Wallacea
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 European Union, 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: Green pit viper (*Trimeresurus fasciatus*). © Robin Moore/iLCP; and Ngade Lake, Ternate, Maluku Islands, Indonesia. © Burung Indonesia/photo by Tri Susanti

The Hotspot

The Wallacea biodiversity hotspot, which includes the whole of Timor-Leste and the central portion of Indonesia, including the major island groups of Sulawesi, Maluku, and the Lesser Sundas, qualifies as a global biodiversity hotspot due to its high number of plants and animals found nowhere else and accelerating levels of habitat loss. The chief causes include overexploitation of natural resources, habitat degradation, fragmentation, and conversion and pressure from population increase and economic development.

Wallacea is fundamentally an island landscape, with more than 1,680 islands and 30 million people, the majority of whom live in coastal areas earning their living from farms, forests, wetlands and the sea. Like much of Indonesia, Wallacea reflects the mixing of numerous cultures over the ages—indigenous, Javan, Malay, Indian, Chinese, Melanesian, Polynesian, Portuguese, Arabian, English and Dutch—resulting in an interweaving of languages, religion and ethnicity. This is highly significant as governments and civil society make decisions about achieving the twin demands for economic growth and stewardship of biodiversity.

CEPF's investment in Wallacea is guided by an investment strategy, known as an "ecosystem profile." The ecosystem profile presents a situational analysis of the context for biodiversity conservation in the region, framing an investment strategy for CEPF and other funders interested in strengthening and engaging civil society in conservation efforts in the hotspot. In this way, the ecosystem profile offers a blueprint for coordinated conservation efforts in the hotspot and cooperation within the donor community.

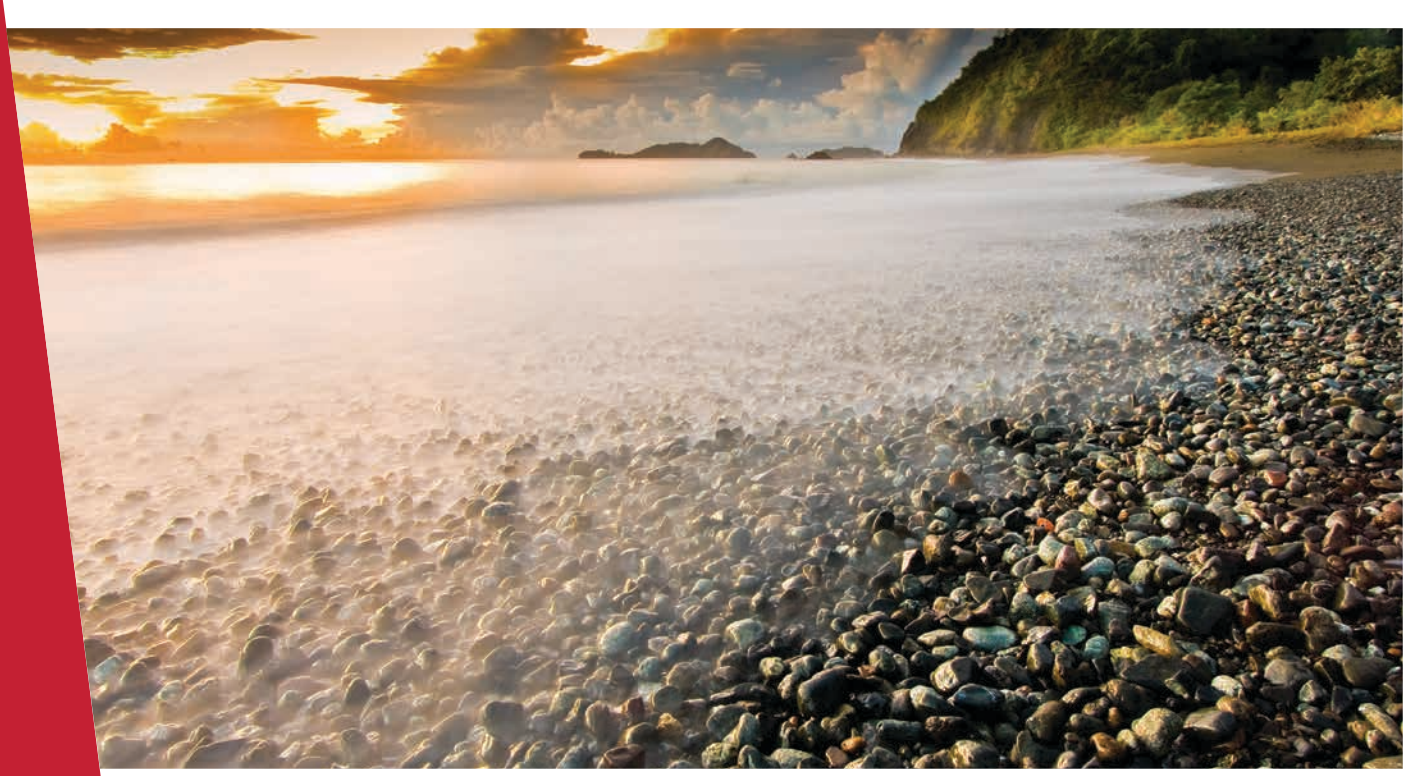
Men haul a canoe onto a beach in Central Sulawesi.

Development of the Ecosystem Profile

The ecosystem profile for Wallacea was developed through a process of consultation and desk study led by Burung Indonesia in partnership with several partners in Indonesia and Timor-Leste. Initial research and analysis at the regional level provided draft biodiversity and thematic priorities that were subsequently reviewed by experts within the hotspot. The year-long process involved consultation with 301 organizations and individuals via meetings, correspondence and nine workshops throughout the region. Stakeholders represented nongovernmental organizations (NGOs); local, provincial and national government; universities; business; media and donors.

The ecosystem profile defines a suite of measurable conservation outcomes at the species, site and corridor scales as the scientific basis for guiding CEPF's grant making. These are framed by a situational analysis, including an assessment of the predicted impacts of climate change in the region, as well as reviews of the policy, socioeconomic and civil society contexts for biodiversity conservation. It also includes an assessment of patterns and trends in current conservation investment that captures lessons learned from past investments in the hotspot, as well as an overview of threats and drivers of biodiversity loss. The conservation outcomes and situational analysis provide the justification for an investment strategy for CEPF in the hotspot.

The investment strategy comprises a set of strategic funding opportunities—termed strategic directions—broken down into investment priorities that outline the types of activities eligible for CEPF funding. Civil society actors may propose projects that will help implement the strategy by fitting into at least one of the strategic directions. The ecosystem profile does not include specific project concepts, as civil society groups will develop these as part of their applications for CEPF grant funding.



Sunrise on a turtle nesting beach in Central Sulawesi, Indonesia.

Biological Importance of the Wallacea Biodiversity Hotspot

The Wallacea region, first described by Alfred Russel Wallace in 1869, is noteworthy for having fauna and flora that are distinct from the Asian biogeographic realm to the west and the Australian-Pacific biogeographic realm to the south and east. The many islands are varied—volcanic, nonvolcanic, continental crusts, and composites—and are separated by shallow seas in some cases and trenches as deep as 7,000 meters in others. Powerful currents connecting the Pacific and Indian oceans flow through the region, creating barriers to dispersal of species.

The complex geography and barriers to movement have led to the region's high biodiversity. Among the hotspot's endemic species—those found nowhere else—are 1,500 vascular plants, 127 mammals, 274 birds, 99 reptiles, 33 amphibians, 50 freshwater fish and 110 marine fish. There are also as many as 400 species of coral in the region. Notable endemic species include tarsiers, macaques, the Flores hawk-eagle and the Komodo dragon. The hotspot is a terrestrial conservation priority, and habitats include lowland evergreen and semi-evergreen forests, lowland monsoon forest, montane forest, karst areas, and mangroves and other coastal habitats. Natural habitats extend from mountain ridge to reef, although they are fragmented by agricultural conversion and human settlement in many places. These "ridge-to-reef" ecosystems are notable for their resilience to the effects of climate change and for delivering a wide range of ecosystem services to human communities.

Marine conservation is of equal importance—Wallacea lies within the Coral Triangle, a region that supports 75 percent of known coral species and an estimated 3,000 species of reef fishes. Thus, the geographic scope of the hotspot is considered to include near-shore marine habitats, such as coral reefs and seagrass beds, in addition to terrestrial habitats.

A hawksbill turtle glides above a reef, Komodo National Park, East Nusa Tenggara, Indonesia.

Conservation Outcomes

CEPF uses conservation outcomes, or biological targets against which the success of conservation investments can be measured, as the scientific underpinning for determining its geographic and taxonomic focus for investment. Conservation outcomes can be defined at three scales—species, site and corridor—that interlock geographically through the presence of species at sites and within corridors. They are also logically connected: if species are to be conserved, the sites at which they occur must be protected; if these sites are to provide vital ecosystem services, ecological integrity must be maintained at the corridor scale.

Defining conservation outcomes is a bottom-up process, with species-level targets being set first. The process requires detailed knowledge of the conservation status of individual species. According to the IUCN Red List, 308 terrestrial and freshwater species and 252 marine species in the Wallacea Hotspot are threatened with extinction globally. Recognizing that most species are best conserved through the protection of networks of sites at which they occur, the next step is to define site-level targets, termed Key Biodiversity Areas (KBAs). Two hundred and fifty-one terrestrial KBAs have been defined, covering a combined land area of 9.5 million hectares, or 30 percent of the total land area of the hotspot. An additional 140 marine KBAs have been defined, which cover an additional 9.5 million hectares of seascape. Seventy percent of the terrestrial KBAs lie outside the formal protected area network. On the other hand, 70 percent of all land in Wallacea is managed under the authority of the Indonesian Ministry of Forestry, highlighting the need to foster partnerships between civil society and government agencies.

KBAs are the starting point for defining landscape-level targets, or conservation corridors. These are defined where it is necessary to maintain or establish ecological connectivity in order to maintain evolutionary and ecological processes or meet the long-term needs of landscape species. Ten landscapes have been defined, covering a total land area of 14.4 million hectares or 45 percent of the total land area of the hotspot.

Tayawi River Halmahera, North Maluku Province, Indonesia.

Threats

Following political transitions in both Indonesia and Timor-Leste in the last 15 years, the Wallacea region is now in the middle of a major economic transformation. As a result, the region is seeing threats from overexploitation of natural resources—primarily logging, fishing and collection of wild products—and from habitat degradation, fragmentation and conversion, including mining, oil and gas, industrial agriculture and forestry, smallholder agriculture and livestock, urbanization, infrastructure development and energy development. In addition, pollution, erosion, sedimentation, invasive species and climate change present their own challenges.

Indirect drivers of biodiversity loss for both terrestrial and marine habitats are several: regulatory issues (absent, inappropriate, or poorly enforced regulation); capital-intensive economic development (plantations, industrial forestry, and mining supported in some cases by subsidies and global demand for commodities); and increased intensity of small-scale resource use (driven by increased population pressure, changing technology, monetization of traditional economies, and weakening of the customary regulation of resources).

Constraints to effective protection of the environment include capacity limitations among government and civil society, poor integration of environmental issues into regional development planning, poor understanding of environmental issues among the general population, and lack of information on biodiversity. CEPF will address these constraints, root causes of biodiversity loss, and direct threats to critical sites in Wallacea.

Piles of trash smolder by the side of the road in Central Sulawesi, Indonesia.

Impact of Climate Change on Wallacea

Climate change in Timor-Leste and the Indonesian provinces of Wallacea is predicted to result in greater extremes in heat, rainfall and drought, as well as sea-level rise, which in turn will threaten food security, health, water resources, farming and coastal livelihoods, and a wide variety of life forms in forests and the oceans. Experts project that by the end of this century, climate change will cost Indonesia between 2.5 percent and 7 percent of its GDP. The greatest impacts will fall on the poorest people, especially those who live in areas susceptible to drought, flooding or landslides, and who are dependent on climate-sensitive livelihoods, particularly in agriculture and fisheries.

In marine environments, global warming has a direct impact on sea surface temperatures. Rising sea surface temperatures interfere with the relationship between the coral polyp and its symbiotic algae, leading to the bleaching and death of the coral. Should Maluku and Nusa Tenggara suffer bleaching as expected, fish habitat and fisheries will be disrupted. The terrestrial environment in the region will also be at risk as drier, hotter conditions increase the likelihood of forest and grassland fires and changes in temperature and rainfall alter the distribution of plants, parasites and diseases.

Further, increases in temperature, and temperature differences between land and sea, will cause stronger winds and larger waves, making life harder for local fishermen. New temperature patterns will also change the distribution of malaria-spreading mosquitoes, while increased rainfall, with Wallacea's steep topographies and friable (crumbly) soils, will lead to landslides, blocking roads and damaging farmland and property. High rainfall will increase the spread of the bacterial leaf blight in rice—particularly on the islands of Timor and Sumba, and in South Sulawesi and Central Maluku—while maize in Timor-Leste will be vulnerable to drought. The production of coffee, Timor-Leste's most important export crop, will likely move upslope, bringing farmers into conflict with forest conservation.

Sorowako, South Sulawesi Province, Indonesia.

Healthy, diverse ecosystems provide the vital resources, extreme weather mitigation and carbon storage that can be essential in addressing climate change. CEPF interventions are locally based and geographically focused, allowing for the flexibility of response needed to mitigate or adapt to climate change and its impacts.

Current Investments

CEPF bases its investment on an understanding of the gaps in conservation funding between national government spending, official development assistance, and the activities of the private sector and international NGOs. Throughout the region, there has been a historical lack of investment in conservation, specifically, and economic development in general. However, Wallacea is now at a pivot point. As Indonesia's economy has grown, overseas development aid has dropped dramatically, now at less than 0.1 percent of gross national income. Conversely, Timor-Leste, a new country, still relies on foreign aid for significant investment. Now, both countries are looking to the region to generate jobs and as a source of natural resources while the conservation community pushes for a "green path" for development.

Domestic civil society organizations and local communities have responded to the conservation issues they face with a range of strategies, often founded on traditional customs and governance arrangements. For these groups to be successful, they require greater capacity, as do the groups that give them technical support. Local groups, NGOs and governments also need the ability to monitor and communicate to ensure that they deliver on their overlapping but different goals in relation to the underlying ecosystem. Moreover, there is a need to integrate the goals of conservation areas into plans and policies of other sectors so that they are not undermined by incompatible developments.

Aketajawe Lolobata National Park, Halmahera, North Maluku Province, Indonesia.

The ecosystem profile presents a detailed analysis of conservation investment in the hotspot over the past several years. Reflecting Indonesia's growing economy, national sources of funding are substantial.

In 2013, the Government of Indonesia spent more than US$30 million for protected area management in Wallacea, and in 2012 allocated US$200,000 to each district government for environmental management activities. On the other hand, public sector funding in Timor-Leste is extremely limited as the government responds to critical human welfare needs. For both countries, in the environment sector, major donors include Japan, Australia, the United States, Germany, France and the World Bank. In total, the average annual investment for conservation is roughly US$60 million.

In the region overall, marine program funding is concentrated through a coordinated approach by several foundations in the Lesser Sundas and Banda seascapes, and funding for terrestrial programs is focused in parts of Sulawesi. Thus, funding from CEPF is designed to fill a crucial niche for supporting conservation.

Mother and child, Timor Leste.

CEPF Niche

CEPF is designed to facilitate rapid and flexible funding to civil society to act in areas where globally significant biodiversity is under the greatest threat. Funds should add incremental value to existing initiatives, and should aim to ensure that the outcomes realized through investments are sustained. These criteria provide the basic framework for identifying the niche for CEPF.

In Wallacea, the CEPF investment niche is defined in terms of taxonomic (species) priorities, geographic (site) priorities, and thematic priorities, with the last including a focus on the benefits to human well-being from conservation. The basic premise underlying the investment niche is that conservation investment should be targeted where it can have the maximum impact on the highest conservation priorities, while providing opportunities to strengthen and engage civil society, and support the livelihoods of poor communities.

Three issues underpin the CEPF niche. First, to be relevant, CEPF must make grants that, while promoting conservation, support the economic growth agendas of the two countries. Second, local civil society needs to take the lead in conservation, with CEPF fostering partnerships that allow for international and national NGOs and universities to play an intermediate role. Third, in geographies where customary institutions and management practices still prevail, CEPF will take an approach that supports these first, even if it means not creating formal protected areas.

The niche for CEPF investment in the hotspot was defined through an extensive process of stakeholder consultation, supported by a detailed analysis of gaps and trends in conservation investment. The CEPF niche is to support a diversity of civil society organizations with varying levels of capacity to achieve conservation outcomes and environmental sustainability within the increasingly important national agendas of economic growth.

Sulawesian toad (*Ingerophrynus celebensis*).

CEPF Strategic Directions and Investment Priorities

1

STRATEGIC DIRECTION

Address threats to high priority species.

INVESTMENT PRIORITIES

- Provide information to promote species outcomes and allow for monitoring and improved policies and programs of local and national government and other stakeholders.
- Change behavior of trappers, traders or buyers through appropriate enforcement, education, incentives and alternatives.

2

STRATEGIC DIRECTION

Improve management of sites (KBAs) with and without official protection status.

INVESTMENT PRIORITIES

- Facilitate effective collaboration between civil-society organizations, local and indigenous communities and park management units to improve planning and management of official protected areas.
- Develop and implement management approaches that integrate sustainable use by business or local stakeholders with conservation of ecosystem values in KBAs outside official protected areas.
- Support surveys, research and awareness campaigns to create new protected areas or better manage KBAs without protection status.
- Work with central and local governments on specific legal and policy instruments, including land use and development plans, for better site management, and build a constituency of support for their promulgation and implementation.

3 STRATEGIC DIRECTION

Support sustainable natural resource management by communities in priority sites and corridors.

INVESTMENT PRIORITIES

- Support community institutions to secure adequate rights over resources and to develop and implement rules on resource use.
- Develop alternatives for livelihoods otherwise dependent on unsustainable resource management practices and enhance markets for sustainably produced products and services.
- Propose specific legal and policy instruments to address obstacles to effective community-based natural resource management at local or national level.

4 STRATEGIC DIRECTION

Strengthen community-based action to protect marine species and sites.

INVESTMENT PRIORITIES

- Support the identification and establishment of new local marine protected areas.
- Strengthen local institutions and mechanisms for management and monitoring of marine protected areas.
- Support the engagement of local government to increase the financial sustainability and legal effectiveness of local marine protected areas.
- Facilitate the sharing of lessons and experiences between stakeholders involved in marine conservation initiatives.

A blue-and-white kingfisher (*Todiramphus diops*), Aketajawe Lolobata National Park, Halmahera, North Maluku Province, Indonesia.

5 STRATEGIC DIRECTION

Engage the private sector in conservation of priority sites and corridors, in production landscapes, and throughout the hotspot.

INVESTMENT PRIORITIES

- Engage with the private sector, business associations and chambers of commerce so that corporate social responsibility (CSR) funding supports the goals of the ecosystem profile.
- Encourage mining and plantation companies and their funders and buyers to consider conservation values in management of concessions and rehabilitation of production areas.
- Establish links between civil society organizations and organizations undertaking campaigns with consumers, financiers and consumer-facing companies to create market-related incentives and disincentives for private sector to support conservation actions.
- Support efforts for mediation or formal engagement with mining and other industry to reduce threats from unlicensed operators or those operating with an illegitimate license.

6 STRATEGIC DIRECTION

Enhance civil society capacity for effective conservation action in Wallacea.

INVESTMENT PRIORITIES

- Enhance the capacity of civil society to identify, plan and undertake surveys, planning, implementation and monitoring of conservation actions.
- Catalyze networking and collaboration among community groups, NGOs, private sector and other elements of civil society.
- Increase the volume of sustainable funding available to civil society for conservation actions via capacity building and appropriate mechanisms.

7

STRATEGIC DIRECTION

Provide strategic leadership and effective coordination of conservation investment through a Regional Implementation Team.

INVESTMENT PRIORITIES

- Operationalize and coordinate CEPF's grant-making processes and procedures to ensure effective implementation of the investment strategy throughout the hotspot.
- Build a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile.
- Engage governments and the private sector to mainstream biodiversity into policies and business practices.
- Monitor the status of biogeographic and sectoral priorities in relation to the long-term sustainability of conservation in the hotspot.
- Implement a system for communication and disseminating information on conservation of biodiversity in the hotspot.

Peda Mangairi River, Halmahera, North Maluku Province, Indonesia.

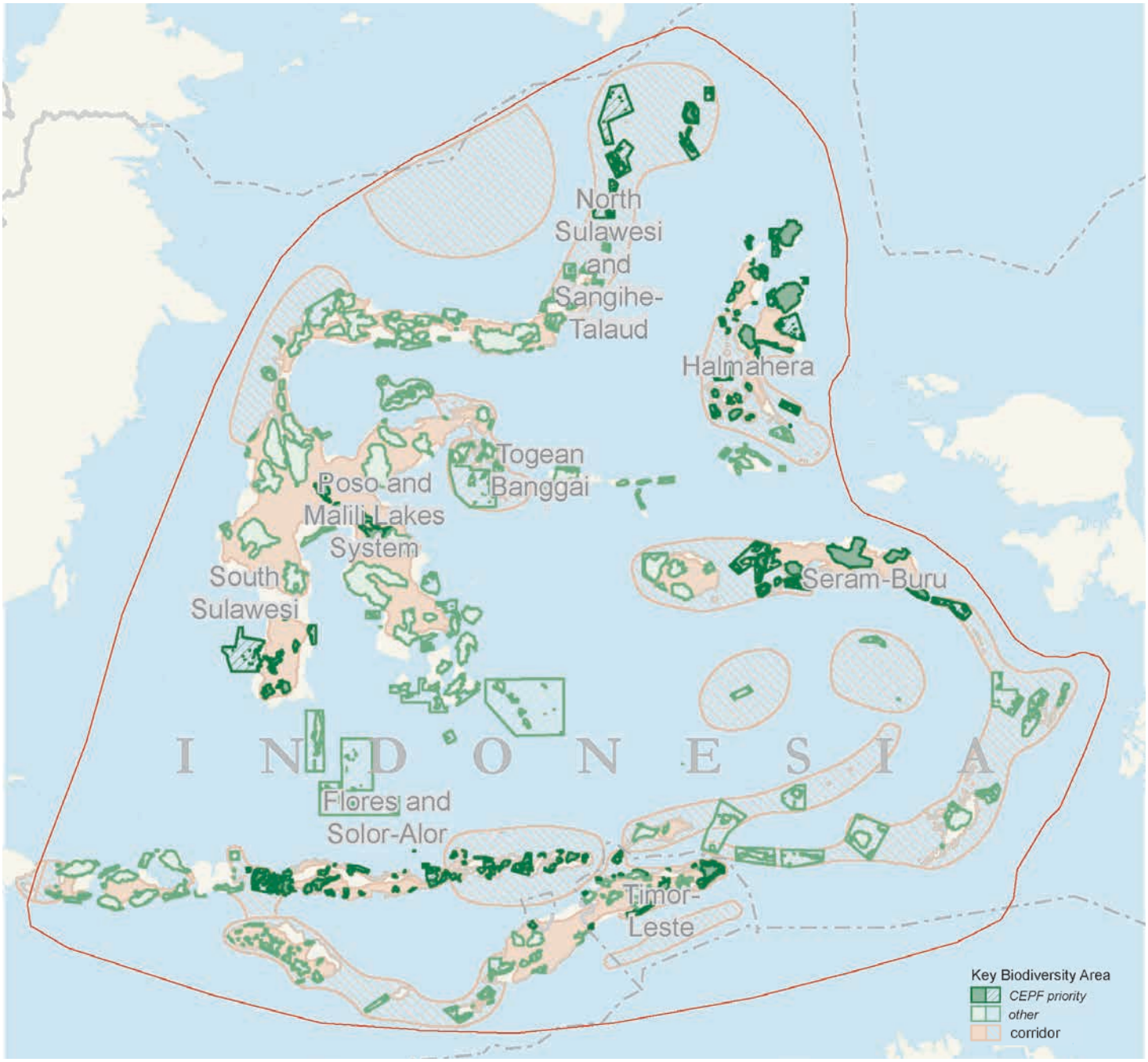
CEPF Investments

CEPF investment will be targeted where it can make the greatest and most sustained contribution to the conservation of globally important biodiversity in the Wallacea Hotspot, within the context of other investments by governments, donors and civil society.

In a geography with 1,680 islands and high inter-island diversity, there are 391 terrestrial and marine KBAs of importance, all worthy of domestic and international support. However, with limited funds, CEPF must limit its scope. During the ecosystem profile process, experts and stakeholders used biological and other criteria to prioritize from among the full list. Recognizing that many KBAs are small and that some are in groups, while others are in remote locations, efficient delivery of service was also a factor. To this end, in Indonesia, seven clusters of terrestrial sites covering 85 KBAs and four marine corridors—covering 41 KBAs—are prioritized, and in Timor-Leste, four KBAs and one marine corridor—covering 12 KBAs—are prioritized.

In addition, 22 terrestrial species and 23 marine species have been prioritized from among the full list of globally threatened species in the hotspot. The purpose of selecting priority species is to support actions where species conservation cannot adequately be addressed by habitat protection alone. In most cases, the additional action needed is control of overexploitation.

False clown anemonefish (*Amphiprion ocellaris*), Halmahera, North Maluku Province, Indonesia.



Priority Terrestrial Clusters and KBAs

FLORES
Aegela
Egon Ilimedo
Gapong
Gunung Inerie
Gunung Lewotobi
Gunung Muna
Ili Wengot
Kelimutu
Komodo–Rinca
Kunggwera
Lamalera
Larantuka
Lembata
Mainang
Mausambi
Mbeliling–Tanjung Kerita Mese
Nangalili
Nangarawa
Nggorang Bowosie
Pantar
Pota
Pulau Besar
Pulau Ontoloe
Ruteng
Sesok
Tanjung Watu Mana
Tanjung Watupayung
Todo Repok
Tuti Adagae
Wae Wuul
Wolo Tado

HALMAHERA
Aketajawe
Dote — Kobe
Galela
Gamkonora
Gorogoro
Gunung Dukono
Gunung Sibela
Halmahera Timur
Hutan Bakau Dodaga
Kao
Kasiruta
Mandioli
Morotai
Pulau Kayoa
Pulau Rao
Rawa Sagu Ake
Jailolo
Saketa
Tanah Putih
Ternate
Tidore
Tutupa
Yaba

NORTH SULAWESI AND SANGIHE-TALAUD
Gunung Awu
Gunung Sahendaruman
Karakelang Selatan
Karakelang Utara
Pulau Kabaruan
Pulau Salibabu
Pulau Siau
Tahuna

POSO AND MALILI LAKES SYSTEM
Danau Mahalona
Danau Poso
Danau Towuti
Feruhumpenai–Matano

SERAM-BURU
Gunung Sahuwai
Gunung Salahutu
Haruku
Leitimur
Luhu
Manusela
Pegunungan Paunusa
Pulau Buano
Pulau Kassa
Saparua
Tanah Besar
Tullen Batae
Waebula

SOUTH SULAWESI
Bantimurung
Bulusaraung
Bulurokeng
Cani Sirenreng
Danau Tempe
Karaeng–Lompobattang
Komara
Pallime

TIMOR-LESTE
Citrana
Mundo Perdido
Nino Konis Santana
Tilomar

PRIORITY MARINE CORRIDORS
Perairan Halmahera
Solor–Alor
Sulawesi Utara
Togean– Banggai
Timor-Leste Marine

Moving Forward

Wallacea presents CEPF with a major opportunity to support biodiversity conservation in ways that deliver significant, meaningful benefits to local communities. Taking advantage of this opportunity will necessitate a commitment to capacity building at multiple levels and a readiness to align global biodiversity priorities with local cultural and development priorities.

The successful implementation of the CEPF investment strategy will require time, persistence and, above all, a commitment to genuine and lasting partnership. The cooperation and common vision that have been witnessed through the ecosystem profiling process inspires confidence that such success will be achieved.

Vegetation survey at Tayawi Forest, Halmahera, North Maluku Province, Indonesia.
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Sugar gliders (*Petaurus breviceps*).
© Burung Indonesia/photo by Irfan Rosyadi

www.cepf.net

Critical Ecosystem Partnership Fund

Conservation International
2011 Crystal Drive, Suite 500
Arlington, VA 22202 USA

cepf@conservation.org

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