CRITICAL ECOSYSTEM PARTNERSHIP FUND

Ecosystem Profile

THE PHILIPPINES HOTSPOT

FINAL VERSION
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CONTENTS

INTRODUCTION

The Critical Ecosystem Partnership Fund (CEPF) is designed to better safeguard the world's threatened biodiversity hotspots in developing countries. It is a joint initiative of Conservation International (CI), the Global Environment Facility (GEF), the Government of Japan, the MacArthur Foundation and the World Bank. CEPF provides financing to projects in biodiversity hotspots, areas with more than 60 percent of the Earth's terrestrial species diversity in just 1.4 percent of its land surface. A fundamental purpose of the Fund is to ensure that civil society is engaged in efforts to conserve biodiversity in the hotspots. An additional purpose is to ensure that those efforts complement existing strategies and frameworks established by local, regional and national governments.

CEPF will promote working alliances among community groups, NGOs, government, academic institutions and the private sector, combining unique capacities and eliminating duplication of efforts for a more comprehensive approach to conservation. CEPF is unique among funding mechanisms in that it focuses on biological areas rather than political boundaries, conceiving each area as a "corridor" and thus aiming to maximize biological survival through the establishment of a portfolio of projects which all contribute to an integrated landscape-scale program of conservation. It will also focus on transboundary cooperation when areas rich in biological value straddle national borders or in areas where a regional approach will be more effective than a national approach. CEPF aims to provide civil society with an agile and flexible funding mechanism complementing funding currently available to government agencies.

In summary, CEPF offers an opportunity to promote the conservation of some of the most important ecosystems in the world — places of high biodiversity and great beauty. CEPF will promote the engagement of a wide range of public and private institutions to address conservation needs through coordinated regional efforts.

The Ecosystem Profile

The purpose of the ecosystem profile is to provide an overview of the causes of biodiversity loss in a particular region and to couple this assessment with an inventory of current conservation activities in order to identify the niche where CEPF investment can provide the greatest incremental value. The ecosystem profile is intended to recommend broad strategic funding directions that can be implemented by civil society to contribute to the conservation of biodiversity in the targeted region. Applicants propose specific projects consistent with these broad directions and criteria. The ecosystem profile does not define the specific activities that prospective implementers may propose in the region, but outlines the conservation strategy that will guide those activities. For this reason, it is not possible or appropriate for the ecosystem profile to be more specific about the site or scope of particular projects or to identify appropriate benchmarks for those activities. Applicants will be required to prepare detailed proposals that specify performance indicators.

The Corridor Approach to Conservation

The corridor approach to biodiversity conservation seeks to provide a practical and effective solution to the universal difficulty of maintaining extensive areas of pristine habitat. It is recognized that large habitat parcels are essential for maintaining biodiversity and large-scale ecological processes, and that every opportunity to protect large bodies of habitat in perpetuity

should be taken. Nevertheless, few such opportunities exist. Existing protected areas are often too small and isolated to maintain viable ecosystems and evolutionary processes; indeed, in many hotspots, even the remaining unprotected habitat fragments are acutely threatened. In such circumstances, conservation efforts must focus on linking major sites across wide geographic areas in order to sustain these large-scale processes and ensure the maintenance of a high level of biodiversity. Such networks of protected areas and landscape management systems are *biodiversity corridors*.

The main function of the corridors is to connect biodiversity areas through a patchwork of sustainable land uses, increasing mobility and genetic exchange among individuals of fauna and flora even in the absence of large extensions of continuous natural habitat. Such corridors not only promote the immediate goals of regional-scale conservation based on individual protected areas, but also help maintain the ecosystem processes needed in order to sustain biodiversity into the future. In this context, small habitat fragments within corridors perform several related functions — connecting or reconnecting larger areas, maintaining heterogeneity in the habitat matrix, and providing refuge for species that require the unique environments present in these fragments.

Large-scale intervention through biodiversity corridors, ecoregional planning, and landscape conservation is therefore one of the highest conservation priorities at the regional level in many of the world's hotspots and wilderness areas. From an institutional perspective, CEPF's adoption of the corridor approach aims to stimulate new levels of civil society participation in practical and political processes as a way to support government and corporate responses to conservation. The corridor approach relies on strategic partnerships with key stakeholders to build a support framework and to coordinate activities in the field. The active involvement of local stakeholders and the development of their planning and implementation skills are essential to the sustainability of the biodiversity corridor.

BACKGROUND

Before CEPF initiative in the Philippines Hotspot, the National Biodiversity Conservation Priority-Setting Program convened a series of regional consultation workshops to identify, assess, and prioritize geographic areas that best represent biodiversity of the different centers of endemism in the country and to formulate the strategy and actions needed to conserve Philippine biodiversity. The Protected Areas and Wildlife Bureau of the Department of Environment and Natural Resources (PAWB-DENR), together with Conservation International – Philippines and the Biodiversity Conservation Program of the University of the Philippines' Center for Integrative and Development Studies, spearheaded this process. Workshops were held in Luzon, the Visayas, and Mindanao, following 11 months of data collection, compilation, processing, and mapping. The resulting information served as basis for identification of priority conservation sites. The workshops involved site verifications and validation of the maps generated by the working groups, further data collection, identification of criteria for prioritization, and nomination of regional representatives for the national workshop. At least 40 local stakeholders participated in each workshop. The program culminated in the National Biodiversity Conservation Priority-Setting Workshop with participation by more than 200 local and international scientists and more than 70 institutions representing the government, NGO, academic, and donor communities, the private sector, and People's Organizations.

The workshops identified 19 terrestrial and nine marine regions (corridors) as top priority areas for biodiversity conservation in the country.

Initiated by CEPF, additional stakeholder consultation workshops produced the results reflected in this ecosystem profile. The first workshop (August 7, 2001) identified three priority regions for CEPF funding. The workshop also identified the threats to biodiversity in each of these areas, and the root causes of those threats. More than 85 participants representing national government agencies, provincial governments, national and local NGOs, and academic institutions attended this workshop.

The prioritization process used the following criteria:

- species richness, uniqueness, and distinctiveness
- habitat diversity
- species and habitat status
- utility and value in terms of tourism, economic activity, indigenous peoples, and research
- manageability — in terms of size, political situation, local government capacity, number of NGOs present, and level of community awareness
- conservation efforts — extent and quality of efforts already in progress

Within the priority biogeographic regions, the participants in the stakeholder workshop recommended that CEPF focus on:

- Sierra Madre Biodiversity Corridor
- Eastern Mindanao Corridor
- Palawan Corridor

These landscapes feature the largest tracts of remaining forest in the country and a diverse range of habitat types. Not surprisingly, these three regions hold the country's greatest species richness and diversity, accounting more than 70% of its plant species. Moreover, these corridors present some of the most promising opportunities for reconnecting forest and habitat fragments isolated by land use conversion, forest extraction, and other anthropogenic activities.

While the selected regions cover a major portion of the Philippines' biodiversity, the stakeholder review decisions will not protect all species with the highest probability of extinction. Therefore, it was recommended that emergency measures be put in place to ensure that some CEPF funding be available for species conservation throughout the Philippines Hotspot, with particular emphasis on West Visayas (particularly Negros, Panay and Cebu), Lake Lanao in central Mindanao, and the remaining lowland forest of Mindoro and the Sulus.

BIOLOGICAL IMPORTANCE OF THE PHILIPPINES HOTSPOT

The Philippines, a country of more than 7,000 islands with a combined landmass of 300,780 square kilometers, is the second-smallest of the 17 megadiversity countries in the world. It is also one of the most threatened hotspots, due to its population density — the highest in Southeast Asia except for Singapore. The islands, most of which are now inhabited by humans, feature diverse topographic landscapes ranging from rugged volcanic mountains, plateaus, and vast fertile plains — now cropland for rice, corn, and coconut — to long coastlines with some of the

world's most colorful coral reefs.

The varied geological histories of the different parts of the archipelago, with diverse climates and topography, contribute to the exceptionally diverse biota in the country. Each biogeographically distinct set of islands is home to a unique community of species of plants and animals, with larger islands holding more unique species than most countries, and even small islands supporting greater biodiversity than the biologically richest countries in Europe. The diversity of small biogeographic regions in such a compact area makes the Philippines ecologically unique.

The Philippines is probably the most biologically diverse country in the world, in terms of unique terrestrial and marine plant and animal species per unit area. Moreover, the country has more endemic species than some larger megadiversity centers. Plant endemism is reported to be between 45-60%. The 2000 IUCN Red List of Threatened Species includes 193 species considered Threatened (Critically Endangered, Endangered and Vulnerable) in the Philippines.Invertebrate diversity is also high in the Philippines, with butterflies alone accounting for 895 species, 39% of which are endemic — the second-highest number of endemics in the world after Indonesia.

There are five major centers of endemism in the country and at least five minor ones, each supporting its own unique set of mammals, amphibians, plants, birds, reptiles, and butterflies, and each geographically isolated from the others.

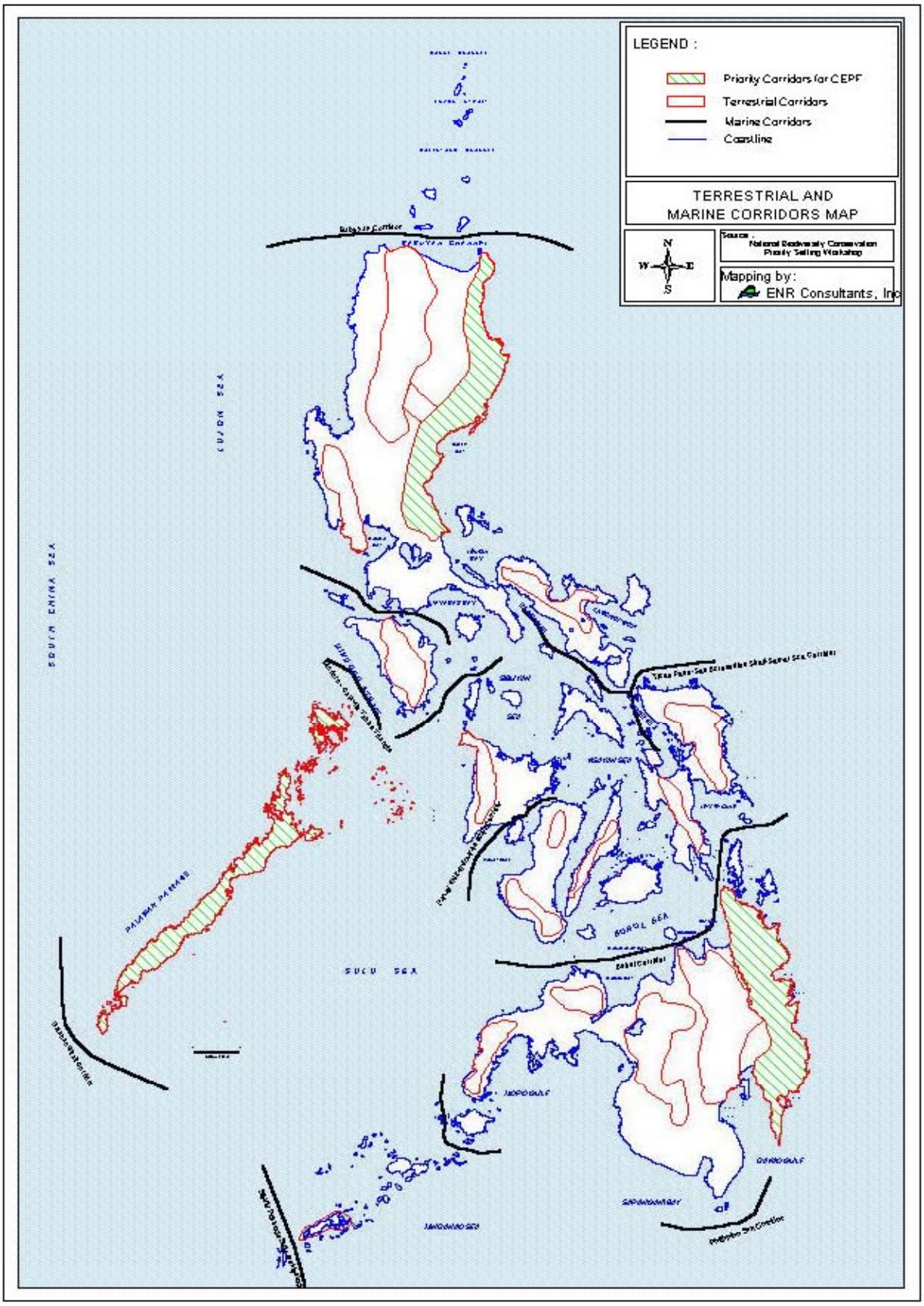
Prioritization of Corridors Within the Hotspot

Sierra Madre Corridor

The Sierra Madre Corridor is mostly terrestrial, but includes some of the Batanes-Babuyan islands straddling the South China Sea and the Northern Pacific zones. The terrestrial side is within the Greater Luzon Biogeographic Region and is largely defined by the Sierra Madre mountain range, the "backbone of Luzon" and the longest mountain range in the country. The corridor has a land area of about 1.8 million hectares in 10 provinces (Batanes, Cagayan, Isabela, Nueva Vizcaya, Quirino, Nueva Ecija, Aurora, Bulacan, Rizal, and Quezon) in Administrative Regions 2, 3 and 4.

Sierra Madre contains the greatest number of protected areas — 68 national parks, watershed forest reserves, natural monuments, marine reserves, protected landscapes and seascapes in all. Of these, the Northern Sierra Madre Natural Park is the largest and most important because it was the precursor to the biodiversity corridor concept and has served as a model for other regions in the Philippines. The corridor is not only rich in species diversity and endemism, but is home to many indigenous peoples, including the Agtas/Dumagats, Isneg, Ibanags, Ikalahans, Gaddangs, Ifugao, Ilonggots, and the Bugkalots or Negritos.

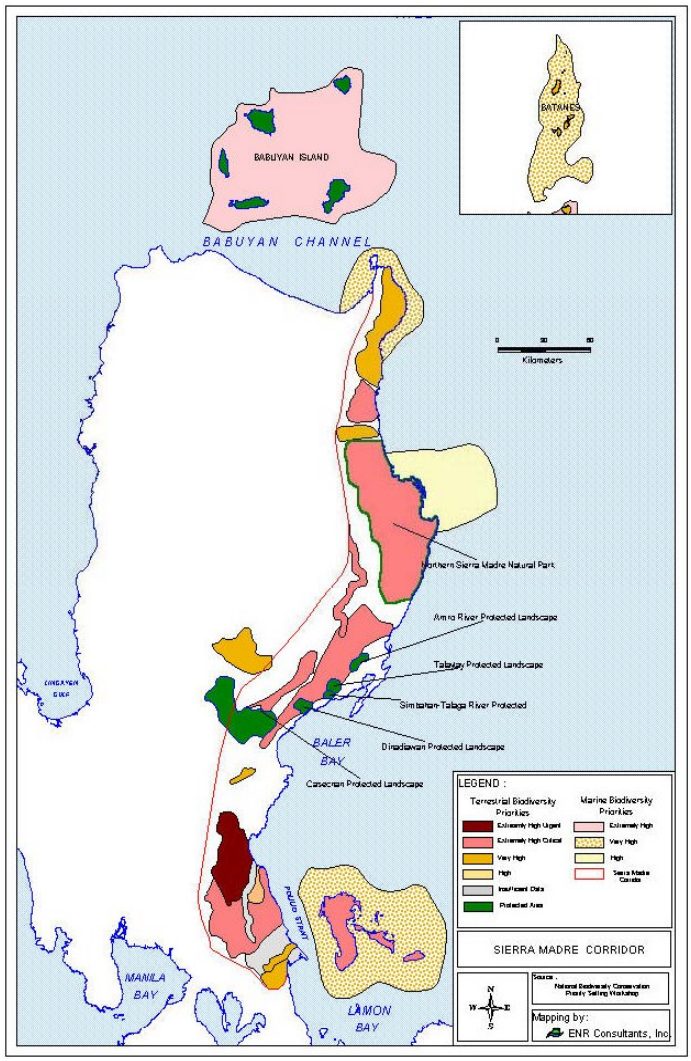
The forest cover in the Sierra Madre Corridor is the most extensive in the Philippines — about 1.4 million hectares, accounting for 25% of the country's forest resources, including more than 40% of the remaining old growth forests. Of the 13 forest types in the Philippines recognized by Whitmore (1984a), 11 were reported present in the corridor, including tropical evergreen rainforest, upper and lower montane rainforests, limestone forest, forest on ultramafic substrate, beach forest, and wetlands such as mangrove forest and freshwater swamp.



Terrestrial and Marine Biodiversity Corridors Identified by the National Biodiversity Conservation Priority-Setting Workshop

The biological importance of the corridor is not only due to the remaining intact forest in the central part of the mountain range, but also to the high plant biodiversity, with more than 3,500 species recorded in the area. This represents about 45% of species recorded in the country. The highest number of endemic plant species is found in this corridor, with 58% endemism within the corridor and 41% relative to the national figure. Generic endemism is also high, with 68% of endemic genera found in the corridor. The number of threatened plant species in the IUCN Red List is 106 for the corridor — or 42% of the total threatened species of Philippine flora.

The Sierra Madre corridor has the highest species diversity of birds in Luzon, accounting for at least 80% of all resident breeding birds of Luzon. Fourteen (20%) of the country's 65 threatened bird species have been recorded in Luzon. Diversity of other taxa is only partially documented, but species diversity generally is high, including 38 mammals, 40 reptiles and 17 amphibians. Five mammals and six reptiles are threatened with extinction. A total of 25 threatened higher vertebrates are present in the corridor, 75% of them endemic to the Philippines.



Sierra Madre Corridor

The corridor has 12 endemic amphibians (71%). Of the endemic bird species recorded in Luzon, 83% are present in the corridor — 84 species. At least 55% of the mammal species in the corridor are endemic (21 species, or 24% of all endemic mammals found in Luzon). At least 16 reptile species (40%) are endemic.

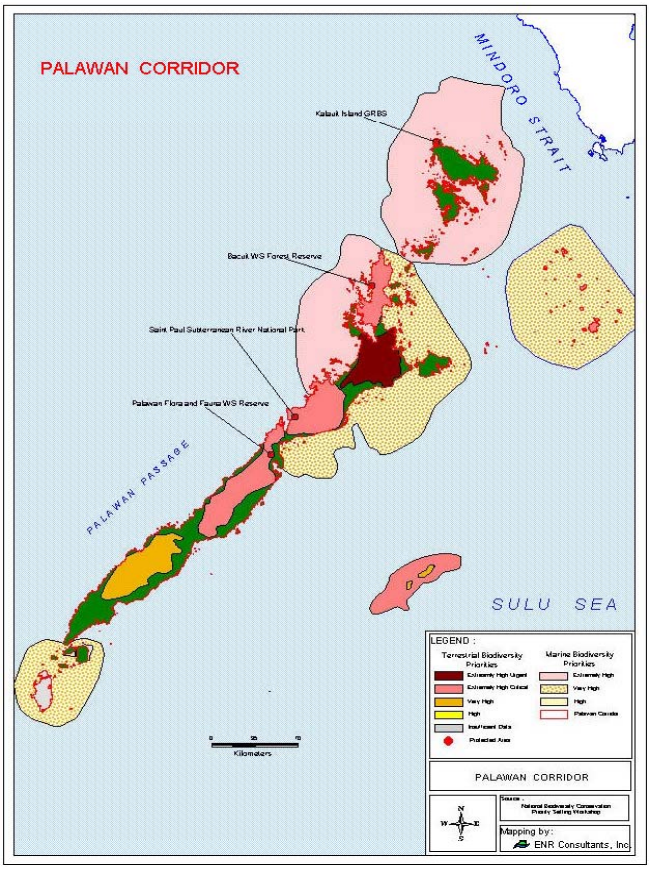
Palawan Corridor

Palawan is geologically part of the Sunda Shelf (which includes Borneo, Sumatra, the Malay Peninsula, and Java), and is a biogeographic region of its own. Palawan is the fifth-largest island in the Philippine archipelago with an area of more than 11,000 square kilometers. It has a long mountainous backbone with three peaks above 1,500 meters.

Several land formations in Palawan are of botanical importance: the Balabac islands; the ultrabasic formations in the mountain peaks of Mt. Mantalinghangan, Victoria/Anapahan, and

Mt. Bloomfield; primary forest of Mt. Puyos (Cleopatra's Needle); karst formation of the rugged limestone terrain in the northern and northwest portion of the mainland (including El Nido); and the Calamianes group.

The biological importance of Palawan is recognized both nationally and internationally. In 1990, UNESCO declared the entire area as a Biosphere Reserve. The region includes several existing Proclaimed Conservation Areas — namely, Coron Islands (7,580 hectares), El Nido Marine Reserve (89,140 hectares), Malampaya Sound (90,000 hectares), and St. Paul's Subterranean River National Park. The entire province has also been declared a mangrove reserve.



Palawan Corridor

Palawan encompasses various types of forest formations ranging from mangrove and beach forests to forests on ultramafic and limestone rocks, tropical lowland evergreen, moist deciduous, and upper montane rain forests. The northern part of the island is home to the endemic plant genus *Adonidia* (Palmae). It has been estimated that the island contains about 1,522 species of flowering plants with 15-20% endemism.

Palawan supports 11 amphibians (46%) endemic to the Philippines — eight of which are found only in Palawan. The island is also home to 25 Philippine endemic birds (15%), including 16 (62%) that occur only in Palawan, 18 endemic mammals (33%), including 15 (83%) that are endemic to Palawan, and 24 endemic reptiles (36%).

In terms of conservation status, 23 faunal species are threatened: nine birds, six mammals, five reptiles, and one amphibian. At least 14 of the threatened species (61%) are endemic.

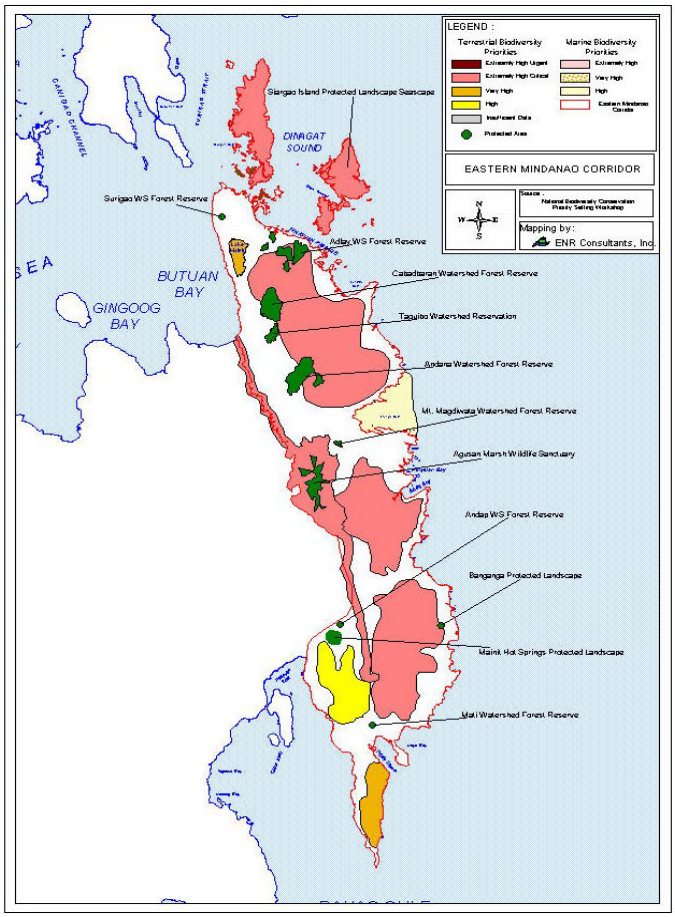
Eastern Mindanao Corridor

Eastern Mindanao forms part of the Greater Mindanao Biogeographic Region. Its northern boundary is Siargao Island, and it extends south to where Mt. Hamiguitan rises. To the west, portions of the Agusan Marsh delineate the area.

Agusan Marsh has been declared a Wildlife Sanctuary and one of the 10 priority protected areas in the Integrated Protected Areas System; meanwhile, Siargao Island, Bucas Grande,

and other smaller adjacent islands and islets were declared as a unit having a Protected Landscape and Seascape status. Thirty-four sites have been prioritized by the National Conservation Priority-setting Workshop process for conservation within this region. Of these, 15 are classified as *extremely high priority – critical,* 5 *extremely high priority – urgent,* and 11 *extremely high priority*.

One of the largest remaining blocks of dipterocarp forest in the country is found along the eastern portion of Mindanao. In fact, 75% of the country's extracted timber comes from this area. Plant diversity in the corridor comprises more than 2,300 plant species, accounting for some 31% of the Philippines' total. Of these, 60% are endemic to the corridor and account for 29% of Philippines' endemics. Eight endemic genera, 26% of the country's total, are found in this region. Thirty-one floral species in the corridor are threatened.



Eastern Mindanao Corridor

Bird diversity comprises about 178 species (67%) of resident breeding birds and mammal species (37) represent 42% of the native mammals in the Mindanao Biogeographic Region. Diversity of other taxonomic groups is only partially documented, but species diversity is high, including 26 amphibians and 62 reptiles.

Eastern Mindanao has 16 amphibian species endemic to the Philippines (42%), several of which are confined to Mindanao. The corridor is home to 85 bird species, 81% of all Philippine endemics recorded in the Mindanao Biogeographic Region. It has 25 endemic mammal species (57%), including two species found only on Dinagat Island. Finally, Eastern Mindanao has 36 endemic reptiles (53%), several of which are confined to Mindanao.

In terms of conservation status, at least 22 species are threatened, including the Philippine Eagle, Philippine Cockatoo, the Golden-crowned flying fox, and the Philippine crocodile. Siargao Island is home to the second-largest mangrove forest in Mindanao (86 square kilometers) and the largest contiguous stand of mangroves in the country (40 square kilometers).

SYNOPSIS OF THREATS

The primary threat to biological diversity is habitat alteration and loss, especially rapid since 1980, caused by destructive resource use, development-related activities, and human population pressure.These factors are exacerbated by resource extraction (mining and logging) and land conversion for infrastructure, industrial, agricultural, and urban development.

Root causes of these threats include:

- lack of understanding and appreciation for the value of biodiversity;
- weak resource management and governance mechanisms;
- insignificant financial commitment to formal mechanisms;
- lack of political will for conservation of biodiversity;
- insufficient enforcement of environmental laws;
- inappropriate and conflicting conservation policies;
- significant lack of ecological expertise in decision-making institutions and processes.
- lack of conservation knowledge and expertise among key stakeholders; and
- lack of sustainable livelihood for local stakeholders.

Deeper analyses have shown that these causes are rooted in conflicting government policies and weak institutional mechanisms, reflecting a very low budgetary priority for nature and naturalresource conservation. Moreover, inequitable access to resources, poor governance, lack of public awareness and participation, lack of economic incentives, and poor use and allocation of resources all cause or exacerbate threats to biodiversity.

Extractive Industries

Destructive resource use emanates from extractive industries such as mining, logging and fishing, on commercial and small scales, and from the road building necessary to accommodate them. Philippine forests are subject to unsustainable mining and logging activities. Mining and logging are factors especially in Sierra Madre and Eastern Mindanao. Although these activities are regulated by the government, implementation of regulatory safeguards is hampered by corrupt practices that tend to disregard sustainability. Areas abandoned by commercial logging and mining concessions attract many small (and illegal) loggers and miners whose activities are generally more destructive. Where there are commercial logging and mining activities, there is migration of people seeking related employment — opening up areas for settlements and bringing workers and families to previously uninhabited areas. Hunting, poaching, and flora collection follow human migration into upland areas, aggravating the threat to wildlife. Moreover, logged-over areas are often converted to *kaingin* (slash-and-burn) farms, clearing them of remaining vegetation. In addition, industrial and domestic pollution inland degrade river systems and coastal waters affecting riparian life and habitats. This is the case particularly in northeastern Mindanao.

Increased Population Density and Urban Sprawl

Population pressure as a threat to biodiversity stems mainly from the encroachment into and exploitation of biologically important areas by impoverished people whose primary concern is simply survival. Such people often migrate in substantial numbers between areas and islands, having lost their lands through such factors as soil erosion and exhaustion, landslips and volcanic

eruptions. The destructive slash-and-burn migrant farming of uplands and logged-over areas, illegal logging, and hunting and collection of wildlife and flora are widespread. Further, the mainstreaming of indigenous communities has resulted in the gradual loss of indigenous knowledge and practices, which are conservation-friendly. The lack of economic options forces many people to resort to destructive activities even as they are aware that these are not sustainable. Since these activities are largely fragmented and located in remote places, they are difficult to control without community assistance and support in the area.

Expansion of towns and provinces within the corridors, because of increasing population density, is a further threat to biodiversity. The need for more land to be developed for settlements, economic activities, and transportation infrastructure creates tremendous pressure to convert forestlands to such uses. Industrial sites, housing subdivisions, power plants, and infrastructure projects sometimes encroach on buffer zones of protected areas, critical watersheds, and remaining primary and secondary forests. Tourism in coastal areas leads to the destruction of mangrove forests and reef areas along with their associated wildlife. These are evident in many sites within the corridors. Without proper land use control and environmental mitigation, these activities will result in further habitat destruction and biodiversity loss.

Conflicting Policies

Unclear land use policies at the national level create confusion and conflicts. Overlapping mandates and jurisdictions occur with respect to the use and management of forest lands where logging, mining, plantation, special uses and settlement encroachment are concerned. Similar problems occur at the local level in response to indiscriminate land use conversion and development projects. Weak consideration, if any, is given to environment and biodiversity conservation by local governments in land use decisions. A Comprehensive Land Use Plan (CLUP) for each municipality and province is required by law and is a prerequisite to the formulation of local or provincial development plans. The CLUP exercise in many Local Government Units (LGUs), however, tends to be weak and focused on the urban zones. The lack of process and understanding of the natural and socioeconomic resources of these areas, along with the overlapping institutional jurisdictions, precludes the rational determination of land uses necessary for the establishment of appropriate regulations. In cases where proper land use and zoning controls are in place, the problem lies with the political will to enforce those controls, particularly where there are unresolved conflicting uses and contending institutions or influential parties involved.

These threats and their underlying causes are clearly demonstrated in each of the three corridors, which consequently were validated and confirmed by the stakeholder participants during the two consultation workshops. However, it should be noted that the degree of each threats influence differs among the corridors.

Threats in Sierra Madre Corridor

The Sierra Madre Corridor is mineral-rich and contains the most extensive forest cover in the country. The major threats to biodiversity in the terrestrial corridor are directly related to the extraction of these resources by logging and mining. The presence of these industries exposed biologically sensitive areas to population pressure, with ensuing small-scale logging, hunting, and agricultural activities that exacerbate the degraded state of much of the forest ecosystem. At the same time, logging and mining concessions (including small-scale illegal activities) have

influenced the development of support industries in the lowlands to process timber and mineral products. These ancillary industries, in turn, reinforce the primary industries and serve to influence political support and tolerance for their abuses.

Logging and Related Activities

Records of the Department of Environment and Natural Resources (DENR) showed 52 logging concessions granted Timber License Agreements (TLAs) to operate in the Corridor, specifically in Region 2, from 1965 to 1985. Of these, 12 were cancelled, 34 expired or were terminated, and six are still in effect — three of which operate with an approved Integrated Annual Operation Plan. The three remaining concessions allow extraction of 46,622 cubic meters of timber from 857 hectares every year. Their operations have cut down remaining old growth forests at an average rate of 21,536 hectares per year. In cancelled or terminated TLA areas, on the other hand, indiscriminate timber poaching occurs due to open access.

In the corridor, the cancellation or termination of logging operations has resulted in conversion from forest to agriculture or settlement areas and an increase in timber poaching as an alternative source of income for timber workers who are left behind, or for lowland migrants, due to the open access established during commercial logging. A recent study reported a reduction in commercial logging to less than 6,000 hectares in the corridor. Forest destruction, however, always exceeded 100,000 hectares per year, with forest destruction occurring much faster in areas with cancelled TLAs than in areas where concessions still operate.

Timber poaching or illegal logging has also resulted in the annual reduction of mossy forest areas by 1,010 hectares, and the reduction of pine groves by 253 hectares. It has further led to the expansion of other brushlands at a rate of 12,654 hectares per year in Cagayan Province. Such activities, which primarily involve carabao logging, have also caused soil erosion resulting in severe or heavy siltation of the Cagayan valley river basin. In Isabela, there is timber poaching in the western side of the Northern Sierra Madre Natural Park (NSMNP) and its buffer zones. There has also been a substantial increase in the illegal felling and collection of narra, a hardwood species often used in furniture, due to the flourishing furniture trade in Isabela. A similar situation occurs in the province of Bulacan, where there is rampant illegal gathering of forest products for furniture.

In Aurora province, illegal logging activities are rampant in Casiguran and San Luis, as well as hunting and gathering of fuelwood and minor forest products. This has resulted in landslides and soil erosion in the Pingit Watershed in Baler and sedimentation of the Diteki River. Although an 28,000 hectare area of primary forest in Quezon Province could comfortably support eight pairs of Philippine eagles, the area has been declared “alienable and disposable,” allowing its owners to obtain a private timber permit. The area is slated for conversion to multi-use development featuring a combination of leisure and recreation areas, housing, and institutional areas.

Mining and Quarrying

There have been 390 operating nonmetallic mines and quarries in the Sierra Madre corridor since 1999, including basalt, bentonite, diatomaceous earth, feldspar, guano, limestone, marble, red clay, sand and gravel, silica, and white clay. Only one operational and medium-scale gold mine existed in the corridor, operating from 1978-1984 under a mineral lease covering about 800 hectares.

As of May 2001, numerous applications for exploration and mining (gold, copper, silver, manganese, other base metals, and limestone, covering an area of 811,541 hectares) have been filed in the three regions, with some of the applications covering overlapping areas. From these applications, 17 Exploration Permit Applications, four applications for Mineral Production Sharing Agreements, and six Financial or Technical Assistance Agreements refer to the slopes of the Sierra Madre Mountains, and two cover areas *within* the NSMNP. Combined, these applications cover 496,314 hectares. It should be noted that the largest primary montane forest in the NSMNP extends from Mt. Dos Cuernos in San Pablo south through the mountains of Cabagan and Maconacon to Divilacan and Tumauini around Mt. Cresta. This portion of the Natural Park will be seriously threatened once these mining applications are approved and construction and operations begin.

Roads and Industrial Development

Road building is arguably the most serious threat to conservation of biodiversity in the Sierra Madre corridor.

The 1994-2004 Cagayan Valley Strategic Development Plan identified road development as one of the main priorities in achieving a robust and sustainable economy for Region 2, whose Gross Regional Domestic Product (GRDP) has the second-lowest among the 14 regions of the country since 1998. The relatively slow development of the region is attributed to several constraints, including the underdeveloped transportation infrastructure. The present road network is unreliable and, in some places, nonexistent, making production areas inaccessible and marketing difficult. East-west road development in Northern Luzon is considered a development priority, and most of the proposed roads will go through the Sierra Madre Mountains. There are already five lateral roads and four coastal roads planned that will traverse the mountain range.

Along the coast of the Sierra Madre Corridor, a proposed road from Dingading, San Guillermo to Dinapigue will traverse a protected area. Another proposed national road would cut through 72 kilometers of old growth forest in Gattaran, Baggao and Cagayan, a habitat of many endemic species. In addition, a proposed national road construction of about 67 kilometers will be cross the old growth forest to Barangay Bolos Point in the coastal area of Gattaran. Finally, a proposed provincial road will connect the valley side to the coastal barangays of the NSMNP. The Regional Development Council (RDC) of Region 2 has already approved this road.

In the province of Quirino, the 50-kilometer Maddela-Casiguran Road that will connect Aurora to Quirino, the Maddela-Nagtipunan-A Castaneda-North Ecija Road, and the Maddela-San Agustin-Jones Road will also traverse the Sierra Madre Mountains.

In addition to these proposed roads, there are two major industrial developments planned in the corridor: the Cagayan Special Economic Zone, which covers portions of the forest areas in Gonzaga and Santa Ana, Cagayan, and the proposed Pacific Coast City in General Nakar and Umiray, Quezon, which will affect 28,000 hectares of primary forest within the corridor.

Another major development project that will take place in the corridor is the controversial Trans-Casecnan Hydropower Plant in the province of Quirino. This project will displace a number of indigenous communities from their ancestral lands and encroach on the Casecnan Protected

Landscape, the second-largest protected area in the Sierra Madre corridor (which has a priority rating of *extremely high – critical* from the results of the priority-setting activity).

It is expected that the construction of these roads and the resulting access to the Sierra Madre mountain range, and related development, will place the entire forest and adjacent marine ecosystem of the corridor in great peril. The physical and biological functions of these ecosystems will be under great pressure from inadequately managed development.

Population Pressure

The prevalence of illegal logging and gathering activities and *kaingin* farming in all the provinces of the corridor is an indication that there is human encroachment in the upland areas where the remaining forest cover is found.

Threats in Palawan Corridor

The major threats to biodiversity in Palawan are small-scale illegal logging; unregulated collection of timber and non-timber forest products; commercial and small-scale mining; conversion of mangroves into fishponds and rice fields; and illegal fishing and overfishing.

The uncontrolled population migration in the corridor puts pressure on the limited land resources and has led to encroachment into sensitive areas where resources are exploited in unsustainable and destructive ways.

Illegal Logging

Palawan is the only island province in the country with more than 50% of its forest cover intact — because, in 1993, commercial logging was banned in the province. This was the first legislative logging ban of its kind. However, small-scale illegal logging continues in parts of the province, especially in the northern and southern parts of Palawan. In fact, from 1993-2001, there were 364 arrests for illegal logging in the province, representing an estimated $1.1 million or more in poached timber for hardwood lumber and narra tiles.

Illegal logging invariably attracts swidden farming or shifting cultivation in the upland areas. This is rampant throughout the province, resulting in deforestation, erosion, floods, and the extensive use of agrochemicals, particularly in the town of Taytay. Migration into Palawan has increased the number of forest occupants practicing shifting cultivation using lowland methods.

Mining

Most mining activities are small-scale, with only one large nickel mine operating in Rio Tuba in the southern part of the mainland. Chromite, copper, nickel, silica, marble, mercury, manganese, limestone, barite, feldspar, sand, gravel, washed pebbles, and guano are mined in small-scale operations. As of May 31, 2001, there are two applications for MPSAs, with a total area of 3,825 hectares. In the town of Camago, about 25 miles northwest of Malampaya, there is uncontrolled commercial mining activity going on.

Development Programs

ADB, JBIC, and the World Bank have ongoing projects intended to develop or improve roads, feeder ports, irrigation and airports in different parts of Palawan that may have direct or indirect adverse effects on the environment as well. There are also four pearl farming operations in the

province and other facilities processing marine products. Such activities can have a serious effect on the marine environment.

Planned operations of Malampaya Gas are expected to bring significant revenue to the province from its share in the national wealth and local taxes. There are already some broad discussions of opportunities to use the revenue increase to further the development of Palawan. If such planning is not properly guided by environmental and conservation considerations, it might lead to land uses beyond the limited carrying capacity of Palawan's fragile environment.

Population Pressure

Palawan's population is growing at a rapid rate of 3.04% annually, mostly due to inbound migration. The high migration rate puts tremendous pressure on the upland forest areas and coastal areas where most of the migrants settle. Much of the destructive *kaingin* (slash and burn) cultivation and illegal fishing is associated with the relatively new migrant population coming to the province in search of livelihood.

Threats in Eastern Mindanao Corridor

Eastern Mindanao covers two major identified Area Development Zones: the Davao Gulf ADZ and the Caraga ADZ. The Davao Gulf ADZ, which includes Davao Oriental, is the most advanced area in Mindanao in terms of infrastructure, market links, and financial services; consequently, it is expected to remain the top exporter of key food crops and industrial products (wood, fabricated metal, rubber, and cement and other nonmetallic minerals) as well as a center of shipbuilding.

The Caraga ADZ — covering Surigao del Norte, Surigao del Sur, Agusan del Norte, and Agusan del Sur — is slated for industrial and agricultural development, the growth of which is linked to the regional status of the Cagayan-Iligan and Davao Gulf regions as trade and industrial centers of Mindanao.

These development plans provide the context for assessing human pressures on biodiversity and conservation initiatives in the corridor.

Mining and Quarrying

The most significant threat in Eastern Mindanao is the proliferation of mining operations. Gold, silver, nickel, copper, chromite, limestone, silica, and other precious metals, base metals, and nonmetallic minerals are mined throughout the corridor. At present, there are 10 large mines and quarries operating in Surigao and Agusan del Norte, Agusan del Sur and Compostela. In addition, there are 74 nonmetallic mines and quarries operating in the corridor, plus 16 applications for financial and technical assistance and 48 exploration permit applications. Apart from these, 27 MPSAs (covering 72,464 hectares) and 20 exploration permits (covering 90,259 hectares) had been issued by the MGB in the corridor as of June 2001. Some of these cover declared protected areas and watershed forest reserves within the corridor, where most ongoing conservation efforts will be concentrated.

In Surigao del Norte, industrial waste and mine tailings are being dumped indiscriminately from open pits and tailing ponds of gold mining operations in Hinituan Passage. An open-pit chromite mine in Claver also caused heavy siltation of rivers. Because of indiscriminate dumping of mine

wastes, 1,639 damage claims were filed and processed by the DENR from 1990-1994. The DENR has issued only a few minor citations against these operations; however, local grassroots action was able to suspend some mining in 2000.

In Agusan del Norte, gold mining on commercial and small scales is prevalent in Cabadbaran, Santiago, Tubay, and Jabonga. Mine tailings are dumped in rivers such as the Kalinawan, draining into the Mindanao Sea and causing siltation of the coastal areas. Mining operations in San Roque Kitcharao are also polluting the headwaters of the Lambug River. Ongoing mineral extraction activities are mostly small-scale operations, including 15 mining permits as well as illegal miners in the gold rush area in East Morgado, Santiago.

Logging and Timber Plantations

One of the largest remaining blocks of dipterocarp forest in the country is found along this corridor. However, much of the remaining lowland dipterocarp forest is within logging concessions. In fact, 75% of the country's timber comes from this area. Large-scale logging and wood processing industries thus constitute a serious threat to biodiversity in the corridor. The two biggest logging concessions in the country are in Surigao province, within the EMC. One of these has a concession area of 360,670 hectares with a registered annual production capacity of 3 million cubic meters. There are only two other TLAs outside of the Surigao provinces: one in Agusan del Sur (72,680 hectares) and one in Agusan del Norte (98,312 hectares).

The logging practices of these companies and TLA holders are often indiscriminate. One company is reportedly operating outside of its approved operation plan, which led to its suspension last year and exacerbated damage to the forest.

Commercial logging is accompanied by the development of industrial tree and forest plantations, such as oil palm and bamboo plantations. As of 1998, there were 38 such plantations in the corridor, occupying more than 300,000 hectares. These plantations grow only one species of plant each — e.g., falcata in Agusan del Norte and bamboo or palm trees in Agusan del Sur. To make matters worse, the DENR proposes to establish a timber corridor in this section of Mindanao that will cover at least 100,000 hectares. These operations threaten biodiversity, as they replace and alter natural ecological processes and create monocultures susceptible to pests and disease. Endemic plant species in the corridor are especially at risk.

Illegal logging and *kaingin* activities in the uplands have also led to loss of forest cover and consequent soil erosion and sedimentation of rivers. Local authorities made arrests in 1999-2000 for illegal extraction of hardwood lumber, round logs, and narra tiles in the corridor.

Industrial Development and Land Conversion

Development plans in the Caraga ADZ include economic centers that will catalyze domestic and foreign investment in the region. The 10 economic centers planned in Caraga would be the highest concentration of such facilities in the country. Two agro-industrial estates are already slated for development in the corridor: the Nasipit Industrial Estate and the Tubay Agro-Industrial Estate in Agusan del Norte.

There are four large industrial establishments and two medium-scale manufacturing establishments being considered as a foundation for development of heavy industry and

manufacturing in the region. However, agriculture and forestry remain the biggest factors in the region's economy and job growth. The region has oil palm plantations and processing facilities, accounting for most of the country's production, with the largest plantations in Agusan del Sur (up to 8,000 hectares). Agriculture, especially in the Agusan River Basin, and marine fishing grounds in the west-central Pacific will be developed with the municipalities along the north coast of Mindanao. Moreover, the Nasipit and Surigao ports are expected to absorb the expansion of agricultural processing and light manufacturing from Cebu, Cagayan-Iligan, and Davao.

Several industrial establishments in the region are engaged in marine and agricultural processing; most, however, deal with manufacturing of fabricated metal, nonmetallic mineral products, rubber products, industrial chemicals, transportation equipment, and paper products. Most (95%) of these operations are small-scale; heavy industries are limited to plywood and cement manufacturing and shipbuilding.

In Siargao, there is extensive mangrove conversion by foreigners buying land to convert into beach resorts, and for firewood — one of the main sources of livelihood on the island. Fuelwood is taken as far as Manila to supply bakeries. Artificial fishponds are installed near mangrove areas; reportedly, 576 hectares have been converted in Siargao and Bucas Grande (Management Plan of the Siargao Wildlife Sanctuary). Indiscriminate cutting of mangroves for firewood and clearing for fish ponds and prawn farms is also prevalent in Cabadbaran, Tubay, and Magallanes in Agusan del Norte. Land conversion from forest to farmland and residential and industrial settlements, or from agricultural to residential use, is also widespread throughout the corridor.

Population Pressure

Groups of people from Luzon (Ilocanos) and Cebu (Cebuanos) are migrating into Surigao del Sur, giving the area the fastest growth rate in the region. The indigenous population, including the Manobos, Higaonons, Mamanwas, Mandayas and Talaandigs of the corridor forests, are being integrated into the mainstream of lowland culture, losing much of their indigenous knowledge and ecologically sound practices. Some of these indigenous peoples are adopting destructive lowland farming techniques in the uplands. Additionally, they are involved in illegal logging.

SYNOPSIS OF CURRENT INVESTMENTS

There are efforts in progress in the Philippines to address the above threat directly or indirectly. This section outlines the major investments and participants in biodiversity conservation and describes their strategic priorities and accomplishments.

Multilateral Donors

The Global Environment Facility (World Bank as implementing agency): The World Bank is among the major active donors directly promoting protected area and natural resource management programs in the country for the purpose of biodiversity conservation and sustainable development.

Through a $20 million grant fund from the GEF, the World Bank has supported the CPPAP from 1994-2002, the first project in the country that embodied the Integrated Protected Areas System (IPAS) concept. The legal framework used for this effort was the National Integrated Protected

Area System (NIPAS) Act of 1992, the first law on IPAS. This enabling legislation was designed to remedy the deficiencies of previous proclamations relating to national parks by ensuring that the existing protected areas be evaluated and reclassified, employing new classifications embodying management objectives and in accordance with internationally understood and recognized criteria, inclusion of indigenous and other local communities in management and recognition of the tenure of indigenous groups and long-established settlers. Because of this law, subsequent projects related to protected area management were implemented such as the EU-funded NIPAP project as well as the ADB buffer zone project in the country.

CPPAP led implementation of the NIPAS focusing on the first 10 priority IPAS areas, two of which (Batanes Landscape and Seascape and NSMNP) are found in the Sierra Madre Corridor and another two (Agusan Marsh Wildlife Sanctuary and Siargao Islands Protected Seascape and Landscape) in the Eastern Mindanao. Investment to the NIPAP project supports:

- legitimization of the priority sites as protected areas through a process that eventually leads to a legislative proclamation;
- organizational development for the establishment of the Protected Area Management Board (PAMB), a multi-stakeholder body mandated to manage the IPAS areas;
- site and resource management activities including the development of management plans for IPAS areas and improved enforcement of environmental protection laws;
- recognition of tenure rights of indigenous communities and settled migrants; and
- socioeconomic development.

A consortium of national NGOs, the NGOs for Integrated Protected Area (NIPA), is implementing the project with support from the DENR. This is the first and only major NGO-managed project outside of the medium-sized and small grants programs of the GEF. Success has been achieved in legitimizing the protected area status of some sites, organizing effective PAMBs and undertaking management and enforcement activities against illegal mining and logging operations, particularly in the NSMNP and around Lakes Kamansihan and Mantuod in the EMC. Implementation, however, is rather slow and marred by squabbles and bureaucracy within the NIPA at the national level and the PAMB at the site level. Technical and procedural problems have hampered the utilization of the livelihood fund and have prevented significant progress in implementing the socioeconomic development component of the program that is critical for sustainability.

Other donor support has been generated to complement the CPPAP. This includes Asian Development Bank technical assistance to establish buffer zones, and "Technical Assistance for Improving Biodiversity Conservation in Protected Areas," funded by DANIDA and the World Bank, which has developed an innovative Biodiversity Monitoring System now being implemented in many protected areas.

Other World Bank resource management projects addressing conservation include:

- The sectoral adjustment loan for the environment implemented by the DENR in Northern Luzon and Mindanao, covering the northern Sierra Madre Corridor (including all of Region 2) and the Eastern Mindanao (Agusan and Surigao del Norte). The program piloted forest watershed management initiatives involving strong community and LGU support, and

developed the capabilities of DENR and civil society to monitor logging operations and enforce forestry regulations. In Northern Luzon strong and committed partnerships among various local stakeholders contributed to sustained natural resource management and the establishment of Multisectoral Forest Protection Committees resulted in the apprehension of illegal loggers and the empowerment of communities to manage their own watershed resources by providing alternative sources of livelihood. The problem, however, is sustaining these efforts after the project — especially the MFPCs, which need funds for ongoing operational expenses.

- The Water Resources Development Program administered by the World Bank, addressing the critical watersheds throughout the country through appropriate river basin planning and water management.
- The Community-Based Resource Management (CBRM) Program administered by the Department of Finance. This project has a $67.5 million budget over six years (1998-2003) to combat rural poverty and environmental degradation nationwide. It provides grants and loans to local governments on a demand-driven basis to develop and implement sub-projects in resource management. The bureaucratic procedures of the Department of Finance limit the capacity of LGUs to avail themselves of these funding opportunities.

Global Environment Facility (United Nations Development Program as implementing agency) Full- and Medium-Sized Projects and GEF Small Grants Program: The UNDP supports projects with active involvement of communities in the protection and sustainable management of natural resources and biodiversity conservation through its own funds or GEF conservation projects through the Small Grants Program (SGP).

The UNDP-GEF Small Grants Program currently supports four projects in the Sierra Madre Corridor (Quezon, Cagayan and Nueva Vizcaya) and four in Eastern Mindanao (Davao Oriental, Agusan del Norte, Dinagat and Siargao Islands in Surigao del Norte). In the Palawan the Community Management of Protected Areas Conservation, or COMPACT, is a joint project of the SGP and the United Nations Foundation situated in the Puerto Princesa St. Paul's Subterranean River National Park. The project aims to demonstrate how community-based initiatives can significantly increase effectiveness of biodiversity conservation in globally significant protected areas. Specifically, it provides grants to NGOs and People's Organizations for community-based activities that include sustainable livelihood initiatives and other community-level intervention that will reduce pressure on natural resources.

In general, the SGP projects are implemented through:

- strong partnership with local communities with the aim of establishing a "social fence" against threats;
- strengthening of participatory planning, process-response monitoring, surveillance and enforcement, conservation management capacities of communities and advocacy;
- assistance to the local people to develop conservation-compatible livelihoods;
- information, education and communication campaigns; and
- research and monitoring for effective community-based resource management planning.

These projects receive grants of up to $50,000 to support community-based organizations and NGOs for activities that address problems related to SGP areas of concern. The lessons learned

from some completed projects suggest that partnerships between the local community, LGUs, the DENR, and other donor agencies are replicable.

Asian Development Bank: Through a technical assistance grant, ADB supported the study on "Buffer Zone Establishment in Protected Areas." This was intended to support the implementation of CPPAP by providing the criteria and process for defining buffer zones in protected areas considering the presence of indigenous communities and migrant settlers. Very recently, ADB also provided a small technical assistance grant on the "Implementation of the Convention on Biodiversity in the Philippines" by strengthening the National Biodiversity Strategy and Action Plan to guide government and other agencies, including donors and NGOs, in integrating biodiversity conservation in their work.

Other relevant ADB projects that support conservation include:

- formulation of the Philippine Forestry Master Plan in the 1990s which documented the state of Philippine forests and outlined strategies for sustainable forest management;
- Forestry Sector Program 1, which provided loans for implementation of community-based reforestation plans involving partnership between NGOs and Peoples' Organizations; and
- project preparation for a forest CBRM program focused in Mindanao.

The ADB provided loans for implementation of a nationwide Fishery Sector Program that was followed by another package, the Fishery Resource Management Program, with co-financing from JBIC. Both programs support sustainable coastal resource management, focusing on municipal coastal waters and using community-based approaches. Preparation is under way to package another investment in integrated coastal resource management. This proposed investment will incorporate all aspects of coastal resource management, including watershed protection, conservation, and pollution control.

Bilateral Donors

U.S. Agency for International Development: A major USAID investment which has strong linkages to biodiversity conservation is the Natural Resources Management Program, which has evolved over the years from the narrower Forest Resource Management Program, formerly called NRMP Phases 1 and 2) to include the Coastal Resource Management Program. Another strategic component of the program, slated for implementation in 2001, is the Ecological Governance Program — an integration and spinoff of FRMP, CRMP, and the USAID Program on Governance for Local Democracy (EcoGov) targeted at LGUs.

USAID invested some $39 million in grant funds for NRMP Phases 1 & 2 (now called FRMP) from 1990-1998 to provide policy and capacity building support to the DENR and partner institutions for sustainable forest management, with special focus on CBFM, biodiversity, and the forest products industry. Program initiatives included:

- drafting and advocacy of the Sustainable Forestry Management Act;
- formulation of policies to implement CBFM including integration of tenure instruments, individual property rights, and management planning;
- forest land use planning as a component of CLUP for local governments;

- local management of a protected area in Sierra Madre (Nueva Viscaya) under a memorandum of agreement between the DENR, the LGU and the local People's Organization;
- development of criteria and indicators for sustainable forest management leading to forest product certification; and
- federation of CBFM People's Organizations for upland technology sharing and forest protection advocacy.

USAID invested $1.4 million into the Sierra Madre Biodiversity Corridor Program aiming to conserve the region's endemic and relatively intact forest biodiversity. CI and partners will strengthen the management of the Northern Sierra Madre Natural Park, a key protected area that will form part of the core nuclei of the Sierra Madre Biodiversity Corridor. CI and partners will strengthen the baseline biological and socioeconomic data for the Park, capacitate local park management units, develop a park management plan and conduct a thorough legal analysis to challenge the validity of mineral and timber claims within and surrounding the Park. CI will also work with local institutions to develop and implement an awareness campaign for communities in the corridor.

The Sierra Madre Program will also aim to mobilize support for development of a new national park in Northern Aurora. CI and partners will conduct an assessment of the legal, political, institutional and other constraints to park declaration, consult stakeholders to generate interest, assess issues, and implement a communications strategy.

The initiatives under this Program can be sustained and replicated in CEPF.

In the coastal ecosystem, the CBRM Program — with $21 million in grant funding over a seven-year period (1996-2002) — focuses also on community-based resource management of coastal areas covering 3,000 kilometers of coastline in 29 municipalities. Its priorities include policy refinement, enterprise development, and training at the local level. This program is based in the northern part of Palawan; in the provinces of Cagayan, Isabela, Nueva Vizcaya, and Quirino in the Sierra Madre Corridor; and in Davao Oriental in Eastern Mindanao. The program shifts investment focus from the forest to the coastal zones, spinning off major coastal resource management projects — e.g. the ADB Fishery Sector Program and Fishery Resource Management Program.

EcoGov is a new program initiative under the NRMP and will be launched very soon. The program will address critical threats to the country's forests by reducing illegal logging and conversion of natural forests, over fishing, destructive fishing practices, and solid waste. It will promote good governance — including transparency and accountability — in awarding licenses, leases, and contracts, and in collecting fees.

Delegation of the European Commission – European Union: The EU has provided a funding support of $12.7 million for a parallel program to the World Bank-funded CPPAP through the National Integrated Protected Areas Programme (NIPAP). This program covers seven IPAS areas over a six-year investment period (1995-2001). NIPAP provides support for a clear resource management planning through actual delineation of protected areas and buffer zones. In fact, NIPAP has substantially encouraged the use of the community-based planning tool

merging GIS data and people's knowledge to produce a stand-alone relief model. CEPF can build on this tested model of planning and project implementation. Like the World Bank project, NIPAP provides investments for livelihood and training. NIPAP sites include El Nido, Coron, and Malampaya Sound in northern Palawan. The NIPAP is implemented mainly by the DENR using the mechanisms provided under the NIPAS Act; the CPPAP is implemented by NIPA.

Another EU project is the Palawan Tropical Forest Protection Program, focused on the protection of 12 priority water catchments with components on agriculture and livelihood; mapping; capacity-building; and information, education, and communications campaigns. While the communications and mapping components are in advanced stages, less progress has been made toward participatory community-based management of these catchments. The sustainability of project efforts is a concern.

Denmark: The government of Denmark, through the World Bank, provided support to CPPAP involving the development of a biodiversity monitoring and evaluation system coupled with technical assistance that enhances the capacity of protected area management staff, local communities, and the national government. The project led to implementation guidelines for the Biodiversity Monitoring System in protected areas. However, the systematic implementation of BMS in PAWB and beyond the project remains to be seen. This second phase of the project (1999-2001) has a budget of $1.5 million and is being piloted in the three areas: Sierra Madre Natural Park in the Sierra Madre Corridor, Malampaya Sound and El Nido Protected Areas in Palawanand Siargao and Agusan Marsh Corridor in Eastern Mindanao. Advocacy and related activities in the terrestrial, marine, and wetland ecosystems in these three sites are also part of the project.

The Netherlands: The government of the Netherlands is supporting research programs that promote collaborative, participatory, and interdisciplinary research enabling sustainable use of biological resources, effective decision-making on biodiversity conservation, and improving livelihood and cultural opportunities of the local communities. The Dutch government also supports implementation of the NIPAS Law covering two sites: the El Nido Marine Park in the Palawanand the Palanan Wilderness in the Sierra Madre Corridor. Since 1996, the Dutch government has provided funds ($5.5 million) to Plan International for the NSMNP Conservation Project. The project has focused its operations on establishing a socioeconomic, ethnographic, and physical database of the Park; establishing the physical boundaries of the Park and management zones; strengthening the capacities of local stakeholders; and implementing the Integrated Environmental Management Plan and CBRM and Development Plans. CEPF can build on the tested strategies and information developed through this project.

Germany, German Agency for Technical Cooperation (GTZ) and German Agency for Financial Cooperation (KfW): The government of Germany has made significant contributions to conservation in the Sierra Madre Corridor by providing technical assistance in the management of dipterocarp forests and upland development. This was made possible through KfW support for a CBRM project in the province of Quirino. For example, the Financing Cooperation Agency of the Federal Republic of Germany and the GTZ-KfW supported the Quirino Community-Based Forestry Program (a debt-for-nature swap) and the Philippine-German Community Forestry Project – Quirino covering the municipalities of Maddela, Nagtipunan, Aglipay, and Diffun. The project investment amounts to 30% of the $5.8 million

debt. On the other hand, CFPQ aims to protect the forest within the project area through sustainable management practices, community organization and self-help. It has a total budget of $8.6 million and will end this year. This project is similar to the CBFM program funded by the USAID in terms of strong LGU participation building support for CBFM. However, sustainability of their interest in CBFM remains to be seen.

Japan International Cooperation Agency and Japan Bank for International Cooperation: In the Sierra Madre Corridor, JICA is currently funding the development of the Master Plan for Watershed Management in the Upper Magat and Cagayan River Basin, covering three provinces in the corridor. This project is intended to generate an investment program for watershed rehabilitation in priority areas for reforestation. It is also expected that the local people will play a vital role in this program as a source of primary information and in ascertaining the major constraints and opportunities for watershed rehabilitation.

JBIC provides loan assistance for the implementation of the Second Forestry Sector Program started by ADB, with sub-projects in each of the three corridors, using essentially the CBFM approach with addition of some small infrastructure support as part of watershed rehabilitation. Another recent JBIC investment in the northern Palawanis the Sustainable Environmental Management Project, a six-year project with a $25 million loan and three major components:

- Environmentally Critical Area Network Zoning, which involves mapping and zoning consistent with the SEP framework for Palawan, research in support of zoning activities, and capacity-building for the delineation and implementation of ECAN zones;
- Environmental Sustainable Tourism Development, which includes project management and planning for tourism development consistent with the ECAN zoning; and
- erosion control.

Australian Agency for International Development (AusAID): The Australian Government's Development Cooperation Program, managed by AusAID, has invested $32.2 million in 2000-2001 in efforts to reduce poverty and promote sustainable development. AusAID's assistance has focused on meeting the human development needs of the poor by improvements in the key livelihood areas of rural incomes, health, education, and environment. In addition, AusAID has supported good governance by assisting with the development and implementation of policies empowering poor and vulnerable groups, rural and urban, affected by structural and economic change. At present, AusAID has targeted provinces of Surigao del Norte, Agusan del Sur, and other areas within the Eastern Mindanao Corridor.

Canadian International Development Agency: CIDA in the Philippines has invested in local governance, environmental protection, and other basic services. In the environment sector, the agency has provided necessary assistance in responsible governance, including support for the multi-stakeholder collaborative solutions to local environmental problems in the forest, upland, coastal, and urban areas using the facilitation skills of NGOs and technical assistance from their partners.

Major Nongovernmental Organizations

World Wide Fund for Nature: WWF – Philippines works to integrate conservation, protection, and development through biodiversity research. It also includes enterprise development and

institution building by giving the local community and LGUs training and an active role in resource management, particularly in the coastal environment. For example, in the Palawan, WWF has invested in biodiversity research and monitoring, management and planning, enterprise development, institutional development, and technical assistance as exemplified by the biodiversity component of the El Nido Integrated Conservation and Development Project with a budget of $477,000. Given these types of investment, CEPF projects can build on science-based research initiated by the WWF and provide information necessary for conservation.

Foundation for the Philippine Environment: The FPE was incorporated in 1992 through the collective efforts of the Philippine government, NGOs and the U.S. government. The financial base of FPE is an endowment fund established through a debt-for-nature swap. The financing came from USAID through the Natural Resources Management Program (NRMP) amounting to about $22 million. The FPE has been supporting NGO activities to empower local communities and their People's Organizations to carry out conservation projects for the last eight years. The FPE has also secured the support of international NGOs like the John D. and Catherine T. MacArthur Foundation and the Keidanren Conservation Fund. Several donors like the UNDP-GEF and SGP also made grants with the FPE as a conduit to distribute large funds to NGOs and People's Organizations and for technical assistance. CEPF can leverage the FDE and complement and strengthen these existing arrangements by setting up a small grants mechanism hosted by an in-country organization.

The FPE uses CBRM as a main strategy with four main components: community organizing, resource management, livelihood, and advocacy. In the Sierra Madre Corridor, FPE, through its partners, has been able to empower communities to implement conservation projects promoting sustainable development. The foundation has invested in four projects in the corridor: Biak na Bato National Park Conservation Project in Bulacan; Bolos Point CBRM Project in Gattaran, Cagayan; CBRM at Santa Margarita, Baggao, Cagayan; and CBRM for Mt. Banahaw and San Cristobal. In addition, in Eastern Mindanao, the FPE has supported the Lanuza Bay Area Community-Based Coastal Resource Management Program; the Lake Mainit Biodiversity Conservation Project; Biodiversity Corridors as an Option for Biodiversity Conservation in Mindanao; and Dinagat Island CBRM. These projects are based on the seven-year CBRM framework of the Foundation. The FPE provides grants to NGOs ranging from $2,000 to $19,000.

Haribon Foundation: Haribon Foundation for Conservation of Natural Resources, established in 1972, has been regarded as a pioneer in the Philippine environmental movement and one of the most active environmental organizations in the country. Haribon aims to promote community-based resource management strategies; conduct scientific and socioeconomic research; and build a national constituency for conservation. For example, with the support of FPE, Haribon has supported CBRM projects in Palawan. The Foundation has made the conservation of Important Bird Areas (a concept and global tool of BirdLife International) a significant component of its program; there are eight IBAs in the Sierra Madre Corridor, 10 in Palawan (including the islands), and nine in Eastern Mindanao (including Dinagat and Siargao).

Conservation International – Philippines: CI – Philippines initiated conservation projects in the country with USAID funding to mobilize a biodiversity corridor approach in Sierra Madre, aiming to reconnect habitats by extending protection and promoting land uses compatible with

conservation. In the Sierra Madre Corridor, CI – Philippines has invested in strategic partnerships with key stakeholders to build support frameworks and coordinate activities in the field. CI – Philippines also aims to build a database, compile conservation and planning maps using GIS, and conduct information and education campaigns in order to build consensus among stakeholders in natural resource management. In the Palawan, CI – Philippines is providing technical assistance in the establishment of ECAN zones, recruiting local communities, LGUs, the Palawan Council for Sustainable Development, and other government agencies as partners. Other investments include the Mangrove Interpretive Project, promoting environmental education and conservation of the mangrove ecosystem; the Cashew Enterprise Project, providing supplemental income to the local Tagbanua community; and Calamianes Marine Corridor Management, introducing integrative planning and conservation management in the marine corridor based on the ECAN strategy.

Other international and local NGOs: Foreign NGOs supporting conservation efforts in the Sierra Madre and Palawans include Plan International, Zoologischer Garten Berlin, Zoological Society of London, Aage V. Jensen Charity Foundation, Bristol Zoo. These organizations' efforts include community-based or participatory research; survey and assessment of the biodiversity and habitats in the Sierra Madre Mountains; local biodiversity workshops; *in situ* conservation; and field surveys of the Philippine bleeding-heart pigeons and cloud rats in the southern part of the Corridor.

In the Palawan, Shell Philippines Exploration, Espace Zoologique (France), the FPE, and CI – Philippines are very active. Shell Philippines Exploration has been involved in ecological research on Malampaya Sound in partnership with NIPAP-DENR, ESSC, LGUs and BFAR. The project has a budget of $200,000 and will end this year. Species conservation has been the focus of Espace Zoologique with funding from the Loro Parque Fundacion which has implemented a project on the conservation of the Philippine Cockatoo. This institution also supports research, protection, and restoration activities in the cockatoo's habitat.

Government and Other Local Research Institutions

Department of Environment and Natural Resources-Ecosystems Research and Development Bureau (DENR-ERDB) and Department of Science and Technology – Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD): As of April 2000, there were 12 biodiversity-related special projects being implemented by the DENR local offices and its research arm, the ERDB, with an approved budget of $248,000. On the other hand, 57 regular biodiversity-related projects were implemented from 1989-2000, four still in progress and 53 completed. PAWB, the unit of DENR directly responsible for conservation work, also monitors 20 biodiversity projects implemented with donor assistance. Projects handled by PAWB-DENR include community-based resource management and development; livelihood development; information and education campaigns; research and development; and technical assistance. For PCARRD projects and private organizations (e.g. the Paper Industry Corporation of the Philippines), most biodiversity-related efforts focus on scientific research assessing and monitoring the timber stand and growth yield in adequately stocked residual dipterocarp forests and other logged-over areas, or studies of indigenous forest species with significant biodiversity values.

Other biodiversity efforts of the DENR include:

- implementation of the National Biodiversity Strategy and Action Plan (NBSAP) for the Philippines;
- advocacy for the Wildlife Act, which empowers the DENR to delineate critical terrestrial and marine habitats;
- advocacy for the Sustainable Forest Management Act, which provides for, among other measures, forest demarcation; and
- advocacy for the Land Use Act, which will manage land development and protect biodiversity.

The Philippines National Museum and Herbarium, Manila, has conducted extensive botanical and zoological research throughout the country for exactly a century. The Flora of the Philippines project — backed by the National Science Foundation (United States), USAID, and the MacArthur Foundation — has collected in and compiled floral checklists for all three target regions since 1990.

CEPF NICHE FOR INVESTMENT IN THE REGION

Many conservation projects in the Philippines, while successful to varying degrees, have not necessarily linked with other similar or nearby conservation initiatives. The result has been scattered and isolated conservation benefits. Consequently, successes have been temporary and lacked a wide constituency of support that could have engendered the political will necessary for broadening, multiplying and sustaining conservation initiatives. Therefore, CEPF's niche in the Philippines will be fostering civil society's support and advocacy for broad-based, coordinated biodiversity conservation on a corridor scale.

Filling this niche will require:

- improving linkage between conservation investments to multiply and scale up benefits;
- building awareness of civil society about the myriad benefits of conserving corridors of biodiversity; and
- building capacity of civil society to advocate for better protected area and corridor management and against development harmful to conservation.

Improving linkages between conservation investments will require enlisting civil society's knowledge of and interest in corridor-level conservation efforts and the alliances that will be necessary to ensure their implementation and success. Key stakeholders in this process will need the capacity to plan for corridor-level conservation, to communicate more widely and effectively, to facilitate alliances, to mitigate inevitable conflicts, to interpret relevant legal considerations, to inventory and monitor natural-resource use and conservation, and to work more effectively with and influence relevant government entities.

In the interest of biodiversity beyond the focal corridors, CEPF also will support measures toward recovery of Critically Endangered species. This additional niche is key because it will cover areas of the Philippines increasingly overlooked for funding due to the focus of limited resources on the longer-term promise of conservation at the corridor level.

CEPF INVESTMENT STRATEGY AND PROGRAM FOCUS

The CEPF niche focuses on building alliances and civil society capacity essential for the success of corridor-level conservation. A majority of resources will support means to this end in three selected areas: the Sierra Madre, Palawan, and Eastern Mindanao, where collectively 70% of the Philippines' biodiversity is concentrated. A hotspot-wide fund for recovery of Critically Endangered species will help conserve the 30% of the Philippines' endemic species diversity that falls outside corridor-based efforts, in places such as Mindoro, Panay, Negros, Cebu, and the Sulu Islands.

CEPF funds will remain flexible, as factors such as absorptive capacity for funding and political climate may dictate shifts in distribution. It also should be noted that priority will be given to NGOs and communities which either work at the local level or link with local organizations in order to build conservation capacity of key stakeholders within the focal corridors. However, this stipulation does not preclude support of national awareness-building and advocacy in support of conservation within these corridors.

Success within this niche is possible because of the strong presence and potential capacity of NGOs in the Philippines. CEPF has a strategic opportunity to bring together networks of NGOs, communities, and the private sector to pool resources and expertise under a shared common agenda.

CEPF Strategic Directions and Investment Priorities

Strategic Directions	Investment Priorities
1. Improve linkage between conservation investments to multiply and scale up benefits on a corridor scale in Sierra Madre, Eastern Mindanao and Palawan	1.1 Encourage corridor-level natural-resource conservation efforts led by civil society 1.2 Support building of alliances between civil society groups and projects favoring corridor-level conservation 1.3 Support corridor-wide mapping and tracking of conservation investments 1.4 Strengthen communication and information sharing advantageous to corridor conservation
2. Build civil society's awareness of the myriad benefits of conserving corridors of biodiversity	2.1 Build civil society's understanding of the rationale and mechanisms for achieving corridor-level conservation of biodiversity 2.2 Support initiatives that demonstrate or document benefits of corridor-level conservation 2.3 Build capacity of civil society to assess costs and benefits of options for natural resource use
3. Build capacity of civil society to advocate for better corridor and protected area management and against development harmful to conservation	3.1 Facilitate sharing of lessons learned from conservation efforts within each corridor 3.2 Build, through civil society, the capacity of local government to properly manage protected areas 3.3 Support civil society in efforts to influence or mitigate development that will negatively affect biodiversity 3.4 Build capacity of civil society to participate in development and implementation of management plans for protected areas 3.5 Support civil society in promoting new protected areas within selected corridors 3.6 Support initiatives to increase civil society's understanding of laws affecting corridor-level conservation 3.7 Build capacity of civil society to monitor, document, and report the impact of extractive industries 3.8 Build capacity of civil society to monitor natural resource use and conservation 3.9 Support civil society initiatives which improve effectiveness of the Wildlife Act 3.10 Support initiatives to evaluate and improve existing policies and laws affecting biodiversity conservation
4. Establish an emergency response mechanism to help save Critically Endangered species	4.1 Support projects that help conserve the habitat of Critically Endangered species or mitigate threats to their survival 4.2 Support activities to highlight the extinction crisis in the Philippines and enlist civil society in species conservation

Improve linkage between conservation investments to multiply and scale up benefits on a corridor scale in Sierra Madre, Eastern Mindanao and Palawan

Although there are some conservation networks in the Philippines, corridor-wide management of biodiversity is a relatively new concept in the Philippines. And while there are existing alliances among Philippine NGOs at the national level, there are few alliances at the local level.

Therefore, CEPF will support activities that strengthen links and coordination among conservation initiatives, NGOs, communities, government agencies, donors, and academia in order to facilitate corridor-wide biodiversity conservation in the focal corridors. These activities should favor civil society networks advocating corridor conservation and encourage relevant government bodies to adopt and implement corridor-scale conservation policies.

Build civil society's awareness of the myriad benefits of conserving corridors of biodiversity

CEPF will support building public awareness of practical and socio-cultural benefits made possible by conservation of biological diversity, especially on a corridor scale. Ideally, some CEPF-supported projects will demonstrate to key stakeholders the biological and economic benefits of this broader, coordinated corridor approach to conservation of natural resources. At the same time, raising public awareness of the means to achieve and sustain corridor-scale biodiversity conservation is essential.

Build capacity of civil society to advocate for better corridor and protected area management and against development harmful to conservation

In order for corridor initiatives and alliances to succeed, CEPF should help build the capacity of civil society to advocate corridor-wide biodiversity, to create corridor-wide communications mechanisms and information sharing, and to monitor and evaluate the corridor-wide conservation initiatives.

CEPF will encourage civil society's involvement in the development and implementation of management plans for protected areas. Stakeholder involvement is of particular importance, especially for indigenous peoples, local farmers, women, and other groups that otherwise would not be consulted.

CEPF also should help build the capacity of civil society to understand and intervene in developments that may adversely affect biodiversity in the focal corridors. This may include building technical skills as well as communications and conflict-resolution capacity.

Following on from this, CEPF will help build the capacity of NGOs and civil society to understand and encourage sound natural resource management, land use planning, resource inventory and monitoring, and options for sustainable enterprise and livelihoods.

It is important that CEPF-supported projects that facilitate the sharing of lessons learned about resource management and sustainable livelihood among the various communities and NGOs in each corridor.

One option for implementing this strategic direction would be small grants programs run from within each corridor, with the aim of distributing funding among groups and individuals who currently lack the capacity to access fund earmarked for conservation.

Establish an emergency response mechanism to help save Critically Endangered species

Through civil society efforts, CEPF will initiate and support activities that raise public awareness of the extinction crisis in the Philippines and utilize innovative ways to address the crisis. Local academic institutions should be integrally involved in efforts led by civil society to protect critically endangered species.

To address this urgent need, CEPF will establish an emergency fund for the protection of Critically Endangered species endemic to the Philippines. This strategic funding direction would provide grants specifically for projects conserving the habitat of these species or mitigating key threats to their survival. Most grants under this strategic direction will support projects outside the focal corridors.

SUSTAINABILITY

This CEPF investment in the Philippines will cover a period of five years. During this time, certain projects that form the foundation for future conservation efforts — such as those related to alliance-building and the first phase of corridor-wide planning — will have met their objectives. Others will require follow-on support. Therefore, CEPF will encourage and, where possible, assist with sustainable funding strategies and mechanisms. Alliances built during the course of this period should be able to attract support for continuing proven successes within the strategic directions.

CEPF-supported projects should be designed with sustainability in mind. Any resulting profits should go to key stakeholders but also to mechanisms designed for sustaining conservation initiatives.

CONCLUSION

CEPF's investments in the Philippines collectively will aim to build a broad-based constituency for conservation of biodiversity corridors and Critically Endangered species. While most of the work will be done within the focal corridors, CEPF hopes public awareness of and political will for biodiversity conservation will be increased nationwide as a result. The CEPF niche in the Philippines will be to link conservation advocates and efforts in order to multiply and scale up conservation benefits — especially to local stakeholders who can ensure sustainability of conservation initiatives over the long term.

LIST OF ACRONYMS

ADZ	Area Development Zones
BFAR	Bureau of Fisheries and Aquatic Resources
BMS	Biodiversity Monitoring System
CBFM	Community-Based Forest Management
CBRM	Community-Based Resource Management
CFPQ	Community Forestry Project – Quirino
CLUP	Comprehensive Land Use Plan
COMPACT	Community Management of Protected Areas Conservation
CPPAP	Conservation of Priority Protected Areas Project
CRMP	Coastal Resource Management Plan
DENR	Department of Environment and Natural Resources
ECAN	Environmentally Critical Areas Network
EMC	Eastern Mindanao Corridor
EPA	Exploration Permit Application
ERDB	Ecosystems Research and Development Bureau
ESSC	(Institute of) Environmental Science and Social Change
FPE	Foundation for the Philippine Environment
FRMP	Forest Resource Management Program
IPAS	Integrated Protected Areas System
LGU	Local Government Unit
MFPC	Multisectoral Forest Protection Committee
MGB	Mines and Geosciences Bureau
MPSA	Mineral Production Sharing Agreement
NBSAP	National Biodiversity Strategy and Action Plan
NIPA	National Integrated Protected Area System
NIPAS	National Integrated Protected Area System
NRMP	Natural Resources Management Program
NSMNP	Northern Sierra Madre Natural Park
PAMB	Protected Area Management Board
PAWB	The Protected Areas and Wildlife Bureau
PCARRD	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development
SEP	Strategic Environmental Plan
TLA	Timber License Agreement