IUCN Conservation Outlook Assessment 2014 **(archived)**
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Please note: this is an archived Conservation Outlook Assessment for Tubbataha Reefs Natural Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Tubbataha Reefs Natural Park

SITE INFORMATION

Country:
Philippines
Inscribed in: 1993
Criteria:
(vii) (ix) (x)

Site description:
The Tubbataha Reef Marine Park covers 130,028 ha, including the North and South Reefs. It is a unique example of an atoll reef with a very high density of marine species; the North Islet serving as a nesting site for birds and marine turtles. The site is an excellent example of a pristine coral reef with a spectacular 100-m perpendicular wall, extensive lagoons and two coral islands. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

The conservation outlook for Tubbataha Reefs Natural Park is good in relation to present management and current threats which, for the most part, are being addressed and mitigated. The values of the Park are being maintained and enhanced as protective management is having the effect of improved conditions in the coral reef ecosystem that that is being protected. Potential future threats raise some concerns because of their unknown nature. Shipping is a growing concern in the Sulu Sea which is not yet managed to minimize potential impact on the Park. Marine debris is always increasing from sources far from the Park. The potential of sea surface temperature increases due to climate change looms on the horizon and could have a severe negative impact on the coral reef ecosystem in the future.

Current state and trend of VALUES

Good
Trend: Stable

The biophysical and environmental resources of coral reefs and their associated high diversity of marine life as well as their high reproduction values and atoll reef formation are being well maintained in the Park and are in excellent condition based on current management and improvements from the past conditions prior to the implementation of protection for the Tubbataha Reefs. The associated reef habitats of seagrass beds, reef slopes, small islets with nesting seabird populations are equally well maintained and improving in ecological integrity. Water pollution is absent from the Park area and the overall system serves as a laboratory for study, education and research as well as a control for the high biomass of marine life no longer typical in this part of the world.

Overall THREATS

Low Threat

Almost all current threats are low to very low but vigilance is needed to maintain these threats at a low level. Potential threats, mainly related to climate change, are mostly beyond the control of Park managers and the Philippines but are considered to be high if they occur.

Overall PROTECTION and MANAGEMENT

Highly Effective

Overall, protection and management of Tubbataha are excellent and serious problems of short term management are small due to the good management team and their vigilant efforts to protect the Park. The only weakness in the Park management system is long term financial sustainability which could be addressed through the establishment of an endowment fund.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Pristine coral reefs with a large diversity of associated marine life**
  Criterion:(vii)

  Tubbataha Reefs Natural Park contains excellent examples of pristine reefs with a high diversity of marine life. The property includes extensive reef flats and perpendicular walls reaching over 100m depth, as well as large areas of deep sea. The remote and undisturbed character of the property and the continued presence of large marine fauna such as tiger sharks, cetaceans and turtles, and big schools of pelagic fishes such as barracuda and trevallies add to the aesthetic qualities of the property (SoOUV, 2009). The coral reef atoll formation which includes all common reef-associated habitats, is a remote area that is largely undisturbed and with a wide variety of reef topographies, slopes and reef flats within seas of clear water with visibility ranging from 15 to 30 m. (Arquiza and White 1999; Ledesma et al 2005; WWF 2006).The diversity of flora and fauna within the Tubbataha Reefs includes 600 species of fish, 360 species of corals belonging to 80 out of 111 genera known in the world. It provides habitat for 181 species of threatened and near threatened marine life and the Park contains one of the few remaining colonies of breeding seabirds (6 species) in the region (Arquiza and White 1999; Jensen 2004; WWF 2006).

- **High reproduction among large diversity of reef associated marine life**
  Criterion:(ix)

Tubbataha Reefs Natural Park lies in a unique position in the middle of the Sulu Sea and is one of the Philippines' oldest ecosystems. It plays a key role in the process of reproduction, dispersal and colonization by marine organisms in the whole Sulu Sea system, and helps support fisheries outside its boundaries (SoOUV, 2009). The relatively pristine nature of the coral reef and its high diversity of marine life allows high level reproduction among its marine life which populates the surrounding waters with larvae and repopulate the reef. In this regard, the biomass of marine life has been increasing since the reef was actively protected from fishing in the mid-1990s (Ledesma et al 2005; White et al., 2012).

► Laboratory for study of ecological and biological processes in pristine condition

Criterion:(ix)

The area serves as a natural laboratory for the study of ecological and biological processes, displaying the ongoing process of coral reef formation and supporting a large number of marine species dependent on reef ecosystems. The increasing shark populations indicate ecological balance and the area offers a control site for the study of the responses of a protected reef system to the impacts of climate change (SoOUV, 2009; White et al 2012).

► High diversity of common and threatened marine species including seabirds

Criterion:(x)

The variety and size of the habitats within the Tubbataha Park allows the area to support 360 species of corals, almost 90% of all coral species in the Philippines. The reefs and seas of the property also support 13 species of cetaceans, 13 species of sharks, and an estimated 600 species of fish, including healthy and growing populations of fish species, such as the Napoleon Wrasse and Bump-head Parrotfish that are threated in other areas. Tubbataha has an increasing population of Green and Hawksbill sea turtles that feed and rest in the area, a few of which nest in sandy islets. A healthy population of 6 seabird species resides on the islets. The critically endangered Christmas Island Frigate is a regular visitor to the property (SoOUV, 2009; Arquiza and While 1999; White et al, 2012; WWF 2006; TMO

surveys data).

▶ **High biomass of reef fish, invertebrates and associated organisms in the Coral Triangle region**
Criterion:(x)

Almost 20 years of no fishing has allowed the biomass of the reef organisms to increase so that Tubbataha has a higher biomass per unit area of reef compared to any reef in the Philippines and compared to most other reefs in Southeast Asia. The status of the reef has been and is being documented periodically so that change over time is recorded (White et al., 2012).

Assessment information

Threats

Current Threats

Low Threat

Current threats mostly pertain to either present uses of the site area through tourism and visitation and some potential illegal fishing and those restricted to areas outside the site related to shipping and the accumulation of debris in the Sulu Sea from various sources outside the site. The overall level of current threats is low to very low based on recent history and observations.

▶ **Tourism/ visitors/ recreation**
Low Threat
Inside site

Dive tour boats are well managed but in excess could detract from the visitor satisfaction and have some minor impacts on the reef ecosystem (White et al 2012; AW 2013)

▶ **Shipping Lanes**
Low Threat

Inside site

Ships pass close to the Park on a regular but not very frequent basis and could present a threat for either grounding or pollution (AW 2013)

► Fishing / Harvesting Aquatic Resources

High Threat
Inside site

Fishing is not allowed inside the Park and rarely occurs but vigilance is needed. Fishing outside the Park could encroach into the Park on the outer boundaries where surveillance is difficult (AW 2013). There is a need to allocate more funding to education of benefits of the property and awareness to prevent illegal fishing (IUCN Evaluation, 2009). Information, Education and communication (IEC) campaigns implemented in the local communities, where most apprehended illegal fishers are based, have greatly contributed to enhancing compliance with the ‘no-take’ status of the property, as the low number of illegal fishing related arrests made in 2010 shows (SOC Report, 2011). Illegal fishing from international vessels is potentially more serious than from local fishers. In 2011 it was noted that TMO’s budget for patrols was small in relation to the property’s area (SOC report, 2011). However, the budget for enforcement has increased since then and regular patrols are being conducted. Fishing, however, remains a high threat.

► Tourism/ visitors/ recreation

Low Threat
Inside site

Dive tour boats are well managed and quite careful but minor discharges are possible from the boats if they don’t follow the no-dumping within 1 mile rule (AW 2013)

► Solid Waste

High Threat
Inside site

A growing concern is the increase in floating debris in and around the Park that affects marine life (AW 2013)

Potential Threats

High Threat

Potential threats are mostly related to climate change that could cause repeated episodes of sea surface temperature increases causing coral bleaching. Although projected to occur in the future due to global warming and increasing acidity of the oceans, these threats are considered to be high because of the potential damage that could occur over the next 100 years.

▶ Oil/ Gas exploration/development

Low Threat
Inside site

There is interest in the Philippines to explore for oil/gas in the Sulu Sea.

▶ Modified Genetic Material

Very Low Threat
Inside site

This is a very low threat of possible introductions from ships that pass close to the Park

▶ Chemical changes in oceanic waters

High Threat
Inside site

This will degrade the reef if and when it occurs, but not for another 50 to 100 years or so, depending on its severity.

▶ Temperature changes

High Threat
Inside site

Sea surface temperature changes caused a major bleaching in Tubbataha in 1998 and will likely occur again during the next ENSO event that affects this part of the world (Ledesma et al 2005).

▶ Earthquakes/ Tsunamis

Very Low Threat

Inside site

Earthquakes have damaged the reef in the past and could in the future while a tsunami will likely have only a minor impact

Protection and management

Assessing Protection and Management

▶ Legal framework and enforcement

Highly Effective

The Park is effectively protected since almost no illegal intrusion occurs (AW 2013)

▶ Relationships with local people

Mostly Effective

Tubbataha has a positive image and relationships with the local communities have been well managed by the Park management (WWF 2006)

▶ Integration into regional and national planning systems

Highly Effective

Tubbataha Park is protected by national law and is part of the National Integrated Protected Areas System (NIPAS) in the Philippines and also a flagship site within the Coral Triangle MPA System (TRNP Act of 2009)

▶ Management system

Highly Effective

The management regime is focused on strict protection, and delivered through a management consortium consisting of the Philippine central, provincial and municipal level of government, NGOs and some private sector donors (IUCN Evaluation, 2009). The management operations are carried out by the Tubbataha Management Office (TMO) based in Puerto Princesa.

► Management effectiveness

Highly Effective

The management systems work and is practical. Despite continuing pressures, it is a relatively effectively protected coral reef for its size in the region (IUCN Evaluation, 2009).

► Implementation of Committee decisions and recommendations

Mostly Effective

In 2009 when the World Heritage Committee approved the extension of the property , it also requested that the State Party to put in place a programme of ecological monitoring and to develop a sutstainable tourism strategy (Decision 33COM 7B.18). In its Decision 35COM 7B.17 the World Heritage Committee commended the State Party for the progress achieved in implementing the recommendations, but also urged the State Party to undertake further actions, including expediting “the application for the designation of the Sulu Sea as a Particularly Sensitive Sea Area”. A regional forum will be held in Philippines in July in response to the request for the establishment of Tubbataha as a PSSA. The Philippine Coast Guard has been identified as the lead agency in such an application (Consultation with the site manager, June 2014).

► Boundaries

Mostly Effective

Boundaries are established by national law and publicized for all mariners and stakeholders (TRNP Act of 2009). The boundaries are adequate (IUCN Evaluation, 2009).

► Sustainable finance

Some Concern

The Park has revenue from tourism, national and provincial government allocations and from small grants but also has a yearly budget deficit (gap) of about $200,000 (Starling Resources 2012)

► Staff training and development

Highly Effective

Staff are well trained and highly motivated and perform their tasks well (Pers. Comm., 2013). However, the on-site operations are heavily reliant on the personnel and logistic support from the Navy and Coastguard (IUCN Evaluation, 2009).

► Sustainable use

Highly Effective

The Park area is only used for tourism and some monitoring and research which is sustainable and has no measureable negative impact on the environment in the Park (White et al 2012)

► Education and interpretation programs

Mostly Effective

The Park management advertises the Park as an educational destination and it serves to educate various stakeholders from fishers to tourists. Also, dive boat operators all carry interpretive guides (Pers. comm., 2013)

► Tourism and interpretation

Mostly Effective

Lack of tourism impact monitoring on the property’s Outstanding Universal Value (OUV) represents a certain management gap (SOC report, 2011). An accreditation system to regulate dive masters, crew and boat operators, in order to promote conservation awareness among tourism businesses, is being developed (SOC report, 2011).

► Monitoring

Highly Effective

Monitoring is done annually by Park staff, some outside researchers and one volunteer scientific group which visits the Park for monitoring every 4 years (AW 2013; White et al 2012)

► Research

Mostly Effective

Limited research is done in the Park due to cost and distance so most research is related to the monitoring of Park resources over time to determine cause effect relationships for changes in the coral reef and fish

Overall assessment of protection and management

Highly Effective

Overall, protection and management of Tubbataha are excellent and serious problems of short term management are small due to the good management team and their vigilant efforts to protect the Park. The only weakness in the Park management system is long term financial sustainability which could be addressed through the establishment of an endowment fund.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

Outside threats to the Park resources are the largest concern because the Park management has a limited ability to control these potential threats (e.g. debris, pollution from ships, climate changes etc.) (Pers. Comm., 2013)

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Pristine coral reefs with a large diversity of associated marine life

Good
Trend:Stable

Stable and improving based on monitoring results (Ledesma et al., 2005; White et al., 2012)

- **High reproduction among large diversity of reef associated marine life**

  Good
  Trend:Improving

  Evidence of increased population of vulnerable species such as Napoleon wrasses, groupers, small pelagic fish that were less abundant in the past, sharks, and a few others (Ledesma et al., 2005; White et al 2012)

- **Laboratory for study of ecological and biological processes in pristine condition**

  Good
  Trend:Stable

  Stable and improved based on monitoring results (White et al., 2012)

- **High diversity of common and threatened marine species including seabirds**

  Good
  Trend:Stable

  Stable and improved for most species based on monitoring results (Ledesma et al., 2005; White et al., 2012; Jensen 2005).

- **High biomass of reef fish, invertebrates and associated organisms in the Coral Triangle region**

  Good
  Trend:Stable

  Stable and improving based on monitoring results (Ledesma et al 2005; White et al., 2012)

Summary of the Values

- **Assessment of the current state and trend of World Heritage values**

  Good

  Trend: Stable

  The biophysical and environmental resources of coral reefs and their

associated high diversity of marine life as well as their high reproduction values and atoll reef formation are being well maintained in the Park and are in excellent condition based on current management and improvements from the past conditions prior to the implementation of protection for the Tubbataha Reefs. The associated reef habitats of seagrass beds, reef slopes, small islets with nesting seabird populations are equally well maintained and improving in ecological integrity. Water pollution is absent from the Park area and the overall system serves as a laboratory for study, education and research as well as a control for the high biomass of marine life no longer typical in this part of the world.

Additional information

Key conservation issues

▶ **Increasing debris in water in and around Tubbataha Park**
Regional

The Sulu Sea as other seas is collecting more marine debris from various sources. The sources are not from within Tubbataha Park but are from ships and land-based sources outside of the Park. This is beyond the control of Park management but is an increasing national and global issue.

▶ **Sustainable finance and endowment funds for Park management**
National

Tubbataha is well managed but annually incurs a gap between budget requirements and revenues of about $200,000. This could be addressed through an endowment and through some tweaks in the revenue streams.

▶ **Potential intrusion of ships that could cause pollution and/or grounding on the reef which requires enforcement of the 10 mile radius buffer zone around the Park boundaries**
Local

Remote reefs are often vulnerable to grounding of ships, 2 of which have hit the reef in the last year (both foreign vessels). Groundings cause local damage

but also can result in oil pollution if leaks occur which can be more serious.

▶ **Sea surface temperature changes due to global warming**
Global

In 1998, about 25% of the living hard coral in Tubbataha bleached due to an increased sea surface water temperature. Since that time, the corals have recovered but the worry remains that this type of event will be repeated.

Benefits

Understanding Benefits

▶ **Is the protected area valued for its nature conservation?**

Tubbataha embodies the full realm of tropical coral reef systems in the Philippines and at a global scale and provides direct and indirect benefits to all who value marine nature conservation

▶ **Outdoor recreation and tourism**

Tubbataha is a major (world class) diving destination for both Filipinos and international tourists. It provides tourism revenues to Park management as well as indirect economic benefits to tourism related enterprises in Palawan Island and in Cagayancillo Municipality. It also provides education to Filipinos and international visitors.

▶ **Importance for research**

Tubbataha, being a no extraction marine reserve, being located in a remote area without much pollution and under good management, means that it can serve as a control for how coral reef ecosystems function in a natural setting, what is the extent and composition of its fish community and how it will change over time in relation to climate change.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Coastal Conservation and Education Foundation, Inc.		Conducts monitoring of Tubbataha Reefs every 4 years and compiles a complete report of the reef status. This monitoring uses volunteer divers who cover the cost of the trip so trained divers who want to contribute are always encouraged to join the expedition.
2	Tubbataha Management Office (TMO)		The TMO manages the Tubbataha Park in its entirety and coordinates all activities within the Park and assists to source resources for Park management
3	World Wildlife Fund Philippines		WWF Philippines provides monitoring support to the TMO and use of their boat to travel to Tubbataha for routine operations. WWF also provides support for some personnel assisting with Park management.

REFERENCES

№	References
1	Arquiza, Y. and White A. 1999. Tales from Tubbataha. Sulu Fund for Marine Conservation and The Bookmark, Inc.
2	Jensen, A.E. 2005. Monitoring and Inventory of the Seabirds of TRNMP, Cagayancillo, Palawan, Philippines, unpublished, a study commissioned for the TPAMB.
3	Ledesma, M., Dygico M., Reyes M., Conales, M. and A. Songco. 2005. Monitoring changes in the benthic and fish community structure of Tubbataha Reef National Marine Park from 1997 to 2005, WWF-Philippines, unpublished.
4	Personal Observation of Alan White (AW 2013) based on meeting with Tubbataha Protected Area Management Board (TPAMB) and short visit to Tubbataha Park on 14-16 May 2013
5	Starling Resources 2012. An initial sustainable financing scoping exercise for MPAs in the Sulu-Sulawesi Seas Marine Eco-region – DRAFT. Report commissioned by WWF to support planning in the Sulu-Sulawesi Marine Ecoregion.
6	Tubbataha Reefs Natural Park Act of 2009 (R.A. No. 10067), Philippines
7	WWF 2006. Tubbataha Reefs A Marine Protected Area that Works, A Case Study on the Philippines. WWF Philippines, GEF-UNDP.
8	White, A.T., D. Apistar, C.F. Caballes, E. White, S. Tesch, A Sabonsolin, R. Martinez, W. Porpetcho, D. Delizo Jr., and E.Y. Lucas. 2012. Summary Field Report: Coral Reef Monitoring Expedition to Tubbataha Natural Park, Sulu Sea, Philippines, April 13-20, 2012. The Coastal Conservation and Education Foundation, Inc., Cebu City, 96 p.