IUCN Conservation Outlook Assessment 2014 **(archived)**
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Please note: this is an archived Conservation Outlook Assessment for Malpelo Fauna and Flora Sanctuary. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Malpelo Fauna and Flora Sanctuary

SITE INFORMATION

Country:
Colombia
Inscribed in: 2006
Criteria:
(vii) (ix)

Site description:

Located some 506 km off the coast of Colombia, the site includes Malpelo island (350 ha) and the surrounding marine environment (857,150 ha). This vast marine park, the largest no-fishing zone in the Eastern Tropical Pacific, provides a critical habitat for internationally threatened marine species, and is a major source of nutrients resulting in large aggregations of marine biodiversity. It is in particular a ‘reservoir' for sharks, giant grouper and billfish and is one of the few places in the world where sightings of the short-nosed ragged-toothed shark, a deepwater shark, have been confirmed. Widely recognized as one of the top diving sites in the world, due to the presence of steep walls and caves of outstanding natural beauty, these deep waters support important populations of large predators and pelagic species (e.g. aggregations of over 200 hammerhead sharks and over 1,000 silky sharks, whale sharks and tuna have been recorded) in an undisturbed environment where they maintain natural behavioural patterns. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

The conservation outlook for the site is positive compared to the situation of many marine protected areas in the World. This is because of the size and remoteness of the property, the existence of a large no-take area and the encouraging conservation efforts by governmental and non-governmental actors, including foundations, research institutions and tourism operators. Intensified efforts and technology are needed to curb and eventually completely prevent illegal fishing. Protocols to avoid the introduction of marine and terrestrial alien invasive species must be strictly applied to Navy personnel, scientists and any other visitors. Improved international cooperation is needed to ensure the management of marine traffic, pollution and fisheries in the Tropical Eastern Pacific. Malpelo and the various other World Heritage properties in the Eastern Tropical Pacific can play a key role in large scale seascape management under the umbrella of CMAR.

Current state and trend of VALUES

Low Concern
Trend: Stable

The current state and trend of World Heritage values continue to be very good despite the occurrence of illegal fishing. Ecological processes remain largely intact in the site as evidenced by the population densities of a broad range of apex predators and pelagic species.

Overall THREATS

High Threat

Illegal fishing is the largest current threat to the site. Alien invasive species and disturbance from visiting tourists, scientists and Navy personnel likewise pose threats but appear comparatively straightforward to manage. However, stronger

measures need to be taken to prevent future invasions. In the longer term, the pressure on marine resources is expected to increase in line with global trends and as a function of resource depletion elsewhere. Illegal fishing requires monitoring and law enforcement while management of legal fisheries in the wider marine region likewise needs to respond to the increasing demand.

Overall PROTECTION and MANAGEMENT

Some Concern

Within a relatively short period of time protection and management activities have well advanced after starting only in the 1990s. Consolidation of funding and management is needed, also on the regional basis provided by CMAR, in particular increased efforts in monitoring and law enforcement.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **ExUndisturbed marine wilderness**
  Criterion:(vii)

  The large and remote marine environment of the Malpelo FFS encompasses steep walls, dramatic rock formations, caves and tunnels. A sight of extraordinary natural beauty, major aggregations of the full range of large top predators and pelagic species constitute an increasingly rare phenomenon in the world's overfished oceans. It is one of the few areas in the world where natural population densities and behavioral patterns of these species can be observed in an undisturbed "marine wilderness” (IUCN, 2006, 30COM 8B.28).

- **Globally significant and largely pristine marine protected area with unaltered and non-threatened ecosystems**
  Criterion:(ix)

  As the largest no-fishing zone in the Eastern Tropical Pacific, the Malpelo Fauna and Flora Sanctuary is a globally significant and largely pristine marine protected area with unaltered and non-threatened ecosystems, free of invasive species, that is essential to maintain and replenish the population of sharks, giant grouper and billfish in the Eastern Tropical Pacific (30 COM 8B.28) . Several marine currents meet at Malpelo FFS, making the site an unusual geographical spot. Jointly with the rugged underwater topography this results in a complex and diverse array of habitats and species. The three major marine communities surrounding Malpelo Island are the vertical

habitats, the coral reefs and the pelagic. Large top predators continue to fulfill their ecological roles while behaviour patterns continue undisturbed and still free of major acute threats, providing exceptional research opportunities. The small island and its rocky satellites are believed to serve as an aggregation point of critical importance for the reproduction of numerous marine species. Impressive populations of marine species include Giant Grouper, Billfish and various shark species, including major aggregations of Hammerhead Shark, Silky Shark, Whale Shark and Tuna. Besides numerous marine mammals and reptiles close to 400 fish species have been recorded, including several endemics. The small terrestrial areas are home to several endemic plant and reptile species and also support large nesting seabird colonies.

Other important biodiversity values

► Other international designations

The site lies within a Biodiversity Hotspot suggested by Conservation International and was designated a Particularly Sensitive Sea Area (PSSA) by the International Maritime Organization (IMO) in 2002. Malpelo FFS is an integral part of the Eastern Tropical Pacific Marine Corridor, a marine conservation site network regionally known by its Spanish acronym CMAR. CMAR also includes World Heritage properties in Costa Rica, Ecuador and Panama and another marine and coastal protected area in Colombia. While much of the potential remains to be realized, CMAR constitutes a rare chance for large scale marine management and conservation across international boundaries.

Assessment information

Threats

Current Threats

Very High Threat

Illegal artisanal and, more importantly, illegal industrial fishing within and around the marine protected zone is a continuing problem. Vessels from various nations illegally enter and fish within the site, attracted by the abundance of pelagic fishes and sharks, causing great damage to the ecosystem. More efficient monitoring and law enforcement is required in the no-take areas. Illegal fishing in the wider region is even more challenging and likely to impact on the longer term integrity of the property.

► Fishing / Harvesting Aquatic Resources

Very High Threat
Inside site
Outside site

Illegal artisanal and, more importantly, illegal industrial fishing within and around the marine protected zone is a continuing problem. Vessels from various nations illegally enter and fish within the Sanctuary, attracted by the abundance of pelagic fishes and sharks, causing great damage to the ecosystem. A single boat can extract thousands of sharks in a few hours (Fundación Malpelo, 2012). More efficient monitoring and law enforcement is required in the no-take areas. Hand, seine and long-line fishing are used, causing destructive by-catch beyond impacting on commercial target species (WDPA, 2011). Illegal fishing in the wider region is even more challenging and likely to impact on the longer term integrity of the property.

► Tourism/ visitors/ recreation

Low Threat
Inside site

The small naval station on the island impacts local fauna and flora, even though care is taken to reduce this to a minimum (Fundación Malpelo, 2012).

Potential Threats

Low Threat

Accidental introduction of exotic species and increasing tourism pose relatively low-level potential threats to date, however, stronger measures need to be taken to prevent future invasions. In the longer term, the pressure on marine resources is expected to increase in line with global trends and as a function of resource depletion elsewhere. Illegal fishing requires monitoring and law enforcement while management of legal fisheries in the wider marine region likewise needs to respond to the increasing demand. Studies on plastic marine pollution besides the comparatively well-understood situation in the North Pacific are at the infancy stage.

► Solid Waste

Low Threat

Major risks include increasing marine traffic which is addressed by the PSSA designation. The confirmation of garbage patches in various parts of the Pacific is an even more complex and truly global challenge. Recent research has recorded marine plastic pollution both north and south of the Eastern Tropical Pacific suggesting that even remote locations far from pollution sources can be at risk. (http://www.sciencedirect.com/science/article/pii/S0025326X12006224#f0005).

► Tourism/ Recreation Areas

Low Threat
Inside site
Outside site

Recreational and scientific boating and scuba diving can negatively affect the Sanctuary. While a relatively small number of some 600 divers visiting the site per year active management is required (Fundación Malpelo, 2012).

► Invasive Non-Native/ Alien Species

High Threat
Inside site

Few marine non-native species were detected in the last few years (i.e. Carijoa spp). There is no information about the source of these introductions but stronger measures must be taken to prevent future invasions. Scientists, tourists and Navy personnel should follow strict protocols to minimise the

risks.

► Fishing / Harvesting Aquatic Resources

Low Threat
Inside site
Outside site

In the long term, the management of fisheries in the wider seascape will be a factor in the equation of Malpelo FFS.

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

Cooperation with Navy station and personnel.

► Legal framework and enforcement

Some Concern

The no-take area and the status as an element of Colombia's national Protected Areas System provide a clear and adequate framework. Monitoring and law enforcement lag behind the exemplary legal set-up.

► Integration into regional and national planning systems

Some Concern

This large marine protected area is a key component of Colombia’s National Fisheries Management Plan for the Pacific Region and an integral part of the Eastern Tropical Pacific Marine Corridor (CMAR).

► Management system

Some Concern

The island and surrounding waters are administered by Colombia's Protected Areas Agency which holds an agreement with an NGO for the implementation of the management plan. The NGO, currently Fundación Malpelo, also

operates the endowment resources. The Colombian Navy, the only permanent human presence on Malpelo Island, cooperates in the patrolling of the island and the surrounding waters. The reported occurrence of illegal fishing suggests room for improvement.

► Management effectiveness

Mostly Effective

The Colombia Protected Areas Agency evaluates on a periodical basis the management effectiveness of all national protected areas. The most recent assessment was made on short-, medium- and long-term effectiveness, with scores of 60, 66 and 69%, respectively (Fundación Malpelo, 2013). Since the assessment was made, recommendations have been followed on strengthening the National Agency personnel, updating monitoring protocols and a better coordination between Fundación Malpelo and park officers.

► Implementation of Committee decisions and recommendations

Some Concern

The inscription decision in 2006 recommended improving management highlighting illegal fishing, as well as strengthening tourism management, developing long term funding and embarking on research in the poorly known deeper areas, including seamounts.

► Boundaries

Mostly Effective

Terrestrial areas covered in their entirety, marine boundaries cover a broad range of the diverse habitats.

► Sustainable finance

Highly Effective

A privately administered 5 million USD endowment (Conservation International/Global Conservation Fund + Fondo Acción) with public-private governance provides annual funding since 2009 for main activities of the management plan through an NGO operator that also leverages significant additional funding. Currently the operator is Fundación Malpelo.. The full potential of tourism revenues remains to be realized. The cooperation with

the Colombian Navy in patrolling is an important in-kind contribution. Additional funding based on transnational agreements (as CMAR may provide) could enable intensified monitoring and law enforcement to address illegal fishing more effectively

► Staff training and development

Mostly Effective

Navy personnel stationed on the island on a rotational basis have been trained with protocols to minimise the risks of introducing alien invasive species (Pers. Comm., 2012).

► Sustainable use

Mostly Effective

Recreational and scientific diving in the Sanctuary is strictly regulated.

► Education and interpretation programs

Mostly Effective

Oral and video presentations are made in the capital of Bogota, Cali, and Buenaventura at secondary schools, universities, international meetings, and on-board boats visiting Malpelo to further awareness of the conservation values of the Sanctuary (Fundación Malpelo, 2012).

► Tourism and interpretation

Mostly Effective

Approximately 20 ships and 600 divers visit the Sanctuary annually. The diving boats furnish accommodation, food, and equipment for divers, and only 25 divers are allowed at one time in dive sites. Concessionaires assume the cost of maintenance of anchor buoys. A handbook has been developed that regulates activities that can be undertaken in the Sanctuary. The Fundación Malpelo conducts some of the tours to the Sanctuary, and the proceeds help pay for management of the site. The Foundation also attends major diving fairs in Europe and the U.S. to promote conservation and travel to the Sanctuary (Fundación Malpelo, 2012).

► Monitoring

Some Concern

Diving boats visiting the Sanctuary monitor ecosystem status including data on sea temperatures, marine mammals, turtles, birds, and the presence of fishing boats in the area. The Fundación Malpelo has monitored populations of Hammerhead Sharks since 2000 (Fundación Malpelo, 2012). Monitoring is also carried out through annual expeditions by the Fundación Malpelo, the Universidad del Valle, the Caldris Association and BIOMMAR group, partially funded by CI-FA Malpelo Endowment (Pers. Comm., 2012).

► Research

Mostly Effective

Research has been conducted in the Sanctuary since 1999 by the Colombian Institute for Marine and Coastal Investigation (INVEMAR), the Colombian Navy, the Calidris Association, the Malpelo Foundation, the Universidad del Valle, and the Colombian Protected Areas Agency. The Malpelo FFS is remote and in very good condition, and therefore an excellent research location and much is still to be done. Only in 1998 was the latest shark species discovered (Odontaspis ferox). Currentl research includes monitoring of invasive octocoral species, connectivity patterns of two pelagic fish species, effects of climate change in the growth dynamics of an octocoral, and several studies on genetic connectivity and fisheries that make part of the Sharks' National Action Plan. In 2005 there was a submarine expedition, the Deep Ocean Quest, to explore the seas down to 1,000m, coordinated by MarViva, (the Costa Rican Marine Conservation Organization) and the Malpelo Foundation, with the financial support of Conservation International. (PNNC, 2006). (WDPA, 2011)

Overall assessment of protection and management

Some Concern

Within a relatively short period of time protection and management activities have well advanced after starting only in the 1990s. Consolidation of funding and management is needed, also on the regional basis provided by CMAR, in

particular increased efforts in monitoring and law enforcement.

▶ **Assessment of the effectiveness of protection and management in addressing threats outside the site**
Some Concern

Management efforts outside the large marine protected area, e.g. fisheries, are not directly coordinated with the management of the property. The international CMAR initiative mentioned above has the potential to address this scale of management.

▶ **Best practice examples**

The conservation history of Malpelo FFS, including the successful World Heritage nomination, is based on an exemplary cooperation between governmental and non-governmental actors.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **ExUndisturbed marine wilderness**
Low Concern
Trend:Stable

The pristine natural beauty of the site remains largely preserved.

▶ **Globally significant and largely pristine marine protected area with unaltered and non-threatened ecosystems**
Low Concern
Trend:Stable

Ecological processes remain largely intact in the site as evidenced by the population densities of a broad range of apex predators and pelagic species. The location of the site and its related role as an aggregation point enable dispersal and replenishment of benthic larvae of corals, fish and mollusks

and other marine life in the broader Eastern Tropical Pacific.

Other important biodiversity values

► Other international designations

The site lies within a Biodiversity Hotspot suggested by Conservation International and was designated a Particularly Sensitive Sea Area (PSSA) by the International Maritime Organization (IMO) in 2002. Malpelo FFS is an integral part of the Eastern Tropical Pacific Marine Corridor, a marine conservation site network regionally known by its Spanish acronym CMAR. CMAR also includes World Heritage properties in Costa Rica, Ecuador and Panama and another marine and coastal protected area in Colombia. While much of the potential remains to be realized, CMAR constitutes a rare chance for large scale marine management and conservation across international boundaries.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Low Concern

Trend: Stable

The current state and trend of World Heritage values continue to be very good despite the occurrence of illegal fishing. Ecological processes remain largely intact in the site as evidenced by the population densities of a broad range of apex predators and pelagic species.

► Assessment of the current state and trend of other important biodiversity values

Low Concern

Trend: Data Deficient

The above mentioned illegal fishing is a broader challenge transcending national boundaries, including within the regional CMAR efforts.

Additional information

Key conservation issues

▶ Illegal fishing

Global

Commercial fishing vessels occasionally enter the Sanctuary to illegally fish sharks and pelagic species thereby directly impacting on the target and by-catch species but also altering the structure of the marine ecosystem.

▶ Alien Invasive Species

Local

Despite the small numbers of rotating Navy personnel and visitors, introductions of terrestrial and/or marine alien invasive species could have dramatic effects as well documented in countless island settings and marine areas.

▶ Marine pollution

Global

Major risks include increasing marine traffic which is addressed by the PSSA designation. The confirmation of garbage patches in various parts of the Pacific is an even more complex and truly global challenge. Recent research has recorded marine plastic pollution both north and south of the Eastern Tropical Pacific suggesting that even remote locations far from pollution sources can be at risk.

Benefits

Understanding Benefits

▶ Is the protected area valued for its nature conservation?

Conservation of the large aggregations of apex predators and pelagic species in the Sanctuary are of global significance.

▶ **Importance for research**

The Sanctuary is in very good condition as regards contamination and other modifications and impacts. Jointly with the population densities and behaviour patterns considered natural Malpelo is a reference area for many aspects of marine ecology and biology.

▶ **Fishing areas and conservation of fish stocks**

The Malpelo FFS serves as a major reproduction, breeding and nursery area for many forms of marine life and contributes to the productivity of the fisheries of the Eastern Tropical Pacific. Additional economic benefits are derived from touristic use.

Summary of benefits

The Malpelo FFS is of major importance for conservation and research, and serves as an aggregation, reproduction, breeding and nursery site for numerous marine species that are of great importance for the Eastern Tropical Pacific fisheries. The large predators and pelagic species are the basis for the high-end diving tourism.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Colombian Navy		Patrol boat and personnel for law enforcement.
2	Conservation International, Fundación Malpelo, Asociación Calidris and Universities		Support for participation in activities related to the Eastern Tropical Pacific Seascape to coordinate conservation policies, research, and management, and facilitate information exchange.

№	Organization/ individuals	Project duration	Brief description of Active Projects
3	Environmental Action Fund of Colombia		Annual contribution of more than US$200,000 per year (proceeds from the Malpelo Endowment Fund) to support management. Endowment manager.
4	Fundación Malpelo		Hammerhead shark research (funding from CI-FA Malpelo Endowment); development of management effectiveness and conservation (funded by Conservation International ETPS).

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Research in the poorly known deeper areas, including seamounts of the underwater Malpelo Range to better understand the marine system.	
2	.	Increased monitoring and law enforcement.	
3	CMAR	Consolidation of intergovernmental efforts at the regional level of the Eastern Tropical Pacific.	

REFERENCES

№	References
1	Fundación Malpelo, 2010. Management Effectiveness Analysis, Malpelo Fauna and Flora Sanctuary. AEMAPPS.
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3	Fundación Malpelo, 2013. Endowment anual report.
4	IUCN, 2006. World Heritage Nomination – IUCN Technical Evaluation, Gorgona and Malpelo Islands, Coastal & Oceanic National Marine Parks of Colombia’s Eastern Tropical Pacific (Colombia) – ID No. 1216.
5	Parques Nacionales Naturales, 2005. Plan de Manejo, Sanctuario de Fauna y Flora Malpelo, 2005-2009. Parques Nacionales Naturales de Colombia, Fundación Malpelo y Otros Ecosistemas Marinas.
6	Personal communication, 11.11.2012.
7	WDPA, 2011. Data Sheet – Malpelo Fauna and Flora Sanctuary, Colombia. UNEP – WCMC.