Eastern Afromontane
Ecosystem Profile Summary

CRITICAL ECOSYSTEM PARTNERSHIP FUND

About CEPF

Established in 2000, the Critical Ecosystem Partnership Fund (CEPF) is a global leader in enabling civil society to participate in and influence the conservation of some of the world's most critical ecosystems. CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International, the Global Environment Facility (GEF), the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank. CEPF is unique among funding mechanisms in that it focuses on high-priority biological areas rather than political boundaries and examines conservation threats on a landscape scale. From this perspective, CEPF seeks to identify and support a regional, rather than a national, approach to achieving conservation outcomes and engages a wide range of public and private institutions to address conservation needs through coordinated regional efforts.

Cover photo left to right:
Ethiopian red hot poker (*Kniphofia foliosa*), Bale Mountains, Ethiopia. © Robin Moore/iLCP
Highland boy, Ethiopia. © Rod Mast

The Hotspot

The Eastern Afromontane biodiversity hotspot—which stretches over a curving arc of widely scattered but biogeographically similar mountains from Saudi Arabia to Mozambique and Zimbabwe—is one of the Earth's 35 biodiversity hotspots, the most biologically rich yet threatened areas around the globe. It covers an area of more than 1 million square kilometers and runs over a distance of more than 7,000 kilometers.

The region's unique biological attributes, as well as its economic and cultural importance, led the Critical Ecosystem Partnership Fund (CEPF) to prioritize the region and develop an investment strategy. The strategy, known as the Eastern Afromontane biodiversity hotspot ecosystem profile, will guide CEPF's investment in the region—$9.8 million, to be disbursed via grants to civil society groups such as community associations and other nongovernmental organizations. But the profile, which was developed through the input of more than 120 organizations based in or working in the region, is much more than CEPF's strategy. It offers a blueprint for future conservation efforts in the Eastern Afromontane biodiversity hotspot and cooperation within the donor community.

Bale Mountains National Park, Ethiopia.
© Robin Moore/iLCP

Development of the Ecosystem Profile

CEPF uses a process of developing “ecosystem profiles” to identify and articulate an investment strategy for each region to be funded. Each profile reflects a rapid assessment of biological priorities and the underlying causes of biodiversity loss within particular ecosystems.

The Eastern Afromontane biodiversity hotspot ecosystem profile was developed with broad stakeholder consultation from December 2010 to December 2011 under the leadership of BirdLife International and several supporting organizations. The profiling team included experts in conservation biology, spatial planning, economics, policy and governance. All worked collaboratively to develop the profile, and engaged more than 200 individuals from civil society, government and donor organizations.

The ecosystem profile presents an overview of the hotspot, including its biological importance in a global and regional context, potential climate change impacts, major threats to and root causes of biodiversity loss, socioeconomic context and current conservation investments. It provides a suite of measurable conservation outcomes, identifies funding gaps and opportunities for investment, and thus identifies the niche where CEPF investment can provide the greatest incremental value.

It also contains a five-year investment strategy for CEPF in the region. This investment strategy comprises a series of funding opportunities, called strategic directions, broken down into a number of investment priorities outlining the types of activities that will be eligible for CEPF funding. The ecosystem profile does not include specific project concepts. Civil society groups will develop these for their applications to CEPF for grant funding.

Bale Mountains National Park, Ethiopia.
© Robin Moore/iLCP

Biological Importance of the Eastern Afromontane Biodiversity Hotspot

The Eastern Afromontane biodiversity hotspot is one of the most extraordinary places on Earth, and is remarkable for both its high level of biological diversity and the life-sustaining systems it maintains that benefit millions of people. Characterized by a series of montane "islands" (including the highest peaks in Africa and Arabia) and extensive plateaus, it extends over 44 degrees of latitude and is bisected by the equator. The highest point is on Mount Kilimanjaro, which reaches 5,895 meters above sea level, and forests and woodlands included within the ecoregions (relatively large units of land or water that contain distinct biodiversity) extend as low as 300 meters altitude in some areas, although 800 to 1,000 meters is a more typical lower altitudinal limit.

Gorilla *(Gorilla beringei beringei)*, Virunga National Park, Rwanda. © Rod Mast

Covering such distances and altitudes, the hotspot is home to a variety of ecosystems including broadleaf, pine and bamboo forests; forest-grassland mosaics; grasslands, bushlands and high altitude wetlands; and freshwater lakes and rivers. The result is a region suitable for a wide range of vegetation types, with an estimated 7,600 plant species, of which at least 2,350 are endemic, or unique, to the region.

The diversity of birds measures currently at 1,300 species, including 157 endemics, but new species continue to be discovered, particularly from the Eastern Arc Mountains of Tanzania. Further, some 102 species have restricted ranges, such as the Critically Endangered Uluguru bush-shrike *(Malaconotus alius)*, which lives in a single nature reserve in the Uluguru Mountains of Tanzania.

Mammal fauna of the Eastern Afromontane includes nearly 500 species, of which 100 are endemic. Although several of Africa's larger flagship mammals, including the elephant and leopard, are found in this hotspot, the majority of threatened species are primates and smaller mammals, including a large number of unusual rodents and shrews. The hotspot is also home to the charismatic Ethiopian wolf *(Canis simensis)*—the rarest canid in the world—while the flagship species of the entire hotspot remains the Critically Endangered mountain gorilla *(Gorilla beringei beringei)*.

There are 350 species of reptiles of which 90 species are endemic, mostly chameleons. A further 323 amphibian species are found in the region, of which more than 100 are endemic, including live-bearing frogs, 72 of which are globally threatened. Less understood, but not overlooked, freshwater taxa—including fish, crabs or freshwater mollusks—are also under threat. In the hotspot, a total of 181 freshwater species are globally threatened.

As the hotspot is so geographically vast, the ecosystem profile organizes it into four regions, from north to south: the Arabian Peninsula, the Ethiopian Highlands, the Albertine Rift and the Eastern Arc and Southern Highlands (including the Kenyan and northern Tanzanian volcanic mountains).

Conservation Outcomes

The Eastern Afromontane biodiversity hotspot ecosystem profile reflects CEPF's emphasis on using conservation outcomes—targets against which the success of investments can be measured—as the scientific underpinning for determining the geographic and thematic focus for investment. Conservation outcomes are the full set of quantitative conservation targets in a hotspot that need to be achieved in order to prevent biodiversity loss. They can be defined at three scales—species, site and landscape—that interlock geographically through the presence of species in sites and the presence of sites in landscapes. They are also logically connected. If species are to be conserved, the sites in which they live must be protected and the landscapes or seascapes must continue to sustain ecological services such as provision of fresh water and shelter from floods and storms. Species also contribute to the production and maintenance of ecosystem services.

Defining conservation outcomes is a bottom-up process, with a definition of species-level targets first, from which the definition of site-level targets is developed. The process requires detailed knowledge of the conservation status of individual species. The Eastern Afromontane biodiversity hotspot profile identifies 677 globally threatened species, as defined by the IUCN Red List (2010).

Recognizing that most species are best conserved through the protection of sites at which they occur, the profile's creators next pinpointed key biodiversity areas (KBAs)—sites important for the conservation of globally threatened species, restricted-range species, biome-restricted species assemblages or congregatory species—as targets for achieving site-level conservation outcomes. A total of 261 terrestrial and 49 freshwater KBAs are identified in the profile. The terrestrial areas cover close to 300,000 square kilometers, or approximately 29 percent of the land area of the hotspot. Of the total, 192 terrestrial areas are each less than 100,000 hectares, and most fall outside the formal protected area network, highlighting the issue of habitat fragmentation. In addition, 14 biodiversity conservation corridors were identified, containing 155 of the terrestrial areas, 42 of the freshwater areas and 16 Alliance for Zero Extinction sites.

Stinking strawflower (*Helichrysum foetidum*), Yemen.
© The Royal Botanic Garden Edinburgh/photo by Tony Miller

Threats

The countries of the Eastern Afromontane Hotspot, with the exception of Saudi Arabia, are characterized by a high poverty rate and rapid population growth. The result is expansion of agriculture into the marginal and fragile high montane ecosystems. Growing energy needs also lead to increased deforestation for fuel wood, the main energy source in the region. Degradation, fragmentation of habitats and unsustainable exploitation of natural resources are the most important threats to biodiversity in the region. Facing such development challenges, the governments of the region are pursuing ambitious strategies that include large infrastructure projects—dams in particular—and increased exploitation of underground resources such as oil and minerals. Some countries are also being tempted to sell large estates for foreign agribusiness investments. There is a high risk that the development of these economic activities will incur a steep cost for biodiversity and livelihoods if efforts are not taken to ensure that negative impacts are reduced or mitigated. Only rarely are ecosystem services recognized in the development agenda for their contribution to national wealth and potential long-term economic growth. In this hotspot, the issues of development and conservation are intimately intertwined.

Additionally, the region has suffered—and in parts continues to suffer—civil unrest and conflict, some of which has led to large-scale displacement of the population. Some of these conflicts have had disastrous direct consequences for biodiversity and ecosystems, as well as indirect impacts due to the resulting lack of law enforcement and investment in conservation. Weak governance, lack of institutional capacity and limited security of land tenure have also impeded conservation efforts in many parts of the hotspot.

Climate change is also directly affecting the hotspot. Research suggests that climate change will be highly varied both in magnitude and direction. While temperature is expected to rise between 1-3 degrees Celsius by 2050, rainfall changes will vary by location and time of year as a function of latitude and altitude. Modifications of climate patterns, together with expected extreme fluctuations such as drought or heavy rainfall, are expected to be significant in the Afromontane ecosystems, in particular at the highest elevations.

Tea plantations, edge of Nyungwe National Park, Rwanda.
© CI/photo by Russell Mittermeier

Current Investments

CEPF analyzes existing conservation investments from national governments, bilateral and multilateral donors, the private sector, and foundations in order to ensure its own priorities complement the funding that is already present. Funding varies by the type of donor as well as across the 16 countries in the hotspot, with perhaps Saudi Arabia and South Sudan representing the two extremes of potential domestic resources.

Overall, conservation activities in the hotspot still remain largely dependent upon funding, dominated by public, bilateral and multilateral donors. Close to $950 million of investment in biodiversity and ecosystem conservation/management has been identified for the years 2007-2011—of which $450 million is specifically linked to sites within the hotspot. While this is considerable, it represents roughly 1 percent of the total overseas development aid received by the hotspot countries during the same period.

The Global Environment Facility (GEF) is the single largest multilateral funder of conservation projects in the hotspot. Since 2007, the GEF has supported 41 medium-sized (up to $1 million) and full-sized (over $1 million) projects worth $157 million in the region. Combined, multilateral agencies have provided $284 million since 2007. Bilateral agencies from 16 countries have contributed $600 million for conservation in the hotspot since 2007, with the majority coming from Denmark, Finland and Norway. Trusts and foundations, as well as CEPF investment from 2004-2008, have contributed an additional $60 million while non-government and corporate funders have provided a further $8.6 million.

The greatest investment is in Ethiopia, partly reflecting the size of the country within the hotspot area, followed by DRC, Uganda, Tanzania and Kenya. Civil society receives about 40 percent of the total funding, while government agencies administer the remaining 60 percent. Trends in donor funding show a general move away from biodiversity conservation, but also a move toward climate change adaptation and mitigation. There is a growing emphasis on the economic value of biodiversity and ecosystem services, and a move from project to program funding.

A conservationist identifies plants on the Sanetti Plateau, Ethiopia.
© Robin Moore/iLCP

The overall impact in the hotspot of these four combined trends could be that: (i) less funding will be available for biodiversity conservation; (ii) the funding that will be available will be largely spent in a small number of countries and key programmatic areas (per donor); and (iii) these areas are likely to include climate change adaptation and mitigation, and to a lesser extent ecosystem services. This means that there will be less funding available for both government and civil society recipients in "unpopular" countries, and that there will not be many opportunities to find support for addressing "unpopular" conservation needs. This investment context has been an important factor in the design of a niche for CEPF funds.

CEPF Niche

CEPF works to enable civil society to have a more prominent role in driving development in a biodiversity-friendly direction. To date, three major obstacles have been that (1) community organizations lack the funding to design local action plans and to implement the biodiversity-related components contained therein, (2) insufficient support is available to stimulate productive partnerships and engagement between civil society organizations and the private sector, and (3) there is a limited knowledge base on threats to biodiversity and the means to react quickly to counteract them.

Within this context, the niche for CEPF investment in the Eastern Afromontane Hotspot will be to support civil society to apply innovative approaches to conservation in under-capacitated and underfunded protected areas, key biodiversity areas and priority corridors.

CEPF grants will demonstrate the link between biodiversity and people by improving livelihoods and by mainstreaming biodiversity and sustainability into existing policies, plans and development programs. As the strategic directions and investment priorities are designed, CEPF will yield benefits for both priority sites and corridors and the people living in or near them.

Terraced agricultural landscape, Yemen.
© BirdLife International

CEPF Strategic Directions and Investment Priorities

1 STRATEGIC DIRECTION

Mainstream biodiversity into wider development policies, plans and projects to deliver the co-benefits of biodiversity conservation, improved local livelihoods and economic development in priority corridors.

INVESTMENT PRIORITIES

- Enhance civil society efforts to develop and implement local government and community-level planning processes to mainstream biodiversity conservation, and leverage donor and project funding for livelihood activities that explicitly address causes of environmental degradation in and around priority KBAs in priority corridors.
- Promote civil society efforts and mechanisms to mainstream biodiversity conservation into national development policies and plans, and into territorial planning in priority corridors and countries.
- Support civil society to build positive relationships with the private sector to develop sustainable, long-term economic activities that will benefit biodiversity and reduce poverty in priority corridors.

2 STRATEGIC DIRECTION

Improve the protection and management of the KBA network throughout the hotspot.

INVESTMENT PRIORITIES

- Increase the protection status (via creation or expansion of protected areas) and/or develop, update and implement management plans for terrestrial priority KBAs.
- Support the role of civil society organizations in the application of site safeguard policies and procedures, including the strengthening of environmental impact assessment implementation in order to address ongoing and emerging threats to all KBAs, including priority freshwater KBAs.
- Advance the identification and prioritization of KBAs in Africa and the Arabian Peninsula.

The ecosystem profiling process identified 261 terrestrial and 49 freshwater KBAs, plus 14 conservation corridors. In order to match the level of funding available from CEPF with geographic scope, these sites and corridors have been prioritized to 36 terrestrial sites, five freshwater sites and six corridors. The terrestrial sites represent 5.5 million hectares, or 18 percent of the total KBA and 5.5 percent of the total surface of the hotspot.

3 STRATEGIC DIRECTION

Initiate and support sustainable financing and related actions for the conservation of priority KBAs and corridors.

INVESTMENT PRIORITIES

- Support civil society organizations to develop forest carbon partnerships and projects that advance biodiversity conservation in priority KBAs in Africa.
- Support civil society organizations to develop partnerships and projects for non-carbon payment for ecosystem services schemes and other market mechanisms in priority KBAs in Africa, particularly priority freshwater KBAs that influence freshwater biodiversity, livelihoods and health.
- Support training for civil society organizations in fundraising and project management, especially training such organizations at all levels with respect to emerging opportunities for sustainable financing for KBAs in Africa.
- Support the institutional development of civil society organizations in Eritrea, South Sudan and Yemen, and their role in the conservation of KBAs in their respective countries.

4 STRATEGIC DIRECTION

Provide strategic leadership and effective coordination of CEPF investment through a regional implementation team.

INVESTMENT PRIORITIES

- Operationalize and coordinate CEPF's grant-making processes and procedures to ensure effective implementation of CEPF's strategy throughout the hotspot.
- Build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the shared conservation goals described in the ecosystem profile.

CEPF Investments

The ecosystem profile team identified 14 conservation corridors—or broadscale landscape planning units—that include clusters of KBAs. The strategy laid out in the profile calls for investments that address improvements in ecosystem services and human well-being at the corridor level. Each of the six priority corridors is remarkable in its own right, and to date has received an insufficient amount of investment.

The Arabian Highlands Peninsula in Yemen and Saudi Arabia is rich in plant endemism, the basis for the identification of 37 KBAs. It is also densely inhabited and cultivated. Biodiversity in this corridor is reliant on traditional agricultural practices, such as shade-grown coffee, which create micro-biomes for plants, reptiles and birds.

The Chimanimani Nyanga Mountains are biologically unique, include two Alliance for Zero Extinction sites and are home to endemic amphibians like the Endangered Chirinda toad (*Mertensophyrne anotis*).

The Itombwe Nyungwe Landscape encompasses the contiguous forest between Rwanda and Burundi, on the watershed divide between the Nile and Congo rivers. It is one of the highest priority sites and an area that currently has no formal protection.

The Kaffa and Yayu coffee biosphere reserves are known as the lungs of Ethiopia for their role in carbon sequestration, and are the origin of the wild *Coffea arabica*. The Kaffa and Yayu forests have been UNESCO-designated since 2010 as biosphere reserves, but the landscape suffers from human resettlement and expansion of commercial agriculture.

The Lake Tana Catchment is the main source of the Blue Nile, and is of immense importance to Nile Basin countries. Dense human population and siltation in the lake are the major threats, calling for catchment restoration and management.

The Northern Lake Nyassa Catchments comprise the mountain areas of Tanzania, Zambia, Malawi and Mozambique that drain into the lake. The area includes botanically rich upland grasslands and is incredibly rich in freshwater species diversity and endemic fish species.

Nyungwe National Park, largest remaining forest in the Albertine Rift, Rwanda.
© CI/Photo by Russell A. Mittermeier


SAUDI ARABIA
ERITREA
YEMEN
ETHIOPIA
SOUTH SUDAN
DEMOCRATIC REPUBLIC OF THE CONGO
KENYA
UGANDA
RWANDA
BURUNDI
TANZANIA
ZAMBIA
MALAWI
MOZAMBIQUE
ZIMBABWE
1
2
3
4
5
6
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11
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14
Conservation Corridors
1 Arabian Highlands*
2 Bale Mountains
3 Chimanimani—Nyanga Mountains*
4 Greater Mahale Landscape
5 Greater Virunga—Murchison Landscape
6 Itombwe—Nyungwe Landscape*
7 Kaffa—Yayu Coffee Biosphere Reserves*
8 Kilimanjaro—Meru—North Pare Mountains
9 Lake Tana Catchment*
10 Mount Kabobo—Marungu Highlands
11 Mount Kenya—Aberdare Mountains
12 Northern Lake Nyassa Catchments*
13 Udzungwa—Uluguru Mountains
14 Usambara—South Pare Mountains
* Denotes CEPF priority
CEPF Priority Corridor
Other Biodiversity Conservation Corridor
KBA, CEPF Priority
Other KBA
Hotspot Boundary
1,000 km

Moving Forward

There is no shortage of work to be done in the Eastern Afromontane biodiversity hotspot, which is home to biological wonders while also facing acute threats. CEPF will provide funding for civil society that complements or fills the gaps in the work of government and donor agencies and encourages innovative conservation activities. The CEPF investment strategy attempts to bridge the gap between development and the protection of biodiversity, and recognizes that one cannot progress without the other; improved management of the hotspot's landscapes and watersheds is essential for sustainable growth and development in the region. The ecosystem profile offers an opportunity for all donors to deliver coordinated support to the conservation community and their development partners to acheive a better future for people and nature the region.

Yemen warbler *(Parisoma buryi)*, Mahweet, Yemen.
© Hanne & Jens Eriksen/naturepl.com

Gelada Baboon *(Theropithecus gelada)*, Highlands, Ethiopia. © Robin Moore/iLCP

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