

Important Marine Mammal Areas: a spatial tool for marine mammal conservation

The Marine Mammal Protected Areas Task Force of the IUCN Species Survival Commission and World Commission on Protected Areas announces the completion of entries for 159 Important Marine Mammal Areas (IMMAs), available at marinemammalhabitat.org. This tool highlights areas that are important for one or more marine mammal species and that have the potential to be managed for conservation. These areas are not marine protected areas: they are biocentric with no legal, political or socio-economic basis. The IMMA tool is already being used to create or modify marine protected areas and to address ship-strike and noise issues for whales.

Important Marine Mammal Areas are modelled on Important Bird and Biodiversity Areas (birdlife.org/world-wide/programme-additional-info/important-bird-and-biodiversity-areas-ibas) but with criteria supporting the 130 marine mammal species, including whales, dolphins, porpoises, seals and sea lions, sea otters, manatees, dugongs and polar bears. These megafauna serve as indicators of the biodiversity and health of the oceans.

The Task Force holds intensive week-long workshops with 20–40 scientists per region, who contribute their expertise to define candidate IMMAs. These candidate IMMAs are then presented to an independent review panel, which typically approves 70–80% of the candidate sites as full IMMAs. Candidate IMMA proposals without sufficient evidence supporting one or more IMMA criteria (marinemammalhabitat.org/imm/imm-criteria) acquire the lesser status of Areas of Interest, and others remain as candidate IMMAs if close to approval.

After the first workshop in the Mediterranean in 2016, the Task Force conducted workshops and reviews in five southern hemisphere regions comprising one-third of the global ocean. In 2020 there was a sixth workshop covering Australia, New Zealand and the South-east Indian Ocean, in which 31 new IMMAs passed peer review, many of them identifying habitats for endemic or threatened species.

As of 2021, the Task Force has received > 180 requests for IMMA shapefiles and metadata. The Task Force has gained recognition from the UN Convention on Migratory Species and the Convention on Biological Diversity, and held discussions with the International Maritime Organization, to use IMMAs in conservation planning.

The IMMA work has been largely sponsored by the German International Climate Initiative through the Global Ocean Biodiversity Initiative, the French Biodiversity Agency through the IUCN Global and Polar Marine Programme, and the MAVA Foundation, administered through Tethys Research Institute in Italy and Whale and Dolphin Conservation in the UK.

In 2021, the Task Force will conduct workshops covering the Black and Caspian Seas, followed by the Eastern Temperate and Tropical Pacific (Mexico to Chile).

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Artificial nest cavities can sustain populations of hornbills in the degraded forests of Kinabatangan, Borneo

Eight hornbill species occur in the Kinabatangan floodplain, a biodiversity hotspot in eastern Sabah, Malaysian Borneo. Through regular monitoring, Hutan, a community-based conservation NGO working in Kinabatangan since 1998, has detected a steady decline of hornbills in this area. We have determined that neither poaching nor lack of food is the primary cause of decline. Hornbills are cavity-nesting birds; the female and the chicks spend several months sealed in natural tree holes until fledging. Previous heavy timber extraction in Kinabatangan destroyed cavities suitable for nesting, and pioneer trees now colonize the regenerating forests. Tree cavities formed in these fast-growing trees have relatively short life spans, deteriorating as a result of heart rot. Their entrance closes rapidly, they are too small for large birds such as the Critically Endangered helmeted hornbill *Rhinoplax vigil* or the Vulnerable rhinoceros hornbill *Buceros rhinoceros*, and there is intense competition with other cavity users. The loss of suitable nest cavities directly threatens the long-term survival of hornbills in Kinabatangan.

In 2013, Hutan and several zoo partners (Beauval, Chester, Phoenix, Nashville, Woodland Park and Houston) built artificial nests for hornbills using plastic barrels. Hornbills soon visited the nest boxes, but as far as we are aware it was 3 years before one was first used, by a pair of rhinoceros hornbills. During 2017–2019, two rhinoceros hornbill pairs used these plastic nest boxes and produced five living chicks. The growth of lichen on the nest box surface not only created a more natural appearance but may have been instrumental in the absorption of light energy, reducing the temperature within the nest cavity. In total, we have installed 25 nest boxes using various models and materials (wood, fiberglass, plastic). Wooden boxes have attracted several pairs of Endangered wrinkled hornbills *Aceros corrugatus*, and bushy-crested *Anorrhinus galeritus* and oriental pied hornbills

Anthracoceros albirostris used them for breeding. However, wooden boxes decay rapidly and are often colonized by stingless bees, civets, ants or flying squirrels, making them unsuitable for attracting large hornbill species. In 2020, no hornbills used the artificial or natural cavities during the breeding season (May–November) in Kinabatangan, possibly because rainfall was heavier than usual. Before the 2021 breeding season, we will erect more artificial nest boxes built with plastic drums, which last longer in harsh weather and tropical conditions. Although the occupancy rate of artificial nest boxes is less than 10%, this project gives us hope to sustain breeding populations of large hornbill species in degraded forests, which are becoming the norm across the range of most hornbills in Asia.

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New records of the Andean cat in central Chile—a challenge for conservation

The Andean cat *Leopardus jacobita* is a small felid that inhabits the Andes of Argentina, Peru, Bolivia and Chile, and some areas of northern Patagonia. The species lives at a low population density, with an estimate of no more than 1,400 individuals throughout its range. Habitat loss and degradation are the main threats to this species and it is categorized as Endangered on the IUCN Red List. In Chile, it occurs discontinuously in foothill and high Andean areas from the extreme north (the Arica and Parinacota region) to the central area (the Metropolitan region). Although individuals have been recorded in the Coquimbo and Metropolitan regions, there have previously been no records in the vast connecting landscape of the Valparaíso region.

On 30 January 2020, however, during monitoring using camera traps, we recorded the species for the first time in the Valparaíso region, in the Rocin River basin, Putaendo (32° 28' S; 70° 25' W, at 2,330 m altitude), on 14 October 2020 a local farmer observed an Andean cat in a walnut orchard in a rural area of Putaendo (32° 31' S; 70° 38' W, at 1,115 m altitude), and on 17 October 2020 we recorded the species again with a



The Andean cat photo-trapped in the Valparaíso region on 30 January 2020. Photo: Bernardo Segura Silva.

camera trap in the Rocin River basin (32° 28' S; 70° 25' W, at 2,589 m altitude). These first records for the Valparaíso region improve our knowledge of the species' range, and of potential connectivity between the northern and central zones of Chile. The records in the Rocin River are of particular concern because a large-scale open pit mine is being developed in this area, with damage already caused by the construction of roads and establishment of drilling platforms. Conservation efforts for the Andean cat should focus on long-term monitoring of the species at these sites, further surveys for the species, and increasing the awareness and engagement of communities and private landowners regarding the need to protect the habitat of this species.

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Conservation of the Yangtze River Basin, China

The Yangtze River flows for c. 6,300 km from the Qinghai–Tibetan Plateau to the Yellow Sea at Shanghai, with a watershed > 1,800,000 km², 20% of China's land area. This immense system of rivers and lakes has a rich biodiversity, including many endemics, and provides multiple ecosystem