

The Madagascar and Indian Ocean Islands Hotspot Ecosystem Profile Summary



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.

CEPF's first phase of investment in this hotspot ran from 2001 to 2006 and totaled US\$4.25 million. A consolidation phase of US\$1.4 million followed, though it was delayed due to the country's political situation and ran from 2009 to 2012. CEPF's investments achieved significant results, particularly by helping to establish more than 1 million hectares of new protected areas, improving the livelihoods of communities near several protected areas, and by developing a direct link between improving livelihoods and preserving biodiversity. CEPF's support enabled the participation of a broad range of stakeholders—many of whom had never had the opportunity to operate independently—and also enabled more well-known organizations to take risks to undertake conservation efforts with uncertain outcomes. CEPF's results clearly showed that local conservation groups can have a significant impact once their capacities have been improved, that local communities' commitment is essential to the success of conservation efforts, and that the improvement of living conditions must be included in the goals of any project on the ground. Lastly, CEPF's experience demonstrates the need to strengthen civil society's capacities to understand and interact with the private sector, a crucial participant still poorly integrated in conservation efforts.

Introduction

The Madagascar and Indian Ocean Islands Hotspot is one of 36 biodiversity hotspots on Earth. It is, therefore, one of the planet's richest areas, not only in terms of biodiversity, but also in regard to endangered species. This hotspot is comprised of the nation of Madagascar, the Mascarene Islands (Réunion, Mauritius and Rodrigues), the Comoros and the Seychelles.

Even when compared to the world's other hotspots, this region is considered a priority for conservation because of its extreme biological diversity and uniqueness—there are approximately 15,000 species of plants found only in the hotspot. The region is also prioritized in light of its high level of ecosystem degradation, as demonstrated by the massive deforestation in Mauritius and Madagascar.

The importance of this hotspot led CEPF to invest in Madagascar from 2001 to 2006 and 2009 to 2012. In light of the needs and opportunities identified following these initial investments, the CEPF Donor Council decided in late 2012 to ask the CEPF Secretariat to develop a conservation strategy for the entire region. This strategy, known as an ecosystem profile, guides CEPF's investment, totaling US\$ 8.265 million, between 2015 and 2019. However, the profile represents much more than CEPF's strategy. It takes stock of the status of the region in a way that can serve as a guide for other entities interested in conserving the hotspot.



Praslin Island, Seychelles.
© Conservation International/photo by Russell A. Mittermeier

Ecosystem Profile Development

Between July 2013 and April 2014, the consultation process assembled more than 200 participants representing close to 130 organizations and institutions. National workshops were held in Madagascar by Conservation International and in the Seychelles, Mauritius, the Comoros and Réunion by its partner, Biotope. These various meetings were supplemented with expert consultations and specific interviews by the profiling team, and with a regional workshop.

Reflecting the information gathered during the consultations, the ecosystem profile:

- Presents a holistic view of the hotspot in terms of biological importance.
- Introduces the socioeconomic, political and civil society context.
- Analyzes the main threats and primary causes of biodiversity loss.
- Gathers information on current investments in conservation.

The profile provides a shared vision of conservation and CEPF's five-year investment strategy. This strategy includes investment priorities grouped under four strategic directions. The successful implementation of this strategy will require time, perseverance and, especially, a commitment to the implementation of real, lasting collaborations.



Giant leaf-tailed gecko (*Uroplatus fimbriatus*), Madagascar.
© Piotr Naskrecki

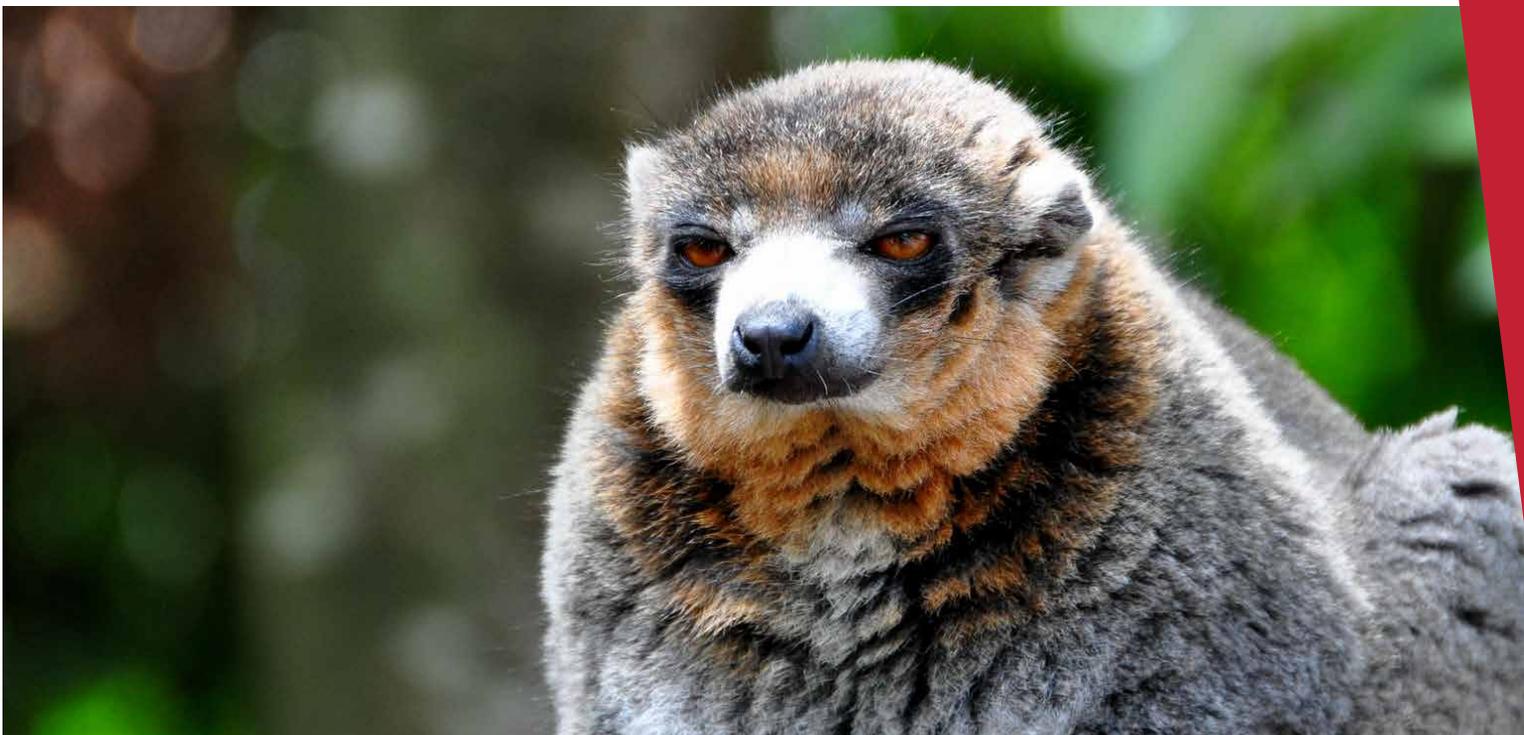
Biological Significance

Isolated from the African continent for between 160 and 180 million years, Madagascar has experienced the evolution of original fauna and flora with a high degree of endemism not only in terms of species, but also genera and even families. While one of the criteria to define an area as a hotspot is having at least 1,500 endemic plant species, Madagascar alone possesses an astounding 11,200 endemic higher plant species. This endemism is not limited to the species level: Madagascar has eight families of plants, five families of birds, five families of primates and two families of freshwater fish found nowhere else in the world.

The terrestrial biodiversity of other Indian Ocean islands is closely linked to that of Madagascar. African influences are particularly visible in the Comoros, while those of Asia are visible in the Seychelles. Although much smaller than Madagascar, the western island groups of the Indian Ocean contribute greatly to the hotspot's biodiversity, with considerable endemism rates.

With regard to the animal kingdom, this hotspot is particularly important for mammals. Of the 211 known mammal species, 95 percent are endemic, including the Endangered ring-tailed lemurs (*Lemur catta*)—the symbolic face of Madagascan wildlife. The region is home to 457 species of reptiles, of which 96 percent are endemic. Some groups have already experienced a high extinction rate, including the giant tortoise, of which only the Aldabra tortoise (*Aldabrachelys gigantea*, VU) remains. Of this hotspot's 309 amphibians, only one is not endemic.

While the hotspot is defined by terrestrial diversity, the marine biodiversity of the Madagascar and Indian Ocean Islands Hotspot is also considerable, both in terms of endemism levels (including corals, coastal species, and species found in ocean trenches) and the international significance of some far-ranging taxa such as cetaceans and marine turtles.



Critically Endangered mongoose lemur (*Eulemur mongoz*).
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Conservation Outcomes

Conservation outcomes can be defined at three levels: species, sites and landscapes, all of which are geographically interconnected. In order to sustainably conserve species, the sites that are home to them must also be protected. Landscapes and seascapes must continue to provide the ecological services on which the sites within them depend and ensure the continuity of genetic exchanges between populations that is necessary for the long-term survival of species.

The definition of conservation outcomes is a bottom-up process that begins at the species level. The process is therefore based on the 1,251 globally threatened species currently recognized in this hotspot, in reference to the International Union for Conservation of Nature Red List (2013), complemented with data on 381 species of importance to local natural heritage or not yet evaluated.

On this fundamental work at the species level, the profile's designers identified Key Biodiversity Areas (KBAs) following the current methodology of the World Commission on Protected Areas (Langhammer et al., 2008). KBAs are home to globally endangered species, species with a reduced distribution area, and significant assemblages of species at a given stage of their lifecycle. In total, the profile enabled the identification or updating of 369 KBAs and the collection of additional data on their legal status, surface area and management. These KBAs vary in size from the forests of Madagascar to the small natural areas that are home to endemic plants in Réunion and Mauritius. The profile also identifies several coastal and marine areas without claiming to be comprehensive in light of the heterogeneous nature of the data as well as the methodological difficulties involved in determining the biological value of marine environments.

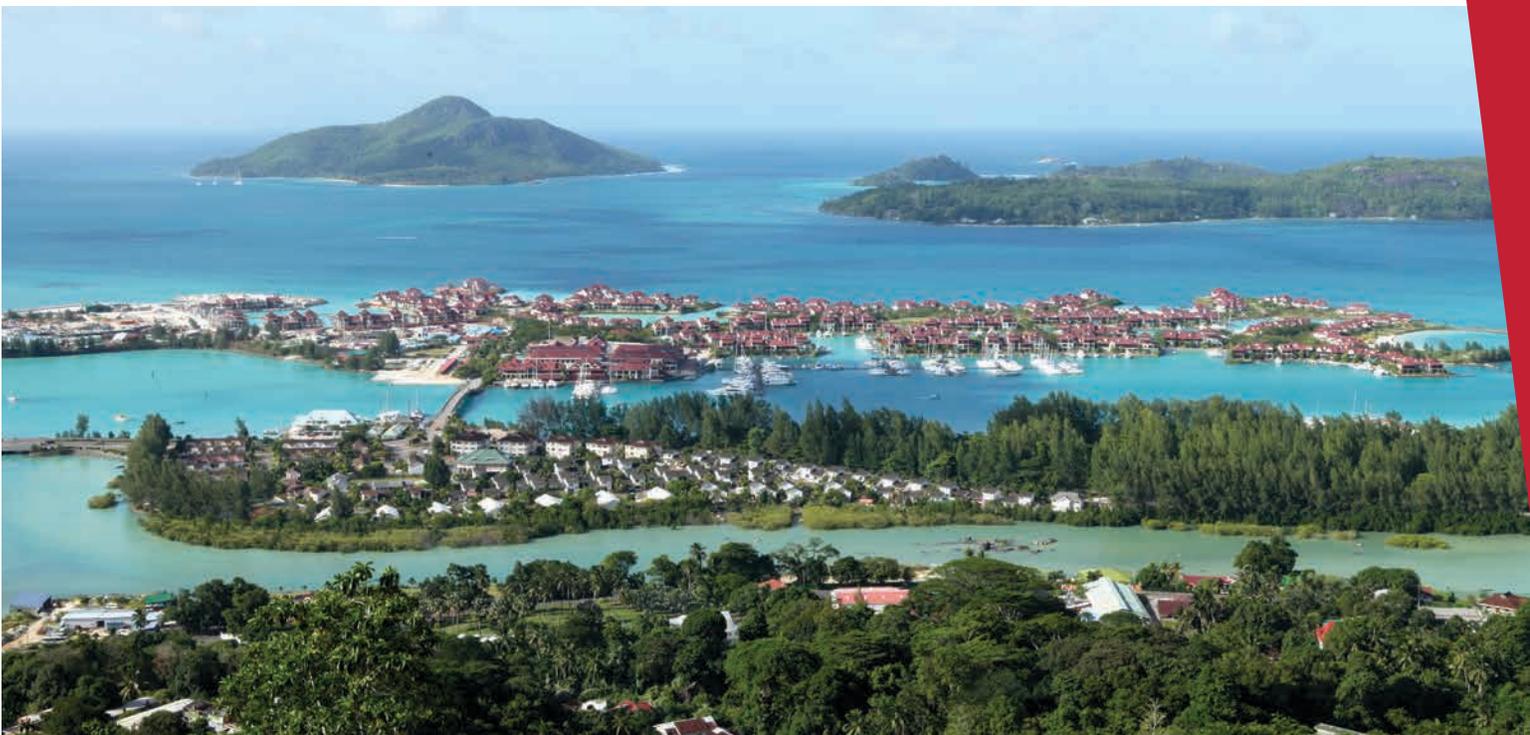


Young boy in the Madagascar highlands.
© Cristina Mittermeier

In addition, 13 conservation corridors were identified in Madagascar on the basis of work previously conducted by the National Association for the Management of Protected Areas, also known as Madagascar National Parks. These corridors are essential to preserving the processes needed to protect endangered species, particularly their long-term adaptation to climate change. Conservation on this scale is vital to ensuring the ecosystems' resilience and enabling them to provide essential services to human and nonhuman communities over the long term. On the small islands of the Indian Ocean, the notion of a biodiversity corridor did not seem justified due largely to the size of the islands and the KBAs. The question of ecological continuity was taken into account by integrating, as much as possible, buffer zones and intermediate spaces in the KBA definition.

Threats

Despite considerable investments in this hotspot's conservation, many threats continue to weigh on biodiversity, both in the short and long term, due to uneven distribution of funds. In the poorest countries—the Comoros and Madagascar—the main threats are the consequences of poverty and underdevelopment. Rural populations, which have been experiencing significant demographic growth and have no access to other economic activities, exert increasing pressure on natural ecosystems. The result has been overexploitation of species, overconsumption of fuel wood, deforestation to extend agricultural and grazing land, and agricultural and grazing practices that negatively impact soil and water resources. These forces are driving a spiral that degrades the environment more and more and fragments populations of native species to the point of threatening their long-term viability. This problem is all the more urgent in light of how heavily dependent people of the region are on the ecosystems' services.



Victoria, capital city of the Seychelles, located on Mahé Island.
© Olivier Langrand

In Mauritius, the Seychelles and Réunion, the question of biodiversity conservation is posed differently due to the already advanced state of degradation apparent in most ecosystems: less than 2 percent of the original forest cover remains on the island of Mauritius. Often degraded or persisting in small spaces, these ecosystems have lost their resilience and are particularly sensitive to the additional pressures caused by invasive species, climate change and other environmental modifications. On densely populated islands where the local population can increase with tourism activities, landscaping and coastal development may push some natural areas beyond the point of no return.

Lastly, some threats are the result of rapidly growing international demand for products derived from natural areas, which some countries have difficulty resisting. Some yield to the temptation of immediate economic development at the expense of international commitments to conserve the world heritage they are responsible for managing. Areas in Madagascar with strong potential for mining and oil development have significant overlap with several KBAs. Marine spaces are vast and often difficult to monitor, and the pressure is rising dangerously, particularly for sharks, sea cucumbers and octopuses. The illegal trafficking of animal and plant species also undermines good governance and puts unique species in danger.

Current Investments

The recognition of Madagascar's exceptional biodiversity by the international community and the Malagasy authorities, as well as the longstanding mobilization of major international conservation organizations, have led to considerable investment to support conservation in Madagascar. The vast majority of national and international financing in support of conservation is devoted to the management of protected areas, although the funding is still insufficient.



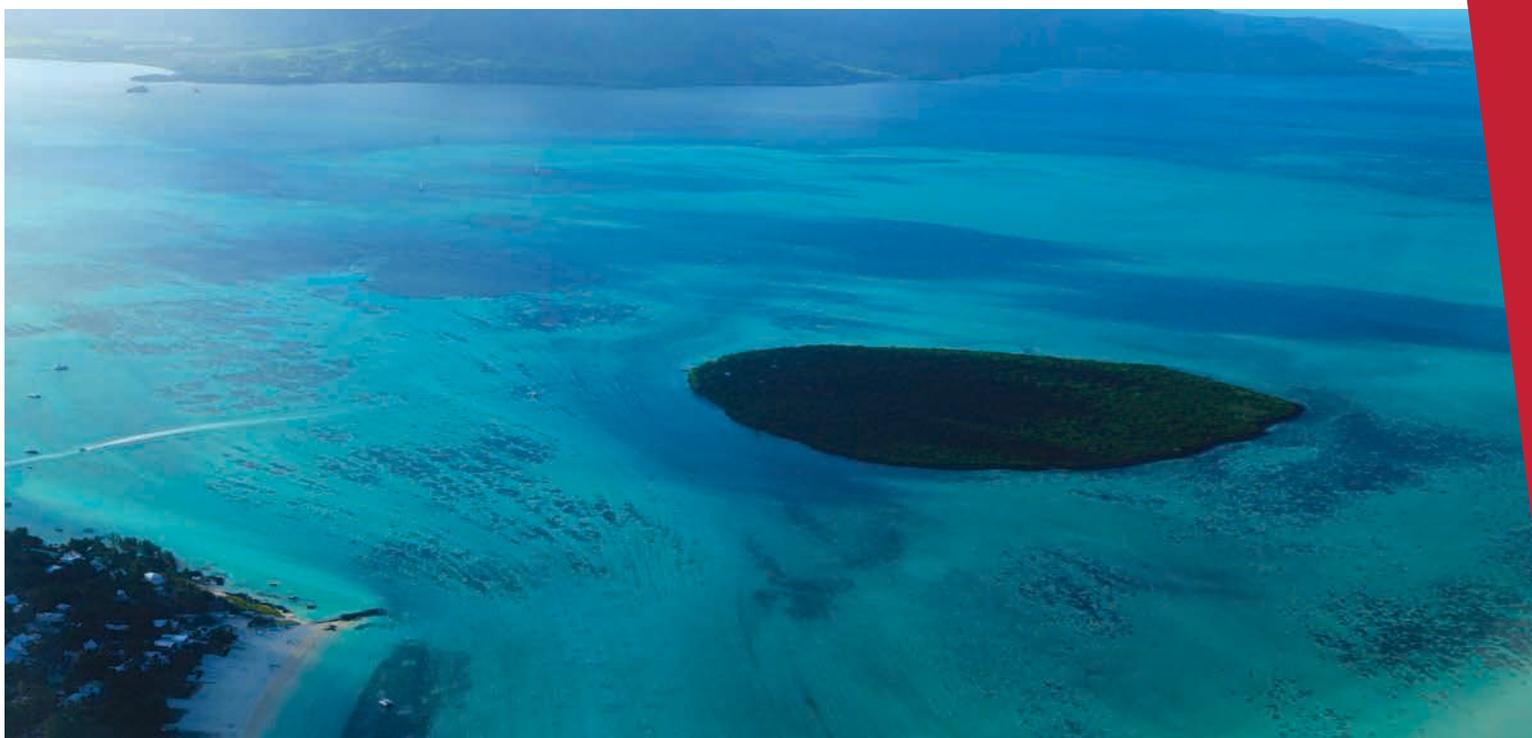
Malagasy girls with fishing net, coastal Madagascar.
© Cristina Mittermeier

On the other hand, the concentration of financing on protected areas leaves a significant number of sites that are not yet formally protected without real financing opportunities. The financial support of major bilateral and multilateral organizations is channeled by national foundations or international nongovernmental organizations (NGOs). National NGOs have more difficulty accessing international financing, whether derived from public aid or private foundations.

Until recently, the Republic of the Comoro Islands had virtually no pro-conservation financing, but this is changing, with several donors supporting the implementation of a national protected areas system. However, helping governmental stakeholders and civil society overcome limited capacities of in the area of environmental management will require long-term technical and monetary support.

In the Seychelles, Mauritius and the French overseas territories, government authorities have made greater efforts to finance conservation. The private sector is also getting more and more involved, but the number of sources for financial support is limited. Civil society organizations sometimes have difficulty completing long-term programs, which limits their capacity for innovation and their role in advocacy.

Financing for regional efforts is almost exclusively delivered under the auspices of the Indian Ocean Commission. Significant results have been achieved, particularly in the areas of legal convergence, the protection of fishing resources, and climate change and natural disaster preparedness. This regional cooperation, however, remains largely fixed at the governmental level, and the creation of a regional civil society community that is focused on conservation issues is only in its infancy.



Île aux Aigrettes, Mauritius.
© Olivier Langrand

CEPF's Niche and Investment Strategy

CEPF's niche in the hotspot was defined based in part on CEPF's capacity for providing variable funding levels, notably by way of its small grants mechanism. In this context, the niche will enable CEPF to support the emergence and strengthening of local organizations. CEPF is also ideally placed to support concrete regional collaborations among the hotspot's civil society organizations, using their diversity of experiences to inform a regional conservation community. CEPF's investments will focus on 38 sites in Madagascar, 19 in the Comoros, nine in Mauritius and 12 in the Seychelles. These sites—wetlands and waterways, dry forests, and coastal and marine areas—house ecosystems that have exceptional biodiversity but have thus far received less attention from conservation funders.



A pair of Endangered Seychelles magpie-robins (*Copsychus seychellarum*) rest on a fallen branch.
© Olivier Langrand



Malagasy woman.

© Conservation International/photo by Johnson Rakotoniaina

CEPF's Strategic Directions and Investment Priorities



3

STRATEGIC DIRECTIONS

Strengthen civil society capacity at local and regional levels through training, exchanges and regional cooperation.



INVESTMENT PRIORITIES

- Foster the emergence of a new generation of conservation professionals and organizations by small grants assistance for technical and practical training.
- Encourage exchanges and partnerships between civil society organizations to strengthen conservation knowledge, organizational capacity, and management and fundraising skills.

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STRATEGIC DIRECTIONS

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

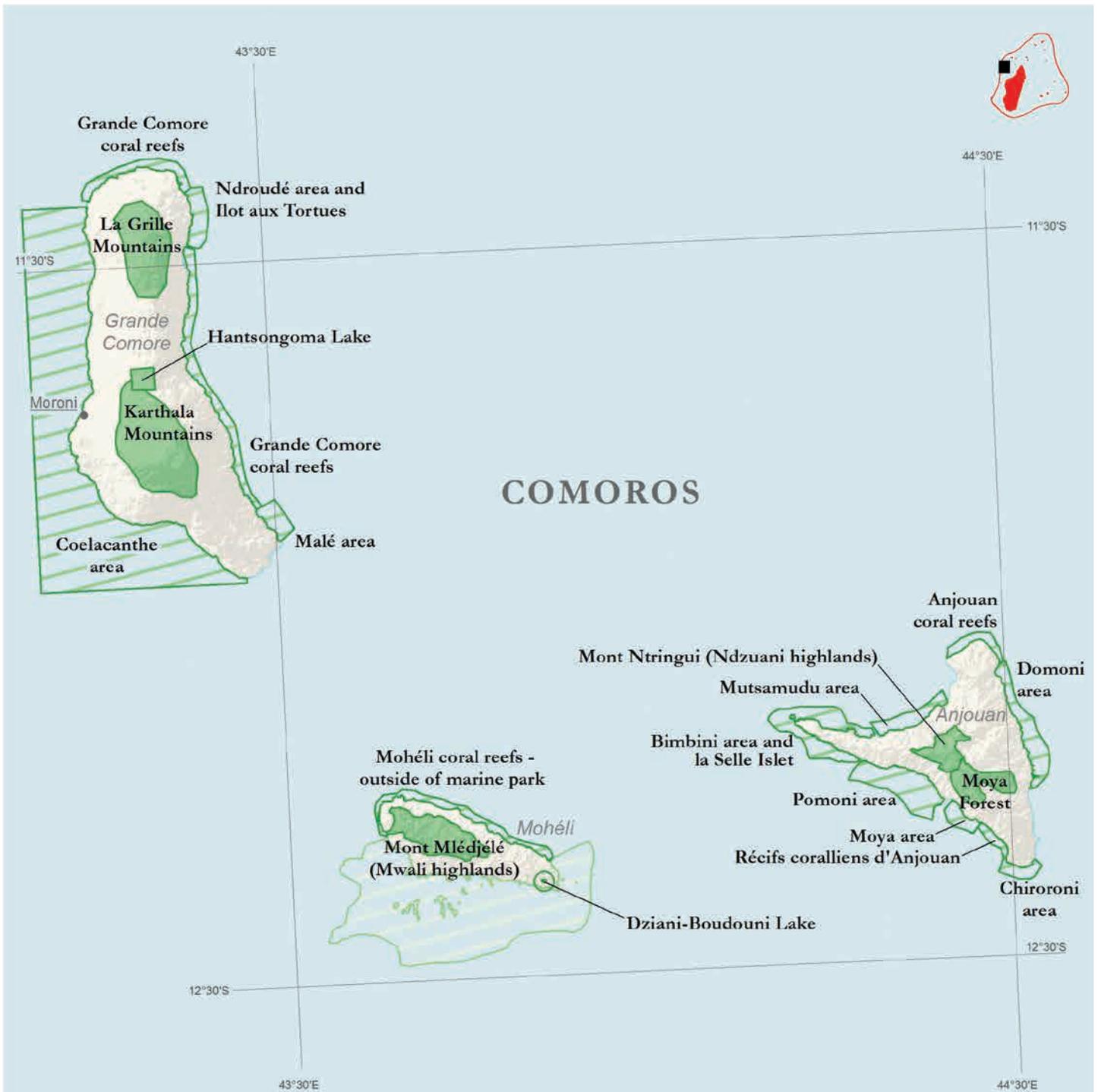


INVESTMENT PRIORITIES

- Make operational and coordinate the allocation and monitoring process of the CEPF grants to ensure effective implementation of the strategy.
- Foster the emergence of a conservation community beyond institutional and political boundaries to achieve conservation objectives.



* Only the northeast part of the northernmost landscape corridor is eligible CEPF funds

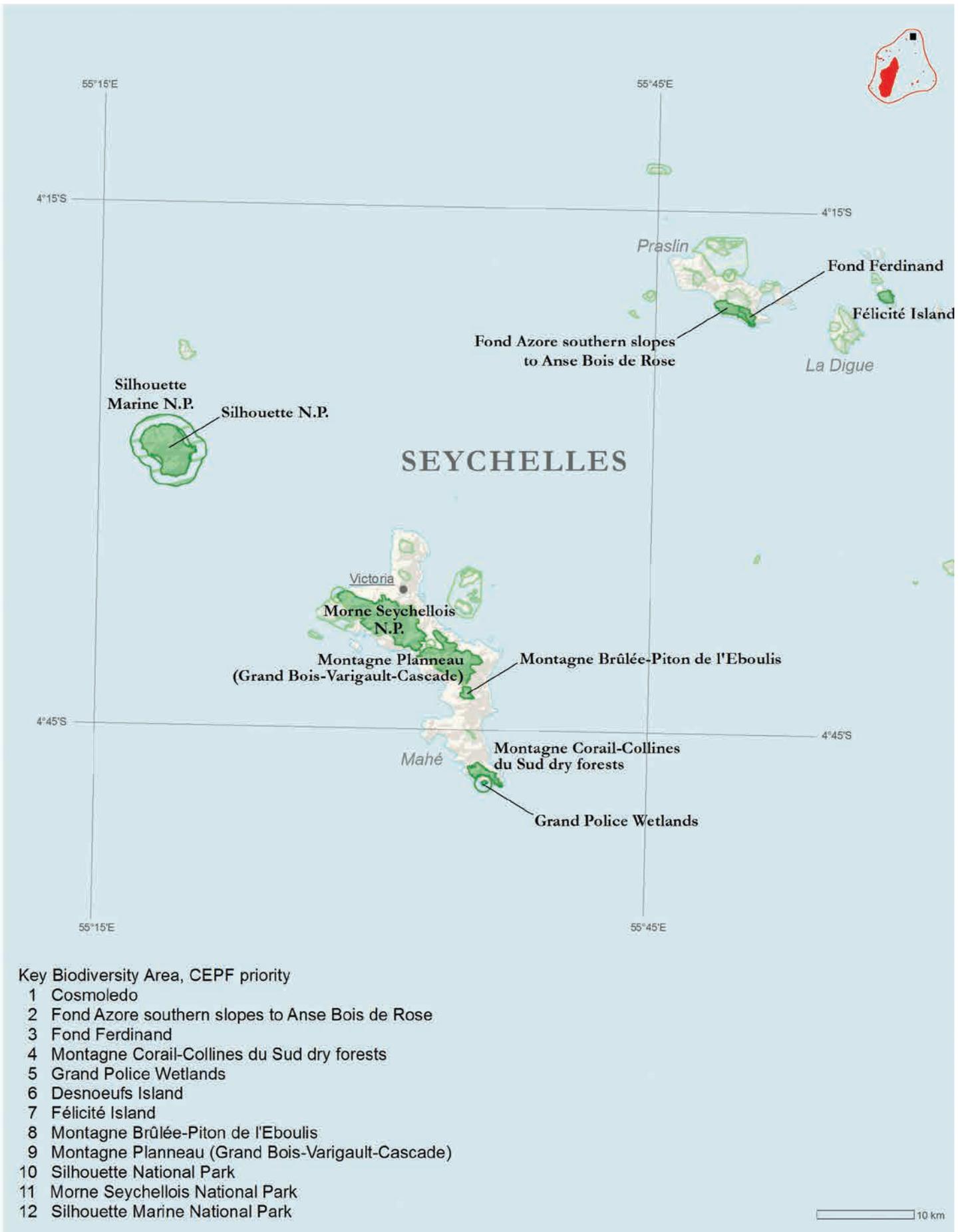


COMOROS

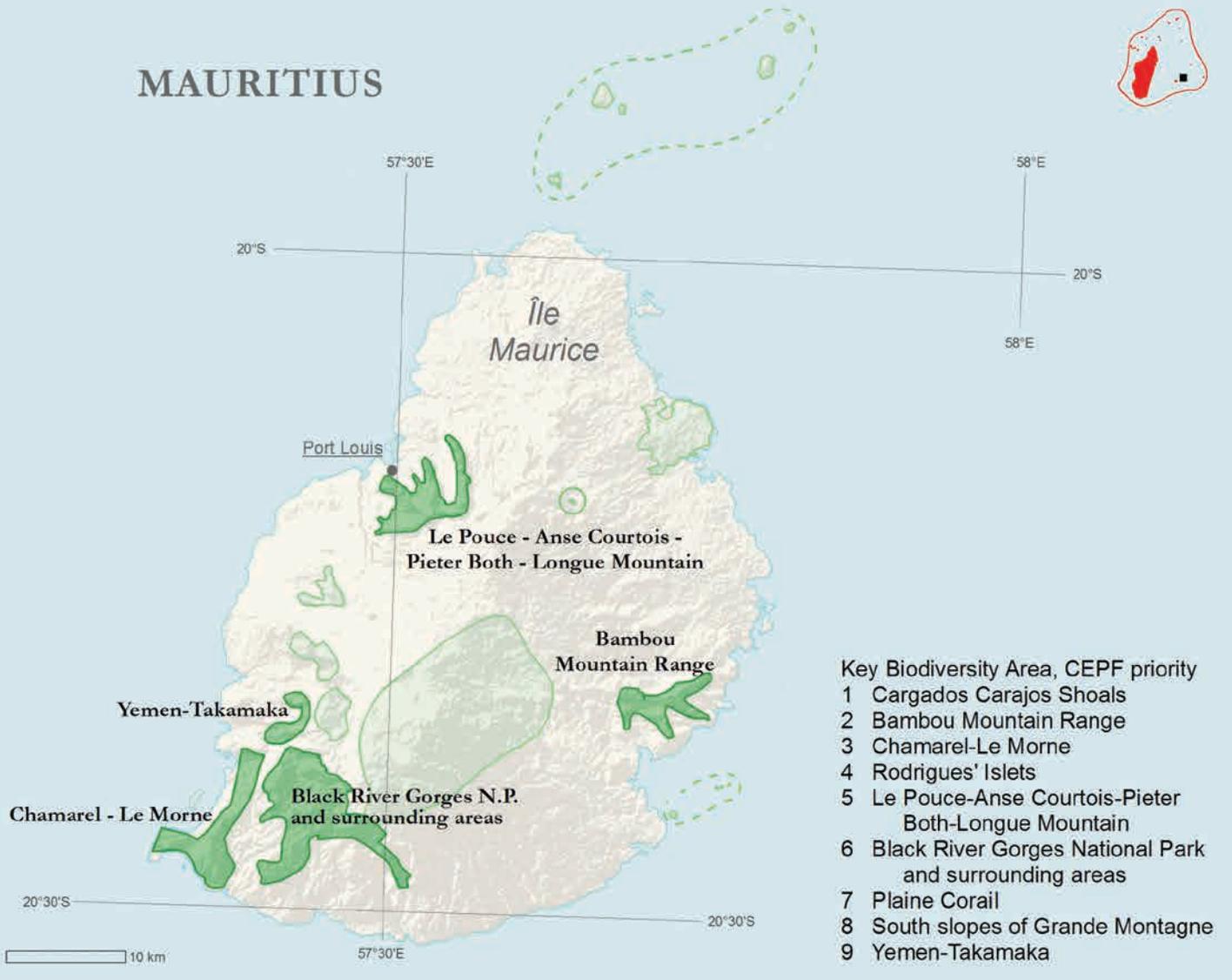
Key Biodiversity Area, CEPF priority

- | | |
|--|--------------------------------------|
| 1 Moya Forest | 11 Bimbini area and la Selle Islet |
| 2 Dziani-Boudouni Lake | 12 Chiroroni area |
| 3 Hantsongoma Lake | 13 Domoni area |
| 4 La Grille Mountains | 14 Malé area |
| 5 Karthala Mountains | 15 Moya area |
| 6 Mont Mlédjélé (Mwali highlands) | 16 Mutsamudu area |
| 7 Mont Ntringui (Ndzuani highlands) | 17 Ndroudé area and Ilot aux Tortues |
| 8 Anjouan coral reefs | 18 Pomoni area |
| 9 Grande Comore coral reefs | 19 Coelacanthe area |
| 10 Mohéli coral reefs - outside of marine park | |

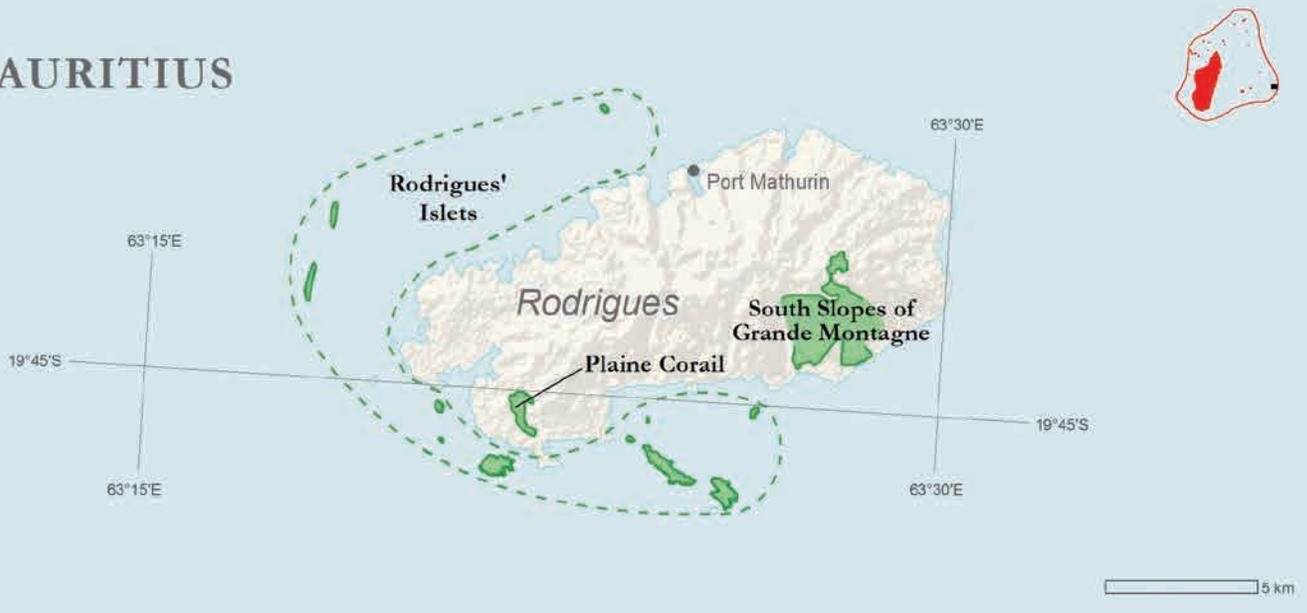
10 km



MAURITIUS



MAURITIUS



Conclusion

The Madagascar and Indian Ocean Islands Hotspot, with its remarkable levels of diversity and endemism, is one of our planet's natural wonders. Its terrestrial and marine ecosystems provide millions of people with fresh water, food, soil stability and fertility and other ecosystem services that are essential to its inhabitants' quality of life. Despite its wealth of natural resources, the hotspot faces such high levels of threat that conservation efforts to date appear inadequate to ensure that future generations of hotspot inhabitants will continue to enjoy its resources. CEPF seeks to provide the hotspot with a new financing source that is designed to reach civil society in a manner that complements financing provided by governmental organizations and other donors. This funding is intended to catalyze innovative conservation activities, particularly those that demonstrate the link between development and biodiversity protection. By choosing an approach that incorporates the improvement of living conditions for the hotspot's people and conservation at the local level, and by supporting the integration of biodiversity protection at the political level as well as in the practices of the private sector, CEPF proposes to amplify efforts to address the immediate threats of poverty and unsustainable development in order to contribute to this hotspot's long-term conservation.



Red-ruffed lemur (*Varecia rubra*), Critically Endangered.
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Lac salé, Grande Comore Island.
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