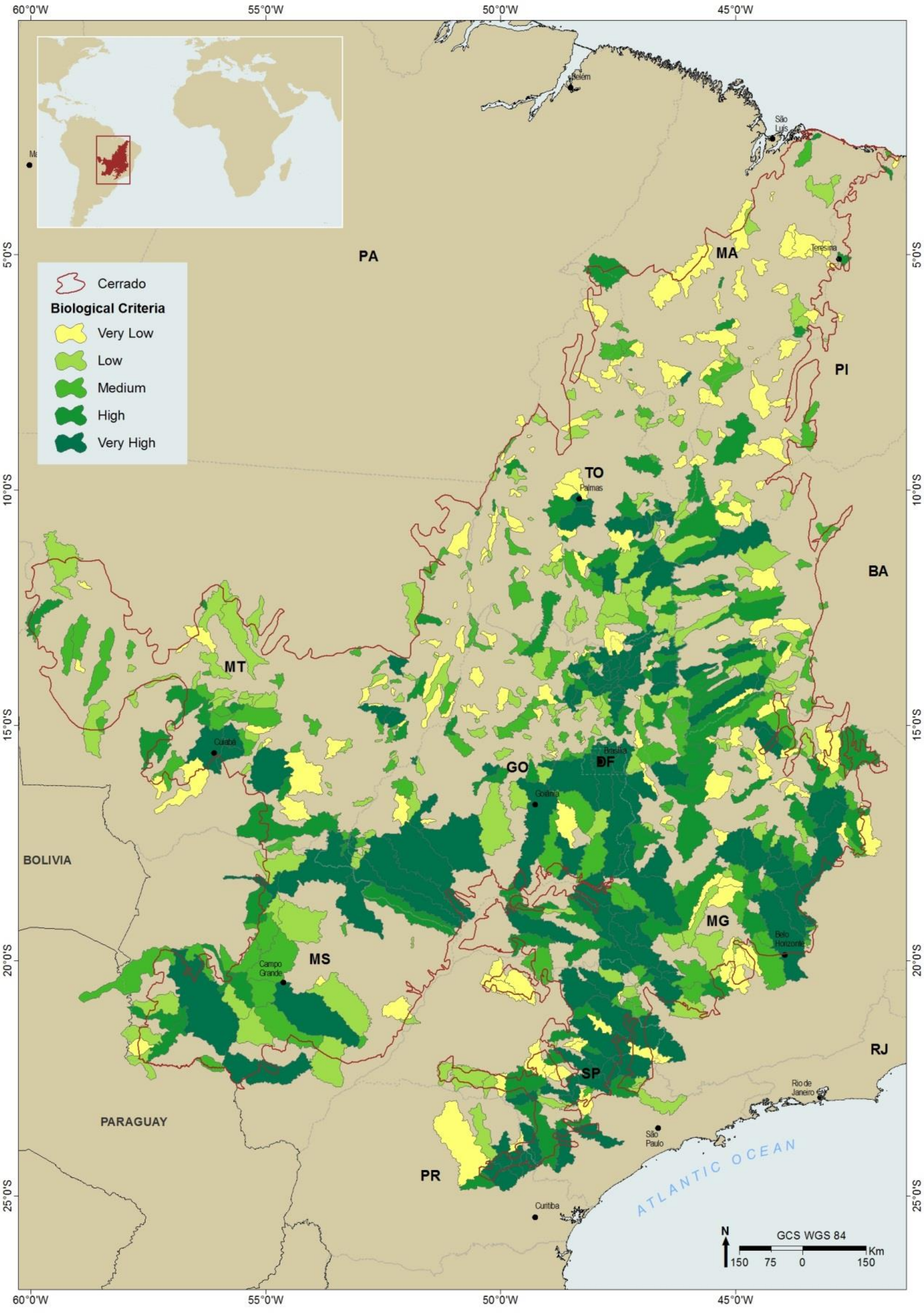

Figure 1: Final result of Biological criteria prioritization

2- Level of Threat: it was used IPA- *Indice de Pressão Antrópica* or Antropic Pressure Index. IPA is a synthetic index of economic and demographic pressures under environment.

It is a combination between agriculture and pasture pressure, population growth, stock and flow, at municipal level, and then analyzed by each KBA.

Due to lack of recent data on antropic pressure on the Biome, it was used, as a first approach in the project, the projected deforesting data for the year 2050 (area of each KBA that would be deforested in 2050). This is a model produced by Federal University of Goias, that synthesizes the pressure for land use (agriculture and pasture) and infrastructure and project the deforestation according to the past pressure data. But the participants from the last workshop criticize the model and suggested another database for it.

So, we worked in an index created by Donald Sawyer: IPA- *Indice de Pressão Antrópica* or Antropic Pressure Index), which encompasses the biggest anthropic pressures in the hotspot: cattle and crops. The index is composed by:

I) Demographic dimension: PAU + PAR = PAD (Pressure index Anthropic Population)

a) Urban areas:

TAU (absolute size of the urban population) + CAU (absolute growth of urban population)

↓

PAU (Urban Anthropic Pressure)

b) Rural Areas:

DPR (density of the rural population) + DCR (Growth density of the rural population)

↓

PAR (Rural Anthropic Pressure)

II) Economic Dimension: PAL + PAB = IPAA (Economic Pressure index)

a) Crops:

DLA (crops area: corn, rice, beans, soy bean, weat) + DCL (Growth Density Absolute Crops)

↓

PAL (Anthropic Pressure Crops)

b) Livestock:

BOD (Cattle area) + DCB (Bovine Growth Density)

↓

PAB (Cattle Anthropic Pressure)

IPA = Arithmetic Average of the PAU / PAR / PAL / PAB values

IPA is expressed in a scale that ranges from 0.2 to 1.0, resulting in the following categories: Low, Medium, High and Very High (Figure 2a). After the data was produced at a municipality level, it was carried out an analysis per each KBA (Figure 2b).

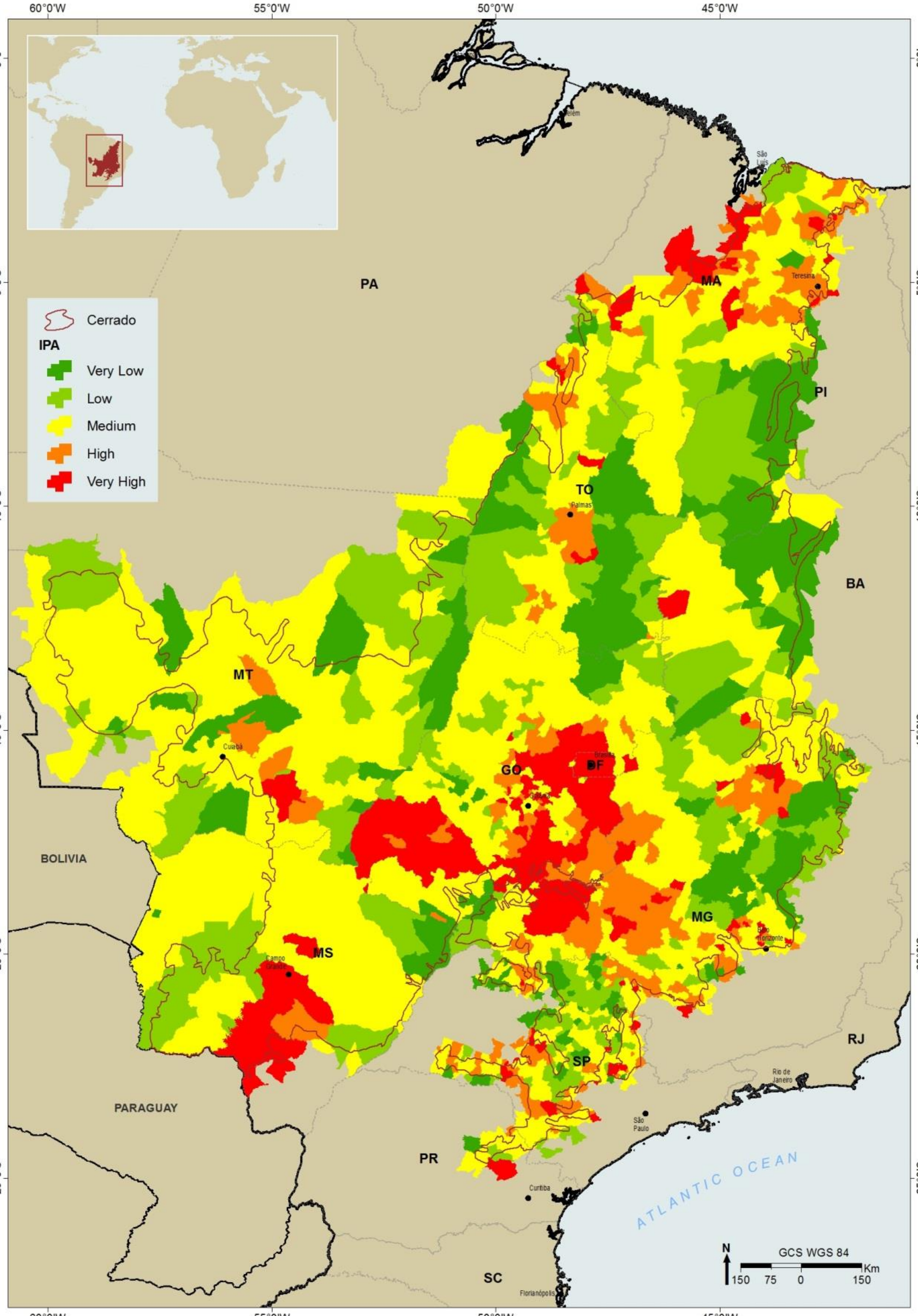

Figure 2a) Threat level per municipality (IPA index)

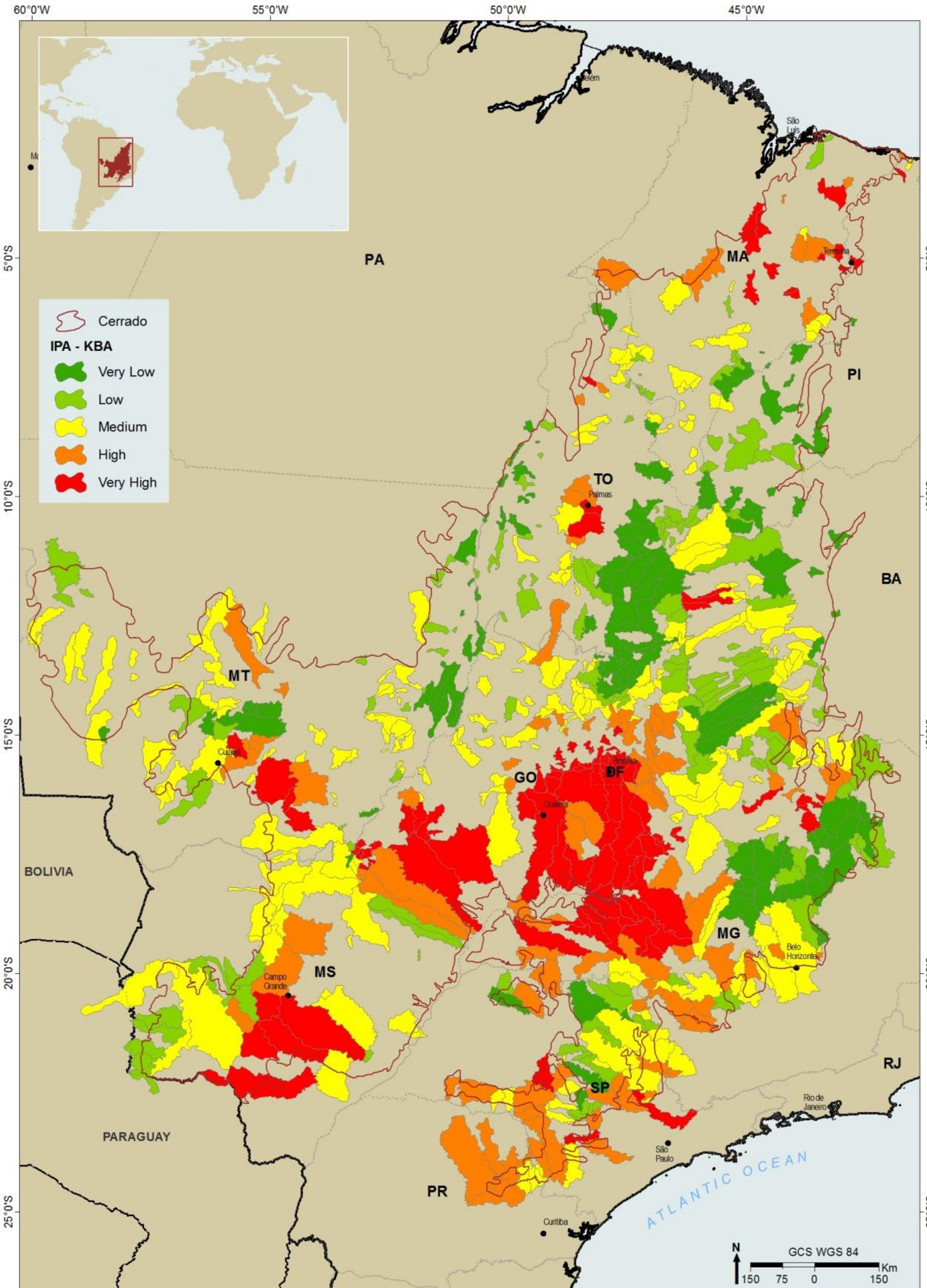

Figure 2b) Threat level per each KBA.

3- Alignment with National Priorities: meaning the potential of that KBA to offer an important opportunity to engage with key public sector stakeholders to sustain, leverage, and/or amplify a CEPF best practice and/or conservation achievement. It was used a combination between official database on protected areas (conservation units, indigenous lands and quilombola lands- afrodescendents from slaves lands) and official priority areas for conservation (both are official through federal government).
It was used different data sources for the Protected Areas database (Figure 3a) and then carried out an analysis per each KBA (Figure 3b), where the superposition were removed and the area of protected areas were then calculated.

- *Conservation Units:* Observatório de Areas Protegidas- WWF database
- *Indigenous Lands:* Fundação Nacional do Indio –FUNAI database
- *Quilombolas Lands:* Palmares Foundation database.

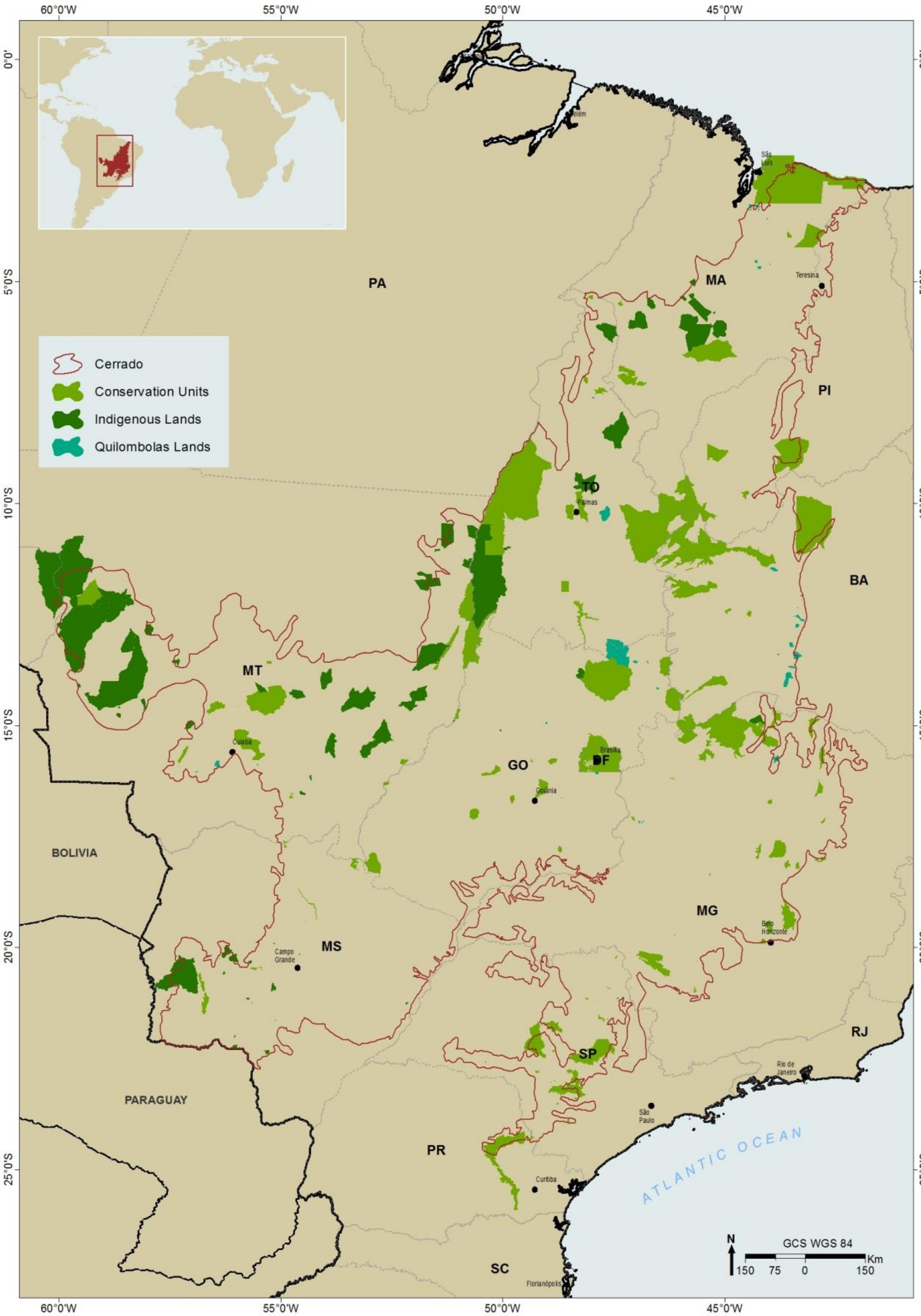

Figure 3: a) Protected Areas in the hotspot

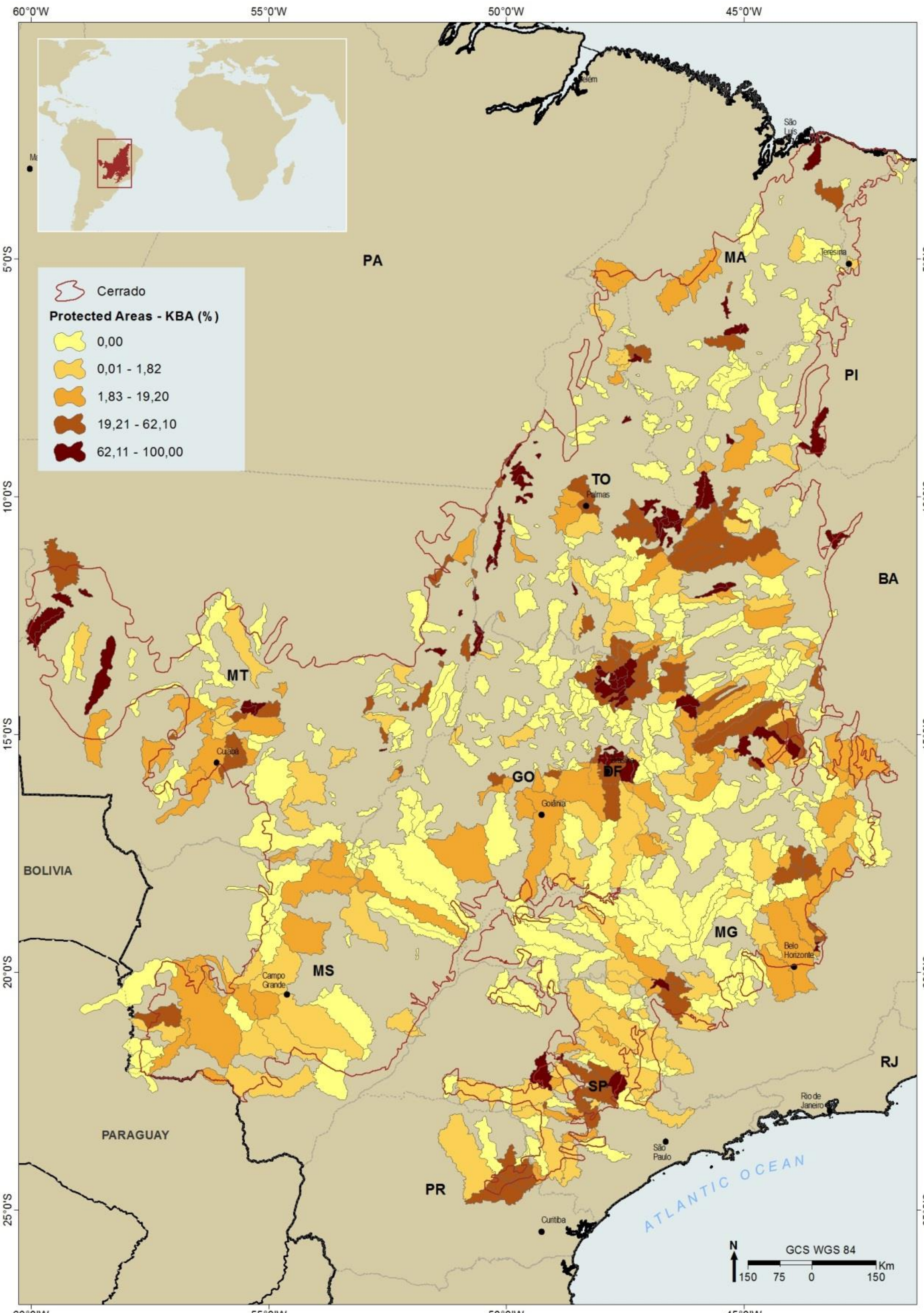

Figure 3b) Percentage of Protected Areas per KBA

The setting of priority areas for conservation has been an official and strategic exercise since 1998, when the federal government assumed this responsibility. The first exercise, developed in 1998, was based on the model of biodiversity workshops to identify priority areas for conservation actions, especially considering the occurrence and distribution of endemic and endangered species in the Cerrado. Biodiversity workshops were part of the Project for Conservation and Sustainable Use of Brazilian Biological Diversity under the National Biodiversity Program. A number of studies have been conducted in all Brazilian biomes, from the mid-90s to the mid-2000s, for the identification and diagnosis of priority areas and actions for the conservation, in compliance with the country's obligations to the Convention on Biological Diversity biological. The best information and summaries were produced for the Cerrado, with the identification of 87 priority areas for biodiversity conservation, also including areas in the Pantanal (MMA, 1999; 2007).

Recently, MMA started the review of priority areas in all Brazilian biomes, one by one. The Cerrado has had its review conducted in conjunction with the Pantanal, under the leadership of WWF, with report issued in 2012. The conservation targets were defined in accordance with scientific researchers, biodiversity specialists and the government for the main taxonomic groups: plants, fishes, reptiles, mammals, birds and invertebrates. GIS specialists modeled the species occurrence for all these groups, and also combined them with other conservation targets as ecosystems, environmental services, and special environments to stablish conservation targets for each one of them. Then it was set a conservation cost based on infrastructure, land cost, deforesting tendency and run out the Gap analysis in the Marxan software, and scenario calculation in C-Plan software. The final result was discussed and validated with scientific researchers, biodiversity specialists and the government.

It was recommended the creation of protected areas in 42 polygons in three different classes of priorities. In addition, the exercise also provides various recommendations of conservation actions (CAR & Good Practice 1-, 2- Recovery, 3- Compensation Legal Reserve, 4- Promotion of sustainable use, 5- Corridor Creation or Mosaic) in 48 polygons also in three different priority classes (Figure 4a). The analysis per each KBA was done using by intersecting all these types of recommendations and priority classes with the KBA area (Figure 4b).

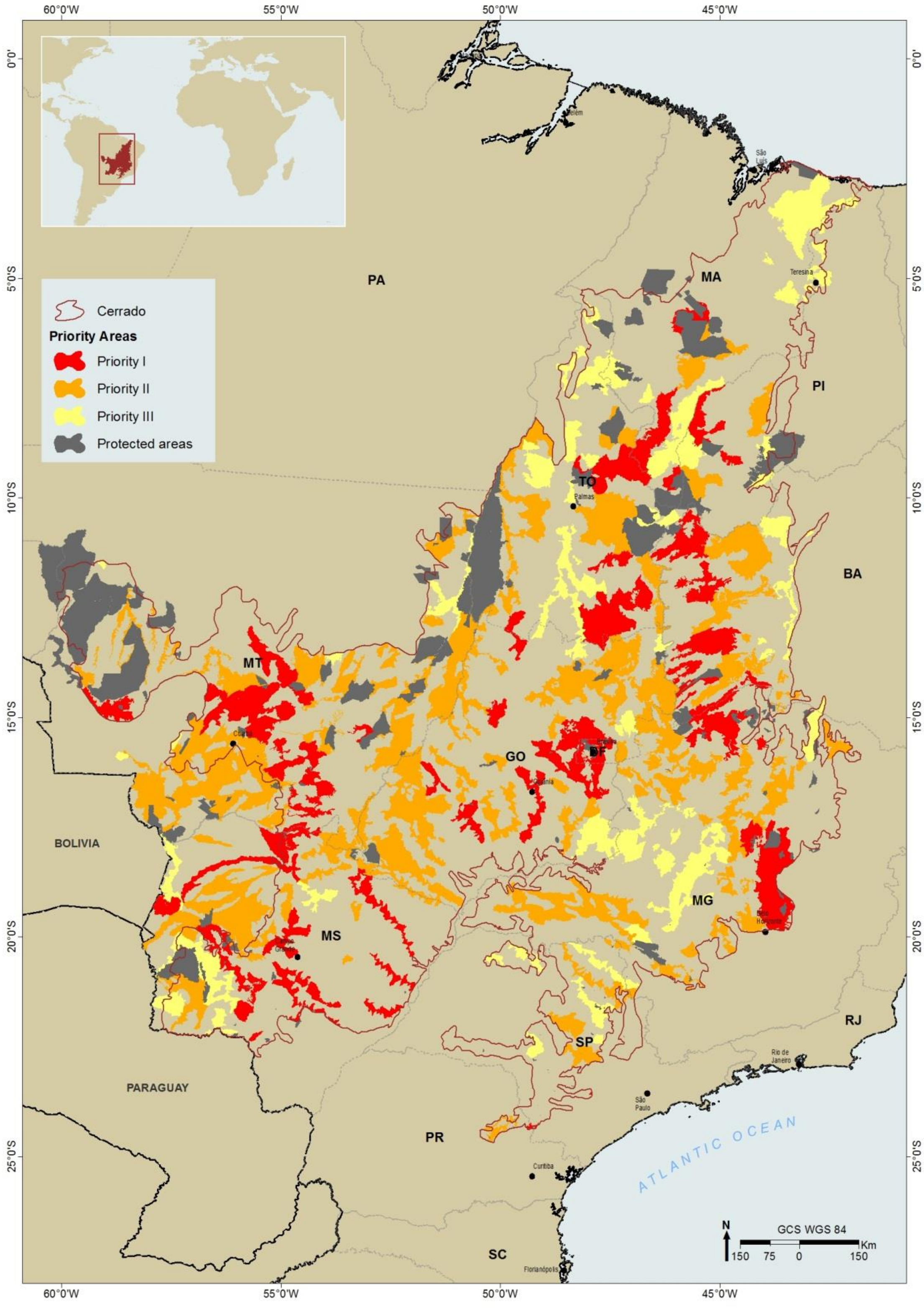

Figure 4a) Priority Areas in the hotspot

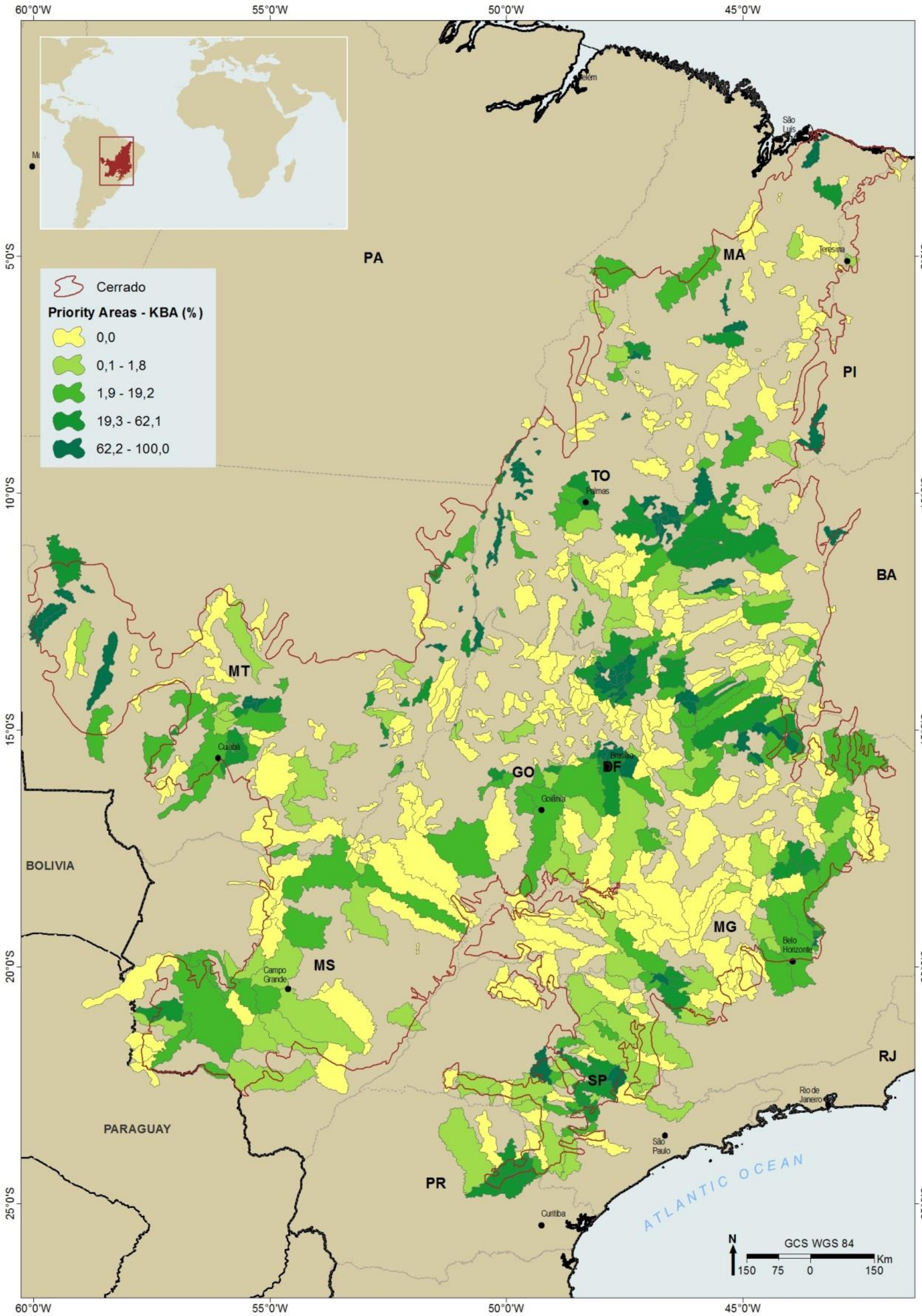

Figure 4b) Percentage of Priority Areas per KBA

4- Civil Society Capacity: for the diagnosis of civil society capacity in the Cerrado biome, it was conducted a broad survey of organizations with regional or national presence in each

Ecosocial Territory Cerrado (*TEC- Territórios Ecossociais*). Organizations were initially identified from the database of the Small Ecosocial Grants Program (*PPEcos- Programa de Pequenos Projetos Ecossociais*), managed by ISPN since 95´s, which has a database with more than 200 community-based organizations, NGOs and social movements. From this list, it was selected the organizations that have: regional or national presence (it was excluded associations representing only one community or settlement); wroking on theme related to the objectives of CEPF and current active. This list of organizations was presented in the three consultation workshops, which was complemented by the participants.

Then the diagnosis was complemented from a survey of the organizations presented in the National Register of Environmental Entities (*CNEA- Cadastro Nacional de Entidades Ambientalistas*), verifying those that meeting the criteria for regional or national presence; working on theme related to the objectives of CEPF and current active. To check this information, all organizations were surveyed on the Internet regarding the presence of sites, social networking profile and recent related news.

For each organization identified, it was described its main actions and place of work. Institution categories were created according to its type ("tipo_instit") and actions ("tipo_ação"), to facilitate further analysis (see annex 5 for the entire list per each TEC and with each category mentioned above).

From the number of environmental organizations and initiatives present, each TEC was classified according to five categories (Figure 5a):

1 - Civil society is not organized - few or no civil society organization present.
2 - Presence of a few civil society organizations and low project management capacity.
3 - Presence of trained civil society organizations, but with little capacity for regional coordination and resource mobilization.
4- Presence of civil society organizations trained and coordinated regionally, but with little resource mobilization capacity.
5- Presence of large number of very qualified civil society organizations already influencing public policies and mobilizing considerable resources.

Subsequently, the KBAs of each TEC occurring in municipalities with the highest number of initiatives and civil society organizations identified were re-categorized in order to improve the map of organized civil society (Figure 5b). For KBA prioritization, the categories 1 and 5 were considered as low priority, assuming that they were not part of the CEPF niche investment.

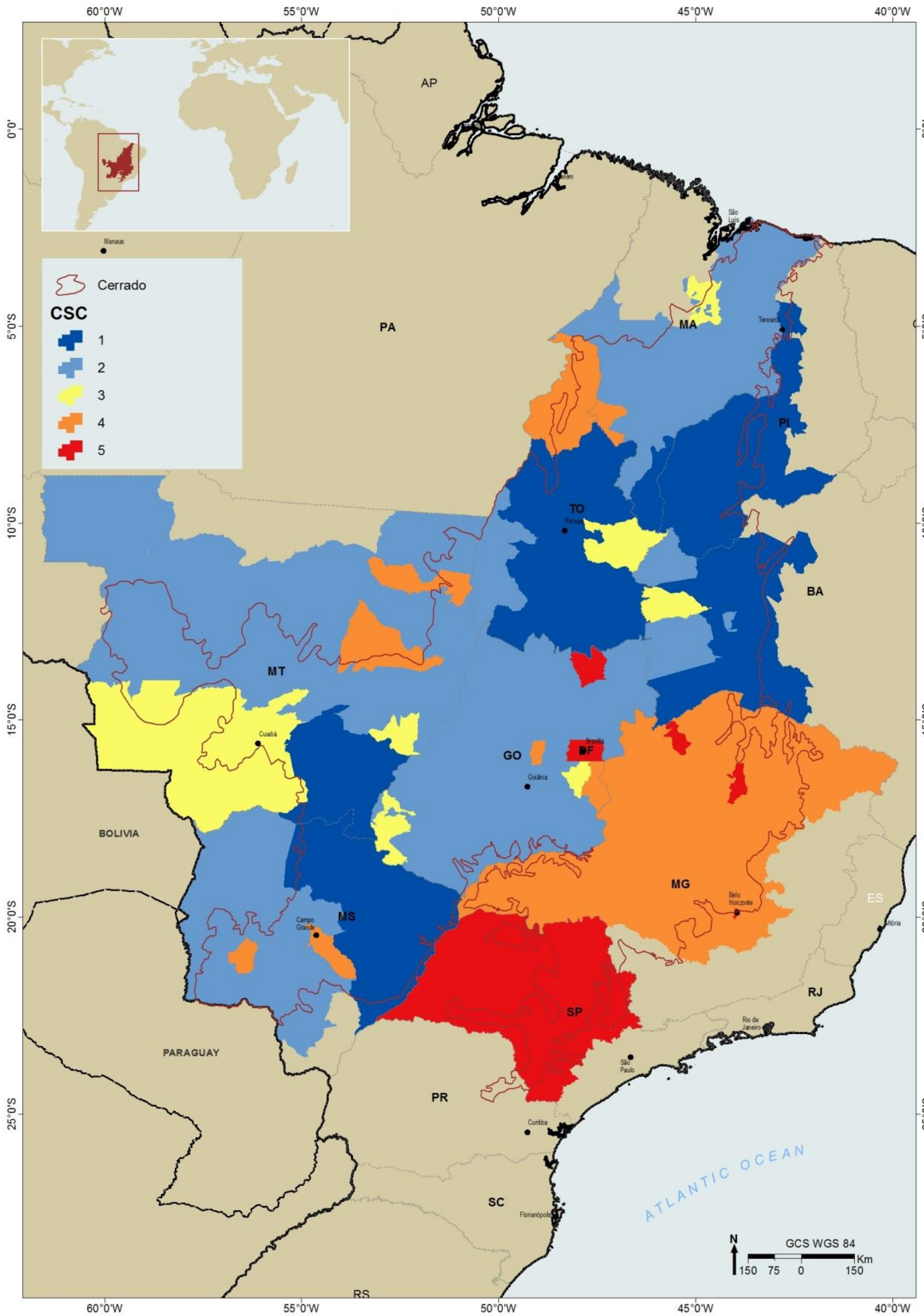

Figure 5a) Civil Society Capacity in the hotspot

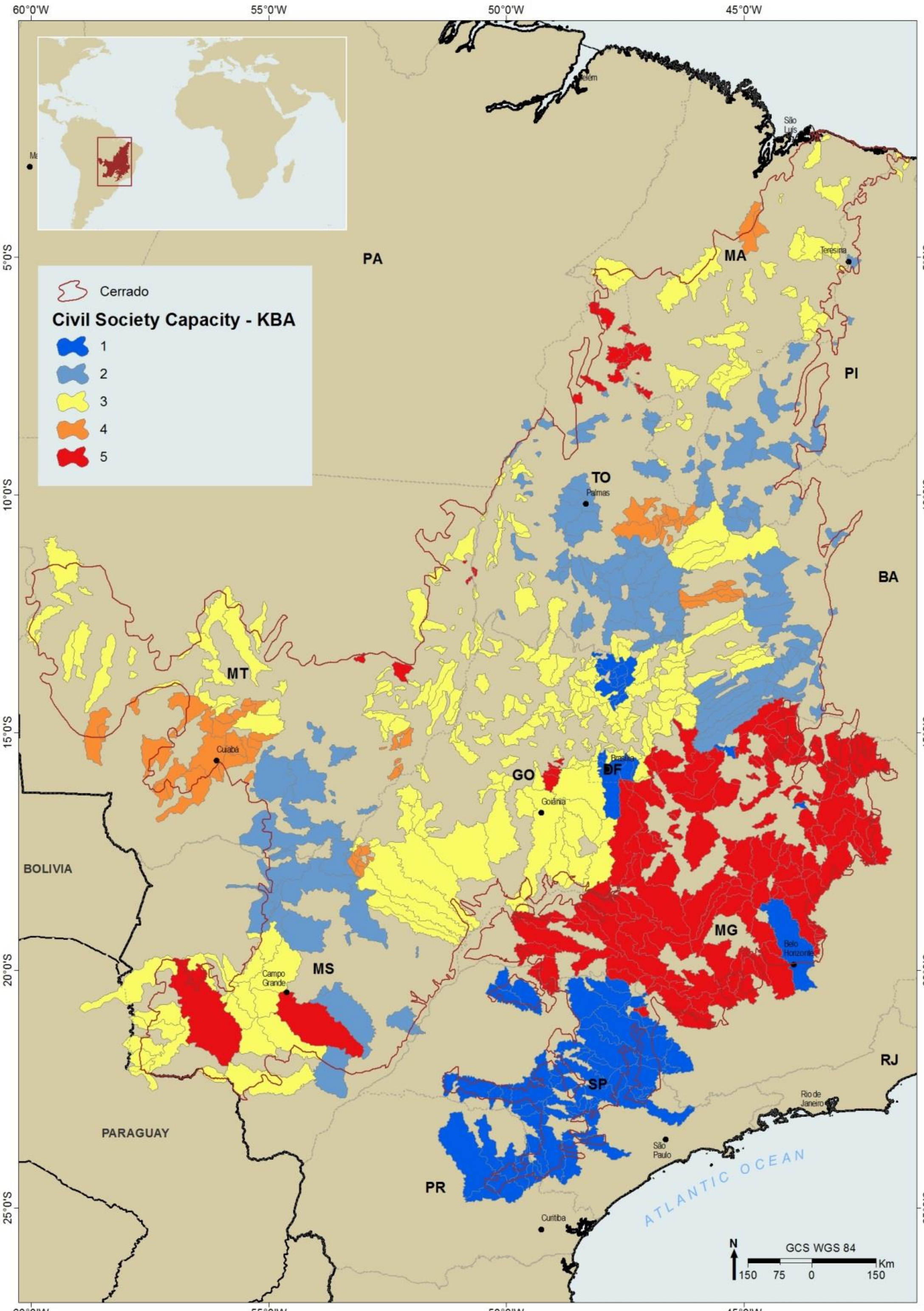

Figure 5b) Civil Society Capacity per KBA (with the modification for classes 1 and 5)

5- Original vegetation cover: By recommendation from the workshop, the percentage of KBA cover by original vegetation cover (remnants) should be included as additional criteria of KBA prioritization, to emphasize the need for conservation on the last big vegetation covers on the Cerrado and ensure conservation actions in the most intact and pristine areas.

The database recommended was the last updated and available one (from Federal Government- Probio 2009, see Figure 6a). Unfortunately there is no updated database for it. There is some specific places that have updated this information through image satellite analysis (e.g. Mato Grosso do Sul state and Legal Amazonia region), but mixed these data were mixed with the 2009, it will cause a problem in the analysis standardization. After GIS experts worked in the original image to correct topology problems, it was calculated the percentage of remnants in each KBA.

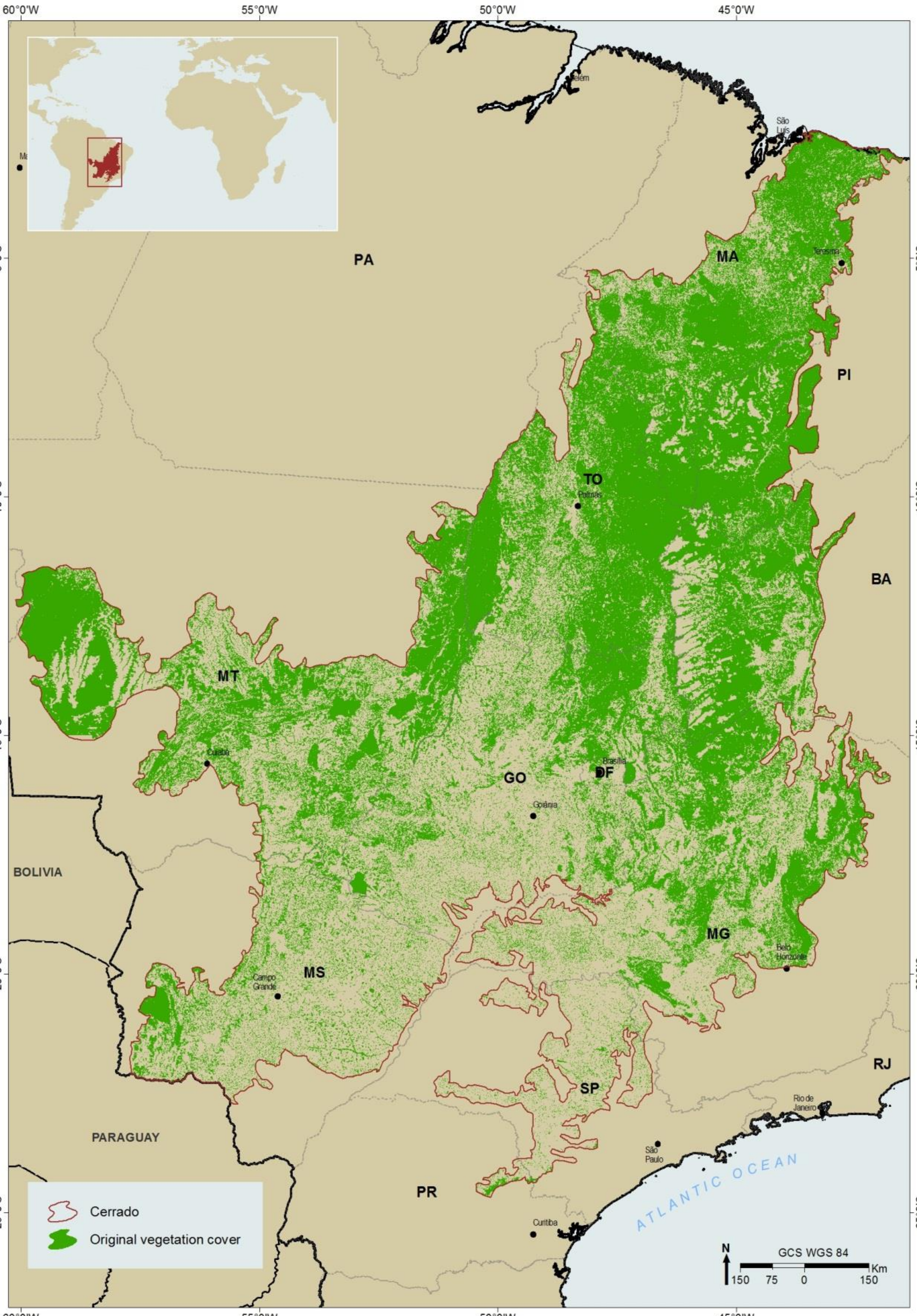

Figure 6a) Original vegetation cover in the hotspot (2009)

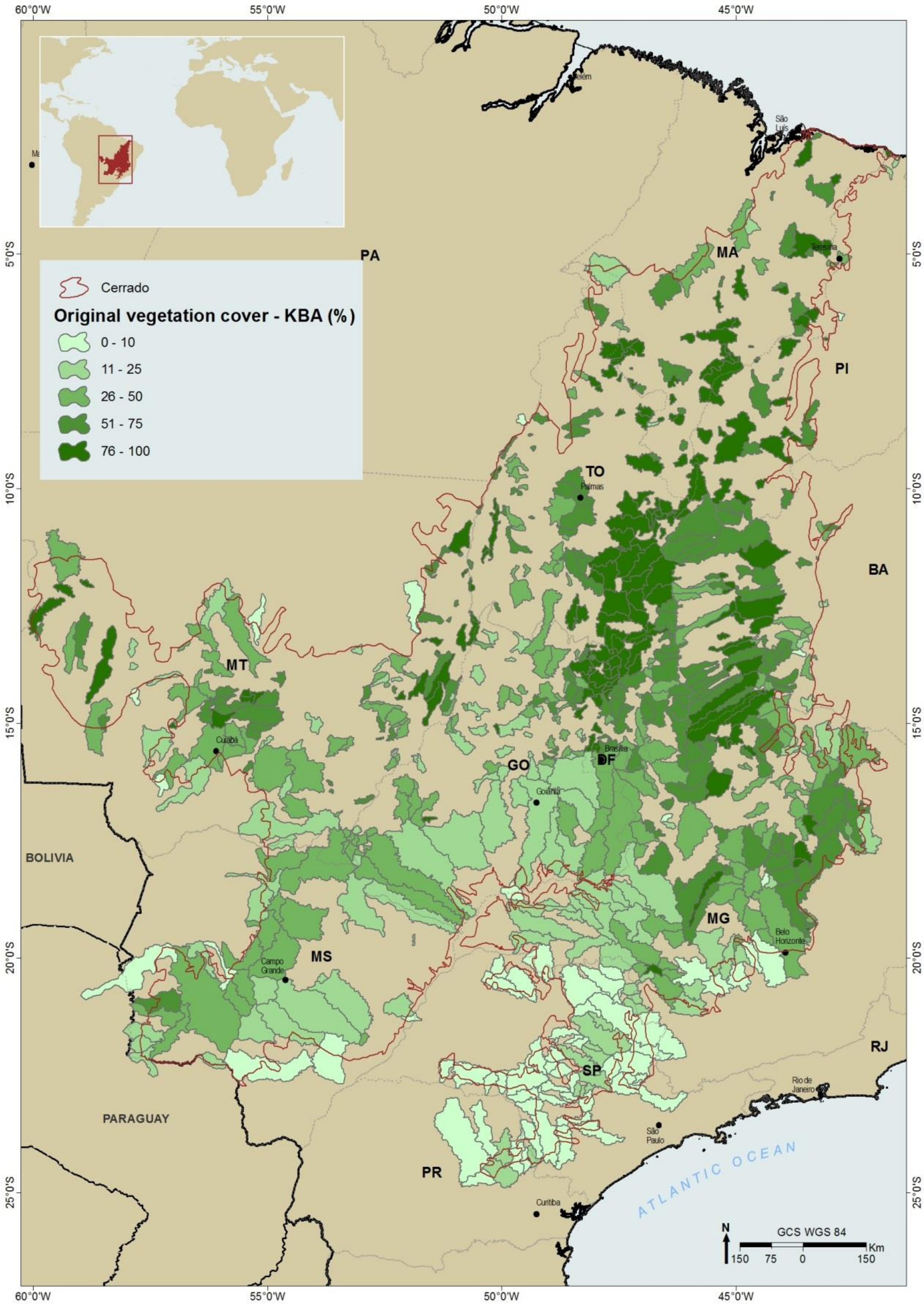

Figure 6b) Percentage of Original vegetation cover per KBA

The remnants were not first used to delineate KBA for two reasons:

1- The database is not recent, and we decided that this could cause comission and omisson errors (according to the biodiversity points of occurrence).
2- Following this, and adding the information that the database of species occurrence are up to date (points of occurrence with reference with more than 10 years were not considered) we decided that remnants could be used to help in determining the conservation strategy for the KBA (increase restoration or protection, depending on the % of remnants inside the KBA).

6- Ecosystem services: ranking the role that KBAs play on the provision of water services to people.

The understanding of the role that KBAs play on the provision of services that are important to people, particularly to the poor, is named as KBA+. The framework was developed by Conservation International’s *Betty and Gordon Moore Center for Science and Oceans* (MCSO) with the support and partnership of CEPF and CI-Madagascar

The KBA+ methodology includes seven steps, which were followed by CI Brasil and ISPN on this study, including engagement with different stakeholders, a cross-cutting component of this methodology. For the Cerrado ecosystem profile some adjustments to the methodology were performed, and the main one was to focus on specific ecosystem services regarding "water" (especially provision for hydropower generation, irrigation and urban supply). There were some approaches used to determine the KBA+ in Madagascar that we discussed and found that were not applicable to the Cerrado biome (eg. available data sources or surrogates for fisheries, hunting, disasters risk) or had a severe database biased problem, despite as being important ES indicators (eg. food supply, based on non-timber and timber forest products; and tourism).

As in the framework adopted in Madagascar, ecosystem services identified in KBA+ will not be "valued" in economic terms, but ranked as to their relative importance for water supply.

The data were provided by the National Agency of Water and includes demand for water use in five categories: animal, industrial, irrigation, rural and urban use (Figure 7a), all in small basin scale. The analysis were performed for each KBA (average weighted per area) and the result were ranked in five categories (Figure 7b) regarding their relative importance of ecosystem services in terms of providing water for different types of use.

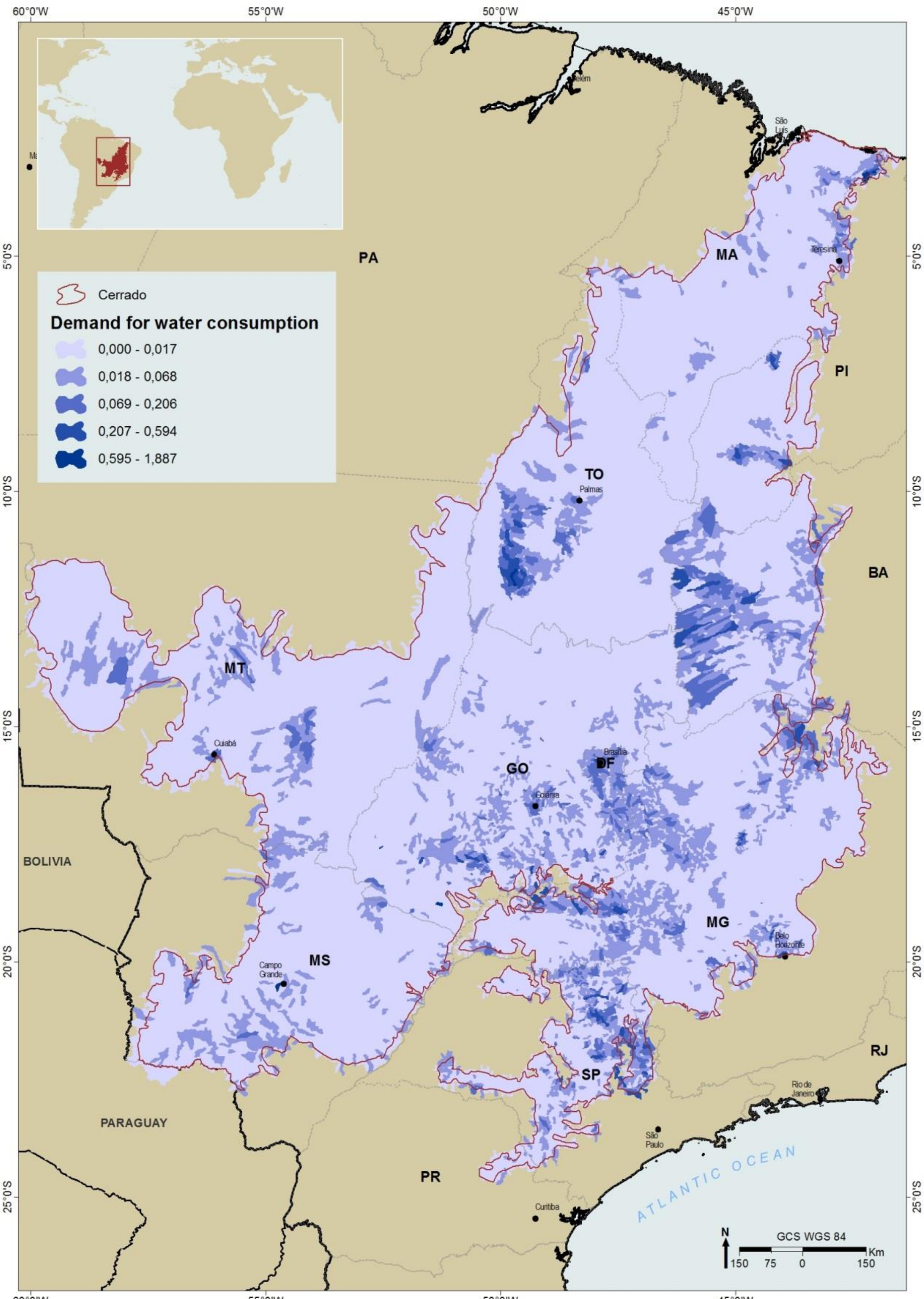

Figure 7a) Demand for water consumption in the hotspot

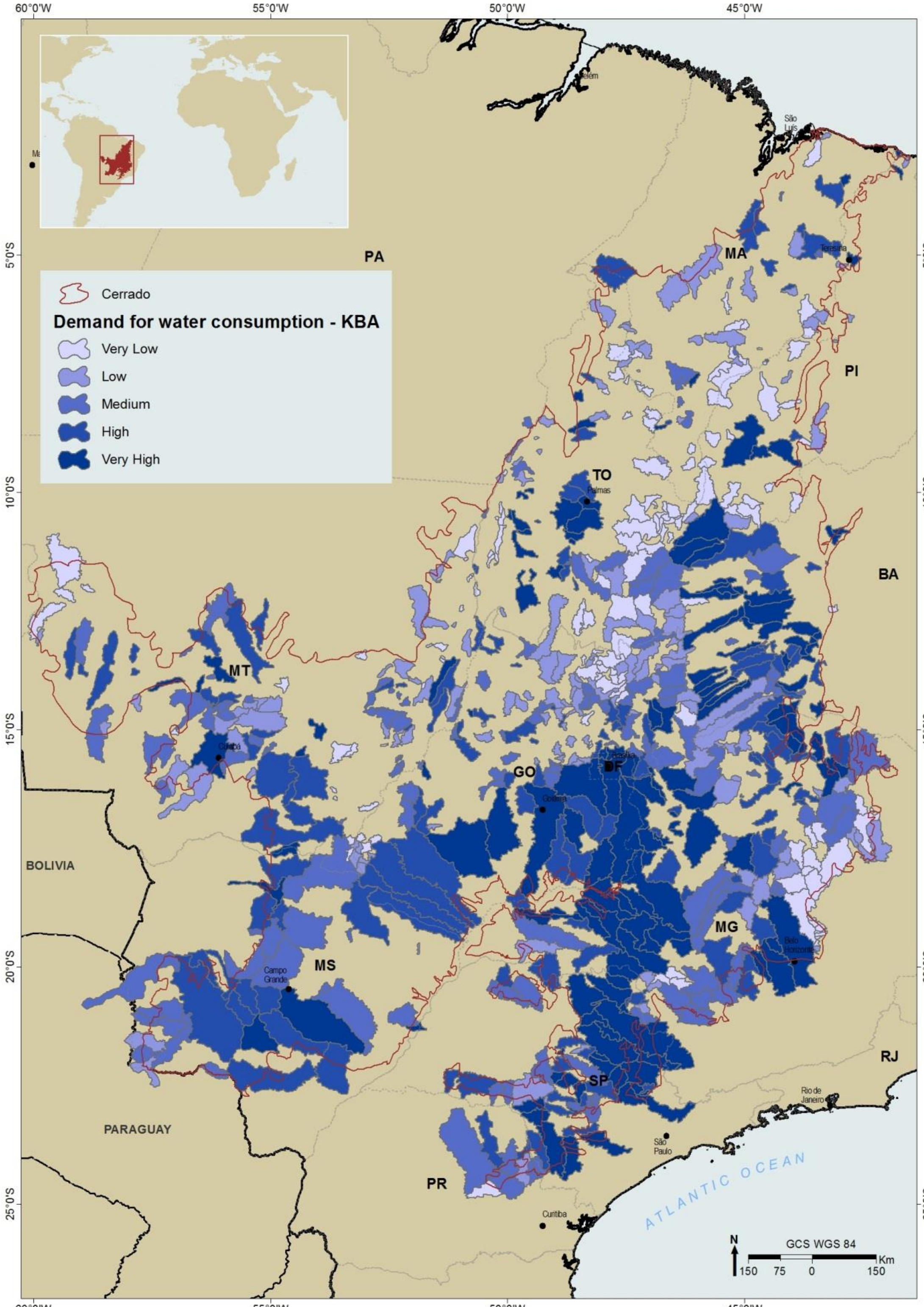

Figure 7b) Average of demand for water consumption per KBA

Prioritization methodology

The weight (or set of weight factors) is the relative importance of a relevant category over another. It is noteworthy that the weight term is associated with a concept of importance that is not directly related to the chosen scale. The weighting may be considered the relative importance assigned to each sub criterion of a set to constitute an evaluation criterion. In other words, the weighting is the result of the preferences of the decision maker, based on concrete facts and subjective (not perfectly modeled).

The literature shows a wide variety of weighting methodologies for criteria and is best known methodologies of direct weighting, the simple classification and the AHP.

In the method of successive comparisons, the evaluator classifies criteria and evaluates according to a cardinal scale, systematically comparing the criteria between them. Then, they check the consistency of the cardinal values previously assigned by modifying the values until the weights are consistent.

Among these, a wide application in science, best known for its American nomenclature, Hierarchical Analytical Process (Saaty, 1980), based on binary comparisons of the criteria, carried out according to a scale of importance (see Table 1 below) then calculates the dominant own vector matrix assessments of the criteria. And finally, the weights are evaluated on an inconsistency rate.

Table 1: Primary Scale Saaty (adapted from Saaty, 1980)

Intensity	Score	Rating
1	Equal importance	Both activities equally contribute to the goal
3	Small importance of one over another 's	experience and judgment favor one activity over another
5	large or vital importance	Experience and judgment strongly favor one activity over another
7	very great importance or demonstrated	One activity is very strongly favored over the other. It could be demonstrated in practice.
9	absolute Importance	evidence favors one activity over another , with the highest degree of safety.
2, 4, 6, 8	Intermediate values	When looking for a compromise condition between two settings.

For KBA prioritization we decided to use AHP methodology because:

- The large number of KBAs
- The huge variation between the criteria´s range (for example, the number of species for one category range from zero to 10, and another from zero to 176)
- In order to normalize the ranges
- For the possibility of using weights to determine the importance between one criteria under another

The KBA prioritization process was done in three main steps:

1- Combining all the species data to have the *Biological Criteria* done called Biological AHP. The biological criteria was considered the most important during this process, assuming that the basis of the whole prioritization process is to invest in the higher biological importance areas.
2- All the other criteria (civil society capacity, alignment with national priorities, original vegetation cover, ecosystem services, level of threat) were called as *Landscape Criteria* and were combined in the Landscape AHP.
3- The Biological AHP was combined with Landscape AHP to produce the final AHP results.

Weights and AHP process

For the integration of data according to the Analytical Process Method Hierarchy (AHP), it was necessary to reclassify the values of each column by statistical "quantile" generating from three (high, medium, low) to five classes (Very High, High, Media, low and very low). Then it was given numerical values (weights) for each one of the classes of information according to level of importance. Later, the pair comparisons were carried along by the AHP method. See annex 3 for entire scorecard for each step described below.

1- Biological AHP

Depending on the weights assigned to each class it was obtained:

Rare Plants

# KBA	Class	Interval	Weight
431	Very Low	0	0.027
226	Low	0 - 2	0.106
55	Medium	2 - 5	0.182
22	High	5 - 10	0.270
27	Very High	> 10	0.415

Rare Fishes

# KBA	Class	Interval	Weight
626	Very Low	0	0.035
99	Low	1	0.199
33	Medium	1 - 4	0.296
3	High	4 - 10	0.470

Threatened Fauna (National Redlist)

- National RedList of Fauna- Critically Endangered

# KBA	Class	Interval	Weight
707	Low	0	0.052
51	Medium	1	0.368
3	High	2	0.579

- National RedList of Fauna- Endangered

# KBA	Class	Interval	Weight
649	Very Low	0	0.027
84	Low	1	0.123
11	Medium	2	0.174
11	High	3	0.265
6	Very High	>4	0.411

Degree of National RedList of Fauna

Class	Weight
Critically Endangered	0.619
Endangered	0.284
Vulnerable	0.096

Weight + Degre

KBA
478
109
73
72
29

- National RedList of Fauna- Vulnerable

# KBA	Class	Interval	Weight
562	Very Low	0	0.027
136	Low	1	0.123
46	Medium	3	0.174
16	High	7	0.265
1	Very High	13	0.411

Threatened Fauna (IUCN Redlist)

- IUCN RedList of Fauna- Critically Endangered

# KBA	Class	Interval	Weight
754	Low	0	0.1
7	High	1	0.9

- IUCN RedList of Fauna- Enda

# KBA	Class	Interval	Weight
681	Low	0	0.052
71	Medium	1	0.368
9	High	3	0.579

Degree of IUCN RedList of Fauna

Class	Weight
Critically Endangered	0.619
Endangered	0.284
Vulnerable	0.096

Weight + Degree of

# KBA	Cla
583	Very
84	Lo
12	Med
62	Hi
20	Very

- IUCN RedList of Fauna- Vulnerable

# KBA	Class	Interval	Weight
622	Low	0	0.052
117	Medium	1	0.368
22	High	4	0.579

Threatened Fauna (National and IUCN RedList)

National RedList of Fauna

# KBA	Class	Interval	Weight
478	Very Low	0.014647	0.034
109	Low	0.017125	0.065
73	Medium	0.025691	0.146
72	High	0.087327	0.295
29	Muito Alta	0.146901	0.460

IUCN RedList of Fauna

# KBA	Class	Interval	Weight
583	Very Low	0.028373	0.034
84	Low	0.034588	0.065
12	Medium	0.038738	0.146
62	High	0.061027	0.295
20	Very High	0.262680	0.460

Degree of IUCN and National RedList of Fauna

Class	Weight
National	0.556
IUCN	0.444

Weight + Degree of IUCN and National RedList of Fauna

# KBA	Class	Interval	Weight
400	Very Low	0.017000	0.034
141	Low	0.025618	0.065
76	Medium	0.055018	0.146
73	High	0.096440	0.295
71	Very High	0.230000	0.460

Threatened Flora (National Redlist)

- National RedList of Flora- Critically Endangered

# KBA	Class	Interval	Weight
705	Low	0	0.052
33	Medium	1	0.368
23	High	29	0.579

Degree of National RedList of Flora

Class	Weight
Critically Endangered	0.619
Endangered	0.284
Vulnerable	0.096

Weight + Degree of National RedList of Flora

# KBA	Class	Interval	Weight
426	Very Low	0.014907	0.034
84	Low	0.017979	0.065
94	Medium	0.030432	0.144
79	High	0.056087	0.295
78	Very High	0.177112	0.460

532	Very Low	0	0.035
126	Low	1	0.199
55	Medium	3	0.296
48	High	105	0.470

- National RedList of Flora- Vulnerable

# KBA	Class	Interval	Weight
545	Very Low	0	0.027
133	Low	1	0.123
43	Medium	3	0.174
21	High	5	0.265
19	Very High	40	0.411

# KBA	Class	Interval	Weight
754	Low	0	0.052
6	Medium	1	0.316
1	High	2	0.632

- IUCN RedList of Flora- Vulnerable

# KBA	Class	Interval	Weight
680	Low	0	0.052
57	Medium	1	0.316
24	High	6	0.632

Threatened Flora (National and IUCN RedList)

Threatened Flora (IUCN Redlist)

- IUCN RedList of Flora- Critically Endangered

- IUCN

Degree of IUCN RedList of Flora

Class	Weight
Critically Endangered	0.619
Endangered	0.284
Vulnerable	0.096

Weight + Degree of IUCN RedList of Flora

# KBA	Class	Interval	Weight
583	Very Low	0.027220	0.034
84	Low	0.037332	0.065
12	Medium	0.044084	0.144
62	High	0.067247	0.295
20	Very High	0.252288	0.460

464

National RedList of Flora

# KBA	Class	Interval	Weight
426	Very Low	0.014907	0.034
84	Low	0.017979	0.065
94	Medium	0.030432	0.146
79	High	0.056087	0.295
78	Muito Alta	0.177112	0.460

IUCN RedList of Fauna

# KBA	Class	Interval	Weight
583	Very Low	0.027220	0.034
84	Low	0.037332	0.065
12	Medium	0.044084	0.146
62	High	0.067247	0.295
20	Very High	0.252288	0.460

Degree of IUCN and National RedList of Flora

Class	Weight
National	0.556
IUCN	0.444

Weight + Degree of IUCN RedList of Flora

# KBA	Class	Interval	Weight
328	Very Low	0.010187	0.034
145	Low	0.012432	0.065
98	Medium	0.015357	0.146
99	High	0.022943	0.295
91	Very High	0.105245	0.460

Irreapleaceable Species

# KBA	Class	Interval	Weight
519	Very Low	0	0.027
155	Low	1	0.106
37	Medium	2	0.182
26	High	3	0.270
24	Very High	92	0.415

To combine all the sub criteria and get the final map of Biological AHP, it was considered the following weights:

Subcriteria	Weight	Final Weight
Rare Plants	0.21	0.42
Rare Fishes	0.21	
Threatened Fauna	0.26	0.52
Threatened Flora	0.26	
Irreapleaceable Species	0.06	0.06

2- Landscape AHP

Depending on the weights assigned to each class it was obtained:

Alignment with National Priorities

Natural Vegetation Cover (MMA,2009)

# KBA	Class	Interval	Weight
74	Very Low	<10	0.036
123	Low	10 – 25	0.069
194	Medium	25 – 50	0.143
191	High	50 – 75	0.292
179	Very High	75 - 100	0.460

Ecosystem Services: Consumptive Water demand (ANA, 2009)

# KBA	Class	Interval	Weight
153	Very Low	0.001742	0.086
152	Low	0.004158	0.123
152	Medium	0.008787	0.177
152	High	0.020170	0.253
152	Very High	0.276296	0.361

Threat Level (IPA index, IBGE, 2000-2010)

# KBA	Class	Interval	Weight
153	Very Low	0.491532	0.416
152	Low	0.538981	0.262
256	Medium	0.600000	0.161
100	High	0.680059	0.099
100	Very High	0.889293	0.062

Civil Society Capacity (ISPN,2015)

# KBA	Class	Interval	Weight
85	Very Low	1	0.034
157	Low	2	0.034
287	Medium	3	0.270
67	High	4	0.307
165	Very High	5	0.354

To combine all the criteria and get the final map of Landscape AHP, it was considered the following weights:

Criteria	Weight
Original Vegetation cover	0.300
Level of threat	0.255
Alignment with National Priorities	0.212
Ecosystem Services	0.134
Civil Society Capacity	0.099

3- Final AHP: Biological + Landscape

To combine Biological and Landscape AHP the following weights were considered and finally got the final results in five classes (Very Low, Low, Medium, High and Very High), see Figure 8 for more details.

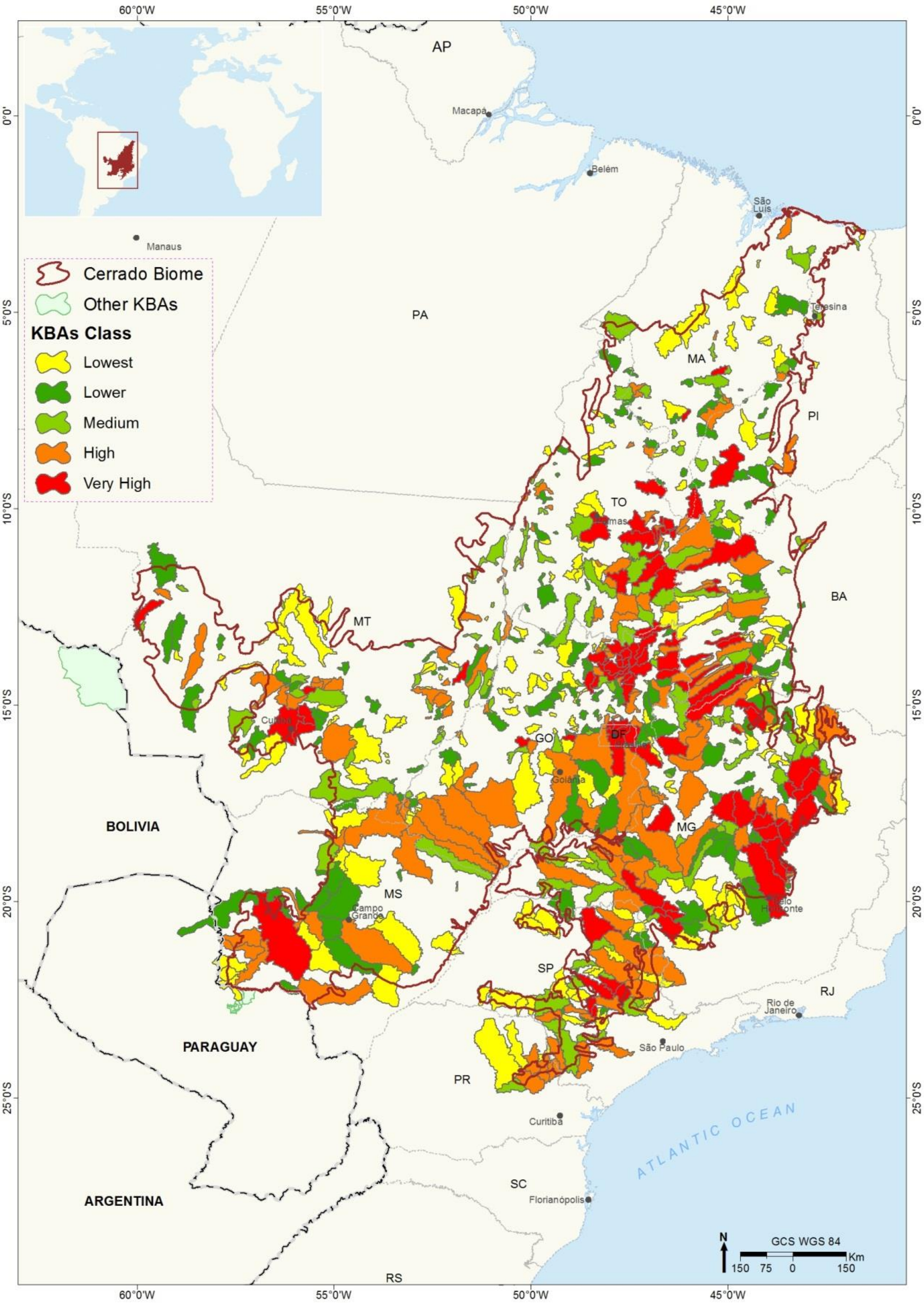

Figure 8. AHP prioritization results in five classes (Very Low, Low, Medium, High and Very High)

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APPENDIX 5. CIVIL SOCIETY ORGANIZATIONS

Institution Name	**Type**	**Action**	**Main geographical location**	**State**	**Ecosocial Region**
A Casa Verde - Cultura e Meio Ambiente	national NGO	productive chains of local products,	Based in DF, action in MT, MS and MG	**DF**	Distrito Feofral
Agência Brasileira de Meio Ambiente e Tecnologia da Informação- Ecodata	regional NGO	public policy	High Tocantins River Basin and DF	**GO, DF**	Northeast of Goiás, Distrito Feofral
Alternativas para Pequena Agricultura - APA-TO	regional NGO	Techincal assistance anda rural extension	Bico do Papagiao, Jalapão	**TO**	Tocantins north and east
Animação Pastoral e Social no Meio Rural	regional social movement	Agroecology, techincal assistance anda rural extension	Monte Carmelo, Iturama	**MG**	Minas Gerais
Articulação Pacari	network	Popular reaserch, technical assistance network and public policies influence	Minas Gerais, Goiás, Tocantins e Maranhão	**MG, GO, TO, MA**	
Articulação Xingu Araguaia - AXA	network	Valorization of the forest products, social mobilization	Araguaia Xingu, MT	**MT**	Northeast of Mato Grosso
Associação Agroextrativista dos Pequenos Produtores de Carolina - AAPPC	local association	Agroecology, agroextractivism	Carolina, Chapada das Mesas	**MA**	West of Maranhão

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Associação Aliança dos Povos do Roncador	local NGO	Enviromental management in indigenous lands	Água Boa	**MT**	Southeast of Mato Grosso
Associação Ambientalista de Marília – ORIGEM	local NGO	Recovery and environmental protection; environmental education	Marília	**SP**	Cerrado of São Paulo state
Associação Barco Escola da Natureza	local NGO	Recovery and environmental protection; environmental education	Americana	**SP**	Cerrado of São Paulo state
Associação Brasileira de Agricultura Biodinâmica - Instituto Biodinâmico	local NGO	agroecology, recovery and environmental protection; research, certification	Botucatu	**SP**	Cerrado of São Paulo state
Associacao Camponesa da Regiao Noroeste de Goias - ASCANG	regional social movement	Agroecology, technical assistance anda rural extension	norwest de Goiás	**GO**	Norwest of Goiás
Associação Cultural e Ecologica Pau Brasil - ACEPB	local NGO	Water, environmental education	Ribeirão Preto	**SP**	Cerrado of São Paulo state
Associação de Educação e Assistência Social Nossa Senhora da Assunção - ANSA	regional NGO	Agroextractivism, environmental education	Araguaia Xingu (4 municipios ao redor de Sao felix do Araguaia)	**MT**	Northeast of Mato Grosso
Associação de Recuperação Florestal do Médio Tietê - FLORA TIETÊ	local NGO	Seedling production, environmental education, recovery of degraded areas	Penápolis e São José do Rio Preto	**SP**	Cerrado Paulista
Associação de Reposição Florestal do Pardo Grande - Verde Tambaú	local NGO	Seedling production, environmental education, recovery of degraded areas	Tambaú	**SP**	Cerrado Paulista

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Associação do Desenvolvimento Solidário e Sustentável - ADES – 10envolvimento	regional NGO	Public policy, agroextractivism, traditional communities	Bacia do Rio Grande, west da Bahia (municípios de Barreiras, Formosa do Rio Preto e Santa Rita de Cássia)	**BA**	West of Bahia
Associação do Grupamento Ambientalista - AGA	local NGO	environmental education	Birigui	**SP**	Cerrado of São Paulo state
Associação dos Apicultores de Nova Olinda - AAPINO	regional association	beekeeping, native fruit pulp production	Nova Olinda, Wanderlândia, Araguaína, Palmeirante (TO)	**TO**	North of Tocantins
Associação dos Proprietários de Reservas Particulares do Patrimônio Natural de Mato Grosso do Sul - REPAMS	regional NGO	Protected areas	MS	**MS**	West and east of Mato Grosso do Sul
Associação dos Trabalhadores Rurais do Vale da Corda - ATRVC	regional association	beekeeping, agroecology	Vale do Corda (TO)	**TO**	North of Tocantins
Associação em Áreas de Assentamento no Estado do Maranhão - ASSEMA	regional NGO	Agroecology and fair trade	18 municipalities of Médio Mearim, region, Maranhão	**MA**	East of Maranhão
Associação Indígena Xavante Norö Tsu'rã	regional association	environmental management of indigenous territories	Nova Xavantina, Campinápolis	**MT**	Sudoste of Mato Grosso
Associação Maranhense para a Conservação da Natureza - AMAVIDA	regional NGO	native beekeeping	Urbano Santos and region, MA	**MA**	East of Maranhão
Associação Mineira das Escolas Familias Agricolas	regional social movement	agroecology	Minas Gerais	**MG**	Minas Gerais

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Associação Mineira de Defesa do Ambiente - AMDA	regional NGO	wild animals conservation, fire management, recovery of degraded areas	Belo Horizonte, Minas Gerais	**MG**	Minas Gerais
Associação para a Gestão Socioambiental do Triângulo Mineiro - ANGÁ	local NGO	environmental education, conservation	Triângulo Mineiro (Uberlândia)	**MG**	West of Minas Gerais
Associação para proteção Ambiental de São Carlos - APASC	local NGO	Organic agriculture	São Carlos	**SP**	Cerrado of São Paulo state
Associação Protetora dos Animais Silvestres de Assis - APASS	local NGO	wild animals conservation	Assis	**SP**	Cerrado of São Paulo state
Associação Regional das Mulheres Trabalhadoras Rurais do Bico do Papagaio - ASMUPIB	regional social movement	agroecology, gender	Bico do Papagaio	**TO**	North of Tocantins
Associação Regional das Produtoras Extrativista do Pantanal - ARPEP	regional association	agroextractivism productive chain	Cáceres e região	**MT**	Southwest of Mato Grosso
Associação Terra Indígena Xingu - ATIX	regional association	native beekeeping	Xingu	**MT**	Northeast of Mato Grosso
Associação Wyty-Catë das Comunidades Timbira do Maranhão e Tocantins	regional social movement	networking among the Timbira people, agroextractivism	south of Maranhão (Carolina) and north of Tocantins	**MA, TO**	West of Maranhão and north of Tocantins

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Associação Terra Viva de Agricultura Alternativa e Educação Ambiental - ATV	regional NGO	Agroecology, environmental recovery	Porto Alegre do Norte, MT	**MT**	Northeast of Mato Grosso
Cáritas Brasileira	national NGO	fair trade, water and land management, agroecology	all Brazil, in Cerrado in MA and MG	**MA, MG**	East of Maranhão and north of Minas Gerais
Cavaleiro de São Jorge	local NGO	Cultural Feast, medicinal plants	Chapada dos Veadeiros, GO	**GO**	Northeast of Goiás
Central do Cerrado	cooperative	Promotion and marketing of Cerrado biodiversity products, technical assistance for management and products improvement	35 community based organization of seven states (MA, TO, PA, MG, MS, MT e GO)	**MA, TO, PA, MG, MS, MT e GO**	
Centro de Agricultura Alternativa do Norte de Minas - CAA/NM	regional NGO	Techincal assistance and rural extension	39 municipalities of north of Minas Gerais	**MG**	North of Minas Gerais
Centro de Agricultura Alternativa Vicente Nica - CAV	regional NGO	Water management and access, agroecology and recovery of degraded land	Alto, Médio e Baixo Jequitinhonha (sobretudo Berilo, Chapada do north, Minas Novas, Turmalina e Veredinha)	**MG**	North of Minas Gerais
Centro de Desenvolvimento Agroecológico do Cerrado - CEDAC	regional NGO	agroecology, agroextractivism	São Domingos, GO	**GO**	Northeast of Goiás
Centro de Documentação Eloy Ferreira da Silva	regional NGO	quilombolas and indigenous peoples rights, territories	Minas Gerais	**MG**	Centro, north and west of Minas Gerais

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Centro de Tecnologia Agroecológica de Pequenos Agricultores - AGROTEC	local NGO	agroextractivism productive chain, medicinal plants	Diorama region, GO	**GO**	Norwest of Goiás
Centro de Trabalho Indigenista - CTI	national NGO	Integraded land management of indigenous territories of Timbira people, education, agroextractivism	8 Timbira Indigenous Territories (TO, MA)	**MA, TO**	West of Maranhão and north of Tocantins
Centro Nacional de Conservação da Flora - CNCFLORA	regional NGO	National Action Plan (PAN) for the Espinhaço Meridional species	Espinhaço Meridional – Serra do Cipó – Diamantina	**MG**	North of Minas Gerais
Comissão Pastoral da Terra - CPT	national social movement	Social mobilization for land rights, agroecology	Tocantins, Goiás, Maranhão, Bahia, Mato Grosso (representação regional)	**TO, GO, MA, BA, MT**	North do Tocantins, Norwest of Goiás, west and east of Maranhão, west of Bahia, Northeast of Mato Grosso
Conselho Indigenista Missionário - Cimi	national social movement	Indigenous technical assistance - land rights, health.	Maranhão, Goiás, Tocantins, Mato Grosso, Mato Gorsso do Sul, Minas Gerais	**MA, TO, MT, MG, MS**	East of Maranhão, east and west of Tocantins, Southwest of Mato Grosso, Minas Gerais and west of Mato Grosso do Sul

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Conservation International - CI	international NGO	promotion of sustainable agriculture landscapes ; ecosystems recovery; support for protected areas management.	Região de Matopiba	**BA, TO, PI, MA**	West of Bahia
Cooperativa Agroecológica pela Vida - COOPEVIDA	cooperative	agroecology, agroextractivism	São Raimundo das Mangabeiras, MA	**MA**	West of Maranhão
Cooperativa Cooperfrutos do Paraíso	regional NGO	agroecology, local seeds	São João da Aliança, Alto Paraíso, Colinas do Sul, Cavalcante, Terezina	**GO**	Northeast of Goiás
Cooperativa dos Agricultores Familiares Ecológicos do Cerrado - Cooperativa Rede Terra	cooperative	agroecology, marketing	Cristalina, GO and DF surroundings	**GO, DF**	Northeast of Goiás, Distrito Federal
Cooperativa Grande Sertão	cooperative	agroextractivism, processing biodiversity fruits and marketing	north of Minas Gerais	**MG**	North of Minas Gerais
Cooperativa Mista de Agricultores e Agricultoras Rurais de Poconé - COMPRUP	cooperative	agroextractivism productive chain	Poconé	**MT**	Sudwest of Mato Grosso
Cooperativa Regional de Produtores Agrissilviextrativista Sertão Veredas - SERTÃO VEREDAS	cooperative	agroextractivism, processing biodiversity fruits and marketing	Chapada Gaúcha	**MG**	North of Minas Gerais
Coordenação das Comunidades Quilombolas do TO - COEQTO	network	Political networking for quilombolas rights in Tocantins state	Tocantins	**TO**	North, east and west of Tocantins

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
COPABASE	cooperative	Agriculture, fair trade	Arinos, Bonfinópolis de Minas, Buritis, Formoso, Pintópolis, Riachinho, Urucuia e Uruana de Minas	**MG**	West of Minas Gerais
Ecologia e Ação - ECOA	regional NGO	Valorization of the forest products, social mobilization	Corumbá, Miranda e Nioaque	**MS**	West of Mato Grosso do Sul
Entidade Ecológica e Educacional do Vale do Paranapanema - ENVAPA	local NGO	Recovery and protection of the Paranapanema river	Assis	**SP**	Cerrado of São Paulo state
Federação das Comunidades Quilombolas do Estado de Minas Gerais – N'Golo	regional social movement	Political networking for quilombolas rights in Minas Gerais state	Minas Gerais	**MG**	West, north and Centre of Minas Gerais
Federação de Órgãos para Assistência Social e Educacional - FASE	national NGO	Technical assistance for agroecology and agroextractivism	Sudwest do Mato Grosso e nos municípios da Baixada Cuiabana	**MT**	Sudwest of Mato Grosso
Fórum Carajás	regional NGO	agroecology, small farmers, population affected by big enterprises	Maranhão, Pará e Tocantins	**MA**	East of Maranhão
FrutaSã	company	Cerrado biodiversity fruits processing and marketing involving small farmers and indigenous	south of Maranhão (Carolina)	**MA**	West of Maranhão
Fudação Neotrópica do Brasil	local NGO	biodiversity conservation, environmental education, protected areas ecotourism	Bonito - MS	**MS**	West of Mato Grosso do Sul

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Funatura	regional NGO	Support to reduction of deforestation and forest fires in the Cerrado, agroecology	Chapada dos Veadeiros, GO, Bacia do São Bartolomeu - DF, Mosaico Grande Sertão Veredas Peruaçu - MG	**GO, DF, MG**	Northeast of Goiás, Distritio Federal, north of Minas Gerais
Fundação Biodiversitas para a Conservação da Diversidade Biológica - FUNDAÇÃO BIODIVERSITAS	regional NGO	biodiversity conservation and research	Serra do Rola Moça, Serra do Espinhaço	**MG**	Centro of Minas Gerais
Fundação de Apoio a Vida nos Trópicos - ECOTROPICA	international NGO	biodiversity conservation	Cuiabá	**MT**	Sudwest of Mato Grosso
Fundação Grupo Boticário	national NGO	Research and management of Reserva Natural Serra do Tombador	Cavalcante, GO	**GO**	Northeast of Goiás
Instituto Bertran Fleury	local NGO	Cerrado history and culture	Distrito Federal	**DF**	Distrito Federal
Instituto Ambiental Vidágua	regional NGO	environment conservation, water	região de Bauru	**SP**	Cerrado of São Paulo state
Instituto Bioeste	local NGO	biodiversity conservation	west da Bahia	**BA**	West of Bahia

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Instituto Brasil Central - IBRACE	national NGO	Water, social mobilization, public policy	Northeast de Goias ; Território da Chapada dos Veadeiros, Vale do Paranã e da Serra da Mesa; Território do Médio Araguaia, north of Goiás, Vale do Rio Vermelho, Vale do São Patrício e Vale do Araguaia; Emas, Estrada de Ferro, Médio Araguaia, Southwest Goiano, Vale do Araguaia	**GO**	Northeast, Northwest and south of Goiás
Instituto Centro de Vida - ICV	regional NGO	Advocacy for deforestation reduction, rural development and forest management	Cotriguaçu, Lucas do Rio Verde e bacia do Alto Paraguai	**MT**	Northwest and southwest of Mato Grosso
Instituto das Águas da Serra da Bodoquena - IASB	local NGO	environmental education, water and public policies	Bonito - MS	**MS**	West of Mato Grosso do Sul
Instituto de Permacultura e Ecovilas do Cerrado - IPEC	local NGO	agroecology, permaculture	Pirenópolis, GO	**GO**	Northeast of Goiás
Instituto de Pesquisas Ecológicas - IPÊ	national NGO	Cerrado Waters Platform: collaborative platform among companies, civil society and government for water conservation	Uberlândia, Indianópolis e Monte Carmelo	**MG**	West of Minas Gerais
Instituto Gea - Etica e Meio Ambiente	local NGO	Solid wast management, environmental education	Paraíso e São José do Rio Preto	**SP**	Cerrado of São Paulo state
Instituto Guaicuy - SOS Rio das Velhas	local NGO	Sustainable development, Environmental education, recovery and water conservation	Velhas River Basin, Ouro Preto	**MG**	Centro of Minas Gerais

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Instituto Lina Galvani	local NGO	environment education, biodiversity conservation	Luis Eduardo Magalhães	**BA**	West of Bahia
Instituto Marista de Solidariedade - IMS	national NGO	Fair trade, agroecology, agroextractivism	Many locations in Cerrado - GO, MS, DF	**MS**	West of Mato Grosso do Sul
Instituto OCA Brasil	regional NGO	Creation and management of Protected Areas, recovery of degraded areas, agroecology	Alto Paraíso	**GO**	Northeast of Goiás
Instituto Onça Pintada	national NGO	Research for jaguar conservation	PN Araguaia, PE do Cantão - TO; Parque Nacional das Emas – GO, Estação Ecológica Uruçuí-Una e Parque Nacional Nascentes do Rio Parnaíba	**TO, GO**	West of Tocantins and south of Goiás
Instituto Ouro Verde	regional NGO	agroecology and agroextractivism chains	Alta Floresta e outros no estado do MT	**MT**	Northwest of Mato Grosso
Instituto Rosa e Sertão	regional NGO	Culture and agroextractivism	Região do Grande Sertão Veredas	**MG**	North of Minas Gerais
Instituto Sálvia de Soluções Socioambientais - ISSA	local NGO	Agroecology, recovery of degraded areas	Distrito Federal	**DF**	Distrito Federal
Instituto Sociedade, População e Natureza - ISPN	national NGO	Support for small grants (Small Grants Program, SGP) for biodiversity conservation, climate change mitigation and recovery of degraded land. Public policies influence, agroextractivism, agroecology	All Cerrado	**MA, PI, TO, BA, MT, GO, DF, MG, MS, SP**	Cerrado

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Instituto Socioambiental - ISA	national NGO	Xingu Program: support for small farmers and indigenous peoples, recovery of degraded land, water	Mato Grosso (bacia do Xingu)	**MT**	Northeast of Mato Grosso
Instituto Terra Brasilis de Desenvolvimento Sócioambiental	regional NGO	biodiversity conservation and research	Belo Horizonte, Serra da Canastra	**MG**	Centro of Minas Gerais
IPOEMA	local NGO	permaculture	Distrito Federal	**DF**	Distrito Federal
Mais Cerrado	regional NGO	advocacy for Cerrado conservation	Chapada dos Veadeiros, GO	**GO**	Northeast of Goiás
Missão Verde	regional NGO	Agroextractivism, environmental education	Parque Estadual do Cantão	**TO**	West do Tocantins
Mobilização dos Povos Indigenas do Cerrado (MOPIC)	national social movement	Advocacy for Cerrado Indigenous peoples	Todo do Cerrado	**MA, PI, TO, BA, MG, MS, MT e GO**	
Movimento Amparo Ecológico - MÃE NATUREZA	local NGO	Water resources	Barra Bonita	**SP**	Cerrado of São Paulo state
Movimento dos Atingidos por Barragens - MAB	national social movement	networking and sensibilization about communities affected by dams	Bacia do Rio Grande, west da Bahia	**BA**	West of Bahia

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Movimento dos Trabalhadores do Campo-MTC	national NGO	Social mobilization	Difuso Brasil, Cerrado: presença maior no north de MG e Northeast	**MG**	North of Minas Gerais
Movimento Interestadual das Quebradeiras de Babaçus - MIQCB	regional social movement	Women Networking for Babaçu Criackers right to access the resource and better productive conditions for the babaçu chain	Região dos Cocais (sede em Esperantina, PI); Bico do Papagaio (sede na cidade São Miguel do Tocantins - TO); Médio Mearim/Cocais (sede na cidade de Pedreiras - MA) e na região Tocantinia (sede na cidde de Imperatriz - MA)	**MA, PI, TO,**	East and west of Maranhão, west of Piauí, north of Tocantins
Mutirão Agroflorestal	regional NGO	Technical assistance in agroecology and Agroforestry Systems	São Paulo, Goiás e DF	**GO, DF, SP**	
Núcleo do Pequi	regional NGO	Network for improvement of the pequi productive chain in Minas Gerais state	north of MG	**MG**	North of Minas Gerais
Onça D'Água	regional NGO	protected areas management and support for local small farmers	Jalapão, Cantão	**TO**	East and west of Tocantins
ONG Verdenovo Rio das Velhas	local NGO	environamental education about water	Nova Lima, MG	**MG**	Centro of Minas Gerais
OPAN Operação Amazônia Nativa	regional NGO	Support for Indigenous Groups	several regions in Cerrado, but also um the Amazon	**MT**	Northeast of Mato Grosso

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Oréades Núcleo de Geoprocessamento	local NGO	Mapping, technical assistance	Mineiros, GO, Parque Estadual das Nascentes do Rio Taquari (PENT) e Parque Nacional das Emas (PNE)	**GO**	South of Goiás
Organização Ponto Terra	local NGO	environamental education about water	Ouro Preto, Três Marias, Sete Lagoas	**MG**	Centro of Minas Gerais
Pequi - Pesquisa e Conservação do Cerrado	regional NGO	research for biodiversity management and conservation	Jalapão	**TO**	East do Tocantins
Pratiquecologia	local NGO	environamental education about water and recovery of degraded areas	Campo Grande - MS	**MS**	West of Mato Grosso do Sul
Pro Vida Brasil	regional NGO	Management of Parque da Serra do Mirador; biodiversity research	Parque Estadual da Serra do Mirador (municipio de Mirador)	**PI**	West of Piaui
Pró-carnivoros	national NGO	Protection and research of wild animals	Parque Nacional das Emas, GO	**GO**	South of Goiás
Rede Ambiental do Piauí	regional NGO	Social mobilization for conservation in Piauí	Piauí	**PI**	West of Piaui
Rede Cerrado	network	Advocacy for Cerrado conservation, Cerrado peoples rights	All Cerrado	**MA, PI, TO, DF, BA, MG, MS, MT, GO**	

Institution Name	Type	Action	Main geographical location	State	Ecosocial Region
Rede de sementes do Cerrado	regional NGO	Research for Cerrado plant species, knowledge management, recovery of degraded areas and capacity building	Rio Pardo de Minas/MG, Goiânia, Alto Paraíso de Goiás e Cavalcante/GO e Brasília/DF	**GO**	Northeast of Goiás
Rede Jalapão de Produtos Artesanais	local NGO	Support for processing biodiversity products of Jalapão region	São Félix , Mateiros, Novo Acordo	**TO**	East of Tocantins
Slow Food Cerrado	regional NGO	Promotion of the use of biodiversity products from local communities in gastronomy	All Cerrado	**GO**	Northeast of Goiás
The Green Initiative - TGI	national NGO	Seedling production, environmental education, recovery degraded areas	Americana, Patrocínio Paulista, Gabriel Monteiro, Jaú, Araras	**SP**	Cerrado of São Paulo state
The Nature Conservancy - TNC	international NGO	Sustanable production, technical assistance for farmers to comply with environmental legislation, recovery of degraded areas	west da Bahia: São Desidério, Riachão das Neves, Barreiras, Luis Eduardo Magalhães, São Desidério, Correntina, Jaborandi e Cocos. Lucas do Rio Verde - MT; Chapada dos Veadeiros - GO; PSA: Bacia do Ribeirão Pipiripau (DF, divisa com Formosa-GO)	**BA, MT, GO, DF**	west of Bahia, Norwest of Mato Grosso, Northeast of MT, Northeast of Goiás, Distrito Federal
Unicafes União Nacional das Cooperativas da Agricultura Familiar e Economia solidária	network	Network for fair trade, cooperation and small farmers support	all the country		

Institution Name	**Type**	**Action**	**Main geographical location**	**State**	**Ecosocial Region**
WWF	international NGO	Sustanable agriculture production to comply with environmental legislation, water, environmental education, support to protected areas management, biodiversity conservation	Mosaico Sertão Veredas Peruaçu (MG), Bacia do São Bartolomeu (GO), Bacia Guariroba, Campo Grande (MS)	**GO, DF, MG, MS**	Northeast of Goiás, Distrito Federal, north of Minas Gerais, west of Mato Grosso do south

APPENDIX 6. CANDIDATE PRIORITY SPECIES

Family	*Species*	Popular Name	Endemic to Brazil	PAN	Brazilian National Red List	IUCN-Redlist	Priority Conservation Strategies
OROBANCHACEAE	*Agalinis schwackeana*		*yes*	Espinhaço Meridional	CR		1- Support direct or indirect actions for the management of populations, species, habitats and landscapes, to promote the conservation of threatened species. 2- Develop human and institutional capacities and raise awareness, focused on implementing actions for endangered species conservation. 3- Support research that generates knowledge, innovation and technology transfer to implement actions for endangered species conservation. 4- Support actions that foster the
ASTERACEAE	*Aspilia eglerii*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Aspilia jugata*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Aspilia ovalifolia*		*yes*	Espinhaço Meridional	CR		
VELLOZIACEAE	*Barbacenia glutinosa*		*yes*	Espinhaço Meridional	CR		
VELLOZIACEAE	*Barbacenia longiscapa*		*yes*	Espinhaço Meridional	CR		
VELLOZIACEAE	*Barbacenia pungens*		*yes*	Espinhaço Meridional	CR		
MALPIGHIACEAE	*Byrsonima fonsecae*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Calea abbreviata*		*yes*	Espinhaço Meridional	CR		
FABACEAE	*Chamaecrista lagotois*		*yes*	Espinhaço Meridional	CR		
ORCHIDACEAE	*Constantia cipoensis*		*yes*	Espinhaço Meridional	CR		
LYTHRACEAE	*Diplusodon glaziovii*		*yes*	Espinhaço Meridional	CR		
BROMELIACEAE	*Dyckia ursina*		*yes*	Espinhaço Meridional	CR		
BROMELIACEAE	*Encholirium biflorum*		*yes*	Espinhaço Meridional	CR		
BROMELIACEAE	*Encholirium pedicellatum*		*yes*	Espinhaço Meridional	CR		
BROMELIACEAE	*Encholirium vogelii*		*yes*	Espinhaço Meridional	CR		
ORCHIDACEAE	*Grobya cipoensis*		*yes*	Espinhaço Meridional	CR		
APOCYNACEAE	*Hemipogon abietoides*		*yes*	Espinhaço Meridional	CR		
APOCYNACEAE	*Hemipogon hatschbachii*		*yes*	Espinhaço Meridional	CR		
APOCYNACEAE	*Hemipogon piranii*		*yes*	Espinhaço Meridional	CR		
AQUIFOLIACEAE	*Ilex prostrata*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Lychnophora humillima*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Lychnophora souzae*		*yes*	Espinhaço Meridional	CR		
APOCYNACEAE	*Minaria bifurcata*		*yes*	Espinhaço Meridional	CR		
APOCYNACEAE	*Minaria diamantinensis*		*yes*	Espinhaço Meridional	CR		

Family	*Species*	Popular Name	Endemic to Brazil	PAN	Brazilian National Red List	IUCN-Redlist	Priority Conservation Strategies
APOCYNACEAE	*Minaria hemipogonoides*		*yes*	Espinhaço Meridional	CR		creation, establishment and implementation of public policies for the conservation of endangered species.
OXALIDACEAE	*Oxalis diamantinae*		*yes*	Espinhaço Meridional	CR		
MALPIGHIACEAE	*Peixotoa andersonii*		*yes*	Espinhaço Meridional	CR		
LYCOPODIACEAE	*Phlegmariurus ruber*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Piptolepis leptospermoides*		*yes*	Espinhaço Meridional	CR		
ORCHIDACEAE	*Pseudolaelia cipoensis*		*yes*	Espinhaço Meridional	CR		
IRIDACEAE	*Pseudotrimezia brevistamina*		*yes*	Espinhaço Meridional	CR		
IRIDACEAE	*Pseudotrimezia gracilis*		*yes*	Espinhaço Meridional	CR		
ASTERACEAE	*Richterago caulescens*		*yes*	Espinhaço Meridional	CR		
LOGANIACEAE	*Spigelia cipoensis*		*yes*	Espinhaço Meridional	CR		
ARECACEAE	*Syagrus mendanhensis*		*yes*	Espinhaço Meridional	CR		
IRIDACEAE	*Trimezia fistulosa var. longifolia*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris dardanoi*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris hystrix*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris nigricans*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris platystachya*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris sororia*		*yes*	Espinhaço Meridional	CR		
XYRIDACEAE	*Xyris tortilis*		*yes*	Espinhaço Meridional	CR		
VELLOZIACEAE	*Barbacenia riparia*		*yes*	Grão Mogol	CR		1- Support actions that foster the creation, establishment and implementation of public policies for the conservation of endangered species. 2- Develop human and institutional capital, in order to
FABACEAE	*Chamaecrista ulmea*		*yes*	Grão Mogol	CR		
LYTHRACEAE	*Cuphea rubro-virens*		*yes*	Grão Mogol	CR		
LYTHRACEAE	*Cuphea teleandra*		*yes*	Grão Mogol	CR		
CACTACEAE	*Discocactus pseudoinsignis*		*yes*	Grão Mogol	CR	EN	
APOCYNACEAE	*Ditassa auriflora*		*yes*	Grão Mogol	CR		
BROMELIACEAE	*Encholirium irwinii*		*yes*	Grão Mogol	CR		
LAMIACEAE	*Oocephalus piranii*		*yes*	Grão Mogol	CR		
BROMELIACEAE	*Orthophytum humile*		*yes*	Grão Mogol	CR		
BROMELIACEAE	*Pitcairnia bradei*		*yes*	Grão Mogol	CR		

Family	***Species***	**Popular Name**	**Endemic to Brazil**	**PAN**	**Brazilian National Red List**	**IUCN-Redlist**	**Priority Conservation Strategies**
IRIDACEAE	*Pseudotrimezia concava*		*yes*	Grão Mogol	CR		implement conservation actions for endangered species. 3-Support research to generate knowledge, innovation and technology transfer to implement actions for endangered species conservation. 4- Support direct or indirect actions for the management of populations, species, habitats and landscapes, to promote the conservation of threatened species.
POACEAE	*Altoparadisium chapadense*		*yes*	Alto Tocantins	CR		** still under major discussion and public consultation process
ASTERACEAE	*Calea abbreviata*		*yes*	Alto Tocantins	CR		
ORCHIDACEAE	*Cyrtopodium linearifolium*		*yes*	Alto Tocantins	CR		
LYTHRACEAE	*Diplusodon ericoides*		*yes*	Alto Tocantins	CR		
AMARYLLIDACEAE	*Griffinia nocturna*		*yes*	Alto Tocantins	CR		
LAMIACEAE	*Hypenia aristulata*		*yes*	Alto Tocantins	CR		
POACEAE	*Ophiochloa hydrolithica*		*yes*	Alto Tocantins	CR		
PODOCARPACEAE	*Podocarpus barretoi*		*yes*	Alto Tocantins	CR		