RENOMINATION DOSSIER FOR TUBBATAHA REEFS NATURAL PARK WORLD HERITAGE SITE

Cagayancillo, Palawan, Philippines
January 2008

EXECUTIVE SUMMARY

State Party:

Philippines

State, Province of Region

Municipality of Cagayancillo, Province of Palawan, Philippines, Southeast Asia

Name of Property:

Tubbataha Reefs Natural Park (TRNP)

Geographical coordinates to the nearest second:

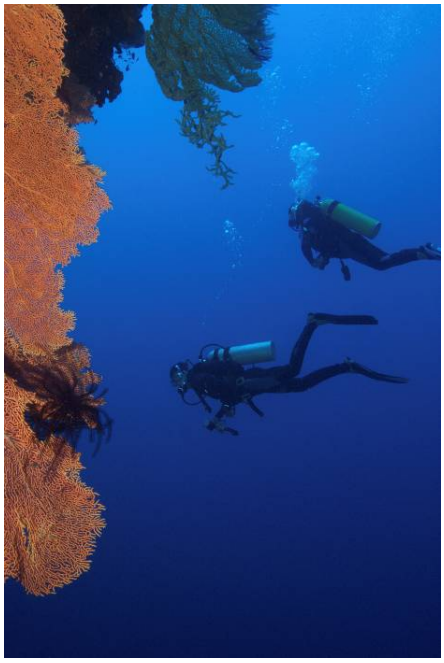
The approximate center of the Tubbataha Reefs Natural Park is located at N 8° 57′ 11.88″ E 119° 52′ 03.36″.

Textual description of the boundaries of the nominated property:

The boundaries of the property are defined by six points with the following coordinates:

Point	Latitude	Longitude
Pt 1	9° 04′ 52″ N	119° 46′ 10″ E
Pt 2	9° 06′ 05″ N	119° 48′ 22″ E
Pt 3	8° 58′ 09″ N	120° 03′ 12″ E
Pt 4	8° 53′ 29″ N	120° 03′ 20″ E
Pt 5	8° 41′ 33″ N	119° 50′ 41″ E
Pt 6	8° 43′ 09″ N	119° 45′ 46″ E
To Pt 1		

Justification: Statement of Outstanding Universal Value



Divers marvel at the beauty of the Jessie Beazley walls. (L & C Topp)

TRNP is universally important because it is one of the few remaining examples of a highly diverse near pristine coral reef in the world. Its location in the center of coral biological diversity in the world, within the Coral Triangle, also a region of high fishing pressure, makes its protection even more critical to the regional economy and to science. Its huge assemblages of fish and corals are a significant attraction to scuba divers around the world and provide opportunity for education. It is a living laboratory with an enormous potential to contribute to educational and scientific advancement.

The North Atoll, South Atoll and Jessie Beazley Reef are classic reef formations with a depth beginning at 2 meters to over 100 meters deep perpendicular walls with overhangs, ledges and caverns as well as extensive reef flats. The Atolls consist of lagoons with an average depth of 24 meters deep. Jessie Beazley Reef, located 13 nautical miles north of the atolls, contains the highest population of soft corals among the reefs. Although its fish biomass and abundance are lower than the Tubbataha atolls as a result of an open access fishing regime before its inclusion in the Park, research result show that these are still higher than in other reefs in the Sulu Sea.

Due to their position in the center of the Sulu Sea the three reef formations within the Park play a unique role in larvae dissemination and fish recruitment within the whole Sulu Sea system. Varying oceanographic conditions and monsoonal shifts result in the dispersal of marine larvae throughout the greater Sulu Sea area. TRNP sustains the fisheries in the region, contributing to the livelihoods of millions of people.

A snorkeler's photo of a reef crest in TRNP. (L. Tan)

TRNP contains 374 species of corals representing almost 90% of all species in the Philippines or about 80% of all coral species in the Sulu-Sulawesi Seas. TRNP hosts considerable assemblages of marine life equal to, if not surpassing sites of the same size in the world. The Park is home

The Brown Booby *(Sulu leucogaster)* is a ground-breeding species and is highly susceptible to population declines as a result of human intervention. The islets of Tubbataha are therefore off limits to visitors. (L & C Topp)

to considerable populations of critically endangered species such as marine turtles, cetaceans and seabirds and of protected species of fish, such as the Humphead Wrasse *(Cheilinus undulatas),* and mollusks, such as the Topshells *(Trochus niloticus)* and clams *(Tridacna sp.)* Eleven species of cetaceans and eleven species of sharks have been identified in its waters. Two species of the highly endangered marine turtles nest in the islets and use the park as developmental stage habitat. TRNP is one of the few remaining diverse strongholds of seabirds in Southeast Asia. A total of 99 species of birds, residents and migrants, have been recorded on the islets and cays of the park. But the focus of attention of the Tubbataha Protected Area Management Board is the seven species of seabirds that permanently reside in the Tubbataha islets. Most of these seabirds are gone from their traditional roosts in the Sulu Sea and other parts of the Philippines and can be found only in the park. A regular visitor is the Christmas Island Frigate *(Fregata Andrewsi)*, a critically endangered species of which only 3000 individuals are believed to exist in the world. This species likewise benefits from the protection of Tubbataha because it forms part of its range.

Tubbataha is home to major populations of the internationally protected humphead wrasse *(Cheilinus undulatus).* (L & C Topp)

TRNP is protected under the National Integrated Protected Areas System and the Palawan Strategic Environmental Plan Law of the Philippines. A multi-sectoral management body, representing national and local government agencies, NGOs, the academe and people's organizations manages TRNP. The Tubbataha Protected Area Management Board has managed the Park for eleven years and has since successfully adapted its strategies to the emerging challenges of administering the lone offshore MPA in the country. The TRNP Bill, which has been filed with the 13th Philippine Congress aims to further strengthen

management institutions.

Criteria under which property is nominated

(vii) Contains superlative natural phenomenon or areas of exceptional natural beauty and aesthetic importance;

The Tubbataha and Jessie Beazley Reefs represent a unique example of pristine reefs with high diversity of marine life in extensive reef flats and perpendicular walls reaching over 100m depth with overhangs and crevices. The resulting beauty of such diverse underwater formations combined with one of the largest coral species diversity in the world and large megafauna, provide unique underwater vistas. The extensive reef flats of the Tubbataha Reefs are habitat to ten species of seagrasses and various marine fauna such as marine turtles and rays. Its two atolls have extensive lagoons where 30 species of corals that were previously unrecorded in the Philippines have been found. Tiger sharks, turtles and rays can be seen inside these lagoons. Megafauna, such as sharks and cetaceans, and big schools of pelagics, such as barracudas and trevallies are common sights in the outer reefs and surrounding waters. Because of this, the area was featured in the books Top Ten Dive Sites of the World and Top Dive Sites of the World.

A tiger shark *(Galeocerdo cuvier)*, one of the 11 species of sharks identified in the Tubbataha Reefs. (L & C Topp)

(ix) An outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

Tubbataha is uniquely positioned in the middle of the Sulu Sea. Therefore it plays a key role in the process of reproduction, dispersal and colonisation by marine organisms in the Sulu Sea. TRNP is a critically important source of fish and decapod larvae enriching the fisheries of islands surrounding it and beyond. Oceanographic research has shown that the northeast monsoon encourages the transport of larvae towards the Balabac Strait and the opposite monsoonal winds transport larva towards the southwest, to the Cagayancillo Islands and beyond. Internal wave patterns have likewise been observed moving in a westerly direction, towards the

eastern coast of Puerto Princesa City, bringing with it marine larvae that enhance the fisheries productivity of the Palawan mainland (See Annex 4).

TRNP's unique position in the middle of sea and the interactions between the atolls and the surrounding marine ecosystem make TRNP an ideal laboratory for the study of ecological and biological processes, in particular larval dissemination and fish recruitment. The presence of top predator species, such as tiger and hammerhead sharks, validate the ecological balance in the reef.

Tubbataha is one of the Philippines' oldest ecosystems. The reefs' formation began around 15 million years ago with the eruption of the chain of volcanoes along the Cagayan Ridge. TRNP represents to date significant on-going process of coral reef formation supporting a vast number of marine species dependants on reef ecosystems.

(x) Contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation;

The TRNP is located within the Coral Triangle, an area known to be the center of coral biological diversity in the world. It provides a critically important habitat for a number of internationally threatened and endangered marine species. The Tubbataha and Jessie Beazley Reefs and its surrounding waters serve as habitat to 479 species of fish, 374 species of corals, which is almost 90% of all coral species in the Philippines, 10 species of seagrass, 78 species of algae, 11 species of cetaceans, 11 species of sharks, 2 species of turtles, and 7 breeding species of seabirds. All of the cetacean species found in the waters surrounding the Tubbataha Atolls and Jessie Beazley Reef are listed under the CITES.

Spinners and other species of cetaceans enjoy safety in the waters surrounding the Tubbataha Reefs. (L & C Topp)

The Bird Islet and South Islet are breeding grounds to seven resident and endangered breeding species of seabirds, one of which is an endemic subspecies of the Black Noddy *Anous minutus worcestri.* The Christmas Island Frigate *Fregata andrewsi,* which is regularly occurring in the Park, is characterized as globally critically endangered. All of these marine species enjoy relative safety from human exploitation within the boundaries of this protected area.

TRNP supports the highest population densities known in the world for whitetip reef sharks (*Triaenodon obesus*), a mean density of 5.5 individuals per ha, with density reaching as high as 13 individuals per ha in some areas. Other pelagic species such

as jacks, tuna, barracuda, manta rays, whale sharks and different species of sharks are common in TRNP. TRNP is a very important nesting, resting and juvenile development area for two species of endangered marine turtles: green turtles and hawksbill turtles.

Name and Contact Information of Official Local Institution/Agency:

Tubbataha Protected Area Management Board/Tubbataha Management Office

2nd Floor, Basaya Building, San Miguel, Puerto Princesa City, Palawan 5300, Philippines

Telefax: 63 48 434 5759

Email: tmo@tubbatahareef.org

Website: www.tubbatahareef.org

United Nations Commission of the Philippines

G/F Department of Foreign Affairs Building

2330 Roxas Boulevard, Pasay City, Philippines

Tel: 63 2 843 3447

Fax: 63 2 831 8873

Contents

List of Figures i
List of Abbreviations used in the Document iii
Identification of the Property 1
Country 2
State, Province or Region 2
Name of Property 2
Geographical Coordinates to the nearest Second 2
Maps and Plans, showing the Boundaries of the Nominated Property 2
Area of Nominated Property (ha.) 2
Description 3
Description of the Property 3
History and Development 8
Justification for Inscription 11
Criteria under which Inscription is Proposed (and justification for inscription under these criteria) 11
Proposed Statement of Outstanding Universal Value 14
Comparative Analysis (including state of conservation of similar properties) 15
Integrity and/or Authenticity 17
State of Conservation and Factors Affecting Property 19
Present State of Conservation 19
Factors affecting Property 20
Protection and Management of the Property 25
Ownership 25
Protective Designation 25
Means of Implementing Protective Measures 25
Existing Plans related to Municipality and Region in which the Proposed Property is Located 28
Property Management Plan or Other Management Systems 29
Sources and Level of Finances 30
Sources of Expertise and Training in Conservation and Management Techniques 30
Visitor Facilities and Statistics 31
Policies and Programmes Related to the Presentation and Promotion of the Property 32
Staffing Levels 33
Monitoring 34
Key Indicators for Measuring State of Conservation 34
Administrative Arrangements for Monitoring Property 37
Results of Previous Reporting Exercises 38
Documentation 41
Photographs, slides, image inventory and authorization table and other audiovisual Materials 41
Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property 41
Form and date of most recent records or inventory of property 42
Address where inventory, records and archives are held 42
Bibliography 42
Contact Information of responsible authorities 43
Signature on behalf of the State Party 44

ANNEXES 45
ANNEX 1. Map of the Sulu Sea showing the Cagayan Ridge where Tubbataha Reef is located. 44
ANNEX 2. Map of the TRNP from NAMRIA. 45
ANNEX 3. Map of TRNP showing boundaries in red. 46
ANNEX 4. Satellite map showing internal waves in the Sulu Sea (Source: Villanoy, 2003). 47
ANNEX 5. List of 99 species of birds documented in TRNP 48
ANNEX 6. Inventory of coral species recorded at Jessie Beazley and Tubbataha Reefs, Philippines. 54
ANNEX 7. Map of the TRNP boundaries (red line) and buffer zone (green). The pink area defines Service Contract 61 claim. 69
ANNEX 8. Scanned copy of the Presidential Proclamation 306 declaring Tubbataha Reefs as a national marine park. 70
ANNEX 9. Faxed copy of Presidential Proclamation 1126 expanding the Park to include Jessie Beazley. 72
ANNEX 10. The TRNP Management Plan 75
ANNEX 11. CI-Phils conservation plan for the Sulu-Sulawesi Seascape. 91
ANNEX 12. 2008 Work and Financial Plan of TMO showing the four programs implemented. 94
ANNEX 13. News clippings of fishers caught in TRNP. 97
ANNEX 14. Results of the Monitoring and Evaluation Program for the TRNMP (pp.64-68) 98

List of Figures

Figure 1. The Republic of the Philippines is found just above the equator in the Southeast Asian Region. (Base map: Google Earth™) 1
Figure 2. Map of the Tubbataha Reefs Natural Park in Cagayancillo, Palawan, Philippines showing the expanded boundaries of the Park 1
Figure 3. Aerial photographs of the South (above) and North (below) Atolls of the Tubbataha Reefs. (Photo: WWF-Philippines/M Dygico) 2
Figure 4. Upper photo: Tiger shark seen in the shallow part of the reef crest of the South Atoll (Photo: L&C Topp). Lower photo: Manta rays and fishes seen along one of the underwater walls at TRNP (Photo: J Freünd) 3
Figure 5. The steep reef slopes of TRNP show higher coral diversity than its shallow lagoons. (Photo: L&C Topp) 4
Figure 6. The endemic subspecies of the Black Noddy (*Anous minutus worcestri*) roosting in the Bird Islet. (Photo: L &C Topp) 6
Figure 7. Christmas Island Frigatebird (*Fregata andrewsi*) soars through the Tubbataha skies. (Photo: L&C Topp) 6
Figure 8. A view of the Bird Islet at low tide. (Photo: L&C Topp) 8
Figure 9. Despite its proclamation as a marine protected area in 1988, coral cover in Tubbataha continued to decline. Shown above is one of the anchorage sites of dive boats before the installation of moorings (Photo courtesy of A White) 9
Figure 10. A photo of the burning structure erected by a private company next to the Bird Islet. In the foreground are Brown Boobies. (Photo courtesy of A White) 9
Figure 11. Giant fan corals withstand the strong Tubbataha currents. (Photo: L&C Topp) 11
Figure 12. Meadows of Acropora. (Photo L&C Topp) 11
Figure 13. School of horse eyed jacks (*Caranx latus*) in Tubbataha. (Photo: J Kirschner) 12
Figure 14. Soft corals likewise abound in TRNP. (Photo: L&C Topp) 12
Figure 15. Common underwater sights in Tubbataha Reefs: large manta ray gliding just below the water surface (above) and a wall of jacks obstructing a diver's path (below). (Photos: J Freünd and L&C Topp) 13
Figure 16. A green sea turtle (*Chelonia mydas*), another denizen of the Reefs (above); a garden of corals wih damsel fishes (below) 14
Figure 17. A nurse shark (*Nebrius ferrugineus*), one of the eleven species of sharks observed in TRNP. (Photo: Karl) 15
Figure 18. Map showing the Coral Triangle (Veron, 1997). Note that the red color signifies that this area has the highest number of coral genera 16
Figure 19. Aerial photos: Lighthouse in South Islet and the DelSan Wreck, a famous dive site (right) and the Bird Islet (above). Both islets of Tubbataha serve as an important rookery and breeding ground for seabirds. (Photos: T Aquino) 17
Figure 20. Graph showing the trend of coral cover in Tubbataha over the years. Data used in the graph came from studies conducted by various research institutions over the years. WWF-Philippines conducted scientific studies from 1997 onwards. 19
Figure 21. Populations of the Brown Booby (*Sula leucogaster*) along with other ground nesters in the Bird Islet declined due to limited habitat space. (Photo: T Aquino) 19
Figure 22. Map showing the overlapping boundaries of SC61 (A) awarded to Burgundy Global in 2005 and the expanded boundaries of TRNP (B) as proclaimed by the President of the Philippines in 2006. (Base map: Google Earth ™) 20
Figure 23. Polished top shells (*Trochus niloticus*) openly sold in Asian markets. (Photo: T Aquino) 21
Figure 24. A discarded toothbrush finds its way into a Brown Booby nest at the Bird Islet. (Photo: T Aquino) 22

Figure 25. One of the dive boats operating in TRNP. Visitor impact in the Park has not yet been fully documented. (Photo: T Aquino) 24
Figure 26. The Tubbataha Protected Area Management Board regularly meets to thresh out issues and policies pertaining to the Park. (TMO file photo) 26
Figure 27. The organizational structure of the TPAMB and its implementing arm, the TMO.. 27
Figure 28. IEC campaigns have been conducted to promote responsible stewardship for the benefit of all children. (TMO file photo) 30
Figure 29. Graph showing the tourism trends from 2001 to 2007. 31
Figure 30. Demography of tourists who visited TRNP from 2001 to 2007. 32
Figure 31. Brochures are produced and distributed to tourists and other people interested in learning more about the park. 32

List of Abbreviations used in the Document

BFAR	Bureau of Fisheries and Aquatic Resources
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DENR	Department of Environment and Natural Resources
DOE	Department of Energy
ELAC	Environmental Legal Assistance Center
F/V	Fishing Vessel
GBR	Great Barrier Reef
GEF-UNDP	Global Environment Facilities - United Nations Development Programme
IEC	Information, Education & Communication
IUCN	International Union for the Conservation of Nature and Natural Resources
LGU	Local Government Unit
M&E	Monitoring and Evaluation
MPA	Marine Protected Area
NAMRIA	National Mapping and Resource Information Authority
NAVFORWEST	Naval Forces West
NGOs	Non-Government Organizations
NIPAS	National Integrated Protected Area System
NOAA	National Oceanic and Atmospheric Administration
PCG	Philippine Coast Guard
PCSD	Palawan Council for Sustainable Development
PCSDS	Palawan Council for Sustainable Development Staff
PN	Philippine Navy
PSU	Palawan State University
SEP	Strategic Environmental Plan of Palawan
TMO	Tubbataha Management Office
TPAMB	Tubbataha Protected Area Management Board
TRNMP	Tubbataha Reef National Marine Park
TRNP	Tubbataha Reefs Natural Park
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHC	World Heritage Center
WPU	Western Philippine University
WWF	World Wildlife Fund for Nature

NOMINATION FOR INSCRIPTION IN THE WORLD HERITAGE LIST

Identification of the Property

Just above the equator in the Southeast Asian Region, the Philippines is bounded by the Philippine Sea on the northeastern side all the way to the southeast, the South China Sea on the west, and the Sulu-Sulawesi Seas on the south (Figure 1). The Sulu Sea, one of the smallest marginal basins in the western Pacific, makes up most of the waters surrounding the islands in the southwestern portion of the Philippines. At its center is the Cagayan Ridge, a line of extinct underwater volcanoes which starts from the north at the Sultana Shoal and ends in the south with the San Miguel Islands.

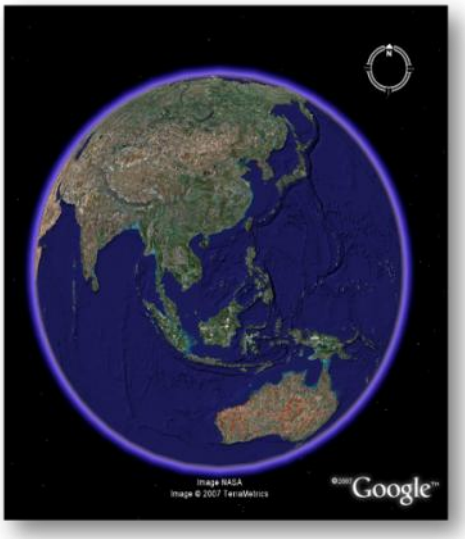


Figure 1. The Republic of the Philippines is found just above the equator in the Southeast Asian Region. (Base map: Google Earth™)

At the center of the Cagayan Ridge lies the Tubbataha Reefs Natural Park (TRNP), a marine protected area composed of the South and North Atolls and the Jessie Beazley Reef, about 80 nautical miles southeast of Puerto Princesa City, Province of Palawan and 80 nautical miles southwest of the Municipality of Cagayancillo, which has political jurisdiction over the area. The North and South Atolls, along with the Jessie Beazley Reef and its surrounding waters make up the TRNP, the property being proposed for inscription into the World Heritage List. It is an expanded area of the Tubbataha Reefs National Marine Park which was inscribed as a World Heritage Site in 1993 (Figures 2 and 3).

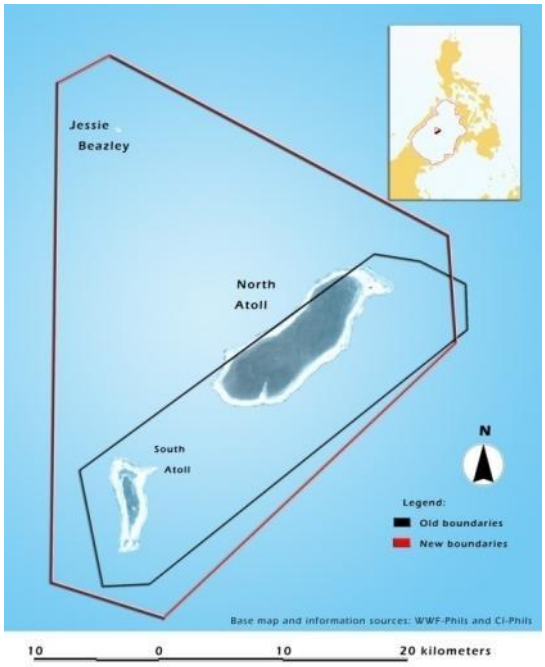


Figure 2. Map of the Tubbataha Reefs Natural Park in Cagayancillo, Palawan, Philippines showing the expanded boundaries of the Park.

Country

Philippines

State, Province or Region

Municipality of Cagayancillo, Province of Palawan

Name of Property

Tubbataha Reefs Natural Park (TRNP)

Geographical Coordinates to the nearest Second

The approximate center of the TRNP is at N8° 57’ 11.88” E119° 52’ 03.36”.

Figure 3. Aerial photographs of the South (above) and North (below) Atolls of the Tubbataha Reefs. (Photo: WWF-Philippines/M Dygico).

Maps and Plans, showing the Boundaries of the Nominated Property

Please refer to Annexes 1, 2, 3 and 4.

The whole Park is managed under a no-take policy. A 10-nm buffer zone has been proposed this year, but has not been approved by the Philippine Congress. The boundaries have been set to the farthest enforceable limit of 3 nm from the reefs’ edge.

Area of Nominated Property (ha.)

Area of Nominated Property: 96,828 hectares

Description

Description of the Property

Geography. The TRNP is located in the center of the Sulu Sea some 80 nm southeast of the Palawan capital, Puerto Princesa City. It is composed of the North and South Atolls, the Jessie Beazley Reef and surrounding waters. Tubbataha is under the political jurisdiction of the island Municipality of Cagayancillo, which lies 80 nm to its northeast. The North and South Atolls are separated by a 5-nm channel. Each has an islet associated with it; the Bird Islet in the North Atoll and the South Islet in the South Atoll. Jessie Beazley Reef is 13 nm north of the atolls.

Weather Conditions. Tubbataha is exposed to yearly monsoons. The seas are rough during the months of June to October with the prevalence of the southwest monsoon. Monsoon breaks, which bring a week or so of calmness, usually transpire before monsoonal shifts. Rough seas also predominate during the months of November to March when the northeast monsoon occurs. Moderate winds from the northeast between April and June allow for regular visits to the area.

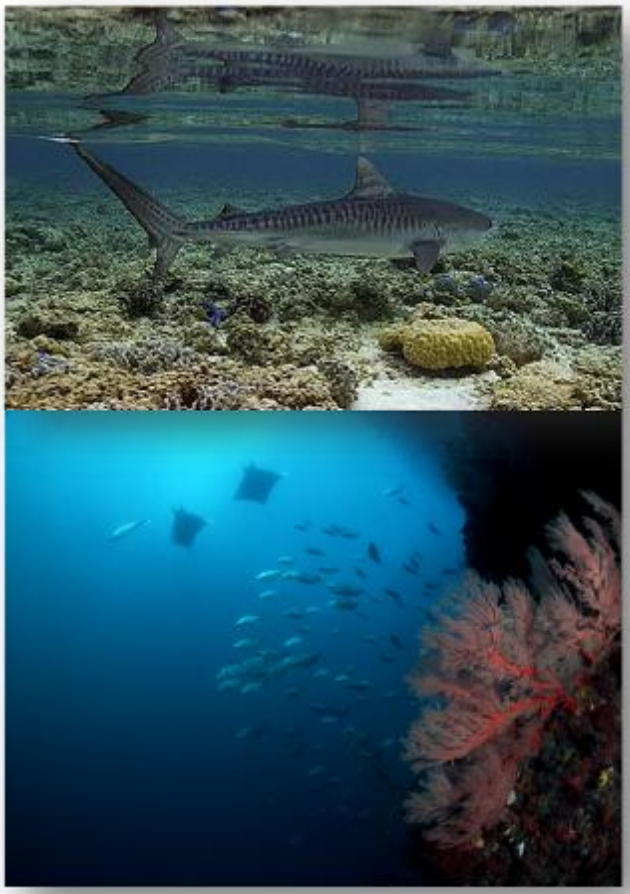


Figure 4. Upper photo: Tiger shark seen in the shallow part of the reef crest of the South Atoll (Photo: L&C Topp). Lower photo: Manta rays and fishes seen along one of the underwater walls at TRNP (Photo: J Freünd).

The North and South Atolls. The North and South Atolls have two main habitats: (1) Outer reef slope, and (2) Lagoon. These are very different habitats (Figure 4). The outer reef slopes have very clear water, strong wave action and currents, high oxygen and low nutrients, and a very wide depth range from about 1 m to over 40 m. The lagoons have turbid water, little wave action or currents, may have lower oxygen and higher nutrients and higher temperatures, and a much restricted depth range from less than 1 m to 25 m. The outer reef slopes have much greater coral

diversity than the lagoons, and much higher scenic and tourist value.

On the other hand, there are coral species found only in the lagoons, most notable of which are 30 species of corals previously unreported in the Philippines (Fenner, 2001). The lagoons are much less studied than the outer reef slopes, and have potential for more biological discovery.

Within these two major habitats, there are several habitats that have significantly different coral fauna. On reef fronts, there is a clear zonation from areas less than one meter deep with little coral, a zone with increasing coral cover down to about 5 m depth, a zone on some reefs about 3-7 m depth that is dominated by one species of branching coral (*Acropora bruggemanni*), and two habitats on deep walls. The first of these two wall habitats are the overhangs that are dominated by sponges, soft corals, coralline algae, azooxanthellate corals, etc., and have few if any, zooxanthellate corals. The second habitat is steep sunlit slopes, which have zooxanthellate corals adapted to low light levels (Figure 5).

In the lagoons, there appear to be several different habitats. One is very shallow grass beds, which may have no corals, or in other areas have scattered corals. Another is deeper water, which may have patches of coral on level sand bottom, or coral communities on the slope into deeper lagoon. The third is a dense coral community at about 1-2 m depth.

These different habitats on the outer reefs and lagoon areas have very different coral populations. The nature of these coral populations in different habitats would be a productive area for future research.

Figure 5. The steep reef slopes of TRNP show higher coral diversity than its shallow lagoons. (Photo: L&C Topp)

Marine Life: The surrounding waters is home to a wide array of marine life, from pelagic and demersal fish to top predators such as sharks, skates, rays, marine turtles, and cetaceans. Several of these are endangered species, e.g., whaleshark, sperm whale, hawksbill and green sea turtles. The significant extension of the boundaries of the Tubbataha Reefs World Heritage Site provides these migratory and endangered species a larger protected space to roam.

A top predator survey in TRNP revealed the ubiquitously high abundance of whitetip reef sharks (*Triaenodon obesus*) between sites. While there are no published accounts of abundance estimates for this reef shark, work in progress by Robbins (unpublished data) suggests that Tubbataha supports the highest population density of *T. obesus* known to date. Robbins conducted surveys along undisturbed reefs of the Cocus Keeling Islands and on the Great Barrier Reef (GBR) at a sample area of 10,000m^2 (1 ha), and found abundances to be less than half of that found in Tubbataha. By converting the sample area, the current survey suggests that Tubbataha supports a mean density of 5.5 individuals per ha, with density reaching as high as 13 individuals per ha in some areas.

These reefs are home to at least 374 species of corals, about 90% of all coral species in the Philippines and 80% of those found in the Coral Triangle. There are 479 species of fish, 79 species of marine algae and ten species of seagrass. Manta rays and sharks, as well as large schools of jacks and barracudas are frequently encountered. Marine mammals are also sighted during transition trips to the different dive sites. At least eleven species of sharks and eleven cetacean species have been observed and recorded. Sea turtles are a common sight. It is home to at least two species, with the islets serving as important nesting grounds. The presence of top predator species, such as tiger and hammerhead sharks, validate the ecological balance in the reef.

Scientists, especially biologists, oceanographers and geologists, have been fascinated by the manner of the reef formation in the Sulu Sea and by its high biodiversity in terms of species numbers and habitat types. They consider these reefs, which are associated either with emergent islands or islets or with submerged structures, prime research and experimental sites. Tubbataha offers marine researchers an opportunity to discover and study the biology and ecology of marine ecosystems at various spatial scales. Subjects for studies could vary from the minute plankton to the large marine mammals and apex species.

The Seabirds of TRNP: Experts have estimated that there are roughly 30,000 seabirds regularly roosting and breeding on islands in the central Sulu Sea, of which TRNP is the center. Among these are Red-footed Boobies (*Sula sula*), Black Noddies (*Anous minutus worcestri*), Sooty Terns (*Sterna fuscata nubilosa*) and various kinds of Frigatebirds. This is a good indicator of the health of these remote island ecosystems. In order to roost and breed, seabirds need intact habitats with a good supply of food such as squid and small fish (Figure 6). Seabird populations have dramatically declined in Southeast Asia since the end of World War II. Many species and populations have disappeared from most of their former breeding ranges and, in most

Figure 6. The endemic subspecies of the Black Noddy (*Anous minutus worcestri*) roosting in the Bird Islet. (Photo: L &C Topp)

cases, there is a threat that they may vanish from the region altogether. In 1995, the Masked Booby, which used to be commonly observed in TRNP, was declared regionally extinct. Other species are feared to follow this fate.

A total of 99 species of migratory and resident species of birds have been identified in TRNP (Annex 5). The islets are rookery and breeding areas of seven species of seabirds, of which a total of 12,217 were counted in 2006. The critically endangered Christmas Island Frigatebird (*Fregata andrewsi*), of which only 3000 individuals are believed to be left in the world, is always present in the islets. Among other species, an endemic subspecies of black noddy (*Anous minutus worcestri*) and the rare sooty tern (*Sterna fuscata*) are resident breeders.

Tubbataha's North and South Islets are among the last breeding strongholds for seabirds in Southeast Asia. Thousands of terns and boobies nest here, laying their eggs in the sand. In the past, the birds have suffered as they are extremely vulnerable to exploitation. Fishers and divers would roam around the islands, disturbing the birds and often stealing their eggs. The park has declared these islets off limits, but the damage has already been done. In the late 1970s, Ipil-Ipil (*Leucaena leucocephala*) trees were planted on the North Islet by Cagayanon fishermen. These invasive trees multiplied and covered around 40 per cent of the limited land area. Because of this, the ground-breeding seabirds were deprived of their natural habitat – an open space essential for nesting in the sand. These invasive species have been eradicated in 2005, although wildlings are observed from time to time and uprooted by marine park rangers.

Figure 7. Christmas Island Frigatebird (*Fregata andrewsi*) soars through the Tubbataha skies. (Photo: L&C Topp)

In 2003 and 2004, the critically endangered Christmas Island Frigatebird was reported on Tubbataha's North Islet (Figure 7). Experts have suggested that Tubbataha is among only three areas in the Sulu Sea region that will be able to sustain seabirds in the long term. Among these

areas, Tubbataha's remoteness and protected status make it the most promising. In this respect, the marine park is vital to the country's seabird populations, in particular the declining population of brown boobies and the Philippine sub-species of Black Noddy, found nowhere else in the world. These seabirds will greatly benefit from the expansion of TRNP.

Jessie Beazley Reef. Jessie Beazley Reef, which is approximately 2.7 km long and 1.7 km wide, is characterized by underwater overhangs, crevices and ledges. An emergent coral cay is observable during low tide but submerged during high tide. Underwater overhangs, crevices and ledges are dominated by sponges, soft corals, coralline algae, azooxanthellate corals, and have few if any zooxanthellate corals. Megafauna, such as sharks, whalesharks and manta rays are present.

Jessie Beazley Reef was made part of the TRNP in August 2006, in response to the recommendation of the World Heritage Committee to the Philippine Government during its 28th Session in 2004 "*to consider extending the property to include adjoining Jezzie Beazley and Basterra Reefs in order to increase the integrity of the property*". The Reef has not benefited from the intensity of protection afforded to Tubbataha Reefs, which has been protected year-round since 1996. The last survey conducted in Jessie Beazley in 2004, showed it had a total fish biomass of 126.25 mt/km² against Tubbataha's biomass of 166.51 mt/km². But very significant is the difference in commercial fish biomass between the two sites. While the Tubbataha atolls had a commercial fish biomass of 65.80 mt/km², Jessie Beazley had 27.49 mt/km². Its fish density was only 469 individuals/100m² as opposed to the 631 individuals/100m² fish density of the Tubbataha atolls. This may be attributable to the open access fishing regime in the Reef, which was exploited mostly by fishers from the Palawan mainland and from other provinces.

Despite the above, Jessie Beazley seems to have benefited from its proximity to the Tubbataha atolls. Since monitoring began in 2001, the total fish biomass of Jessie Beazley nearly doubled. This suggests that fish, either as larvae or adults, migrate from Tubbataha to Jessie Beazley and in this way the positive effect of Tubbataha's 'no-take' policy had already spread to neighboring reefs. With the expansion of Tubbataha Reefs Natural Park boundaries to include Jessie Beazley, it is expected that the fish biomass will increase further and that also commercial fish species will recover. At present, it is being managed under the "no-take" policy like the rest of the TRNP and is being patrolled regularly.

In 2005, close to 200 seabirds were observed for the first time in its sand cay, demonstrating that it now serves as a temporary resting place for seabirds on their forays for food. The pantropical spotted dolphin (*Stenella attenuata*), which was not identified during earlier surveys in Tubbataha, was found in the waters surrounding Jessie Beazley Reef. The Reef also displayed the highest soft coral cover of all the sites surveyed in the Cagayan Ridge. It also had the second highest fish biomass of all Cagayan Ridge sites in 2004, and the third, after Tubbataha and mainland Cagayancillo, in fish species count (258).

Ecological contribution: TRNP is uniquely positioned in the middle of the Sulu Sea. Therefore it is a critically important source of fish and decapod larvae that are disseminated throughout the Sulu Sea enriching the fisheries of islands surrounding it. Oceanographic research has shown that the northeast monsoon encourages the transport of larvae towards the Balabac Strait and the opposite monsoonal winds transport larva towards the southwest, to the Cagayancillo Islands and beyond. Internal wave patterns have likewise been observed moving in a westerly direction, towards the eastern coast of Puerto Princesa City, bringing with it marine larvae that enhance the fisheries productivity of the Palawan mainland.

History and Development

It is believed that the formation of the Tubbataha Reefs is similar to that of coral atolls in the South Pacific where coral communities have developed on the slopes and rims of submerged mountains and old islands. Both its islets have large inner lagoons and sandy areas, a few of which lie above sea level (Alcala, 1993).

Portions of the atoll's shallow coralline reef platforms are exposed at extreme low tide (Figure 8). The reef systems are composed of continuous reef platforms 200-500 meters wide, completely enclosing sandy and coral substrate lagoons that range from 1-40 meters in depth. The reef platform deepens at the outer reef flat and reef crests. It ends in steep, often vertical, walls on the seaward side. On the inner side of the platform are shallow reef flats and sea grass beds with a deeper lagoon in the center.

Figure 8. A view of the Bird Islet at low tide. (Photo: L&C Topp)

To the Cagayanons, as the local residents of Cagayancillo are known, Tubbataha represented a food basket. In the early 1960s to the 1970s, on board the locally manufactured wooden sailboat known as *pangko,* Cagayanons harvested marine products in Tubbataha, staying there for a month or so to catch fish, collect turtles and their eggs and seabirds and their eggs to tide them over the long lean months in their isolated island municipality. Their catch was used for food and as a currency with which to barter household commodities in the more prosperous Visayan islands. These long trips were a form of rite of passage for young boys who were introduced to serious fishing by the older members of the community.

In the mid 1970s when nearshore waters provided adequate fisheries supply, commercial fishers did not commonly venture to the Tubbataha Reefs because of the high cost of fishing inputs required to exploit the area. A local Palaweño fisherman guided scuba divers to the wonders of Tubbataha in 1978. The first commercial scuba diving trip to the Reefs was conducted in 1979 by a Manila-based scuba diving liveaboard facility. Within a few years, word of mouth quickly transformed this remote and unheard-of reef into a must-see destination for local and international scuba divers.

By the early 1980s, scuba divers, marine scientists, national research and academic institutions warned of the speedy degradation of resources within the Reefs. This coincided with the increasing efficiency of the fishing industry. At this time, fishers from outside Cagayancillo began to exploit Tubbataha, securing fishing permits for a measly sum and harvesting products for sale in their heavily-populated localities. And as the fisheries productivity near the coasts declined, more fishers began to hazard the long and costly journey to Tubbataha, where the volume of catch was sure to cover the cost of the voyage with a large margin left for profit. This also brought fishers from far-away provinces using cyanide and dynamite. Between 1984 and 1989, local residents of Cagayancillo also reported an increased incidence of destructive fishing in their area by large numbers of fishermen from the Visayas region.

Figure 9. Despite its proclamation as a marine protected area in 1988, coral cover in Tubbataha continued to decline. Shown above is one of the anchorage sites of dive boats before the installation of moorings (Photo courtesy of A White)

Figure 10. A photo of the burning structure erected by a private company next to the Bird Islet. In the foreground are Brown Boobies. (Photo courtesy of A White)

In response to the growing concern of scuba divers, the Provincial Government of Palawan requested for the establishment of the Tubbataha Reefs as a National Marine Park. Presidential Proclamation 306 signed in August 11, 1988 by then President Corazon Aquino established the reefs as a no-take zone under the DENR. This Proclamation

effectively excluded the Cagayanons from harvesting anything in Tubbataha, an issue that rankled and caused disaffection among the island's residents.

Despite the establishment of the park in 1988, a 52% decline in live coral cover was observed in 1989 due to a combination of destructive fishing and inadequate enforcement inputs to safeguard the area. The DENR, through a Memorandum of Agreement, turned over the management of the area to the Manila-based NGO, Tubbataha Foundation. The Tubbataha Foundation failed to sustain conservation efforts due to a lack of support from various sectors (Figures 9 and 10).

In 1993, during its 17th Session held in Cartagena, Columbia on December 6-11, 1993, the World Heritage Committee inscribed the Tubbataha Reefs in the World Heritage List "under criteria (ii), (iii) and (iv) as one of the outstanding coral reefs in the region and encouraged the Philippine authorities to provide funds for the management of the site."

In 1995, President Fidel V. Ramos issued Memorandum Circular 128 establishing the Presidential Task Force on the Tubbataha Reefs to manage the Park. In a subsequent Circular, President Ramos changed the chairmanship of the Task Force from the DENR to the Armed Forces of the Philippines because the Armed Forces has the personnel and the logistics to secure the area year-round.

To determine the depth of stakeholders' concerns in the management of Tubbataha, WWF-Philippines conducted a Stakeholders' Analysis in 1998. Cagayanons expressed their dissatisfaction with the process of establishing an important fishing ground as a no-take zone. NGOs, government agencies, the commercial fishing sector and the scuba diving industry expressed their support for its conservation. The resulting agreements reached during that workshop are noteworthy: Cagayanons agreed to forego fishing access. Tubbataha management agreed to provide the community with a share in tourism revenues, community development interventions, and job opportunities in park management. Commercial fishers declared their support for its conservation by respecting the no-take policy for the Park.

Tubbataha is the only MPA in the Philippines that has completed the full management cycle. In 2005, the agreements that were reached in 1998 were reviewed through a participatory evaluation and were found by the stakeholders to have been satisfactorily executed (Cola et al., 2005).

The TPAMB was created in 1999 by the Palawan Council for Sustainable Development. The membership of the 17-member multi-sectoral Board is essentially the same as the Presidential Task Force which was established in 1995.

On 23 August 2006, the Park was expanded, established under the NIPAS and SEP Laws, and renamed the Tubbataha Reefs Natural Park (TRNP) by virtue of Presidential Proclamation No. 1126. This was in response to the World Heritage Committee recommendation during its 28th Session in 2004 "*to consider extending the property to include adjoining Jessie Beazley and Basterra Reefs in order to increase the integrity of the property*", a reiteration of its earlier recommendation made in 1993.

Justification for Inscription

Tubbataha Reef Marine Park was inscribed in 1993 for criteria (vii), (ix) and (x). This expansion nomination maintains the same criteria.

Criteria under which Inscription is Proposed (and justification for inscription under these criteria)

(vii) Contains superlative natural phenomenon or areas of exceptional natural beauty and aesthetic importance;

The Tubbataha and Jessie Beazley Reefs represent a unique example of pristine reefs with high diversity of marine life in extensive reef flats and perpendicular walls reaching over 100m depth with overhangs and crevices (Figure 11). The resulting beauty of such diverse underwater formations combined with one of the largest coral species diversity in the world and large megafauna, provide unique underwater vistas. The extensive reef flats of the Tubbataha Reefs are habitat to ten species of seagrasses and various marine fauna such as marine turtles and rays (Figure 12). Its two atolls have extensive lagoons where 30 species of corals that were previously unrecorded in the

Figure 11. Giant fan corals withstand the strong Tubbataha currents. (Photo: L&C Topp)

Figure 12. Meadows of Acropora. (Photo L&C Topp)

Philippines have been found. Tiger sharks, turtles and rays can be seen inside these lagoons. Megafauna, such as sharks and cetaceans, and big schools of pelagics, such as barracudas and trevallies are common sights in the outer reefs and surrounding waters. Because of this, the area was featured in the books Top Ten Dive Sites of the World and Top Dive Sites of the World.

Figure 13. School of horse eyed jacks (*Caranx latus*) in Tubbataha. (Photo: J Kirschner)

(ix) An outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

Tubbataha is uniquely positioned in the middle of the Sulu Sea. Therefore it plays a key role in the process of reproduction, dispersal and colonization by marine organisms in the Sulu Sea. TRNP is a critically important source of fish and decapod larvae enriching the fisheries of islands surrounding it and beyond (Figures 13 and 14). Oceanographic research has shown that the northeast monsoon encourages the transport of larvae towards the Balabac Strait and the opposite monsoonal winds transport larva towards the southwest, to the Cagayancillo Islands and beyond. Internal wave patterns have likewise been observed moving in a westerly direction, towards the eastern coast of Puerto Princesa City, bringing with it marine larvae that enhance the fisheries productivity of the Palawan mainland (See Annex 4).

Figure 14. Soft corals likewise abound in TRNP. (Photo: L&C Topp)

TRNP's unique position in the middle of sea and the interactions between the atolls and the surrounding marine ecosystem make TRNP an ideal laboratory for the study of ecological and biological processes, in particular larval dissemination and fish recruitment. The

presence of top predator species, such as tiger and hammerhead sharks, validate the ecological balance in the reef.

Tubbataha is one of the Philippines' oldest ecosystems. The reefs' formation began around 15 million years ago with the eruption of the chain of volcanoes along the Cagayan Ridge. TRNP represents to date significant on-going process of coral reef formation supporting a vast number of marine species dependants on reef ecosystems (Figure 15).

Figure 15. Common underwater sights in Tubbataha Reefs: large manta ray gliding just below the water surface (above) and a wall of jacks obstructing a diver's path (below). (Photos: J Freünd and L&C Topp)

(x) Contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation;

The TRNP is located within the Coral Triangle, an area known to be the center of coral biological diversity in the world. It provides a critically important habitat for a number of internationally threatened and endangered marine species. The Tubbataha and Jessie Beazley Reefs and its surrounding waters serve as habitat to 479 species of fish, 374 species of corals (Annex 6), which is almost 90% of all coral species in the Philippines, 10 species of seagrass, 78 species of algae, 11 species of cetaceans, 11 species of sharks, 2 species of turtles, and 7 breeding species of seabirds. All of the cetacean species found in the waters surrounding the Tubbataha Atolls and Jessie Beazley Reef are listed under the CITES.

The Bird Islet and South Islet are breeding grounds to seven resident and endangered breeding species of seabirds, one of which is an endemic subspecies of the Black Noddy (*Anous minutus worcestri*). The Christmas Island Frigate (*Fregata andrewsi*), which is regularly occurring in the Park, is characterized as globally critically endangered. All of these marine species enjoy relative safety from human exploitation within the boundaries of this protected area.

TRNP supports the highest population densities known in the world for whitetip reef sharks (*Triaenodon obesus*), a mean density of 5.5 individuals per ha, with density reaching as high as 13 individuals per ha in some areas. Other pelagic species such as jacks, tuna, barracuda, manta rays, whale sharks and different species of sharks are common in TRNP. TRNP is a very important nesting, resting and juvenile

development area for two species of endangered marine turtles: green turtles and hawksbill turtles.

Proposed Statement of Outstanding Universal Value

Figure 16. A green sea turtle (*Chelonia mydas*), another denizen of the Reefs (above); a garden of corals wih damsel fishes (below). (Photos: Y Lee)

TRNP is universally important because it is one of the few remaining examples of a highly diverse near pristine coral reef in the world. Its location in the center of coral biological diversity in the world within the Coral Triangle, also a region of high fishing pressure, makes its protection even more critical to science and to the regional economy. Its huge assemblages of fish and corals are a significant attraction to scuba divers around the world and provide opportunity for education. It is a living laboratory with an enormous potential to contribute to educational and scientific advancement (Figure 16).

The North Atoll, South Atoll and Jessie Beazley Reef are classic reef formations with a depth beginning at 2 meters to over 100 meters deep perpendicular walls with overhangs, ledges and caverns as well as extensive reef flats. The Atolls consist of lagoons with an average depth of 24 meters deep.

Due to their position in the center of the Sulu Sea the three reef formations within the Park play a unique role in larvae dissemination and fish recruitment within the whole Sulu Sea system. TRNP also sustains the fisheries in the region.

TRNP contains 374 species of corals representing almost 90% of all species in the Philippines. TRNP hosts considerable assemblages of marine life equal to, if not surpassing sites of the same size in the world. The Park is home to considerable populations of critically endangered species such as marine turtles, cetaceans and seabirds and of protected species of fish, such as the Humphead Wrasse *(Cheilinus undulatas),* and mollusks such as the Topshells *(Trochus niloticus)* and clams *(Tridacna sp.)* Eleven species of cetaceans and eleven species of sharks have been identified (Figure 17). Two species of the highly endangered marine turtles nest in the islets and use the park as developmental stage habitat. TRNP is one of the few

diverse strongholds of seabirds in Southeast Asia. A total of 99 species of birds, residents and migrants, have been recorded on the islets and cay of the park.

Figure 17. A nurse shark (*Nebrius ferrugineus*), one of the eleven species of sharks observed in TRNP. (Photo: Karl)

TRNP is protected under the National Integrated Protected Areas System and the Palawan Strategic Environmental Plan Law of the Philippines. A multi-sectoral management body, representing national and local government agencies, NGOs, the academe and people's organizations manages TRNP. The Tubbataha Protected Area Management Board has managed the Park for eleven years and has since successfully adapted its strategies to the emerging challenges of administering the lone offshore MPA in the country. The TRNP Bill, which has been filed with the 13th Philippine Congress, will further strengthen management institutions.

Comparative Analysis (including state of conservation of similar properties)

The Philippines has 27,000 sq km of coral reefs. Regrettably, unsustainable fishing practices have destroyed much of these reefs so that presently, only an estimated 5% of the country's coral reefs are in excellent condition. Tubbataha Reefs Natural Park belongs to that 5%. TRNP is considered the most intact and diverse of all the MPA's in the Philippines as well as within the Asian region. For example, it is among the last breeding strongholds for seabirds in Southeast Asia. Tubbataha's remoteness and protected status make it critical to the continued existence of brown boobies and the Philippine sub-species of Black Noddy, found nowhere else in the world.

In response to the alarming decline in fisheries productivity brought about by degraded marine ecosystems, MPAs have been established in numerous localities. Most of these MPAs are locally- or co-managed by the communities, local government units and national agencies. There are over 500 MPAs in the Philippines. Only 10% of these are effectively managed. TRNP is considered to be one of the best managed MPAs in the Philippines because its diverse resources remain intact to this day of ever-increasing fishing pressure. TRNP has great importance as larval source for the whole of the Sulu Sea and it sustains the fisheries in the region.

The reef corals of Tubbataha Reefs belong to the overall Indo-west Pacific faunal province. A few species span the entire range of the province, but most do not. The area of highest biodiversity in corals appears to be an area enclosing the Philippines, central and eastern Indonesia, and northern and eastern Papua New Guinea. Areas of somewhat lower diversity include Eastern Australia's Great Barrier Reef, Southern New Guinea, and the Ryukyu Islands of Southern Japan. Some evidence indicates western Indonesia may not be included in the area of highest diversity.

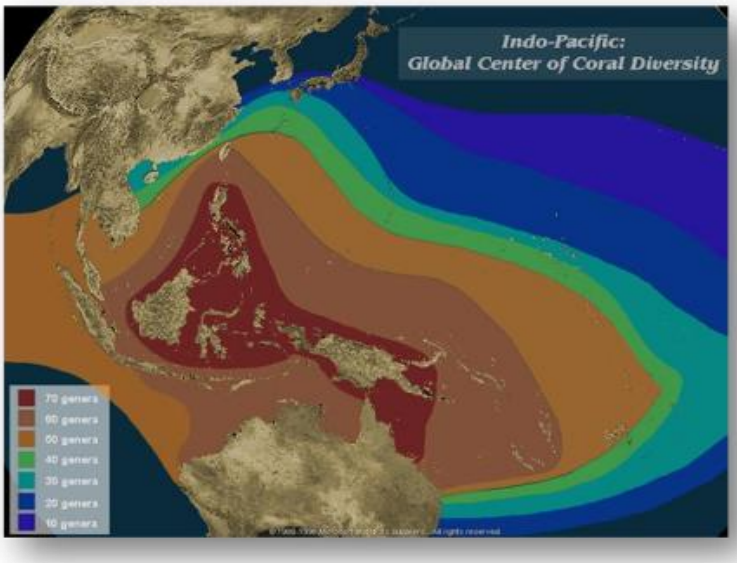


Figure 18. Map showing the Coral Triangle (Veron, 1997). Note that the red color signifies that this area has the highest number of coral genera.

The biodiversity of corals falls off from the Coral Triangle in all directions, reaching 80 species at an island near Tokyo, 65 species at Lord Howe Island southeast of Australia, about 45 species in Hawaii, and about 20 species at Pacific Panama. Species fall-off is significantly less to the west in the Indian Ocean and Red Sea (Figure 18). About 300 species may currently be known in the Red Sea, though this area, like many others, is insufficiently studied to provide accurate figures. TRNP is situated within the coral triangle and has one of the highest coral species diversity in the world together with another World Heritage site, the Great Barrier Reef. Tubbataha Reefs and the Great Barrier Reef have the highest coral species numbers of all World heritage sites. TRNP has 374 coral species over an area of 96,828 has compared to the Great Barrier Reef which has 400 species spread out over 33,126,500 has (UNEP-WCMC, 2007). Considering that only about 10,000 has. of TRNP is composed of coral reefs, and the rest of waters are over 1000m deep, TRNP shows higher coral species diversity per sq km than the Great Barrier Reef and possibly any other reef in the world. TRNP also hosts 46 genera of hard coral compared to the French Polynesia which has 51 genera in an area of 2.5 million sq. kms.

In addition, TRNP supports the highest population densities known in the world for whitetip reef sharks (*Triaenodon obesus*).

In the study done by Alinio and Licuanan (2006) the benthos community structure of Tubbataha Reefs and Jessie Beazley Reef was compared with that of Cagayancillo and Balabac in Palawan and Mabini and Verde in Batangas. It showed Tubbataha Reefs to be the least stressed of all the sites surveyed and reflecting high management effectiveness. In another study covering the same sites but this time on cetacean populations, Dolar (2006) observed that the Cagayan Ridge, where Tubbataha Reefs and Jessie Beazley are found, had the highest cetacean species diversity. Likewise, Campos et al. (2006) reported large aggregates of fish larvae

within the lagoons of the two atolls. The study indicated that Tubbataha Reefs along with Jessie Beazley Reef are both a sink and a source of fish larvae within the greater Sulu Sea.

Globally TRNP is a rare example of near pristine coral reefs and in this respect compares best with some remote Pacific island reef systems such as the Phoenix Islands of Kiribati. However, the species numbers in TRNP are superior to most Pacific reefs and possibly highest per sq km in the world. TRNP also has high importance for the conservation of charismatic and threatened megafauna such as sharks, whalesharks, sea turtles and dolphins. The expansion of TRNP has provided these species a larger area to live in peace within the heavily exploited Southeast Asian seascape.

A number of marine World Heritage Sites (e.g., Brazilian Atlantic Islands and Cocos Island) are important sources of larvae and fish for surrounding marine areas but exceptionally high coral and fish species numbers and TRNP's unique position in the middle of the Sulu Sea makes it stand out. TRNP is an excellent natural laboratory for study of marine biological and ecological processes in a semi-enclosed sea while as Cocos Island and Brazilian Atlantic Islands are situated within the rims of large ocean areas, Pacific and Atlantic.

Integrity and/or Authenticity

With the expansion of its boundaries, the Tubbataha World Heritage Site management board is better able to protect its outstanding values and thus its integrity has increased. It now includes Jessie Beazley Reef in addition to North and South Islets (Figure 19) and almost three times larger open ocean area than previously. By extending the boundaries of Tubbataha to include Jessie Beazley much vaster area is protected, which also benefits mobile and migratory species such as sea birds, whales, dolphins and fish. This expanded area benefits from the protection afforded to it by the professional TRNP management regime. The presence of top predator species, such as tiger and hammerhead sharks, validate the ecological balance in the reef.

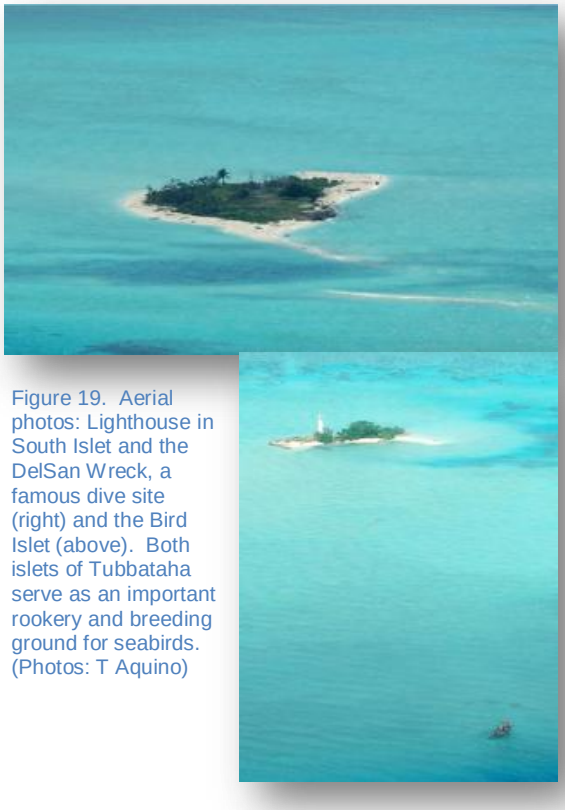


Figure 19. Aerial photos: Lighthouse in South Islet and the DelSan Wreck, a famous dive site (right) and the Bird Islet (above). Both islets of Tubbataha serve as an important rookery and breeding ground for seabirds. (Photos: T Aquino)

Jessie Beazley Reef plays an important role in the Sulu Sea ecosystem together with the other Tubbataha Reefs. It is an important source and sink area of coral and fish larvae and its protection helps to sustain fisheries in the Sulu Sea. It also provides a resting place and rookery for a number of sea birds and a habitat for fish, corals, as well as sharks and other megafauna characteristic for Tubbataha which is free from anthropogenic impacts.

TRNP's excellent condition is proven by its international status as one of the top dive sites of the world. Tourists take relatively costly week-long liveaboard cruises to dive and experience its underwater wonders. It is best known by divers for its great drop-offs, colorful coral reefs, good visibility and sightings of large marine life.

The main threats to the Tubbataha Reefs come from illegal fishing, climate change, oil exploration and shipping. TRNP is effectively managed and patrolled. Illegal fishermen are regularly taken to court, which is starting to serve as deterrent for other illegal users. The results of the research carried out since 1997 show that the condition of the fishes and corals of Tubbataha and other sites, such as Jessie Beazley and Cagayancillo, is improving. Cagayanon fishermen have reported that fish catch in their waters has almost doubled in the past three years alone. This indicates that 'no-take' policy of TRNP has allowed fish populations to increase not only inside TRNP itself but in neighbouring areas as well.

Climate change is a threat but with strict protection, the coral reef ecosystem has demonstrated more resilience and recovered more rapidly than more heavily exploited reef systems. This is exemplified by its quick recovery after coral bleaching affected some 21% of its benthic communities in 1998.

Issues related to protecting TRNP from shipping and oil explorations are currently under discussion. The TPAMB, in collaboration with the Department of Foreign Affairs and NGOs, is exploring opportunities to achieve Particularly Sensitive Sea Area (PSSA) status for the Sulu Sea to regulate navigation and mitigate its impacts, such as oil slicks, marine debris and accidental introduction of alien invasive species. It is also proposing the establishment of a 10nm buffer zone for oil exploration around its new boundaries to further extend the area where migratory species can live protected from adverse developments. Dialogues with the Philippine Department of Energy have been initiated by the TPAMB and the inclusion of the buffer zone in the TRNP Bill promises increased integrity for the property (Annex 7).

Present State of Conservation

TRNP recorded an increase in hard coral cover and in soft coral cover in 2005, almost at par with the conditions of 1997, before the El Niño phenomenon affected the park (WWF, 2005) (Figure 20). The same study tallied 157 species of fish bringing the cumulative count for TRNP to 479 species and a fish biomass estimate of 318.32 mt/km^2. The study attributed the increasing trend in commercial fish biomass and increase in fish sizes to the level of protection afforded the TRNP as well as to its natural features.

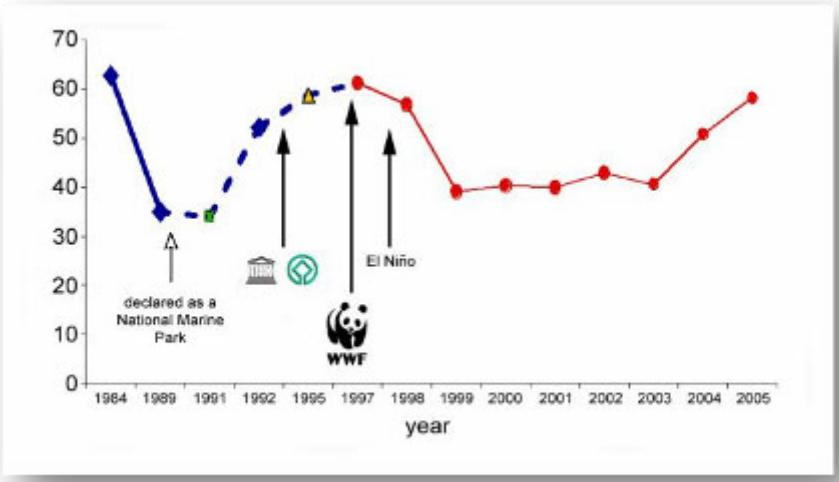


Figure 20. Graph showing the trend of coral cover in Tubbataha over the years. Data used in the graph came from studies conducted by various research institutions over the years. WWF-Philippines conducted scientific studies from 1997 onwards.

Data on the seabird populations in the TRNP, on the other hand, showed varying population trends, depending on the species concerned. The red-footed booby *(Sula sula)*, previously not encountered in Tubbataha increased by 7000% between 1981 and 2006, assumed to be the result of encroachment of its habitats elsewhere. The masked booby *(Sula dactylatra)* was last observed in the park in 1992 but is now considered extirpated. The ground breeding brown booby *(Sula leucogaster)* and the tree-breeding brown noddy *(Anous stolidus)* are showing population declines believed to be caused by limited habitat space (Figure 21). Because

Figure 21. Populations of the Brown Booby (*Sula leucogaster*) along with other ground nesters in the Bird Islet declined due to limited habitat space. (Photo: T Aquino)

the surrounding pelagic islands are increasingly being occupied by human settlements, these oceanic animals are forced out of their living space. TRNP is one of the few locales that offer protection from human intrusion supported by the policy of the TPAMB to prohibit visits to the two islets.

Factors affecting Property

(i.) Development Pressures

Energy exploration. As of this writing, the Philippines' Department Of Energy has awarded seven service contracts within the Sulu Sea to oil exploration companies. One particular contract, SC 61, awarded to Burgundy Global in July 2005, overlaps with the expanded boundaries of the TRNP by about 165 km^2 (Figure 22). The awarding of the contract predates the expansion of TRNP. The proximity of these blocks, SC 61 in particular, to the park can pose potential negative impacts on the marine life within its boundaries. Bombardment of sound waves during seismic activities, over a prolonged period of time can negatively impact marine organisms such as cetaceans. These animals may abandon significant feeding habitats, such as the TRNP, if exposed to prolonged sound waves. The UNESCO WHC-funded national conference held on December 12-14, 2006 in Puerto Princesa City, Palawan was an important venue for the Department of Energy to orient Palaweños on its thrusts and help formulate an action plan to mitigate the impacts of energy exploration and oil spills. A dialogue between the TPAMB and the DOE for the creation of a 10-nm buffer around the Park where no service contracts will be awarded in the future has been conducted with promising results.

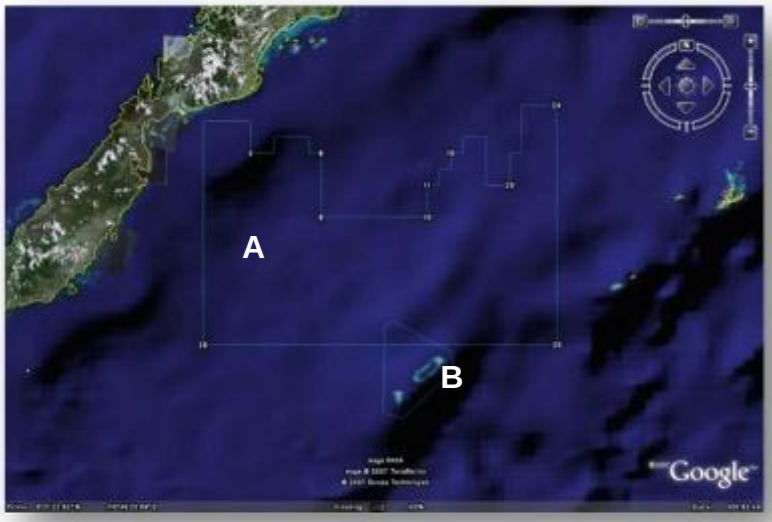


Figure 22. Map showing the overlapping boundaries of SC61 (A) awarded to Burgundy Global in 2005 and the expanded boundaries of TRNP (B) as proclaimed by the President of the Philippines in 2006. (Base map: Google Earth ™)

Shipping. Tankers and other international cargo vessels are observed through radar in the proximity of Tubbataha on many occasions throughout the day. This poses potential hazards from oil spills, waste water discharge with its associated accidental introduction of alien invasive species, and solid wastes. Park rangers and researchers

observed an increasing volume of solid waste through the years. This may be partly attributable to the volume of vessels that ply the waters around the park.

Groundings have been a concern in TRNP. The most infamous grounding incident in the park took place in October, 2005, when the Greenpeace vessel, Rainbow Warrior, ran aground, damaging 95 sqm of coral. Greenpeace immediately paid the fine for coral damages. Others, such as passing fish carriers, however, are not as prompt in the settlement of their obligations. Groundings by dive boats operating in TRNP are more easily settled. The threat of withholding a permit to enter the park is generally sufficient motivation for dive operators to pay fines for coral damages. To date, one other case of grounding that took place in 2005 is yet to be resolved. Although the TPAMB policy is to exhaust all extra-judicial means of settling violations regarding coral damages, a case may have to be filed in court.

Figure 23. Polished top shells (*Trochus niloticus*) openly sold in Asian markets. (Photo: T Aquino)

Fishing Pressure. Fishing within the Park is uncommon. This can be attributed to the active prosecution of illegal fishing cases over the last few years. There were three arrests and prosecution of cases for active fishing in 2005 and two in 2006. However, the collection of topshells *(Trochus niloticus)* has become a major concern (Figure 23). Fishers from the mainland, mostly coming from one or two villages, are reported to enter the park at midnight and leave before the break of dawn to gather these expensive shells. The Philippine Fisheries Code prohibits the collection, trade and possession of topshells. The TPAMB is presently coordinating with various agencies to put a stop to this thievery within the Park.

In December 21, 2006, a Chinese vessel, F/V Hoi Wan was apprehended within Tubbataha waters by Marine Park Rangers. Upon inspection, the vessel was found to be loaded with live endangered species of fish purportedly bought from southern Philippines. What was merely an apprehension of vessels entering the park without a permit thereby progressed to an arrest. Various agencies filed cases for the violation of the Philippine Fisheries Code, Wildlife Resources Conservation and Protection Act, NIPAS Act and a Provincial Ordinance. All 30 Chinese nationals on board the vessel are presently out on bail but a Hold Departure Order has been issued by the Department of Foreign Affairs to guarantee that they will face the charges against them. The incident provided occasion to determine the sincerity of participants to the then recently-concluded National Conference on Tubbataha funded by UNESCO to support the conservation of TRNP. The incident became a national issue as a result

of the outrage of the media, private citizens and NGOs, most of which were in the National Conference. Hearings regarding the incident are ongoing. As of this writing, the marine park rangers, Park Manager, BFAR Director and his staff are facing five law suits filed by the company of Hoi Wan with the Office of the Ombudsman.

(ii.) Environmental Pressures

Solid Waste Pollution. Rangers and visitors alike bring back to the mainland whatever garbage they generate. However, solid waste, believed to come from passing vessels, are more increasingly observed on the water surface or get washed ashore on the islets and on the sand bars. Although the rangers attempt to collect these wastes to bring back to mainland Palawan, the problem appears to be escalating in that even the birds on the Bird Islet make use of discarded solid waste in building nests (Figure 24).

Figure 24. A discarded toothbrush finds its way into a Brown Booby nest at the Bird Islet. (Photo: T Aquino)

Oil Spills. With the number of ships passing through Sulu Sea, the probability of oil slicks is high. Rangers assigned to the station have noted some evidences of bunker oil and slicks in the past. Furthermore, several oil companies are currently conducting oil exploration activities in the Sulu Sea. The potential of oil spills may increase once these activities are full blown.

Climate Change. Coral reefs around the world are under serious threat due to man's unabated emission of greenhouse gases into the earth's atmosphere. The resulting increase in the temperature of the oceans has dire consequences. Scientists expect tropical sea surface temperatures to increase by 1-3°C over the next century and this could be catastrophic for coral reefs. Rising temperatures are believed to have caused coral bleaching in TRNP. According to experts, Tubbataha is particularly vulnerable to water temperature increase due to its position in the middle of the Sulu Sea which is open to the flow of hot water from the north, through the Mindoro Strait, and from the south, through the Balabac Strait. The clear waters of Tubbataha make this even more of a threat as high light intensity contributes to the bleaching process.

The worst bleaching event ever recorded took place in 1998. In some parts of the world, live corals were completely lost. In late June to early November that year, coral bleaching took place all over the Philippines. Around 20-50 per cent of all reefs were seriously affected. Some recovered while others did not. Research carried out by the World Wildlife Fund (WWF) and the University of the Philippines - Marine Science Institute (UP-MSI) showed that although affected, Tubbataha has been able to recover from the 1998 bleaching event.

The latest research suggests that the 1998 bleaching event had a minimal effect on the corals of Tubbataha. Since 1998, the reefs have shown gradual recovery and improvement. From 1997 to 1999, roughly 16 per cent of hard coral cover was lost. However, hard corals now cover around 46 per cent of the reef - almost the same as in 1997, before the bleaching. At the same time, soft corals have increased in coverage. Algae, which increased after the bleaching, have declined. Compared to other Philippine reefs which experienced a coral mortality rate of 50 to 90 per cent, Tubbataha showed resiliency from the bleaching event. Scientists have suggested that protection efforts in Tubbataha contributed to this. The corals were protected from human disturbances, allowing the reef to recovery.

A 10% decrease in coral cover was observed in 2006. Researchers determine the cause to be a mix of coral bleaching and coral diseases, probably attributable to climate change. In order to maintain the resilience of TRNP to the effects of climate change, enforcement and monitoring regimes will be maintained.

(iii.) **Natural Disasters and Risk Preparedness.** The TPAMB, on its own, is unprepared to respond to natural disasters that may affect TRNP. Concerned national and local government agencies are major players in responding to tsunamis, typhoons, bird flu virus, or oil slicks, as Philippine law mandates. Marine park rangers in TRNP are provided with adequate emergency equipment to respond to natural disasters and these are upgraded every year to protect their welfare and enable them to communicate with the TPAMB immediately for the appropriate response.

Visitor/Tourism Pressures. An average of 1,000 tourists visits Tubbataha during the three-month diving season. Tourists generally fly from Manila to Puerto Princesa and go on liveaboard vessels for a four-day diving trip to the Park. A conservation fee of US$70 per person and a vessel entry fee ranging from US$70 to US$140 per trip is charged. Park rules and regulations are distributed to divers and briefings conducted prior to the trips. Brochures and audio-visual presentations are also provided to dive operators and tourists to communicate diving and snorkeling best practice and code of conduct in TRNP.

Figure 25. One of the dive boats operating in TRNP. Visitor impact in the Park has not yet been fully documented. (Photo: T Aquino)

Although attempts to measure diver impacts on the reef were made in 2003 and 2004 with WWF-Phils funding, inadequate manpower caused its non-completion. To date, the study has still not been conducted due to manpower constraints (Figure 25).

Coral damage as a result of grounding by dive boats, a total of 285 sqm in the last three years, has been minimal. The fine for coral damage as a result of grounding was US$80/sqm. It was increased to US$240/sqm in 2006 after the conduct of a coral valuation study commissioned by CI-Phils.

Coral damage is likewise caused as a result of the mooring buoy system presently in place in the Park for use in tourism. The system utilizes 5 to 10-ton concrete blocks installed in the dive sites. During fair sea conditions, the buoys work excellently, but during rough seas, the buoys are dragged along the sea bottom causing damage to coral reefs. An embedment system of mooring is used in most world-class diving destinations. Due to the high cost of installing this system and the absence of funds, the park continues to use its outdated and inefficient mooring system. However, plans are in the offing to invest in the embedment system, with the help of various donors, to be consistent with the World Heritage status of TRNP.

(iv.) **Number of Inhabitants within the Property.** There are no permanent inhabitants within the proposed property other than the Marine Park Rangers who are assigned to the area year-round on three-month rotations to protect and enforce relevant conservation laws and policies in the area.

Protection and Management of the Property

Ownership

TRNP is owned by the Philippine State. The Municipality of Cagayancillo in the Province of Palawan, Philippines had political jurisdiction over the TRNP. However, when the Park was established in 1988, jurisdiction was transferred to the state through the DENR. On June 9, 2003, through Municipal Resolution 078-S-2003, the Local Government of Cagayancillo, within whose jurisdiction Jessie Beazley Reef lies, issued a resolution turning over its management to the TPAMB. This resolution served as a basis for the expansion of TRNP.

Protective Designation

The TRNMP was established as a 33,200-has no-take national marine park through Presidential Proclamation 306 signed by President Corazon Aquino on August 11, 1988 (Annex 8). Its area was expanded to 96,828 has on August 23, 2006 through Presidential Proclamation 1126 signed by President Gloria Macapagal-Arroyo to include the 45-ha Jessie Beazley Reef. The park was renamed the TRNP (Annex 9).

Means of Implementing Protective Measures

The PCSD created the TPAMB. This was formalized through a Memorandum of Agreement between PCSD and DENR. Acting as Chairperson, the late Governor Socrates convened the TPAMB in 15 June 1999.

The vision of the TPAMB is as follows: "A World Heritage Site that is effectively conserved to maintain ecological integrity contributing to the equitable distribution of benefits and sustained socio-economic development of present and future generations." It aims to achieve its vision through responsible stewardship and genuine partnership.

The management goal for TRNP is: "To preserve the globally significant biological diversity and ecological processes of Tubbataha and to manage it and the surrounding areas in a sustainable basis."

The following objectives reflect the desired results of management programs:

- Biological diversity and ecological processes protected from unnatural threats and direct human impact;
- Legal and management structures are effectively maintained;
- Stakeholder participation and representation are ensured;
- Public understanding of the benefits of conserving TRNP is improved;
- Revenues from ecosystems targeted for conservation is enhanced.

Figure 26. The Tubbataha Protected Area Management Board regularly meets to thresh out issues and policies pertaining to the Park. (TMO file photo)

The TPAMB acts as the sole policy-making body responsible for the general administration and management of the park. It decides on matters relating to planning and resource protection (Figure 26). It approves proposals, projects, annual work and financial plans. Under the TPAMB is the Executive Committee (Execom), which reviews, evaluates and recommends actions on proposals, activities and plans. In June 2001, through a project implemented by WWF-Phils and co-funded by the GEF-UNDP and the David and Lucille Packard Foundation, the TMO was established. The TMO functions as the implementing arm of the TPAMB, overseeing day-to-day operations of the park.

The TPAMB has 19 members. They are the representatives of the following agencies and organizations, as follows:

1. Palawan Council for Sustainable Development (PCSD)
2. Department of Environment and Natural Resources
3. Palawan Council for Sustainable Development Staff (PCSDS)
4. Chair, Committee on Appropriations, Provincial Council of Palawan
5. Chair, Committee on Environment, Provincial Council of Palawan
6. Provincial Environment and Natural Resources Office
7. Philippine Commission on Sports Scuba Diving (PCSSD) of the Department of Tourism
8. Mayor of Cagayancillo
9. Chairperson of the Environmental Committee of the Municipal Council of Cagayancillo
10. Western Command, Armed Forces of the Philippines
11. Philippine Navy, Armed Forces of the Philippines
12. Philippine Coast Guard

13. Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture
14. Saguda Palawan, Inc. (NGO)
15. WWF-Philippines (NGO)
16. Conservation International-Philippines (NGO)
17. Tambuli ta mga Cagayanen, Cagayanon people's organization
18. Palawan State University
19. Western Palawan University

The four major management programs implemented in TRNP are conservation management, conservation awareness, ecosystem research and monitoring and sustainable resource management (See Annex 10, TRNP Management Plan for details).

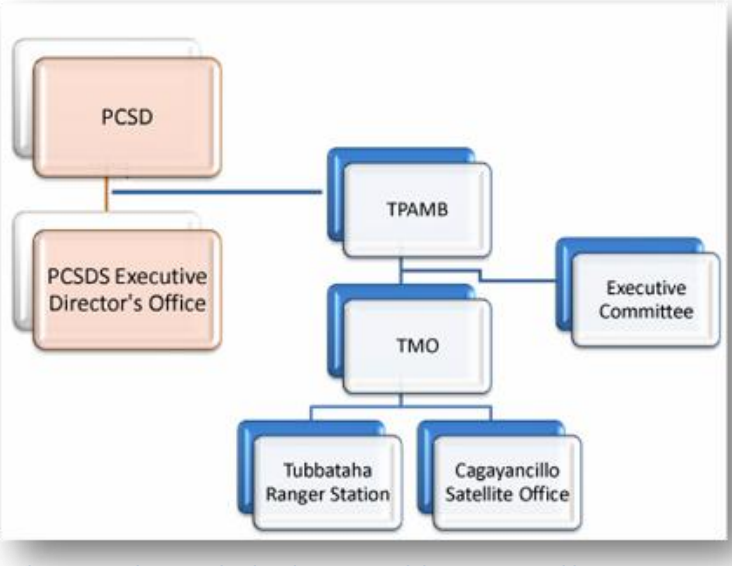


Figure 27. The organizational structure of the TPAMB and its implementing arm, the TMO.

Unlike previous management bodies, all these organizations have local offices based in Puerto Princesa and Cagayancillo, enabling the members to attend quarterly meetings. Decisions are made by consensus.

The Executive Committee is composed of six TPAMB members chosen on account of their direct involvement in the implementation of specific management programs. In this way, those who are most engaged in the day-to-day operations are able to relay updates and provide feedback directly to the TPAMB. The Execom members are the PCSD staff, the DENR, the PN, the PCG, Saguda Palawan and WWF-Phils. The Execom meets monthly and whenever necessary.

The TMO is headed by a Park Manager. The staff is composed of Palaweños. Its four Marine Park Rangers are from Cagayancillo. Prior to the existence of the TMO, the secretariat function of the TPAMB was performed by the PCSD staff. But due to the many other responsibilities of the latter, the secretariat work suffered. The creation of the TMO provided a unit solely dedicated to implementing the park management plan. Programs identified in the management plan, are translated into yearly work and financial plans, evaluated and endorsed by the Execom for the approval by the TPAMB (Figure 27).

A composite team of Marine Park Rangers from the PN, the PCG and the Tubbataha Management Office is assigned in the Park on 3-month rotations year-round. PN and PCG personnel who are detailed to the park are operationally under the TMO. All boats that enter the park are expected to have a permit issued by the TMO. Scuba diving boats generally secure a permit from the TMO before every trip. Fishing boats that enter the park are boarded and inspected. If the fish catch is determined to be pelagic species, the fishers are informed of park rules, the objectives of park management, advised not to enter the park without a permit and allowed to continue their voyage. The discovery of reef-associated fish in these apprehended vessels leads to arrest. The boat is either escorted back to Puerto Princesa City by members of the composite team or the PN sends one of its vessels to escort the boat back to the administrative center for the filing of appropriate charges.

The crew of fishing vessels occasionally request shelter from typhoons and are always granted permission to tie to a mooring buoy in front of the Ranger Station where their activities can be monitored.

Existing Plans related to Municipality and Region in which the Proposed Property is Located

The Sulu Sulawesi Marine Ecoregion (SSME) Conservation Plan, in Chapter 1, Section 3 - Priority Conservation Areas (p.18) identifies outstanding habitats in the subregion. “Another eleven are considered outstanding in the subregion. There are four subregions: Philippine Inland Seas, Sulu Sea, Sulu Archipelago and Sabah and Suluwesi Sea.” The Sulu Sea is one of the subregions that the three countries having jurisdiction over the SSME, i.e., Indonesia, Malaysia and the Philippines aim to conserve.

In the final report of the Philippine Biodiversity Conservation Priorities, the TRNP is considered as ‘extremely high’ as a marine conservation priority area, ‘very high’ as a conservation priority area for birds, ‘very high’ for terrestrial inland water area of biological importance, ‘extremely high critical’ for terrestrial and inland waters conservation priority area, a conservation priority area for reef fishes, corals, mollusks, seagrass, elasmobranches and turtles, and ‘very high’ in socio-economic pressures in terrestrial and inland water area of biological importance.

The Sulu Sulawesi Seascape project of Conservation International aims to conserve critical marine corridors in the Philippines, Malaysia and Indonesia. The Cagayan Ridge where TRNP is located is one of its priority marine biodiversity corridors (Annex 11).

Property Management Plan or Other Management Systems

A Management Plan for TRNP serves as the framework for its administration. Since its adoption in 1999, the management plan has been updated twice. In 2002, after three years of implementation, the TPAMB revised the management plan to incorporate lessons gleaned from park operations. In 2004, the management plan was modified to incorporate the management effectiveness monitoring and evaluation program. Other programs were streamlined based on experiences in the implementation of the GEF-UNDP-funded Tubbataha Conservation Project. This revision institutionalized the monitoring and evaluation system in managing Tubbataha, and provided a more structured feedback mechanism (Annex 10, TRNP Management Plan). The Management Plan, however, was prepared prior to the expansion. Thus it does not, as yet, include strategies specifically for Jessie Beazley. Nevertheless, the strategies being employed to manage the original 33,200 TRNMP is applied to the protection of Jessie Beazley Reef at present. A participatory revision of the TRNP Management Plan to determine activities for the protection of Jessie Beazley was conducted in December 2007. No major issues arose in the planning process and the activity served as a good opportunity to secure the support of the participants in its protection.

The 19-member TPAMB, which meets quarterly, receives updates on the development in TRNP from the TMO. Where necessary, it formulates policy to improve management effectiveness. Matters that require more study and research, i.e., rules and regulations, penalties for coral damage, are assigned to the Executive Committee. Executive Committee meets monthly to decide on operational matters beyond the Park Manager's authority, i.e., request for reconsideration of penalties, etc.

During the last meeting of the year, the TMO submits its Annual Work and Financial Plan for the following year to the TPAMB for approval (Annex 12). The Work and Financial Plan is a short-term expression of the Tubbataha Management Plan. When approved, the release of funds is authorized by the Board on a semi-annual basis.

The TMO holds office in Puerto Princesa City, the provincial capital of Palawan. It is connected to the field station via SSB radio and satellite phone. The field station is located in the southern tip of the North Atoll. It houses a composite team of seven rangers from the Philippine Navy, Philippine Coast Guard and TMO personnel. Marine Park Rangers are assigned on three-month rotations year round. The TMO plans to shorten the tour of duty of marine park rangers by 2008 to increase morale, and therefore, effectiveness.

When arrests are made, the Philippine Navy or TMO sends a vessel to TRNP to escort the violators and their boats back to Puerto Princesa for the filing of appropriate charges. The Park Manager, PCSDS, and/or Bureau of Fisheries and Aquatic Resources generally serve as complainants in the cases and the rangers are apprehending officers and witnesses.

Sources and Level of Finances

At present, 12 million pesos or the equivalent of US$293,000 is the ideal budget for the full implementation of the TRNP Management Plan. Of that, US$60,000 is received from the Philippine Navy and Coast Guard in kind, i.e., ranger salaries and allowances, and relieving trips to TRNP. About US$120,000 is generated from tourism annually. Funds for the implementation of specific projects and activities are received from various donors, such as, the UNESCO WHC, the DENR, NGOs, and in kind contributions from the private sector. The Provincial Government of Palawan allocates US$10,000 annually for its management.

The core cost required in protecting the park is PhP 9.5 million pesos (US$232,000) annually. This includes the salaries of seven park rangers and staff, honoraria for park rangers from the PN and PCG, field supplies and other provisions for rangers, patrols, enforcement incentives, maintenance of the ranger station, equipment and facilities, cost of prosecution of cases, training for park rangers and park staff, and limited capital outlay. A US$58,000 deficit is foreseen for 2008 but annual deficits are generally covered by contributions from various sectors before year-end. Program activities like research, information and education activities and community development in Cagayancillo are not included in the core cost; these activities account for the additional PhP 2.5 million required to fully implement the Park's management plan.

To sustain the present level of management and be able to afford major capital outlay, such as the embedment mooring system, the park will clearly have to continuously engage partners in sharing the cost of park management, while developing a mix of financial mechanisms for ensuring a secure financial future.

Figure 28. IEC campaigns have been conducted to promote responsible stewardship for the benefit of all children. (TMO file photo)

Sources of Expertise and Training in Conservation and Management Techniques

The assignments of personnel from the PN and PCG to various localities in the Philippines are generally temporary in nature. Prior to assignment to TRNP, all personnel undergo a comprehensive training. This training is provided by TMO and its partners. However,

as PN and PCG personnel get reassigned outside Palawan, the manpower pool of trained personnel dwindles, requiring the continuous conduct of the Comprehensive Training for Marine Park Rangers. The Environmental Legal Action Center (ELAC), an NGO based in Palawan, conducts paralegal training and periodic clinics are conducted to evaluate and critique the rangers' performance during enforcement incidents.

The WHC has sponsored the attendance of the Park Manager to several conferences, to wit: ITMEMS 2 (2003), Training on the Management of Marine Biodiveristy (2003), World Parks Congress (2004), World Conservation Congress (2004), IMPAC 1 (2005). It also sponsored the attendance of two TMO staff to the Fund Raising Congress (2005) in Thailand.

The member agencies of the TPAMB and the private sector are all instrumental in the further development of expertise of park personnel. For example, rangers have been able to participate in fisheries trainings offered by BFAR, IEC trainings offered by NGOs (Figure 28), paralegal trainings conducted by PCSD or DENR and trainings on survey techniques offered by the academe.

Visitor Facilities and Statistics

The number of annual visitors to TRNP shows a general increase from 692 in 2001 to 1,422 guests in 2006 with a concomitant, albeit slight increase of boat trips in the same time frame (Figure 29). The composition of visitors according to nationality

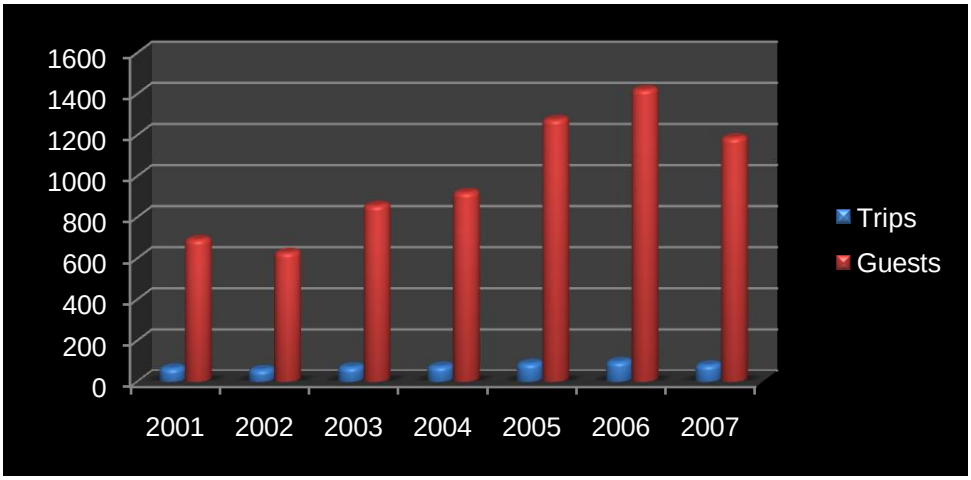


Figure 29. Graph showing the tourism trends from 2001 to 2007.

varied between years as shown in the following graph (Figure 30). To accommodate these visitors, the TRNP has placed mooring buoys at strategic dive areas for live-aboard boats carrying visitors.

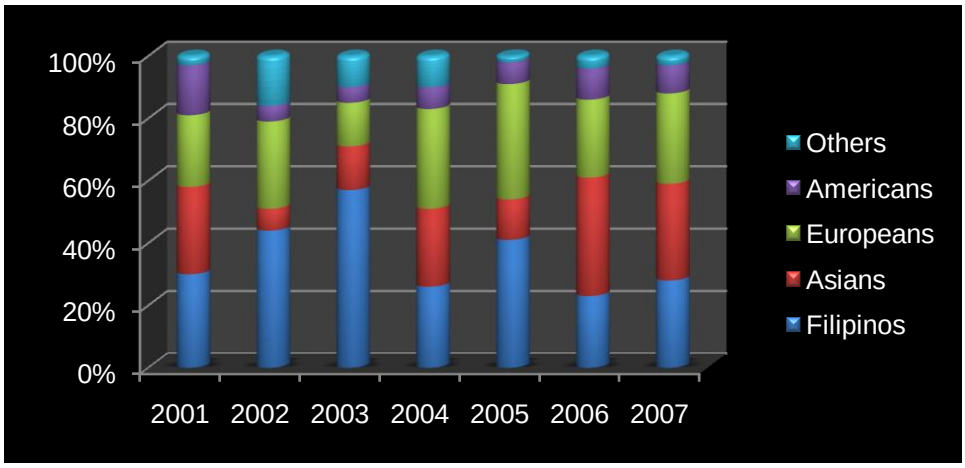


Figure 30. Demography of tourists who visited TRNP from 2001 to 2007.

A Ranger Station built on the sandbar on the southern aspect of the North Atoll which houses the park rangers assigned to protect the area. This is the only part of the TRNP where visitors are allowed to land and only for a limited period of time. All other land masses, i.e., the Bird Islet and the South Islet, are off limits to visitors.

Policies and Programmes Related to the Presentation and Promotion of the Property

Tourism promotion of the TRNP is left to the private sector, which operates scuba diving tours to the park every summer (mid-March to mid-June). The park's website, www.tubbatahareef.org, is a source of official information for interested parties. The website is linked to all the diving operators' sites.

Figure 31. Brochures are produced and distributed to tourists and other people interested in learning more about the park.

Information, education and communication activities are opportunities used to convey the value of the park, the significance of its World Heritage status, and the objectives and strategies employed to conserve TRNP (Figure 31). Conservation awareness is one of the four management programs in the TRNP Management Plan. Admittedly, there is some weakness in the implementation of this program due to inadequate funding and personnel to carry out the task. Only

information materials for tourists have been produced in the last few years and none for the other sectors. Funds have been allocated in 2008 for the strengthening of this program. An Information Officer has been hired to carry out activities that were planned in a participatory process in June 2007. Celebrations of its inscription in the World Heritage List were held in 2003 and 2006.

If at all, information and education initiatives have been opportunistic. Arrests and prosecution of cases against violators in Tubbataha always becomes a major news item. A case in point is the recent arrest of the Chinese poachers on board F/V Hoi Wan in TRNP in December 21, 2006. The local and national media continue to publish and air updates regarding the incident to this day (Annex 13). The incident also prompted civil society to take action and exert pressure on national leaders and on businessmen. Currently, restaurants that offer napoleon wrasse in their menu are being boycotted by various sectors in Manila, while some have stopped offering it in their establishments.

The 2008 Annual Work Plan for TRNP, however, is quite strong on IEC. The exhibit REEFlections, Too staged during the opening of the national conference on TRNP will be displayed in all the major educational institutions in Palawan to inspire support among the youth for the conservation of this natural heritage. Brochures and fliers will be produced for the youth and other sectors to educate these sectors on the value of TRNP and prepare the youth for the privilege and responsibility of protecting the values of the park for future generations.

Staffing Levels

The TMO, acting as the executive arm of the TPAMB, is headed by the Park Manager. Other staff includes; a Finance and Administrative Officer, an Administrative Assistant, two research assistants that double as park rangers, and two park rangers. A manpower pool of approximately 40 trained personnel from the PN and PCG is the source of personnel to function as Marine Park Rangers in TRNP. The assistance of consultants and volunteers are obtained during special circumstances, i.e., preparation for conferences, filing of cases, updating of website, preparation of major reports, conduct of specific studies, etc. During the inventory of fish on the F/V Hoi Wan, which was arrested in TRNP in December 21, 2006, volunteers were employed to conduct an inventory the fish inside the holds/aquariums of the vessel.

Monitoring

Key Indicators for Measuring State of Conservation

Through workshops organized by WWF-Phils in 2003 and 2004 and by CI-Phils in 2006, the TPAMB Monitoring and Evaluation (M&E) Team was established with the following responsibilities: (1) to plan and guide the implementation of the M&E program specified in the management plan, (2) analyze and/or interpret the indicators based on relevant literature, (3) to consolidate the information gathered and facilitate its dissemination through a communication plan, and (4) to provide technical guidance in the collection of relevant M&E data. If necessary, members of the M&E team will assist in the collection of data. Using the guidebook *How is Your MPA Doing?* developed by IUCN, WWF, NOAA and the Packard Foundation, appropriate indicators were identified in a participatory manner and measured in 2006. The indicators measured, as provided for in the guidebook are; biophysical, governance, and socio-economic.

The indicators adopted to monitor and evaluate management effectiveness in TRNP are as listed in the table below. Biophysical and governance indicators are monitored annually while socio-economic indicators are monitored every three years. All studies and reports are submitted to the TMO and are made available to the public upon request.

Indicators	Description	Periodicity of Measurement
Biophysical Indicators		
1. Focal species abundance and diversity	Population and abundance of seabirds, turtles, cetaceans, commercially important fish species, indicator fish species, top predators, giant clams and large gastropods	Annually
2. Focal species population structure	Population per unit area of seabirds, cetaceans, and turtles	Annually
3. Habitat distribution and	Broad scale survey of coral reefs and seagrass beds to assess	Annually

complexity	changes brought about by large scale disturbances such as bleaching, storms, crown of thorns starfish (COTS) infestations	
4. Composition and structure of the community	Comparative composition of corals, fish, seabirds, and seagrass	Annually
5. Type, level and return on fishing effort	Random sampling at known fish landing locations in Cagayancillo	Once every 3 yrs
6. Water quality	Temperature, salinity, turbidity, solid waste volume, and count, diversity and density of plankton	Once every 3 yrs
7. Area showing signs of recovery	Changes through time in the habitat as indicated by seabirds population, benthos and seagrass	Annually
8. Area under no or reduced human impact	Diver impact study, damage assessment	Annually
Socio-economic Indicators		
1. Local marine resource use patterns	Assess marine related activities, who are involved in each activity, technology used, location and boundaries, timing and seasonality	Once every 3 yrs
2. Level of understanding of human impacts on resources	Assessment of threats to natural environment, changes due to these threats, and to what extent stakeholders believe their own activities affect the natural environment	Once every 3 yrs
3. Perceptions of non-market and non-use values (include other economic values, i.e. direct use value, indirect use value and option value to get total economic value)	Income by occupation	Once every 3 yrs
4. Household income	Establishment of protected areas for biodiversity conservation and	Once every 3 yrs

distribution by source	sustainable development	
5. Number and nature of markets	Number of major marine products and their corresponding market channels (include characterization of market channels)	Once every 3 yrs
6. Distribution of formal knowledge to community	Types of information disseminated to stakeholders, level of confidence on the information	Annually
Governance Indicators		
1. Level of resource use conflict	Identification of nature and level of conflict (conflicts to be defined); assessment of nature and characteristics over time; response of managers	Annually
2. Existence of a decision-making and management body	Presence/absence of legally mandated body; frequency of meetings; process of decision-making; roles and responsibilities of members of the body (formal and non-formal)	Annually
3. Existence and adoption of management plan	Presence or absence of park management plan; planning, adoption and implementation process; completeness of the plan; enforceability of the plan	Annually
4. Existence and adequacy of enabling legislation	Existence of legislation to support MPA; legislative support for management plan; assessing appropriateness of legislation	Annually
5. Availability and allocation of MPA administrative resources	Availability and allocation of resources for each MPA activity against needed resources; external resources generated/mobilized	Annually
6. Degree of interaction between managers and stakeholders	Regularity of meetings with stakeholders; assessment of topics of discussion, attendance, problems and issues, solutions; comparison of views between MPA staff and stakeholders; analysis of stakeholders' interest and participation in MPA management;	Annually

	assessment of stakeholders; level of satisfaction with their participation	
7. Clearly defined enforcement procedure	Presence or absence of enforcement guidelines and procedures, adequacy and availability of the guidelines, procedures to undertake enforcement actions	Annually
8. Degree of information dissemination to encourage stakeholder compliance	Assess training/IEC activities/program in terms of number and type provided; expenses against total budget; level of satisfaction of stakeholders; level of understanding feedback from stakeholders	Annually

Administrative Arrangements for Monitoring Property

The M&E Team assigned to biophysical indicators is composed of the following: (1) BFAR; (2) DENR; (3) PSU; (4) WPU; (5) PCSDS; (6) CI-Phils; and (7) WWF-Phils. The WPU was identified as the convenor.

The Team assigned to measure Governance indicators consists of: (1) PSU; (2) LGU-Provincial Government of Palawan; (3) LGU-Municipal Government of Cagayancillo; (4) PCSDS; (5) NAVFORWEST; (6) PCG; (7) BFAR; and (8) DENR. The PSU was assigned as the convenor.

The Socio-economic M&E Team is composed of the following: (1) PCSDS; (2) LGU-Provincial Government of Palawan; (3) LGU-Municipal Government of Cagayancillo; and (4) WWF-Phils, (5) Haribon Palawan, Inc.

Representatives of all the agencies identified as members of the M&E Team were present during the workshops and have committed technical and other support. The teams conducted an evaluation of management effectiveness for TRNP in 2006.

In May 2005, the first participatory evaluation of the park was undertaken for the stakeholders to assess the progress achieved in fulfilling the vision they jointly set seven years earlier (Cola et al., 2005). The review aimed to put the stakeholders in the same level of appreciation and understanding about the program. Based on the review, participants selected critical indicators using those they identified in a questionnaire circulated three weeks prior to the workshop. Each group examined a key program concern. These concerns were: management capability, partnership, habitat protection and local capability. Participants included TPAMB member-

agencies, Cagayancillo government and local residents, NGOs, and the academe. The specific objectives of the evaluation were:

- Review the activities conducted in attaining the objectives of the Management Plan for TRNMP and their results;
- Evaluate the activities and their results to determine their strengths and weaknesses;
- Set the next steps based on the results of past efforts and address gaps in attaining the objectives of the Management Plan.

Results of Previous Reporting Exercises

Temporal and spatial analyses of the results of the M&E evaluation showed improving health and resilience of Tubbataha and the Jessie Beazley Reefs. The measurement of governance and socio-economic indicators likewise showed a positive change in meeting objectives. A more detailed document showing the results of the M&E exercise and the comments and recommendations of the M&E Teams are attached (Annex 14).

TRNP is the first MPA in the Philippines that has completed a full management cycle in the sense that agreements forged between stakeholder groups seven years ago were already achieved. The data retrieved from various sources revealed that the management goal for the park has been substantially achieved although there remains lots of room for improvement. The joint recommendations of the various stakeholders are as follows:

Management Capability
Organization and Systems
• Study further mandates, organization, objectives and work plans to determine the best organizational set-up for TRNP in order to attain better results; • Study and improve systems on enforcement, planning, personnel incentive, volunteerism and sustainable financing. The planning system must afford the regular review and updating of the management plan to keep it in step with new opportunities and challenges. The personnel incentive system must be able to reward conservation work with political and professional gains. The volunteer system must harness the contribution of universities including its students. • Organize workshops on system improvement: enforcement and sustainable financing. The enforcement workshop will generate strategies to make illegal activities very costly to the violators and embed it with security and safety component. The sustainable financing workshop must develop new revenue

sources and earning approaches. It must better capture resource rent. • Work for the legislation of annual provincial allocation for TRNP
Equipment, Facilities and Personnel
• Purchase of the following equipment: long range radio, short-wave radios, outboard motor and twin-engine patrol boat • Install embedment system of mooring • Repair and extend ranger station • Hire technician to maintain radios and other electronic equipment
Partnership
• Intensify IEC on the importance of TRNP especially through youth education • Constitute a rational IEC program with long-term goals • Expand the network of partners to such entities as Shell Philippines and Naval Reserve Unit • Assist expansion areas in applying the principle of benefit-and-cost sharing in park management • Diversify participation in decision-making processes
Habitat Conservation
• Standardize research methodology, format and parameters. Orient researchers can be oriented on the standards. • Review the existing parameters used for consistency and include more management-relevant and measurable parameters. • Conduct connectivity study of species and ecosystems and impact of natural and human intervention. • Establish data base for all researches on TRNP • Fill data gaps and validate past research findings
Local Capability
Livelihood Support
• Expand socio-economic benefits including the operation of a cold storage plant and the planning, implementation and promotion of a municipal tourism program • Study the effects of MPA on seaweed farming
Municipal Coastal Management
• Regulate the establishment of fish aggregating devices and generate revenue. Conduct a study as technical input to legislation • Support to strengthen marine reserve management through installation of marker buoys and acquisition of small patrol boats and binoculars. • Provide materials on TRNP and marine environment in general to schools • Conduct research on the provenance of the name Tubbataha for ethnic pride • Review baseline demographic and habitat characteristics (1974 data and photograph) • Rationalize socio-economic monitoring and study how the fishers displaced from the closure of Tubbataha Reef improved.

Municipal Health
• Strengthen waste management system • Conduct a study to improve the health system and work for better services

Most of these recommendations have been addressed while some require inputs too great for park management to provide at the moment, i.e., twin engine patrol boat, embedment mooring system, hence, they have not yet been addressed.

Documentation

Photographs, slides, image inventory and authorization table and other audiovisual Materials

ID No	FORMAT (slide/ print/ video)	Caption	Date of Photo	Photographer /Director	Copyright Owner	Contact details of Copyright owner	Non-exclusive Cession of Rights
1	Photo	Figure 3. aerial photos or north and south atolls	2003	Marivel Dygico	TMO	angelique@tubbatahareef.org	Yes
2	Photo	Figure 4. tiger shark	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
3	Photo	Figure 5. steep reef slopes of TRNP	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
4	Photo	Figure 13. giant fan corals	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
5	Photo	Figure 14. meadows of *Acropora*	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
6	Photo	Figure 16. soft corals	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
7	Photo	Figure 17. large manta ray and wall of jacks	2006	Lene & Claus Topp	TMO	angelique@tubbatahareef.org	Yes
8	Photo	Figure 21. aerial photos of south islet and bird islet	2006	Terry Aquino	TMO	angelique@tubbatahareef.org	Yes
9	Photo	Figure 26. brown booby nest with discarded toothbrush	2007	Terry Aquino	TMO	angelique@tubbatahareef.org	Yes
10	Photo	Figure 27. dive boat	2007	Terry Aquino	TMO	angelique@tubbatahareef.org	Yes
11	CD	Philippine Biodiversity Conservation Priorities	2002		DENR-PAWB, CI-Phils, BCP-UPCIDS and FPE		

Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property

Please refer to Annex 10.

Form and date of most recent records or inventory of property

Year	Author/s	Title
2007	Aquino, MTR	Cetaceans of the Cagayan Ridge with special notes on Populations within the Tubbataha Reef Natural Park
2006	Campos, W et al.	Investigating Biodiversity Corridors in the Sulu Sea: Distribution and Dispersal of Fish Larvae
2006	Alinio, P and W Licuanan	Completing the Connectivity Cycle for Adaptive Management: Coral Reef Ecosystem based MPA Network Management Chain
2005	Cola, R et al.	First Participatory Evaluation of Tubbataha Reef National Marine Park: Process and Result
2005	Walker, SPW and NE Palomar	Status Report on the abundance of condricthyian and pelagic teleost top predators at Tubbataha Reef National Marine Park, Philippines
2005	Dolorosa, RG, S Schoppe and M Chassels	Focal benthic mollusks (Mollusca: Bivalvia and Gastropoda) of selected sites in Tubbataha Reef National Marine Park, Palawan, Philippines
2005	Cruz, R and D Torres	Report on the Preliminary Assessment of Marine Turtle Habitat Use and the Causes of Marine Turtle Mortality in the Tubbataha Reef National Marine Park
2004	Aquino, MTR and VBJ Calderon	Species inventory of cetacean populations in the waters surrounding Tubbataha Reefs
2003	Villanoy, CL et al.	Tubbataha Reef and Sulu Sea Oceanographic Study Field
2005	Jensen, A	Field Report: Monitoring and Inventory of the seabirds and their breeding areas in Tubbataha Reef National Marine Park, April 27-May 1, 2005

Address where inventory, records and archives are held

Tubbataha Management Office
2nd Floor, Basaya Building
National Highway, Bgy. San Miguel
Puerto Princesa City 5300
Palawan, Philippines

Bibliography

Alcala, AC. 1993. Ecological Importance of the Coral Reefs in the Cagayan Ridge, Sulu Sea, Philippines. Siliman Journal 36 (2): 1-3.

Alinio, P and W Licuanan. 2006. Completing the Connectivity Cycle for Adaptive management: Coral reef ecosystem based MPA network management chain. Report submitted to CI-Philippines. Unpublished.

Aquino, MTR. 2007. Cetacean species of the Cagayan Ridge with special notes on populations within the Tubbataha Reefs Natural Park (TRNP). Report submitted to Conservation International, Philippines and the TPAMB.

Aquino, MTR and VBJ Calderon. 2004. Species Inventory on the Cetacean Populations in the waters surrounding Tubbataha Reefs. Report submitted to the TPAMB and UNESCO.

Arquiza, YD and AT White. 1999. **Tales from Tubbataha**, 2nd edition. Makati City: Bookmark, Inc.

Campos, W. et al. 2006. Investigating Biodiversity Corridors in the Sulu Sea: Distribution and dispersal of Fish Larvae. Update Report submitted to CI-Philippines.

Carceler, J. pers. comm.

Cola, R et al. 2005. First Participatory Evaluation of the TRNP. Report submitted to WWF-Philippines.

Cruz, R., D. Torres. 2005. Report on the Preliminary Assessment of Marine Turtle Habitat Use and the Causes of Marine Turtle Mortality in The Tubbataha Reef National Marine Park

Dolar, MLL and AC Alcala. 1993. Notes on the Ichthyoplankton and Marine Mammals of the Sulu Sea, Philippines. In *Silliman Journal. 2. pp.43-57.*

Fenner, D. 2001. Reef Corals of Tubbataha Reefs, Philippines. Report submitted to WWF-Philippines.

Jackson, J. 1998. **Top Ten Dive Sites of the World**. London: New Holland Publishers.

Jackson, J. 2003. **Top Dive Sites of the World**. London: New Holland Publishers.

Jensen, A. 2005. Monitoring and Inventory of Seabirds of Tubbataha Reef National Marine Park, Cagayancillo, Palawan, Philippines. Report submitted to the TPAMB. Unpublished.

Ledesma, K. 2003. Monitoring changes in the benthic and fish community structure of the Tubbataha Reef National Marine Park from 1997-2005; WWF 2005 Report. Unpublished.

Ledesma, K. 2005. Monitoring changes in the benthic and fish community structure of the Tubbataha Reef National Marine Park from 1997-2005; WWF 2005 Report. Unpublished.

Pomeroy, RS, JE Parks, and LM Watson. 2003. How is Your MPA Doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness. IUCN, Gland, Switzerland and Cambridge, UK.

Thorsell, J. 1993. World Heritage Nomination – IUCN Technical Evaluation; 653: Tubbataha National Marine Park (Philippines)

Veron, JEN. 1993. A Biogeographic Database of Hermatypic Corals. AIMS Monograph 10: 1-433.

Villanoy, C et al. 2003. Tubbataha Reefs and Sulu Sea Oceanographic Study. Report submitted to WWF-Philippines.

Walker, SPW. NE Palomar-Abesamis. 2005. Status report on the abundance of condricthyian and pelagic teleost top predators at Tubbataha Reef National Marine Park, Philippines. Report submitted to TMO

UNEP-WCMC. www.iucn.org/themes/wcpa/wheritage/wheritageindex.htm. Downloaded 24 January 2007.

Contact Information of responsible authorities

Preparer: Tubbataha Management Office

Name: Angelique M. Songco
Title: Park Manager
Address: 2nd Floor, Basaya Building, National Highway, San Miguel City, Province/State, Country: Puerto Princesa City 5300, Palawan, Philippines
Tel: 63 48 434 5759
Fax: 63 48 434 5759
E-mail: tmo@tubbatahareef.org

Official National and Local Institutions/Agencies

UNESCO Commission of the Philippines
G/F Department of Foreign Affairs Building
2330 Roxas Boulevard, Pasay City, Philippines
Tel. No: (632) 834-3447

Department of Environment and Natural Resources – Region 4-B (MIMAROPA)
1515 L & S Bldg., Roxas Blvd., Metro Manila, Philippines
Tel. No.: (632) 405-0014; 405-0330

Department of Environment and Natural Resources – Protected Areas and Wildlife Bureau
Ninoy Aquino Parks and Wildlife Center
Quezon Avenue, Diliman, Quezon City 1100, Philippines

Palawan Council for Sustainable Development
PCSD Bldg., Sports Complex Road
Sta. Monica Heights, Puerto Princesa City
Telefax: (6348) 434-4234

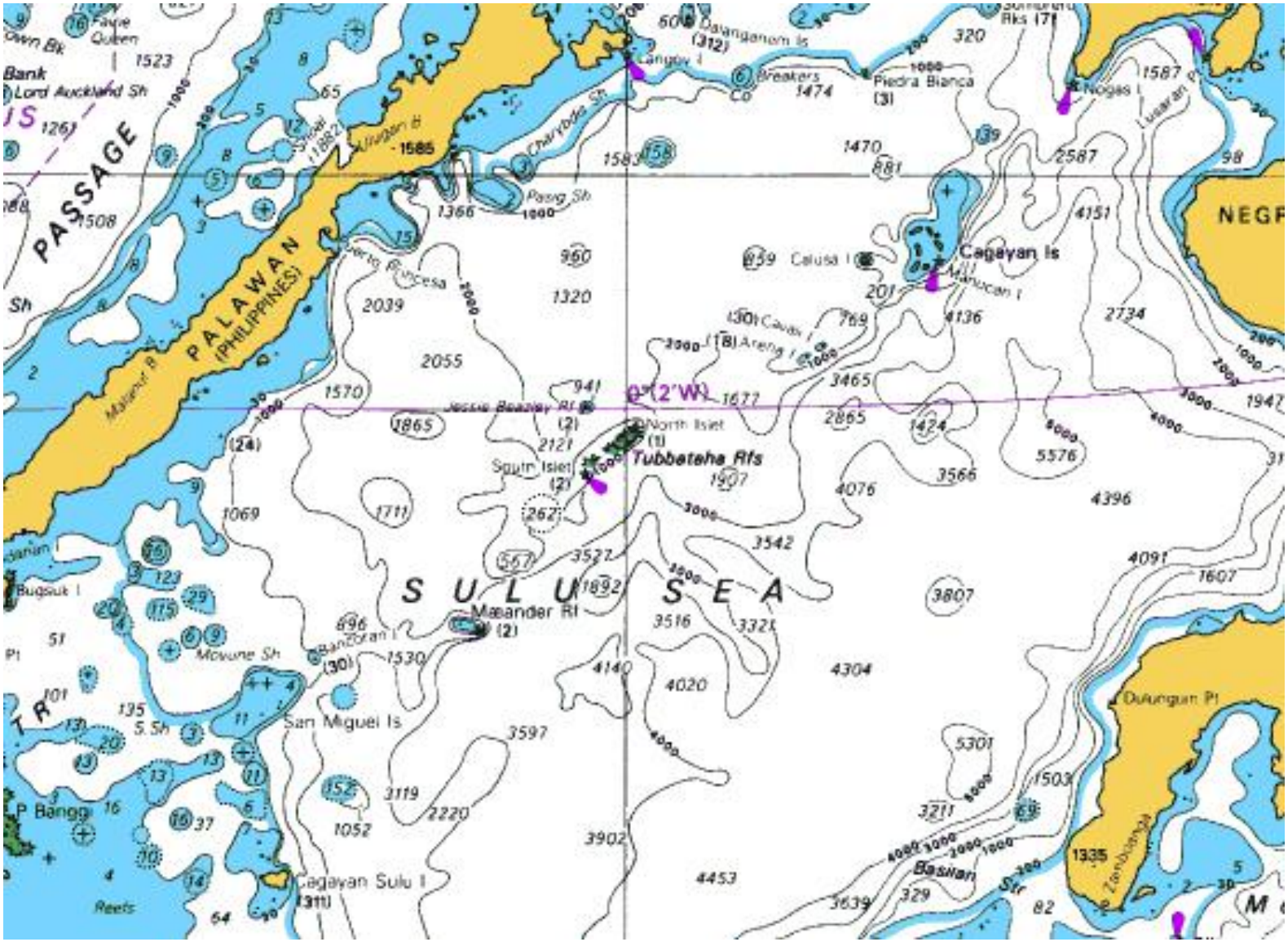
Tubbataha Management Office (TMO)
Tubbataha Protected Area Management Board (TPAMB)
2nd Floor, Basaya Building, San Miguel, National Highway, Puerto Princesa City, Palawan 5300, Philippine
http://tubbatahareef.org
Contact name: Angelique M. Songco
E-mail: tmo@tubbatahareef.org

Signature on behalf of the State Party

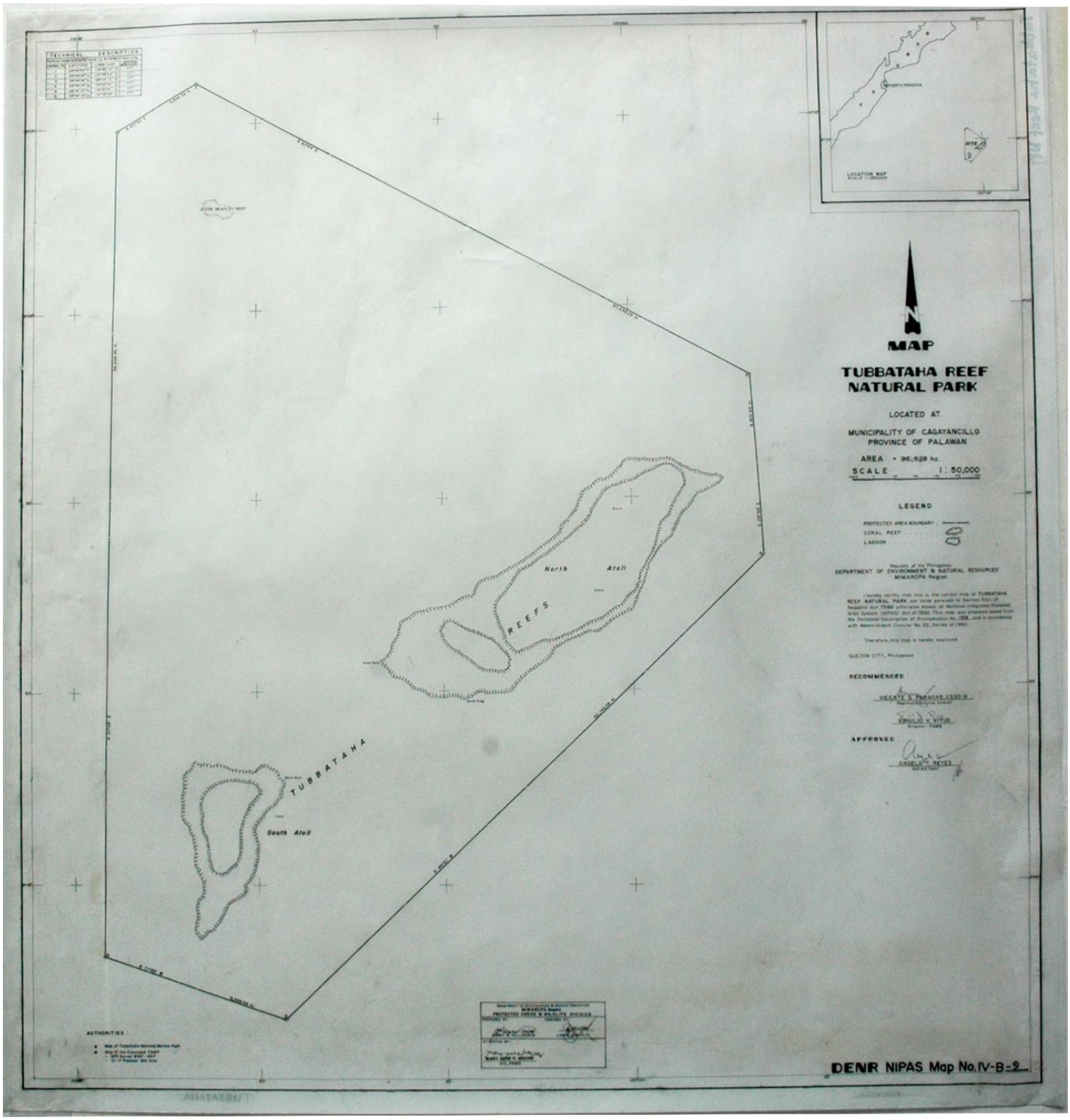
SECRETARY ALBERTO G. ROMULO
Secretary for Foreign Affairs
Department of Foreign Affairs
Republic of the Philippines

ANNEXES

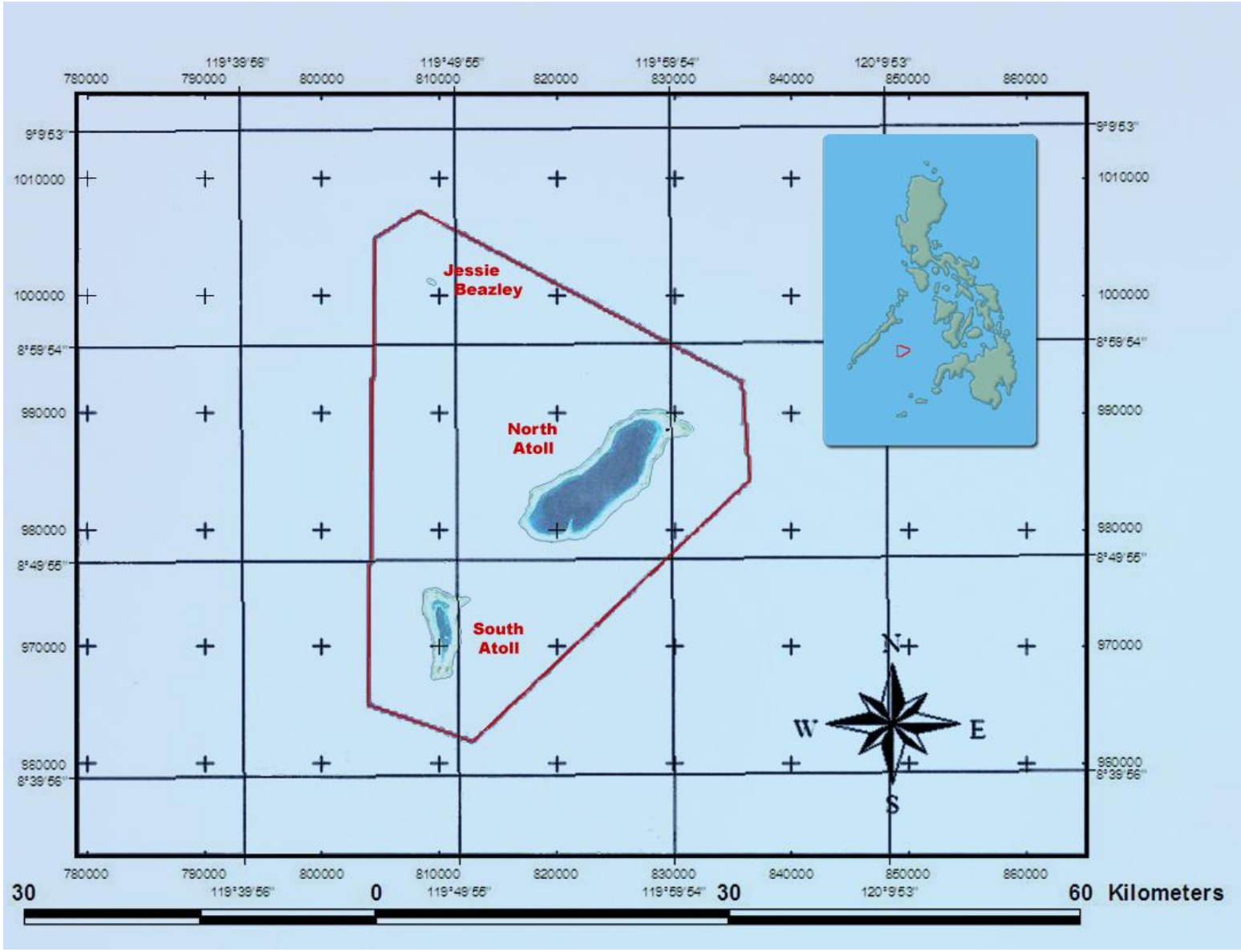
ANNEX 1. Map of the Sulu Sea showing the Cagayan Ridge where Tubbataha Reef is located.



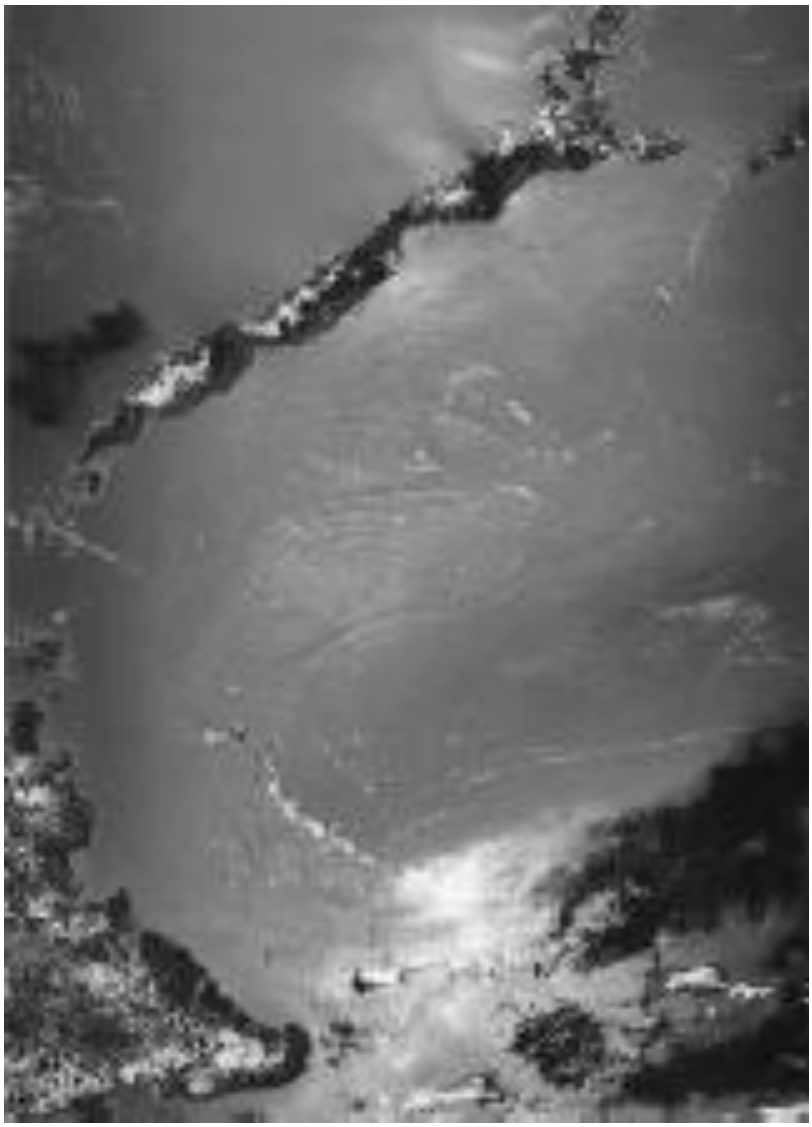
ANNEX 2. Map of the TRNP from NAMRIA.

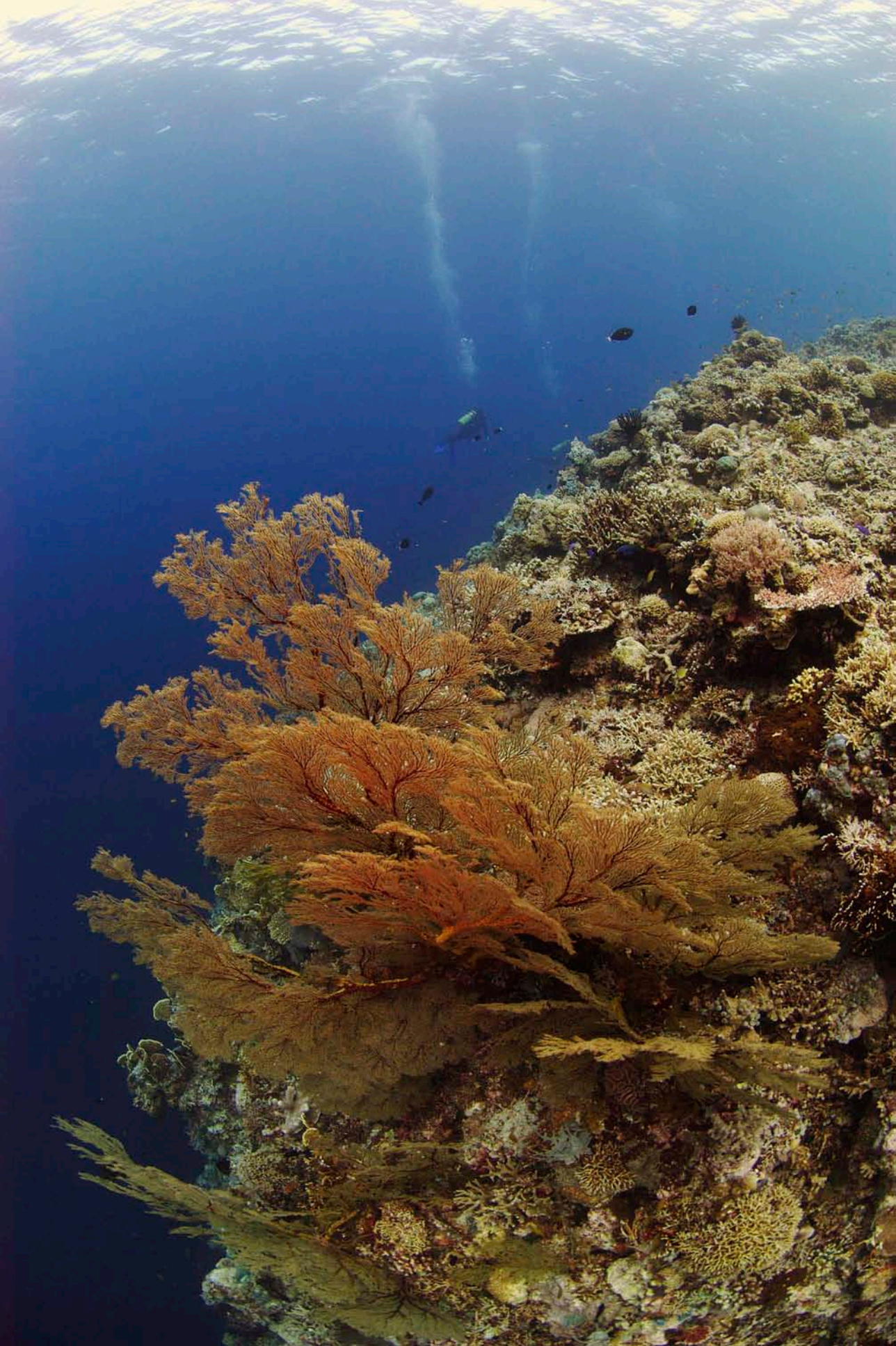


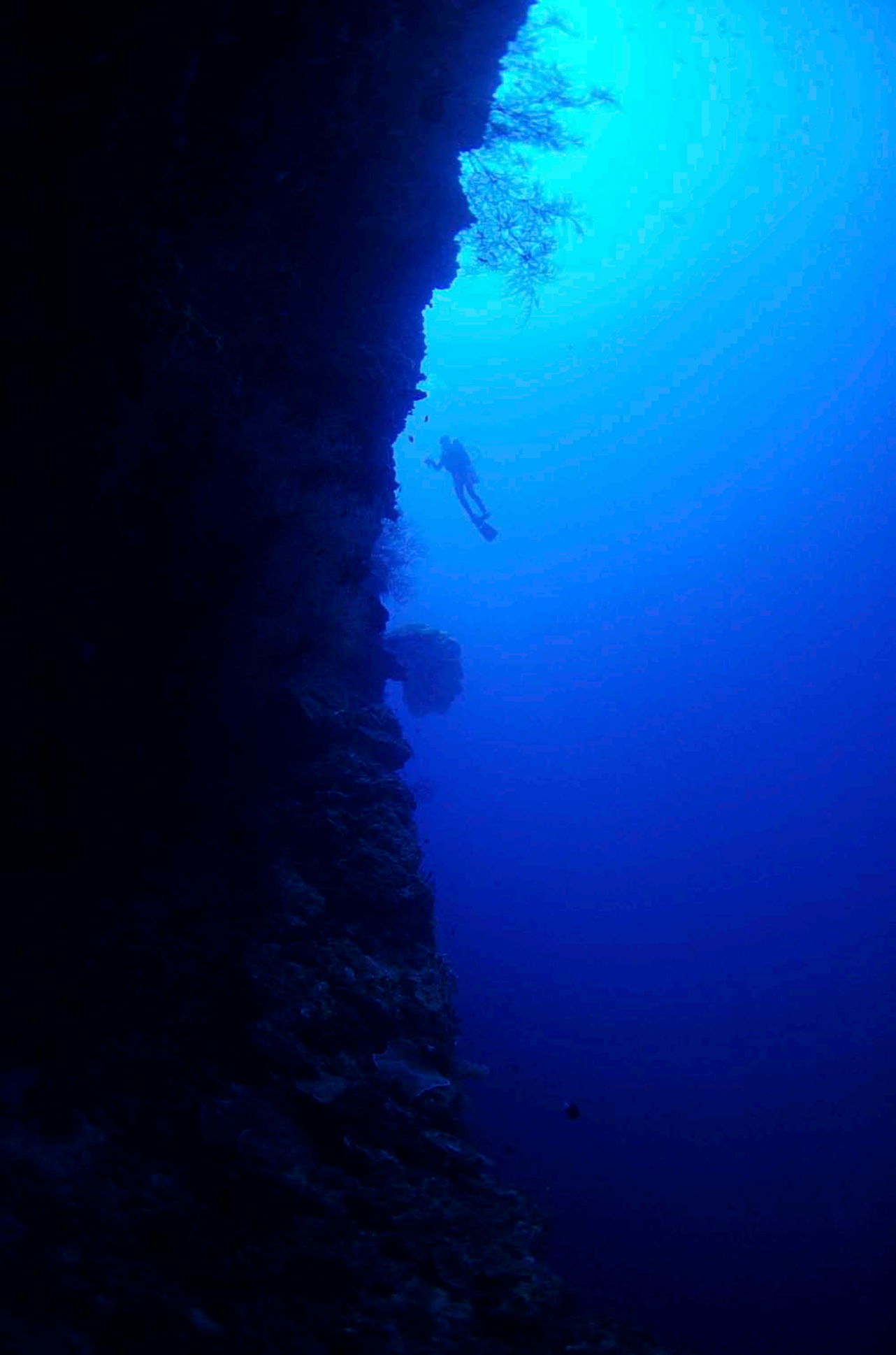
ANNEX 3. Map of TRNP showing boundaries in red.



ANNEX 4. Satellite map showing internal waves in the Sulu Sea (Source: Villanoy, 2003).







ANNEX 5. List of 99 species of birds documented in TRNP

WILD BIRDS CLUB OF THE PHILIPPINES (WBCP)
Checklist of Birds of the Tubbataha Reefs Natural Park: A preliminary updated list 2007
(Edited by Arne Jensen, Avifauna Specialist)
Taxonomic treatment follows Howard & Moore except for Tarictic Hornbill where it follows Kemp and IUCN.

	ENGLISH NAME (SYNONYM NAME)	LATIN NAME	UD	BIU	OR	NOTES
	(Kennedy *et al*) (Howard & Moore 2003 and/or Sibley & Monroe)	(Howard & Moore 2003)				
						Bold = Breeding
	Petrels, Shearwaters, Tropicbirds					
1	Bulwer's Petrel	*Bulweria bulwerii*				
2	Wedge-tailed Shearwater	*Puffinus pacificus*				
3	Streaked Shearwater	*Calonectris leucomelas*				
4	White-tailed Tropicbird	*Phaethon leptura*	X			KEN : *P. lepturus*
	Boobies					
5	Masked Booby	*Sula dactylatra*				Extirpated. Last record is from North Islet, Tubbataha Reef in 1995 (Manatam 1996) and Jessie Beazley on xx 2003, Lu-Ann Fuentes
6	**Red-footed Booby**	*Sula sula*				
7	**Brown Booby**	*Sula leucogaster*				
	Frigatebirds					
8	Christmas Island Frigatebird	*Fregata andrewsi*	X		X	IUCN: Critical Endangered.
9	Great Frigatebird	*Fregata minor*				
10	Lesser Frigatebird	*Fregata ariel*				
	Herons, Egrets, Bitterns					
11	Grey Heron	*Ardea cinerea*				
12	Great-billed Heron	*Ardea sumatrana*				
13	Great Egret	*Ardea alba*	X			KEN: *Egretta*
14	**Eastern Reef-Egret (Pacific Reef Egret)**	*Egretta sacra*				

15	Intermediate Egret		*Egretta intermedia*		
16	Chinese Egret		*Egretta eulophotes*		IUCN: Vulnerable
17	Little Egret		*Egretta garzetta*		
18	Japanese Night-Heron		*Gorsachius goisagi*		IUCN: Endangered
19	Little Heron	(Striated Heron)	*Butorides striata*	X	KEN: *striatus*
20	Cattle Egret		*Bubulcus ibis*		
21	Cinnamon Bittern		*Ixobrychus cinnamomeus*		
22	Yellow Bittern		*Ixobrychus sinensis*		
	Dabbling Ducks				
23	Northern Shoveler		*Anas clypeata*		
	Buzzards, Kites, Eagles, Vultures, Harriers, Hawks				
24	Grey-faced Buzzard		*Butastur indicus*		
	Falconets, Falcons				
25	Oriental Hobby		*Falco severus*		
26	Peregrine Falcon		*Falco peregrinus*		
	Rails, Crakes, Waterhens, Coots				
27	Slaty-breasted Rail		*Gallirallus striatus*		
28	**Barred Rail**		*Gallirallus torquatus*		
29	Red-legged Crake		*Rallina fasciata*		
30	Baillon's Crake		*Porzana pusilla*		
31	White-breasted Waterhen		*Amaurornis phoenicurus*		
32	Common Moorhen		*Gallinula chloropus*		
	Lapwings, Plovers				
33	Grey Plover	(Black-bellied Plover)	*Pluvialis squatarola*		
34	Asian Golden-Plover	(Pacific Golden-Plover)	*Pluvialis fulva*		
35	Kentish Plover		*Charadrius alexandrinus*		
36	Lesser Sand-Plover	(Mongolian Plover)	*Charadrius mongolus*		
37	Greater Sand-Plover		*Charadrius leschenaultii*		

	Curlews, Godwits, Sandpipers, Snipes		
38	Eurasian Curlew		*Numenius arquata*
39	Whimbrel		*Numenius phaeopus*
40	Bar-tailed Godwit		*Limosa lapponica*
41	Black-tailed Godwit		*Limosa limosa*
42	Common Greenshank		*Tringa nebularia*
43	Green Sandpiper		*Tringa ochropus*
44	Grey-tailed Tattler		*Heteroscelus brevipes*
45	Ruddy Turnstone		*Arenaria interpres*
46	Red Knot		*Calidris canutus*
47	Sanderling		*Calidris alba*
48	Rufous-necked Stint	(Red-necked Stint)	*Calidris ruficollis*
49	Ruff (Reeve)		*Philomachus pugnax*
	Phalaropes		
50	Red-necked Phalarope		*Phalaropus lobatus*
	Stilts, Avocets		
51	Black-winged Stilt		*Himantopus himantopus*
	Jaegers (Skuas)		
52	Pomarine Skua		*Stercorarius pomarinus*
53	Long-tailed Skua		*Stercorarius longicaudus*
	Terns, Noddies		
54	Black-naped Tern		*Sterna sumatrana*
55	**Great Crested Tern**		*Sterna bergii*
56	Common Tern		*Sterna hirundo*
57	Roseate Tern		*Sterna dougallii*
58	**Sooty Tern**		*Sterna fuscata*
59	Little Tern		*Sterna albifrons*
60	White-winged Tern	(White-winged Black Tern)	*Chlidonias leucopterus*
61	Whiskered Tern		*Chlidonias hybridus*

62	**Brown Noddy**	*Anous stolidus*	
63	**Black Noddy**	*Anous minutus*	
	Cuckoos, Malkohas, Coucals		
64	Oriental Cuckoo (Himalayan Cuckoo)	*Cuculus saturatus*	
65	Brush Cuckoo	*Cacomantis variolosus*	
	- ssp *sepucralis* (Rusty-breasted Cuckoo)		SM: Rusty-breasted Cuckoo *Cacomantis sepulcralis.* Split from *C. variolosus*
	Owls		
66	Brown Hawk-Owl	*Ninox scutulata*	
	Nightjars		
67	Grey Nightjar	*Caprimulgus indicus*	
	Swifts, Needletails		
68	Island Swiflet (Uniform Swiftlet)	*Aerodramus vanikorensis*	
	Kingfishers		
69	Common Kingfisher	*Alcedo atthis*	
70	Ruddy Kingfisher	*Halcyon coromanda*	
71	White-throated Kingfisher	*Halcyon smyrnensis*	
72	**White-collared Kingfisher**	*Halcyon chloris*	
	Bee-eaters		
73	Blue-throated Bee-eater	*Merops viridis*	
	Pittas		
74	Hooded Pitta	*Pitta sordida*	
	Martins, Swallows		
75	Barn Swallow	*Hirundo rustica*	
76	Pacific Swallow	*Hirundo tahitica*	
	Larks		
77	Oriental Skylark	*Alauda gulgula*	

	Crows					
78	Large-billed Crow		*Corvus macrorhynchos*			
	Robins, Shamas, Thrushes					
79	Blue Rock-Thrush		*Monticola solitarius*			
	Old World Warblers					
80	Arctic Warbler		*Phylloscopus borealis*			
81	Clamorous Reed-Warbler		*Acrocephalus stentoreus*			
82	Oriental Reed-Warbler		*Acrocephalus orientalis*			
83	Lanceolated Warbler		*Locustella lanceolata*			
84	Middendorff's Grasshopper-Warbler (Middendorff's Warbler)		*Locustella ochotensis*			
	Flycatchers					
85	Grey-streaked Flycatcher		*Muscicapa griseisticta*			
86	Narcissus Flycatcher		*Ficedula narcissina*			
87	Mugimaki Flycatcher		*Ficedula mugimaki*			
88	Blue-and-white Flycatcher		*Cyanoptila cyanomelana*			
	Wagtails, Pipits					
89	Grey Wagtail		*Motacilla cinerea*			
90	Yellow Wagtail		*Motacilla flava*			
91	White Wagtail		*Motacilla alba*			
92	Forest Wagtail		*Dendronanthus indicus*			
93	Olive Tree-Pipit	(Olive-backed Pipit)	*Anthus hodgsoni*			
94	Pechora Pipit		*Anthus gustavi*			
	Shrikes					
95	Brown Shrike		*Lanius cristatus*			
	Starlings					
96	Short-tailed Glossy Starling	(Short-tailed Starling)	*Aplonis minor*			
97	Purple-backed Starling		*Sturnus sturninus*	X	X	Morten Heegård and Arne Jensen: 2 on North Islet, Tubbataha Reefs on Oct 26, 1991. ENVIROSCOPE 1992. Description with WBCP

98	Chestnut-cheeked Starling	*Sturnus philippensis*		
	Old World Sparrows, Weavers			
99	**Eurasian Tree Sparrow**	*Passer montanus*		

			ABBREVIATIONS:	
			BirdLife Int. Asia Red Data Book/iUCN Red Data List 2003	BIU
			Clements (updated 2004)	CL
			Haribon/Bird Life International Philippine Red Data Book	PRDB
			Howard & Moore 2003, 3rd edition	HM
			Kennedy *et al* 2000	KEN
			Sibley and Monroe (updated 2003)	SM
			Other references	OR
			Updated	UD

ANNEX 6. Inventory of coral species recorded at Jessie Beazley and Tubbataha Reefs, Philippines.
Source: DENR List and Dr. Fenner (2001)

			Dr. Fenner (2001)	DENR
Family	**Genus**	**Species**		
Mussidae	Acanthastrea	*Acanthastrea brevis* Milne Edwards and Haime, 1849	1	
Mussidae	Acanthastrea	*Acanthastrea echinata (Dana, 1846)*	1	1
Mussidae	Acanthastrea	*Acanthastrea hemprichii* (Ehrenberg, 1834)	1	1
Mussidae	Acanthastrea	*Acanthastrea hillae*		1
Oculinidae	Acrhelia	*Acrhelia horrescens*		1
Acroporidae	Acropora	*Acropora abrolhosensis* Veron,1985	1	1
Acroporidae	Acropora	*Acropora abrotanoides* (Lamarck, 1816)	1	1
Acroporidae	Acropora	*Acropora aculeus* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora acuminata*		1
Acroporidae	Acropora	*Acropora aliiomorpha*		1
Acroporidae	Acropora	*Acropora anthocercis*		1
Acroporidae	Acropora	*Acropora arbuscula*		1
Acroporidae	Acropora	*Acropora aspera*		1
Acroporidae	Acropora	*Acropora austera* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora azurea*	1	1
Acroporidae	Acropora	*Acropora brueggemanni* (Brook, 1893)	1	1
Acroporidae	Acropora	*Acropora carduus*		1
Acroporidae	Acropora	*Acropora carolineana* Nemenzo, 1976	1	1
Acroporidae	Acropora	*Acropora cerealis* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora clathrata* (Brook, 1891)	1	1
Acroporidae	Acropora	*Acropora copiosa*		1
Acroporidae	Acropora	*Acropora cuneata*		1

Acroporidae	Acropora	*Acropora cytherea* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora danai*		1
Acroporidae	Acropora	*Acropora digitifera* (Dana, 1846)		1
Acroporidae	Acropora	*Acropora divaricata* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora donei*		1
Acroporidae	Acropora	*Acropora echinata* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora elseyi*		1
Acroporidae	Acropora	*Acropora excelsa*		1
Acroporidae	Acropora	*Acropora exquisita*		1
Acroporidae	Acropora	*Acropora fastigata*	1	
Acroporidae	Acropora	*Acropora florida* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora formosa* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora gemmifera* (Brook, 1892)	1	1
Acroporidae	Acropora	*Acropora galuca*		1
Acroporidae	Acropora	*Acropora grandis*		1
Acroporidae	Acropora	*Acropora granulosa* (Milne Edwards & Haime, 1860)	1	1
Acroporidae	Acropora	*Acropora horrida* (Dana, 1846)		1
Acroporidae	Acropora	*Acropora humilis* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora hyacinthus* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora indonesia* Wallace, 1997	1	
Acroporidae	Acropora	*Acropora insignis*		1
Acroporidae	Acropora	*Acropora latistella* (Brook, 1891)	1	1
Acroporidae	Acropora	*Acropora lovelli*		1
Acroporidae	Acropora	*Acropora loripes* (Brook, 1892)	1	1
Acroporidae	Acropora	*Acropora lutkeni* Crossland, 1952(?)	1	1
Acroporidae	Acropora	*Acropora microphthalma*		1

Acroporidae	Acropora	*Acropora millepora* (Ehrenberg, 1834)	1	1
Acroporidae	Acropora	*Acropora monticulosa* (Bruggemann, 1879)	1	1
Acroporidae	Acropora	*Acropora nana* (Studer, 1878)	1	1
Acroporidae	Acropora	*Acropora nasuta* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora nobilis* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora palifera* (Lamarck, 1816)	1	1
Acroporidae	Acropora	*Acropora paniculata*		1
Acroporidae	Acropora	*Acropora parilis*		1
Acroporidae	Acropora	*Acropora polystoma*		1
Acroporidae	Acropora	*Acropora pruinosa*		1
Acroporidae	Acropora	*Acropora pulchra* (Brook, 1891)	1	1
Acroporidae	Acropora	*Acropora robusta* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora rosaria* (Dana, 1846)	1	
Acroporidae	Acropora	*Acropora samoensis* Brook, 1891)	1	1
Acroporidae	Acropora	*Acropora sarmentosa*		1
Acroporidae	Acropora	*Acropora secale* (Studer, 1878)	1	1
Acroporidae	Acropora	*Acropora selago* (Studer, 1878)	1	1
Acroporidae	Acropora	*Acropora striata*		1
Acroporidae	Acropora	*Acropora solitaryensis* Veron & Wallace, 1984	1	
Acroporidae	Acropora	*Acropora sp. 1 "danai-like"*		1
Acroporidae	Acropora	*Acropora speciosa* (Quelch, 1886)	1	
Acroporidae	Acropora	*Acropora subglabra*		1
Acroporidae	Acropora	*Acropora subulata*		1
Acroporidae	Acropora	*Acropora tenuis* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora teres*	1	1
Acroporidae	Acropora	*Acropora valenciennesi* (Milne Edwards & Haime, 1860)	1	1

Acroporidae	Acropora	*Acropora valida* (Dana, 1846)	1	1
Acroporidae	Acropora	*Acropora vaughani* Wells, 1954	1	1
Acroporidae	Acropora	*Acropora vermiculata*	1	
Acroporidae	Acropora	*Acropora verweyi*	1	1
Acroporidae	Acropora	*Acropora wallaceae*		1
Acroporidae	Acropora	*Acropora willisae*		1
Acroporidae	Acropora	*Acropora yongei* Veron & Wallace, 1984	1	1
Poritidae	Alveopora	*Alveopora allingi*		1
Poritidae	Alveopora	*Alveopora fenestrata*		1
Poritidae	Alveopora	*Alveopora excelsa*		1
Poritidae	Alveopora	*Alveopora tizardi*		1
Poritidae	Alveopora	*Alveopora verrilliana*	1	1
Poritidae	Alveopora	*Alveopora myriophthlma*		1
Poritidae	Alveopora	*Alveopora ocellata*		1
Poritidae	Alveopora	*Alveopora verilliana*	1	
Poritidae	Astreopora	*Astreopora gracilis*		1
Acroporidae	Astreopora	*Astreopora sp.*		1
Acroporidae	Astreopora	*Astreopora eliptica*	1	
Acroporidae	Astreopora	*Astreopora gracilis* Bernard, 1896	1	
Acroporidae	Astreopora	*Astreopora myriophthalma* (Lamarck, 1816)	1	
Acroporidae	Astreopora	*Astreopora randalli* Lamberts, 1980	1	
Acroporidae	Astreopora	*Astreopora suggesta* Wells, 1954	1	
Mussidae	Australomussa	*Australomussa rowleyensis* Veron, 1985	1	
Faviidae	Barabattoia	*Barabattoia amicorum*	1	
Briareidae	Briareum	*Briareum spp.*		1
Faviidae	Caulastrea	*Caulastrea echinulata* (Milne Edwards & Haime, 1849)	1	

Faviidae	Caulastrea	*Caulastrea furcata*		1
Faviidae	Caulastrea	*Caulastrea tumida*	1	
Nephtheidae	Cladiella	*Cladiella spp.*		1
Agariciidae	Coeloseris	*Coeloseris mayeri* Vaughan, 1918	1	1
Siderasteridae	Coscinaraea	*Coscinaraea columna* (Dana, 1846)	1	1
Siderasteridae	Coscinaraea	*Coscinaraea exesa*		1
Fungiidae	Ctenactis	*Ctenactis crassa* (Dana, 1846)	1	1
Fungiidae	Ctenactis	*Ctenactis echinata* (Pallas, 1766)	1	1
Fungiidae	Cycloseris	*Cycloseris fragilis*		1
Fungiidae	Cycloseris	*Cycloseris sinensis*		1
Fungiidae	Cycloseris	*Cycloseris somervillei*		1
Faviidae	Cyphastrea	*Cyphastrea agassizi* (Vaughan, 1907)	1	1
Faviidae	Cyphastrea	*Cyphastrea chalcidicum*		1
Faviidae	Cyphastrea	*Cyphastrea microphthalma*		1
Faviidae	Cyphastrea	*Cyphastrea ocellina*		1
Faviidae	Cyphastrea	*Cyphastrea serailia*		1
Nephtheidae	Dendronepthea	*Dendronepthea spp.*		1
Dendrophylliidae	Dendrophyllia	*Dendrophyllia* cf *gracilis*	1	
Dendrophylliidae	Dendrophyllia	*Dendrophyllia coccinea*	1	
Faviidae	Diploastrea	*Diploastrea heliopora* (Lamarck, 1816)	1	1
Stylasteridae	Distichopora	*Distichopora violacea* (Ellis & Solander, 1788)	1	
Pectinidae	Echinophyllia	*Echinophyllia aspera* (Ellis & Solander, 1788)	1	1
Pectinidae	Echinophyllia	*Echinophyllia echinata*		1
Pectinidae	Echinophyllia	*Echinophyllia echinoporoides* Veron & Pichon, 1979	1	1
Pectinidae	Echinophyllia	*Echinophyllia gemmacea*		1
Pectinidae	Echinophyllia	*Echinophyllia horrida*		1

Pectinidae	Echinophyllia	*Echinophyllia lamellosa*		1
Pectinidae	Echinophyllia	*Echinophyllia mammiformis*		1
Pectinidae	Echinophyllia	*Echinophyllia orpheensis* Veron & Pichon, 1980	1	
Pectinidae	Echinophyllia	*Echinophyllia patula* (Hodgson & Ross, 1982)	1	
Faviidae	Echinopora	*Echinopora ashmorensis*	1	
Faviidae	Echinopora	*Echinopora gemmacea* Lamarck, 1816	1	
Faviidae	Echinopora	*Echinopora hirsuitissima* Milne Edwards & Haime, 1849	1	
Faviidae	Echinopora	*Echinopora horrida* Dana, 1846	1	
Faviidae	Echinopora	*Echinopora pacificus* Veron, 1990	1	
Xeniidae	Efflatournaria	*Efflatournaria spp.*		1
Euphilliidae	Euphyllia	*Euphyllia ancora* Veron & Pichon, 1979	1	
Euphilliidae	Euphyllia	*Euphyllia cristata*	1	
Euphilliidae	Euphyllia	*Euphyllia divisa*	1	
Euphilliidae	Euphyllia	*Euphyllia glabrescens* (Chamisso & Eysenhardt, 1821)	1	
Faviidae	Favia	*Favia danae*	1	1
Faviidae	Favia	*Favia favus*		1
Faviidae	Favia	*Favia helianthoides*		1
Faviidae	Favia	*Favia laxa*		1
Faviidae	Favia	*Favia matthai*	1	1
Faviidae	Favia	*Favia maxima* Veron & Pichon, 1977	1	1
Faviidae	Favia	*Favia pallida* (Dana, 1846)	1	1
Faviidae	Favia	*Favia rotumana*		1
Faviidae	Favia	*Favia rotundata* Veron & Pichon, 1977	1	1
Faviidae	Favia	*Favia speciosa*		1
Faviidae	Favia	*Favia stelligera* (Dana, 1846)	1	1
Faviidae	Favia	*Favia truncatus* Veron, 2000	1	

Faviidae	Favites	*Favites abdita* (Ellis & Solander, 1786)	1	1
Faviidae	Favites	*Favites* cf *rosaria*	1	
Faviidae	Favites	*Favites chinensis*		1
Faviidae	Favites	*Favites complanata*		1
Faviidae	Favites	*Favites felxuosa*		1
Faviidae	Favites	*Favites halicora* (Ehrenberg, 1834)	1	1
Faviidae	Favites	*Favites paraflexuosa* Veron, 2000	1	
Faviidae	Favites	*Favites pentagona*		1
Faviidae	Favites	*Favites russelli*		1
Fungiidae	Fungia	*Fungia concinna* Verrill, 1864	1	1
Fungiidae	Fungia	*Fungia corona*	1	
Fungiidae	Fungia	*Fungia danai*		1
Fungiidae	Fungia	*Fungia fungites* (Linneaus, 1758)	1	1
Fungiidae	Fungia	*Fungia granulosa* Klunzinger, 1879	1	
Fungiidae	Fungia	*Fungia gravis*		1
Fungiidae	Fungia	*Fungia horrida* Dana, 1846	1	1
Fungiidae	Fungia	*Fungia klunzingeri* Doderlein, 1901	1	
Fungiidae	Fungia	*Fungia paumotensis* Stutchbury, 1833	1	1
Fungiidae	Fungia	*Fungia repanda* Dana, 1846	1	1
Fungiidae	Fungia	*Fungia scruposa* Klunzinger, 1816	1	1
Fungiidae	Fungia	*Fungia scutaria* Lamarck, 1816	1	1
Fungiidae	Fungia	*Fungia vaughani*		1
Fungiidae	Fungia	*Fungia spinifera*		1
Oculinidae	Galaxea	*Galaxea astreata* (Lamarck,. 1816)	1	1
Oculinidae	Galaxea	*Galaxea fascicularis* (Linnaeus, 1767)	1	1
Oculinidae	Galaxea	*Galaxea paucisepta* Claerebaudt, 1990	1	

Agariciidae	Gardineroseris	*Gardineroseris planulata* Dana, 1846	1	1
Faviidae	Goniastrea	*Goniastrea aspera*	1	1
Faviidae	Goniastrea	*Goniastrea australensis*		1
Faviidae	Goniastrea	*Goniastrea deformis*	1	1
Faviidae	Goniastrea	*Goniastrea edwardsi* Chevalier, 1971	1	1
Faviidae	Goniastrea	*Goniastrea favulus*		1
Faviidae	Goniastrea	*Goniastrea minuta*	1	
Faviidae	Goniastrea	*Goniastrea pectinata* (Ehrenberg, 1834)	1	1
Faviidae	Goniastrea	*Goniastrea retiformis* (Lamarck, 1816)	1	1
Poritidae	Goniopora	*Goniopora djiboutiensis*		1
Poritidae	Goniopora	*Goniopora fruiticosa*	1	
Poritidae	Goniopora	*Goniopora Lobata*		1
Poritidae	Goniopora	*Goniopora palmensis*		1
Poritidae	Goniopora	*Goniopora tenuidens*		1
Fungiidae	Halomitra	*Halomitra pileus* (Linnaeus, 1758)	1	1
Fungiidae	Heliofungia	*Heliofungia actiniformis* Quoy & Gaimard, 1837	1	1
Heliporidae	Heliopora	*Heliopora "short"*	1	
Heliporidae	Heliopora	*Heliopora coerulea*	1	1
Fungiidae	Herpolitha	*Herpolitha limax* (Houttuyn, 1772)	1	1
Merulinidae	Hydnophora	*Hydnophora breviconus*		1
Merulinidae	Hydnophora	*Hydnophora exesa* (Pallas, 1766)	1	1
Merulinidae	Hydnophora	*Hydnophora grandis Gardiner, 1904*	1	
Merulinidae	Hydnophora	*Hydnophora microconos (Lamarck, 1816)*	1	1
Merulinidae	Hydnophora	*Hydnophora rigida* (Dana, 1846)	1	1
Faviidae	Leptastrea	*Leptastrea bewickensis*		1
Faviidae	Leptastrea	*Leptastrea pruinosa* Crossland, 1952	1	1

Faviidae	Leptastrea	*Leptastrea purpurea* (Dana, 1846)	1	1
Faviidae	Leptastrea	*Leptastrea transversa* Klunzinger, 1879	1	1
Faviidae	Leptoria	*Leptoria phrygia* (Ellis & Solander)	1	1
Agariciidae	Leptoseris	*Leptoseris cf tubulifera*	1	
Agariciidae	Leptoseris	*Leptoseris irregularis*		1
Agariciidae	Leptoseris	*Leptoseris explanata* Yabe & Sugiyama, 1941	1	1
Agariciidae	Leptoseris	*Leptoseris hawaiiensis* Vaughan, 1907	1	
Agariciidae	Leptoseris	*Leptoseris incrustans*	1	
Agariciidae	Leptoseris	*Leptoseris mycetoseroides* Wells, 1954	1	
Agariciidae	Leptoseris	*Leptoseris scabra* Vaughan, 1907	1	
Agariciidae	Leptoseris	*Leptoseris striata* Fenner & Veron, 2000	1	
Agariciidae	Leptoseris	*Leptoseris yabei* (Pillai & Scheer, 1976)	1	1
Fungiidae	Lithophyllon	*Lithophyllon undulatum*	1	
Mussidae	Lobophyllia	*Lobophyllia corymbosa* Forskal, 1775	1	1
Mussidae	Lobophyllia	*Lobophyllia flabelliformis Veron, 2000*	1	
Mussidae	Lobophyllia	*Lobophyllia hataii* Yabe & Sugiyama, 1936	1	1
Mussidae	Lobophyllia	*Lobophyllia hemprichii* (Ehrenberg, 1834)	1	1
Mussidae	Lobophyllia	*Lobophyllia pachysepta*	1	
Mussidae	Lobophyllia	*Lobophyllia robusta* Yabe & Sugiyama, 1936	1	1
Alcyoniidae	Lobopythum	*Lobopythum spp.*		1
Merulinidae	Merulina	*Merulina ampliata* (Ellis & Solander, 1786)	1	1
Merulinidae	Merulina	*Merulina scabricula* Dana, 1846	1	1
Merulinidae	Merulina	*Merulina sp.*		1
Milleporidae	Millepora	*Millepora dichotoma*	1	
Milleporidae	Millepora	*Millepora exaesa*	1	1
Milleporidae	Millepora	*Millepora intricata*	1	1

Milleporidae	Millepora	*Millepora murrayensis*	1	
Milleporidae	Millepora	*Millepora platyphylla*	1	1
Milleporidae	Millepora	*Millepora tenella/Millepora dichotoma*		1
Faviidae	Montastrea	*Montastrea annuligera*		1
Faviidae	Montastrea	*Montastrea colemani*	1	
Faviidae	Montastrea	*Montastrea curta* (Dana, 1846)	1	1
Faviidae	Montastrea	*Montastrea magnistellata* Chevalier, 1971	1	1
Faviidae	Montastrea	*Montastrea multipunctata*		1
Faviidae	Montastrea	*Montastrea* salebrosa (Nemenzo, 1959)	1	
Faviidae	Montastrea	*Montastrea valenciennesi*		1
Acroporidae	Montipora	*Montipora aequituberculata*		1
Acroporidae	Montipora	*Montipora altasepta*		1
Acroporidae	Montipora	*Montipora caliculata* (Dana, 1846)	1	
Acroporidae	Montipora	*Montipora capitata* Dana, 1846	1	
Acroporidae	Montipora	*Montipora* cf. *vietnamensis* Veron, 2000	1	
Acroporidae	Montipora	*Montipora crassituberculata*	1	
Acroporidae	Montipora	*Montipora cebuensis*		1
Acroporidae	Montipora	*Montipora dannae*		1
Acroporidae	Montipora	*Montipora efflorescens*		1
Acroporidae	Montipora	*Montipora foliosa* (Pallas, 1766)	1	1
Acroporidae	Montipora	*Montipora foveolata* (Dana, 1846)	1	1
Acroporidae	Montipora	*Montipora gaimardi*		1
Acroporidae	Montipora	*Montipora grisea*		1
Acroporidae	Montipora	*Montipora hispida* Dana, 1846	1	1
Acroporidae	Montipora	*Montipora hoffmeisteri*		1
Acroporidae	Montipora	*Montipora incrassata*		1

Acroporidae	Montipora	*Montipora informis*		1
Acroporidae	Montipora	*Montipora mactanensis*		1
Acroporidae	Montipora	*Montipora*		1
Acroporidae	Montipora	*Montipora monasteriata*		1
Acroporidae	Montipora	*Montipora palawanensis* Veron, 2000	1	
Acroporidae	Montipora	*Montipora peltiformis*		1
Acroporidae	Montipora	*Montipora samarensis* Nemenzo, 1967	1	
Acroporidae	Montipora	*Montipora* sp. "*confusa"* Nemenzo, 1967	1	
Acroporidae	Montipora	*Montipora tuberculosa* Lamarck, 1816)	1	
Acroporidae	Montipora	*Montipora turgescens*	1	
Acroporidae	Montipora	*Montipora undata* Bernard, 1897	1	1
Acroporidae	Montipora	*Montipora venosa* (Ehrenberg, 1834)	1	1
Acroporidae	Montipora	*Montipora verrucosa* (Lamarck, 1816)	1	1
Pectinidae	Mycedium	*Mycedium elephantotus* (Pallas, 1766)	1	1
Pectinidae	Mycedium	*Mycedium mancaoi* Nemenzo, 1979	1	
Nephtheidae	Nepthea	*Nepthea spp.*		1
Faviidae	Oulastrea	*Oulastrea alta*		1
Faviidae	Oulastrea	*Oulastrea crispata* (Lamarck, 1816)	1	
Faviidae	Oulophyllia	*Oulophyllia bennettae* Veron, Pichon, & Wijsman-Best, 1977	1	1
Faviidae	Oulophyllia	*Oulophyllia crispa* (Lamarck, 1816)	1	1
Pectinidae	Oxypora	*Oxypora crassispinosa* Nemenzo, 1979	1	
Pectinidae	Oxypora	*Oxypora glabra*		1
Pectinidae	Oxypora	*Oxypora lacera* Verrill, 1864	1	1
Tubiporidae	Pachyclavularia	*Pachyclavularia spp.*		1
Agariciidae	Pachyseris	*Pachyseris gemmae* Nemenzo, 1955	1	1
Agariciidae	Pachyseris	*Pachyseris rugosa* (Lamarck, 1801)	1	1

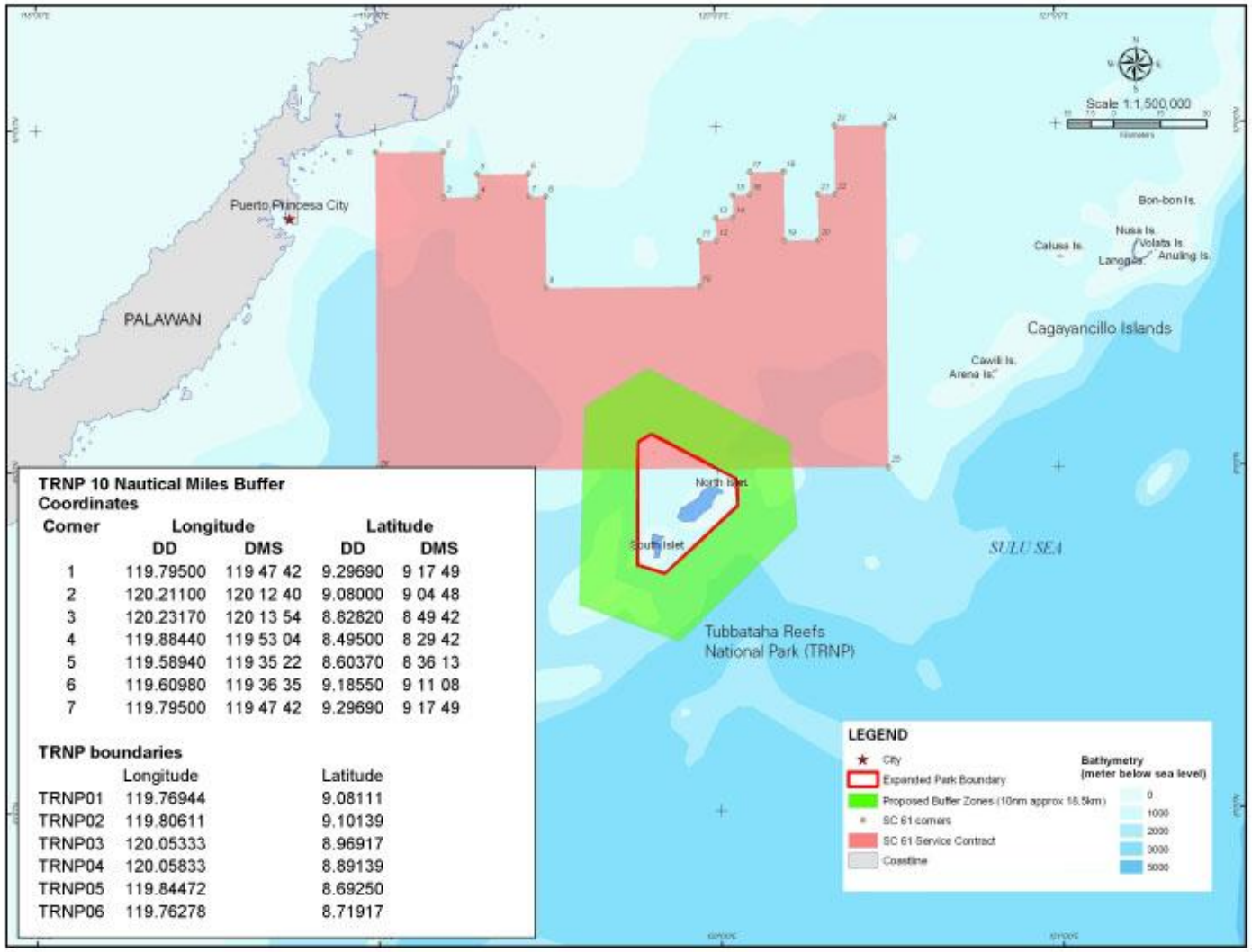
Agariciidae	Pachyseris	*Pachyseris speciosa* (Dana, 1846)	1	1
Nephtheidae	Paralemnalia	*Paralemnalia spp.*		1
Agariciidae	Pavona	*Pavona bipartita* Nemenzo, 1980	1	
Agariciidae	Pavona	*Pavona cactus*		1
Agariciidae	Pavona	*Pavona clavus* (Dana, 1846)	1	1
Agariciidae	Pavona	*Pavona decussata* (Dana, 1846)	1	1
Agariciidae	Pavona	*Pavona duerdeni* Vaughan, 1907	1	
Agariciidae	Pavona	*Pavona explanulata* (Lamarck, 1816)	1	1
Agariciidae	Pavona	*Pavona frondifera*	1	1
Agariciidae	Pavona	*Pavona maldivensis*	1	
Agariciidae	Pavona	*Pavona minuta* Wells, 1954	1	1
Agariciidae	Pavona	*Pavona varians* Verrill, 1864	1	1
Agariciidae	Pavona	*Pavona venosa* (Ehrenberg, 1834)	1	1
Pectinidae	Pectinia	*Pectinia alcicornis*	1	
Pectinidae	Pectinia	*Pectinia lactuca* (Pallas, 1766)	1	1
Pectinidae	Pectinia	*Pectinia paeonia* (Dana, 1846)	1	1
Euphyllidae	Physogyra	*Physogyra lichentensteini* Milne Edwards & Haime, 1786	1	
Faviidae	Platygyra	*Platygyra daedalea* (Ellis & Solander, 1786)	1	1
Faviidae	Platygyra	*Platygyra lamellina* (Ehrenberg, 1834)	1	1
Faviidae	Platygyra	*Platygyra pini*		1
Faviidae	Platygyra	*Platygyra ryukyuensis*	1	
Faviidae	Platygyra	*Platygyra sinensis* (Milne Edwards & Haime, 1849)	1	
Euphyllidae	Plerogyra	*Plerogyra sinuosa*		1
Faviidae	Plesiastrea	*Plesiastrea versipora* (Lamarck, 1816)	1	1
Pocilloporidae	Pocillopora	*Pocillopora damicornis* (Linnaeus, 1758)	1	1
Pocilloporidae	Pocillopora	*Pocillopora elegans*	1	

Pocilloporidae	Pocillopora	*Pocillopora eydouxi* Milne Edwards & Haime, 1860	1	1
Pocilloporidae	Pocillopora	*Pocillopora meandrina* Dana, 1846	1	1
Pocilloporidae	Pocillopora	*Pocillopora verrucosa* (Ellis & Solander, 1786)	1	1
Pocilloporidae	Pocillopora	*Pocillopora woodjonesi*	1	
Fungiidae	Podabacia	*Podabacia crustacea* (Pallas, 1766)	1	1
Fungiidae	Podabacia	*Podabacia motuporensis* Veron, 1990	1	
Fungiidae	Polyphyllia	*Polyphyllia talpina*		1
Poritidae	Porites	*Porites andrewensi*		1
Poritidae	Porites	*Porites annae* Crossland, 1952	1	
Poritidae	Porites	*Porites attenuata*		1
Poritidae	Porites	*Porites australiensis*		1
Poritidae	Porites	*Porites* cf. *rugosa* Fenner & Veron, 2000	1	
Poritidae	Porites	*Porites cylindrica* Dana, 1846	1	1
Poritidae	Porites	*Porites deformis*		1
Poritidae	Porites	*Porites densa* Vaughan, 1918	1	
Poritidae	Porites	*Porites evermanni* Vaughan, 1907	1	1
Poritidae	Porites	*Porites horizontalata* Hoffmeister, 1925	1	
Poritidae	Porites	*Porites irregularis*		1
Poritidae	Porites	*Porites latistella*		1
Poritidae	Porites	*Porites lichen*		1
Poritidae	Porites	*Porites lobata*		1
Poritidae	Porites	*Porites lutea*		1
Poritidae	Porites	*Porites monticulosa* Dana, 1846	1	
Poritidae	Porites	*Porites nigrescens*	1	
Poritidae	Porites	*Porites negrosensis*		1
Poritidae	Porites	*Porites ornata*		1

Poritidae	Porites	*Porites rus* (Forskal, 1775)	1	1
Poritidae	Porites	*Porites sillimaniani*		1
Poritidae	Porites	*Porites vaughani* Crossland, 1952	1	1
Siderasteridae	Psammocora	*Psammocora digitata* Milne Edwards & Haime, 1851	1	1
Siderasteridae	Psammocora	*Psammocora haimeana* Milne Edwards & Haime, 1851	1	
Siderasteridae	Psammocora	*Psammocora nierstraszi* van der Horst, 1921	1	
Siderasteridae	Psammocora	*Psammocora profundacella* Gardiner, 1898	1	
Siderasteridae	Psammocora	*Psammocora superficialis* Gardiner, 1898	1	1
Dendrophylliidae	Rhizopsammia	*Rhizopsammia verrilli*	1	1
Fungiidae	Sandalolitha	*Sandalolitha robusta* Quelch, 1886	1	1
Alcyoniidae	Sarcophyton	*Sarcophyton spp.*		1
Merulinidae	Scapophyllia	*Scapophyllia cylindrica* Milne Edwards & Haime, 1848	1	
Pocilloporidae	Scapophyllia	*Seriatopora aculeata* Qluelch, 1886	1	
Pocilloporidae	Scapophyllia	*Seriatopora caliendrum* Ehrenberg, 1834	1	1
Pocilloporidae	Scapophyllia	*Seriatopora hystrix* Dana, 1846	1	1
Pocilloporidae	Scapophyllia	*Seriatopora sp.*		1
Alcyoniidae	Scapophyllia	*Sinularia spp.*		1
Nephtheidae	Scapophyllia	*Stereonepthea spp.*		1
Astrocoeniidae	Stylocoeniella	*Stylocoeniella armata* (Ehrenberg, 1834)	1	
Astrocoeniidae	Stylocoeniella	*Stylocoeniella guentheri* Bassett-Smith, 1890	1	
Astrocoeniidae	Stylocoeniella	*Stylocoeniella expanda*		1
Pocilloporidae	Stylophora	*Stylophora pistillata*	1	1
Pocilloporidae	Stylophora	*Stylophora subseriata* Ehrenberg, 1834	1	
Mussidae	Symphyllia	*Symphyllia agaricia* Milne Edwards & Haime, 1849	1	1
Mussidae	Symphyllia	*Symphyllia hassi* Pillai & Scheer, 1976	1	
Mussidae	Symphyllia	*Symphyllia radians* Milne Edwards & Haime, 1849	1	1

Mussidae	Symphyllia	*Symphyllia recta* (Dana, 1846)	1	1
Mussidae	Symphyllia	*Symphyllia valenciennesii* Milne Edwards & Haime, 1849	1	
Trachyphylliidae	Trachyphyllia	*Trachyphyllia geoffroyi*		1
Dendrophylliidae	Tubastraea	*Tubastraea coccinea* Lesson, 1829	1	
Dendrophylliidae	Tubastraea	*Tubastraea diaphana*	1	
Dendrophylliidae	Tubastraea	*Tubastraea micranthus* Ehrenberg, 1834	1	
Clavulariidae	Tubipora	*Tubipora musica* Linnaeus, 1758	1	
Clavulariidae	Tubipora	*Tubipora* sp. 1 “large feathery”	1	
Dendrophylliidae	Tubipora	*Turbinaria frondens* Dana, 1846	1	
Dendrophylliidae	Tubipora	*Turbinaria peltata* (Esper, 1794)	1	
Dendrophylliidae	Tubipora	*Turbinaria reniformis* Bernard, 1896	1	
Dendrophylliidae	Tubipora	*Turbinaria stellulata* (Lamarck, 1816)	1	
Xeniidae	Xenia	*Xenia spp.*		1
Fungiidae	Zoopilus	*Zoopilus echinatus* Dana, 1846	1	
		Total	**244**	**271**
Commulative Species count	**374**			
Genera	**76**			
Family	**25**			

ANNEX 7. Map of the TRNP boundaries (red line) and buffer zone (green). The pink area defines Service Contract 61 claim.



TRNP 10 Nautical Miles Buffer Coordinates

Corner	Longitude		Latitude	
	DD	DMS	DD	DMS
1	119.79500	119 47 42	9.29690	9 17 49
2	120.21100	120 12 40	9.08000	9 04 48
3	120.23170	120 13 54	8.82820	8 49 42
4	119.88440	119 53 04	8.49500	8 29 42
5	119.58940	119 35 22	8.60370	8 36 13
6	119.60980	119 36 35	9.18550	9 11 08
7	119.79500	119 47 42	9.29690	9 17 49

TRNP boundaries

	Longitude	Latitude
TRNP01	119.76944	9.08111
TRNP02	119.80611	9.10139
TRNP03	120.05333	8.96917
TRNP04	120.05833	8.89139
TRNP05	119.84472	8.69250
TRNP06	119.76278	8.71917

ANNEX 8. Scanned copy of the Presidential Proclamation 306 declaring Tubbataha Reefs as a national marine park.

BY THE PRESIDENT OF THE PHILIPPINES

PROCLAMATION NO. 306

DECLARING THE TUBBATAHA REEFS AND SURROUNDING WATERS OF THE PUBLIC DOMAIN IN CENTRAL SULU SEA, PROVINCE OF PALAWAN, AS TUBBATAHA REEF NATIONAL MARINE PARK.

Upon recommendation of the Secretary of Environment and Natural Resources, and pursuant to the powers vested in me by law, I, CORAZON C. AQUINO, President of the Philippines, for the benefit and enjoyment of the people of the Philippines and in order to protect the area from all destructive activities, do hereby reserve for park purposes the reefs, islets and surrounding waters of the public domain situated in the Central Sulu Sea, Province of Palawan, described in the Protected Areas and Wildlife Bureau Map MP-01, and more particularly described as follows:

From Pt. 1	119°50'	latitute 8°43'	longitude
to Pt. 2	119°48'	latitude 8°43'	longitude
to Pt. 3	119°47'	latitude 8°05'	longitude
to Pt. 4	119°47'	latitude 8°48'	longitude
to Pt. 5	120°00'	latitude 8°57'20"	longitude
to Pt. 6	120°02'	latitude 8°57'	longitude
to Pt. 7	120°04'	latitude 8°56'	longitude
to Pt. 8	120°04'	latitude 8°54'	longitude
to Pt. 1	119°50'	latitude 8°43'	longitude

containing an approximate area of 33,200 hectares.

The said area shall be known as "Tubbataha Reef National Marine Park" and shall remain under the administration of the Department of Environment and Natural Resources.

The primary purpose for the establishment of this national marine park is to protect and preserve the coral reef atoll with its abundant and diverse reef assemblage, including the marine turtles and water birds found roosting in the area.

Any person who shall collect, gather coral reefs, wildlife or any marine life from the said marine park or in any manner disturb or destroy the habitat and wildlife therein shall be punished in accordance with the penalties prescribed in Section 71 of PD 1559.

PUBLIC DOMAIN IN CENTRAL SULU
SEA, PROVINCE OF PALAWAN, AS
TUBBATAHA REEF NATIONAL PARK

- - - - - - - - - - - - - - - - -

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the Republic of the Philippines to be affixed.

DONE in the City of Manila, this 11th day of August, in the year of Our Lord, nineteen hundred and eighty-eight.

Ferdinand E. Marcos

By the President:

CATALINO MACARAIG, JR.
Executive Secretary

ANNEX 9. Faxed copy of Presidential Proclamation 1126 expanding the Park to include Jessie Beazley.

FROM :CIP FAX NO. :4356446- Aug. 24 2006 05:44PM P1
25/08 2006 17:09 FAX 91 45 USEC FIELD OPS 001
2M : : PHONE NO. : Aug. 24 2006 03:48PM P1
Fax#9206945

MALACAÑANG
Manila
BY THE PRESIDENT OF THE PHILIPPINES

PROCLAMATION No. 1126

ESTABLISHING THE TUBBATAHA REEFS NATIONAL MARINE PARK IN THE PROVINCE OF PALAWAN AS A NATURAL PARK UNDER THE NATIONAL INTEGRATED PROTECTED AREAS SYSTEM (NIPAS) ACT (R.A. NO. 7586) AND THE STRATEGIC ENVIRONMENTAL PLAN OF PALAWAN ACT (RA NO. 7611) AND SHALL BE KNOWN AS TUBBATAHA REEFS NATURAL PARK

Upon recommendation of the Secretary of Environment and Natural Resources and the Palawan Council for Sustainable Development, and pursuant to the powers vested upon me by law, **I, GLORIA MACAPAGAL-ARROYO**, President of the Republic of the Philippines, do hereby withdraw from unauthorized entry, fishing, exploration, exploitation and other forms of utilization, and set aside and declare **Tubbataha Reef National Marine Park** as **TUBBATAHA REEFS NATURAL PARK** (TRNP) to protect, preserve and enhance the rare and threatened species of the flora and fauna and their associated ecosystem within its boundaries, more specifically described in DENR NIPAS Map No. R-48-9:

	Latitude	Longitude
From Pt. 1	9° 04' 52" N	119° 46' 10" E
to Pt. 2	9° 06' 05" N	119° 48' 22" E
Pt. 3	8° 58' 09" N	120° 03' 12" E
Pt. 4	8° 53' 29" N	120° 03' 30" E
Pt. 5	8° 41' 33" N	119° 50' 41" E
Pt. 6	8° 43' 09" N	119° 45' 46" E to point 1, the

point of beginning, containing an area of **NINETY-SIX THOUSAND, EIGHT HUNDRED AND TWENTY EIGHT (96,828) HECTARES**, more or less, which shall include the Tubbataha Reefs and the Jessie Beazley Reef in the Province of Palawan. The area and technical description of the TRNP shall be subject to actual survey and ground delineation.

As a component of the NIPAS under the DENR and the Environmentally Critical Areas Network (ECAN) under the Palawan Council for Sustainable Development (PCSD), the Tubbataha Reefs Natural Park shall be managed by the Tubbataha Protected Area Management Board (TPAMB), which shall be the

OFFICE OF THE PRESIDENT
MALACAÑANG
OFFICE OF THE
DEPUTY EXECUTIVE SECRETARY
LEGAL AFFAIRS

sole policy-making and permit-granting body of the TRNP. It shall be composed of:

a. The Regional Executive Director of the DENR Region IV-B as Chairperson;
b. The Environment and Natural Resources Officer of the Provincial Government as member;
c. A representative from the Department of Tourism as member;
d. The Provincial Officer of the DA-BFAR as member;
e. A representative from the academe as member;
f. A representative from Palawan Council for Sustainable Development Staff as member;
g. At least three (3) representatives from Non-Government Organizations (NGOs) involved in the conservation and management of the TRNMP, to be chosen from among themselves as members; and
h. At least two (2) representatives from People's Organizations (POs) based in the Municipality of Cagayancillo, Palawan and concerned with the conservation and management of the TRNP, to be chosen from among themselves as members.

Every TPAMB member shall serve for a term of five (5) years: *Provided, that,* he/she remains connected with the sector he/she represents. Whenever a vacancy occurs during the term of a member who does not represent the government, a new member shall be chosen in the same manner as the original process to serve the remaining term of his/her predecessor.

The TPAMB shall consult the Governor of the Province of Palawan, the Mayor of the Municipality of Cagayancillo, the Commander of the Armed Forces of the Philippines (AFP) - Western Command (WESCOM), the Commander of the Naval Forces West (NAVFORWEST), and the Commander of the Philippine Coast Guard District-Palawan in the laying down of policies, granting of permits, and the maintenance of security and physical well-being of the TRNP.

Any person who shall catch, collect and/or gather wildlife and other natural resources, cause pollution in the area, enter the area without permit, or otherwise violate RA No. 7586 (NIPAS Act), RA No. 7611 (Strategic Environmental Plan for Palawan Act), RA No. 9147 (Wildlife Resources Conservation and Protection Act), RA No. 8550 (The Philippine Fisheries Code), RA No. 9275 (Clean Water Act), Presidential Decree No. 979 (Marine Pollution Decree of 1976), and such other laws pertaining to the sound management and

conservation of natural resources, shall be punished in accordance with the prescribed penalties under existing laws, rules and regulations.

The DENR, the DA-BFAR, the Department of Justice, the WESCOM, the NAVFORWEST, the Philippine Coast Guard, and the PCSD shall coordinate and cooperate with the TPAMB for the efficient and effective law enforcement and prosecution of violators in the TRNP.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the Republic of the Philippines to be affixed.

DONE in the City of Manila, this 23rd day of August, in the year of our Lord, Two Thousand and Six.

Gloria M. Arroyo

By the President:

EDUARDO R. ERMITA
Executive Secretary

12

PGMA Malacañan # 28548

ANNEX 10. The TRNP Management Plan

THE TUBBATAHA REEF NATUTAL PARK (TRNP) AND WORLD HERITAGE SITE

MANAGEMENT PLAN

Introduction

The Tubbataha Reefs Natural Park (TRNP) lie in the middle of the Sulu Sea, some 80 nautical miles southeast of Puerto Princesa City, Palawan, Philippines. It is composed of two uninhabited atolls and a reef with bustling reef platforms that are submerged on most parts. The North Islet, oblong-shaped, 16 kilometers long and 4.5 kilometers wide encloses a lagoon of sand and corals with a maximum of 30 meters in depth. The South Islet is a triangular reef structure about 5 kilometers long and 3 kilometers wide with a lagoon 21 meters at the deepest section. The islets are separated by a 5-nm channel. Jessie Beazley Reef, which lies about 13 nm from the atolls, has an area of 45 hectares with a small islet made of marl exposed during low tide. The boundaries of TRNP are located three nm from the edge of these marine formations. Tubbataha or the Park, as the TRNP will henceforth be referred to in this document, is composed of over ten thousand hectares of coral reef and more than 86,000 hectares of surrounding waters.

Relatively undisturbed for hundreds of years largely due to its remote location and inaccessibility, marine life in these parts thrived to spectacular abundance. It fell victim to fishing overexploitation and abuse in the late 1980s. Conservationists thus begun to sound the alarm and clamored for the protection of Tubbataha by having it declared a national park. Presidential Proclamation 306 issued by President Corazon Aquino on August 11, 1988 established the 33,200-hectare no-take Tubbataha Reef National Marine Park. It was expanded to include Jessie Beazley Reef by President Gloria Macapagal-Arroyo on August 23, 2007 through Presidential Proclamation 1126 and renamed the Tubbataha Reefs Natural Park. Today, TRNP is 96,828 hectares and stands as the country's only marine protected area inscribed in the UNESCO World Heritage List.

Below is a chronological list of the developments in the management of Tubbataha:

- September 7, 1987 - The Provincial Board of Palawan approves Resolution 244 requesting the national government to declare the Tubbataha Reefs as a marine sanctuary.
- August 11, 1988 - President Corazon C. Aquino issues Presidential Proclamation 306 establishing the Tubbataha Reef National Marine Park (TRNMP) as a no-take protected area and placing it under the management care of the Department of Environment and Natural Resources (DENR).
- 1990 - The DENR and Tubbataha Foundation Inc., a non-government organization, enter into a Memorandum of Agreement for the management of the park. The foundation generates resources and conducts information and education programs to help the DENR in managing the Park.
- 1993 – TRNMP is inscribed as the UNESCO World Heritage Site, becoming the only purely marine World Heritage Site in Southeast Asia.

- July 20, 1995 - President Fidel V. Ramos issues Memorandum Circular (MC) 128 establishing the Presidential Task Force on the Tubbataha Reef National Marine Park. The body serves as the policy and program coordinating mechanism for TRNMP. It is headed by the Secretary of DENR as Chairman and the Chairman of the Palawan Council for Sustainable Development (PCSD) as Co-Chair. Its members include the Secretaries of the Department of Tourism, and Department of Budget, the Commander of Naval District IV of the Philippine Navy, the Mayor of Cagayancillo and five NGOs.
- November 7, 1996 - Memorandum Circular 150 is released, amending MC 128 and turning over the Chairmanship of the Presidential Task Force to the Secretary of the Department of National Defense with the DENR and PCSD representatives as Co-Chair.
- November 12, 1999 – Tubbataha is included in Ramsar List of Wetlands of International Importance.
- November 26, 1999 – the Palawan Council on Sustainable Development approves the TRNMP Management Plan, which provides for the establishment of the Tubbataha Protected Area Management Board (TPAMB).
- August 11, 2001 – the Tubbataha Management Office is formally established by the TPAMB.
- November, 2002 – the 9th draft of the Tubbataha Protected Area Bill, a product of various consultations in Palawan, is filed for the first time with the 12th Philippine Congress.
- August 23, 2006 – President Gloria Macapagal-Arroyo issues Presidential Proclamation 1126 expanding TRNMP to include Jessie Beazley Reef and renames the park Tubbataha Reefs Natural Park.

The Legal Framework and Mandate for Tubbataha Reefs

As a signatory to various international conventions, the Philippines is committed to protect the Tubbataha Reef Natural Park and World Heritage Site. Some of these treaties are:

- *The 1994 UN Convention on the Law of the Sea (UNCLOS)* which aims to regulate all marine activities in any area of the sea and "provides legal basis upon which to pursue the protection and sustainable development of the marine environment and its coastal resources". Signatories to the convention are obligated to conserve and manage the living marine resources under their jurisdiction.
- *The UN Conference on Environment and Development (UNCED or the Earth Summit)* of 1992 stipulates in Chapter 17 of Agenda 21 (Protection of the Oceans) that partner States shall undertake "measures to maintain biological diversity and productivity of marine species under national jurisdiction,…including ... establishment and management of protected areas."
- *Convention of Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar Convention)* of 1971 aims to stem the loss of wetlands worldwide especially those that are important for migratory waterfowl. It defines wetlands as fresh, brackish and saltwater marshes, including marine waters up to

six meters in depth at low tide and any deeper marine waters contained within the wetland area. The Tubbataha Reefs was included in the Ramsar List of Wetlands of International Importance on November 12, 1999.

- *World Heritage Convention (Convention Concerning the Protection of the World Cultural and Natural Heritage)* of 1972 seeks to create international support for the protection and maintenance of sites demonstrating outstanding cultural and natural heritage. All 146 Parties to the World Heritage Convention assumes an obligation to identify, protect, conserve and transmit to future generations its unique cultural and natural heritage. Tubbataha was inscribed in the World Heritage List on December 11, 1993.
- *Convention on Biological Diversity* of 1992 seeks the conservation of biological diversity and the sustainable use of its components. It provides for the establishment of protected areas where special measures are to be taken to conserve biological diversity and the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.

The Philippine Government has enacted laws that call for the protection of biodiversity and land/seascapes through the following instruments:

- *Republic Act No. 7611 (Strategic Environmental Plan for Palawan)* of 1992 - provides the framework for the sustainable development of Palawan compatible with protecting and enhancing natural resources and the endangered environment.
- *Republic Act No.7586 (National Integrated Protected Areas System Act of 1992)* - aims to secure for the Filipino people of present and future generations the perpetual existence of all native plants and animals through the establishment of a comprehensive system of integrated protected areas.
- *Republic Act 8550 (The Philippine Fisheries Code)* - ensures rational and sustainable development, management, and conservation of the fishery and aquatic resources in Philippine waters including the Exclusive Economic Zone and within adjacent high seas. It guarantees the conservation and protection of the country's fishery and aquatic resources to achieve food security.
- *Republic Act 9147 (Wildlife Resources Conservation and Protection Act)* of 2001 - conserves and protects wildlife species and their habitats to promote ecological balance and enhance biological diversity. It also aims to pursue, with due regard to the national interest, the Philippine commitment to international conventions, regulate the collection and trade in wildlife, and initiate or support scientific studies on the conservation of biological diversity. The Palawan Council for Sustainable Development (PCSD) is the key implementor of this law as it applies to Palawan.
- *Republic Act 7160 (Local Government Code of 1991)* - provides for genuine and meaningful local autonomy of territorial and political subdivisions of the State to enable them to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals. It requires all national agencies and offices to conduct periodic consultations with appropriate LGUs, non-government and people's organizations, and other concerned sectors of the country before any project or program is implemented in their jurisdiction.

The Evolution of the TRNMP Management Plan

The Department of Environment and Natural Resources developed the first Tubbataha Management Plan in 1991. The Plan served as a blueprint for the administration and operation of the Tubbataha Reefs and has since been updated to fit current challenges.

A consultative process involving various stakeholders was conducted in 1996, leading to the formulation and adoption of a new management plan in 1999. It was then approved by the PCSD during its 70th meeting held on November 26, 1999, paving the way for the creation of a Protected Area Management Board with the following composition:

1. Gov. Salvador Socrates representing PCSD, Chairman

2. DENR, Regional Executive Director, Vice-Chair
3. Commander, Western Command, Member
4. Provincial ENRO, Member
5. Mayor of Cagayancillo, Member
6. Cagayancillo ABC President, Member
7. Project Manager, Conservation International, Member
8. President, WWF-Philippines, Member
9. President, Saguda Palawan, Member
10. President, Haribon Palawan, Member

The Naval Forces West of the Philippine Navy (PN) and Coast Guard District-Palawan (CGD-Pal) were eventually included as members because these units perform direct protection and enforcement functions through the deployment of personnel in Tubbataha on a year-round basis.

Management Vision, Mission, Goals and Objectives

The Vision for Tubbataha

A World Heritage Site that is effectively conserved to maintain ecological integrity contributing to the equitable distribution of benefits and sustained socio-economic development of present and future generations.

The Mission Statement

We, the stakeholders of Tubbataha commit to conserve its natural endowment through responsible stewardship and genuine partnership.

The Management Goal

"To preserve the globally significant biological diversity and ecological processes of Tubbataha and to manage it and the surrounding areas in a sustainable basis."

Three overarching policies apply for the long-term management of Tubbataha. These are:

- The economic, biological, socio-cultural, educational and scientific values of TRNMP shall be conserved and protected into perpetuity for the enjoyment of present and future generations. Activities that compromise this goal shall not be allowed.
- In consonance with the above, any exploration, exploitation or utilization of non-renewable resources within TRNP shall not be permitted.
- Active collaboration and participation by all stakeholders shall be fostered to engender a sense of ownership and promote compliance to regulations.

The following specific objectives reflect the desired results of management programs for TRNP.

- Biological diversity and ecological processes protected from unnatural threats and direct human impact;
- Legal and management structures are effectively maintained;
- Stakeholder participation and representation are ensured;
- Public understanding of the benefits of conserving TRNP is improved;
- Revenues from ecosystems targeted for conservation is enhanced.

Biophysical Profile of Tubbataha

It is thought that the formation of the Tubbataha Reefs is similar to that of coral atolls in the South Pacific where coral communities have developed on the slopes and rims of submerged mountains and old islands. Both atolls have large inner lagoons and sandy areas, a few of which lie above sea level (Alcala, 1993).

Portions of the atoll's shallow coralline reef platforms are exposed at extreme low tide. The reef systems are composed of continuous reef platforms 200-500 meters wide, completely enclosing sandy and coral substrate lagoons with a maximum depth of 40 meters. The reef platform deepens at the outer reef flat and reef crests. It ends in steep, often vertical, walls on the seaward side. On the inner side of the platform are shallow reef flats and sea grass beds.

Tubbataha is exposed to yearly monsoons. The seas are generally rough during the months of July to October with the prevalence of the southwest monsoon. Monsoon breaks, which bring a week or so of calmness, usually transpire before monsoonal shifts. Rough seas predominate during the months of November to March when the northeast monsoon occurs. Moderate winds from the northeast between mid-March and June allow for regular visits to TRNP.

The predominantly westward movement of ocean currents in the Sulu Sea is believed to transport fish eggs and larvae to the eastern coast of Palawan (Dolar, L & Alcala, A. 1993), ensuring the sustainability of fisheries in mainland Palawan significantly. This theory is has been proven through studies commissioned by Conservation International-Philippines in 2006 and 2007.

TRNP harbors a diversity of marine life equal to or greater than any such reef of its size in the world. It is home to at least 379 species of corals or almost 90% of all coral species in the Philippines, 481 species of fish, seven species of sea grass, 79 species of algae, at least two species of marine turtles, and eleven species of marine mammals. Rays and sharks are common in the reefs. Pelagics such as tuna, mackerel, jacks and barracudas are observed in schools near the reef crests.

The two islets are breeding and rookery grounds for migratory and resident seabird species, some of which are classified as priorities for conservation. North Islet is the breeding ground of an endemic sub-species of Black Noddy *Anous minutus worcestri* and an important rookery of the critically endangered Christmas Island Frigate.

The first recorded visit to Tubbataha was made by Dean C. Worcester in June 1911. He described the Bird Islet as a "low, flat, sandy island … some 400 meters long and 150 meters wide" (Kennedy, 1982). Seventy years later, during the visit of ornithologist Robert S. Kennedy, he observed that the islet had shrunk to 268 by 70 meters. He noted that grass and purslane were the only vegetation on the islet. Today, the islet is 219 m long and 73 m wide. The invasive ipil-ipil trees *(leucena leucocephala),* which were introduced by fishermen as an aid to navigation and to provide shade and fuel wood, have been largely eradicated by the marine park rangers in order to provide breeding grounds for boobies and terns.

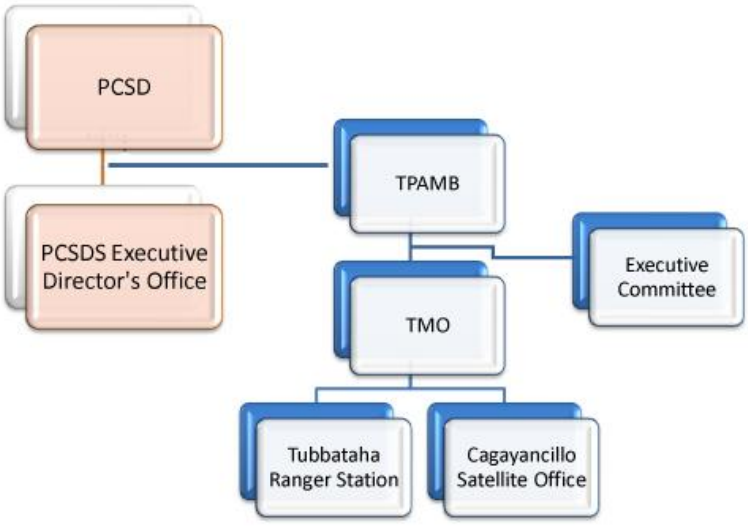
Management and Administration, Stakeholders, and Issues and Concerns

Park Management and Administration

The Park is under the management of the Tubbataha Protected Area Management Board (TPAMB) composed of the following members:

1. Governor, representing PCSD, Chairman
2. PENRO, Vice Chair
3. Commander, Western Command, Member
4. Commander, Naval Forces West, Member
5. District Commander, CGD-Pal, Member
6. Mayor, Cagayancillo, Member
7. Chair, Environment and Natural Resources Committee, Cagayancillo SB, Member
8. ENRO- Province, Member
9. Palawan Council for Sustainable Development Staff, Member
10. Executive Director, Philippine Commission On Sport Scuba Diving, Member
11. Provincial Officer, BFAR, Member
12. Provincial Board Chairman, Committee on Environment & Natural Resources, Member
13. Provincial Board Chairman, Committee on Appropriations, Member
14. Tambuli ta mga Kagayanen, Member (People's organization)
15. President, WWF-Philippines, Member (NGO)
16. Executive Director, Conservation International, Member (NGO)
17. Chairperson, Saguda Palawan, Member (NGO)
18. President, Palawan State University
19. President, Western Philippines University

The TPAMB meets once every quarter to discuss policy issues. An Executive Committee meets on a monthly basis to address operational and administrative issues. The Tubbataha Management Office (TMO) serves as its secretariat and administers the day-to-day affairs of the Park. Below is the management structure for TRNP:



TRNP Stakeholders

The stakeholders that are interested in the future of Tubbataha are:

- The Provincial Government of Palawan
- The Palawan Council for Sustainable Development
- Relevant national government agencies
- Non-government organizations and the international conservation community
- The Municipality of Cagayancillo, which exercises political jurisdiction over Tubbataha
- Tourism operators who promote scuba diving tours in TRNP
- Fishers operating outside the boundaries of the Tubbataha Reefs benefiting from its rich and diverse marine resources
- Non-users, who are interested in the bequest values of TRNP

Management Issues and Concerns

Accessibility

Tubbataha's remote location poses a logistical challenge to its effective management. Supplies and equipment need to be transported regularly year-round despite rough sea conditions to ensure that marine park rangers have sufficient resources to monitor activities within the entire complex at all times for the effective enforcement of regulations.

Illegal Use

Fishers from the coastal communities of Palawan and from the Visayan Islands enter the Park to harvest protected species, like the *Trochus niloticus,* and to fish in the reefs.

Solid Waste

TRNP is a critical rookery for significant populations of birds which rely on the rich fishery resources and relative freedom from human-induced impacts offered by the Tubbataha Reefs. However, the increasing volume of solid waste materials that are brought by tidal currents and wind from outside Park boundaries may negatively impact on the health and reproductive capacity of the birds and marine animals in TRNP.

Stakeholder Ownership

Management experiences in Tubbataha have proven the importance of an enlightened community stakeholder cognizant of the critical role they play in the welfare of the reefs even as they benefit from it. The park strives to develop an informed public constituency by directly engaging them in issues and concerns involving the park. However, there is scarce opportunity to enable local stakeholders to experience the Park, limiting their appreciation and sense of ownership of TRNP.

Funding and other challenges

Tubbataha requires adequate financial and manpower resources in order to maintain effective management. So far, conservation fees paid by dive tourists remain the main source of income of the park. Revenues are not sufficient to sustain the high cost of managing an offshore marine protected area (MPA) like Tubbataha.

Energy Exploration

Energy exploration around TRNP has been sanctioned by the Department of Energy. These activities can pose a threat to marine mammals and other species within the Park unless mitigating measures are established prior to exploration activities.

MANAGEMENT PROGRAMS

Strategies for long-term implementation have been identified as a means to pursue the goals for the park. These identified strategies are subject to review every 5 years.

- CONSERVATION MANAGEMENT. The raison d'etre of the TPAMB is to effectively conserve and protect the marine and terrestrial resources of TRNP for the long term. This will require prudent use of human and other resources to maximize scarce financial assets by a competent organization that practices the principles of adaptive management.
- CONSERVATION AWARENESS. This program aims to promote awareness, generate support and achieve voluntary compliance with regulations. It seeks to foster a holistic view of the park ecosystem as an interrelated and interdependent system, and thus engender a sense of stewardship towards the marine environment. Conservation awareness activities will be focused on local communities, government agencies, educational institutions, and the private sector, including the dive tourism industry operating in Tubbataha.
- ECOSYSTEM RESEARCH AND MONITORING. A regular, uninterrupted monitoring regime is required to provide understanding of biological resources and ecological processes and their interrelationships. Dependable scientific assessments provide inputs for anticipating potential problems and serve as a basis for decision-making.
- SUSTAINABLE RESOURCE MANAGEMENT. Philippine experience has demonstrated that locally-managed marine reserves can significantly increase fish catch for local communities, often within three years of designation. Increased fish catch can reduce fishing pressure on target conservation areas. Resource management strategies will be implemented in the island municipality of Cagayancillo in order to conserve biodiversity and maintain marine resource productivity to enhance living standards in the locality and serve as a disincentive to fishing within TRNP. If deemed necessary, similar activities will be initiated in other localities where fishers have impacts on the conservation of TRNP.

MANAGEMENT STRATEGIES

1. CONSERVATION MANAGEMENT

1.1 Maintain and enhance the capability of the TPAMB and park staff to administer TRNP

The TPAMB is composed of representatives of various agencies whose tenure ends upon their change of official status. Because of the constant turnover of individuals sitting in the board, regular capacity enhancement activities will be conducted. The capacity of park staff in the technical aspects of offshore MPA management will likewise be enhanced. Additionally, the provision of opportunities to improve knowledge on MPA science and regional MPA initiatives will be pursued.

1.2 Develop a competent and professional core of marine park rangers (MPRs) with adequate infrastructure and equipment to curtail resource destruction and strengthen enforcement of pertinent laws and regulations

The likelihood of timely detection, arrest, prosecution and sentencing in court will serve as a deterrent for potential violators of park regulations. Thus, sufficient patrol presence by a competent and professional team of MPRs will be maintained. Law enforcement guidelines will to be periodically reviewed and enforcers' skills upgraded. Adequate infrastructure and enforcement equipment will be provided to enable MPRs to perform their functions effectively.

1.3 Develop the resource management capability of MPRs to enable law enforcers to make meaningful contributions to research and other conservation activities within TRNP

The presence of MPRs in the field provides opportunity for the collection of relevant data year-round, a practical alternative to 'importing' researchers during rough sea conditions. Rangers will be capacitated with specific skills to enable them to assist in monitoring and research, e.g., seabird monitoring and census, fish and coral survey, determinations of fish kills, crown-of-thorns infestations, coral bleaching, etc.

1.4 Manage tourism within TRNP

Tourism and research are the only activities allowed in the park. It has been documented in other marine parks that even recreational diving and snorkeling can cause substantial damage to sensitive marine habitats. In order to ensure long-term enjoyment of the attributes of the Park, tourism activities in TRNP will be managed and regulated and self-regulation will be encouraged. Adequate information and education activities targeting users will likewise be provided to generate support for conservation.

1.5 Develop and implement a plan to support long-term financing of resource management initiatives in Tubbataha

While project grants to Tubbataha contribute to the maintenance of park operations, the park needs to develop its own sustainable funding source for long term management. Entry fees collected from the Park fail to cover annual recurrent costs, currently estimated over Php 9 Million annually. Viable courses of action will be identified and pursued to ensure a secure financial future for the Park and to obviate dependence on external funding.

1.6 Implement the zoning scheme for TRNP

Zoning will separate conflicting activities within the Park and will allow areas that need permanent conservation to be protected from potentially threatening usage. The lagoons in the North and South Atolls are off-limits to scuba diving and snorkeling to protect fragile life forms.

1.7 Cultivate inter-institutional collaboration in planning and implementation with various government agencies, NGO's, and private entities in the management of Tubbataha

The trend in natural resource management has shifted from exclusive government control to decentralization, public-private sharing mechanisms and privatization. The complexity of managing an offshore reef like Tubbataha is a challenge to collaborating agencies and institutions. Management will continue to promote partnerships with government, non-government agencies and individuals in the conduct of enforcement, research, information and education, etc.

1.8 Strengthen relevant legislation and regulations associated with TRNP

There is a need to reconcile overlapping policies and national laws as they apply to the Park. In particular, the NIPAS Act and SEP Law, which both apply to TRNP will be reconciled through the TRNP Bill to develop a stronger institutional mechanisms for effective Park management.

II. CONSERVATION AWARENESS

2.1 Develop and implement a public outreach program

Public outreach activities are critical to the success of MPAs around the globe. An understanding of the ultimate goal for TRNP by all segments of society can generate greater support for conservation initiatives. A public outreach program will be conducted to encourage a sense of stewardship not only for the Park but also for the marine environment in general, and increase compliance to regulations. This will be in the form of special events, campus tours, exhibitions, site visits, etc.

2.2 Develop information materials and other products that will foster greater appreciation and understanding of the value of TRNP

The development and production of information materials such as brochures, radio plugs, activity books, calendars, etc., on TRNP for various sectors will be conducted to heighten appreciation for the values of the Park and inspire support for its protection.

III. ECOSYSTEM RESEARCH AND MONITORING

3.1 Conduct regular monitoring activities to determine general reef and terrestrial habitat health

Baseline data for TRNP were gathered beginning in 1997 against which standards for resource protection are being measured. A monitoring regime will remain in place to allow management to respond actively to changing ecological trends in the Park and measure the biological management effectiveness indicators for Tubbataha.

3.2 Carry out researches for management decision-making

Aside from baseline data, new researches will be conducted to help the TPAMB in determining the best courses of action to take given evolving conditions. A resource

valuation study conducted in 2006, for example, guided the TPAMB in determining charges for coral damages in the Tubbataha Reefs.

3.3 Encourage the participation of external research institutions in the conduct of research

The expertise of research institutions here and abroad will be tapped to further enhance capacities in TRNP. Partnerships with research institutions in the conduct of scientific studies
will be encouraged.

IV. SUSTAINABLE RESOURCE MANAGEMENT

4.1 Conduct studies improve understanding of local resource use and socio-economic factors that contribute to resource depletion in TRNP

Protected area management experiences point to the importance of integrating socio-economic considerations in planning and decision-making. An understanding of the resource use patterns and motivations of major stakeholders, i.e., resident of Cagayancillo, fishers from mainland Palawan, etc., will be generated to aid in the identification of strategies to ensure the conservation of TRNP.

4.2 Conduct community-based resource management activities including the establishment and management of local reserves

The TPAMB will contribute to the improvement in the standard of living of the Municipality of Cagayancillo by providing assistance in the maintenance of the productivity of its marine environment. Hence, resources will be mobilized to contribute to the management of local marine reserves and to support other viable marine conservation strategies that may be identified by the Municipality.

4.3 Implement community-based livelihood projects linked with sustainable resource management

The TPAMB allots 10% of tourism entry fee collections from Tubbataha to fund livelihood initiatives in Cagayancillo. The TPAMB, through WWF-Philippines, has set up a micro-credit facility to support livelihood activities as part of integrated conservation management. The Municipality of Cagayancillo is enjoying benefits from increased tourist visitations during the summer months. The TPAMB will ensure that its contributions are judiciously utilized, assist in the management of the local micro-credit facility, and support the Municipality in its tourism plans contingent upon the exercise of sound management initiatives for the marine environment by the local government unit of Cagayancillo.

7. MANAGEMENT EFFECTIVENESS EVALUATION

There are 439 MPAs established in the Philippines and only 20% of these are fully protected (Pajaro, et al, 1999). TRNP is one of such MPAs with a functional management structure and operational management plan. But to substantiate this claim, it is necessary to measure management effectiveness.

There are several methods for monitoring and evaluation. Being a pilot site of the IUCN WCPA-Marine Management Effectiveness Initiative, the TPAMB will adopt the IUCN Management Effectiveness Framework which presents an iterative protected area management cycle of design, management, monitoring, evaluation and adaptation.

A set of indicators for evaluating specific management objectives was chosen from the book *How is your MPA Doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness*. Methods for measuring the indicators are flexible depending on variations in context, available resources and evaluative purposes.

Eight indicators for biophysical, 8 for governance and 6 for socio-economic conditions have been chosen by the stakeholders of Tubbataha. Participatory planning and analysis of the needs of the Park in terms of evaluation was initiated by WWF-Philippines in 2003. After three other consultations, the set of indicators listed below were selected. Biophysical and governance indicators will be measured annually, while socio-economic indicators will be measured once every three years.

Biophysical Indicators

Relevant Indicator	Method	Unit of Measure
1. Focal species abundance and diversity	Seabirds – Direct count and species inventory Turtles – Direct count (through timed swim or manta tow), tagging Cetaceans – Line transect, photo identification Commercially important species – Fish visual census (FVC) Indicator fish species – Fish visual census Top predators – Timed swim, manta tow Giant clams and large gastropods – belt transect	# of individuals + # of species # of species # of species Biomass/unit area Abundance/unit area Biomass/unit area Abundance/unit area # of individuals and species # of individuals/per unit area # of species
2. Focal species population structure	Cetaceans - line transect (count of adult, sub-adult,calf) photo identification Seabirds - direct count of # of nests, eggs, juveniles, adults (male/female) Turtles - direct count of nests, eggs, nesting adults (measurement of carapace width, length, etc)	#of individuals/ unit area #of individuals/ unit area #of individuals/ unit area
3. Habitat distribution and	Coral reefs-manta tow (in	Broadscale surveys as

complexity	situ) Seagrass	need arises(GIS resource mapping, video manta tows to assess changes brought about by large scale disturbances such as storms, bleaching, COTS)
4. Composition and structure of the community	Corals - video/benthos point transect Fish – FVC Seabirds - direct count Seagrass-quadrat/transect	% cover Species count, biomass Biomass/unit area, abundance %cover or frequency
5. Type, level and return on fishing effort	Random sampling at known fish landing locations in Cagayancillo and Mapun (?)	Species, size, fishing ground, fishing method, size of boat/gear, number of crew, engine type & power, fishing time & duration, total weight of catch, monetary value
6. Water quality	Use of temperature logger, refractometer, secchi disk, chlorophyll and plankton sampling, random garbage collection & weighing of composition	Temperature, salinity, turbidity, solid waste volume, counts and diversity and density of plankton
7. Area showing signs of recovery	benthos point intercept Seagrass – quadrat Bird - plot counts	temporal variation in % cover temporal variation in % cover temporal variation in habitat
8. Area under no or reduced human impact	Diver impact study, damage assessment	Unit area placed under protection, temporal variation in % cover, incidence of coral damage

Governance Indicators

Relevant Indicator	Method	Unit of Measure
1. Level of resource use conflict	Key informant interview; review of existing literature	Identification of nature and level of conflict (conflicts to be defined); assessment of nature and characteristics over time; response of managers;
2. Existence of a decision-making and management body	Key informant interview; review of records of meetings	Presence/absence of legally mandated body; frequency of meetings; process of decision-making; roles and responsibilities of actors of the body (formal and non-

		formal)
3. Existence and adoption of management plan	Key informant interview; review/evaluation of the plan	Presence or absence of park management plan; planning, adoption and implementation process; completeness of the plan; enforceability of the plan
4. Existence and adequacy of enabling legislation	Legal analysis	Existence of legislation to support MPA; legislative support for management plan; assess appropriateness of legislation
5. Availability of and allocation of MPA administrative resources	Interview of MPA staff, analysis of secondary data on administration and finance	Availability and allocation of resources for each MPA activity against needed resources; external resources generated/mobilized
6. Degree of interaction between managers and stakeholders	Key informant interview-MPA staff and stakeholders, review of records of meetings; stakeholder analysis	Regularity of meetings with stakeholders; assessment of topics of discussion, attendance, problems and issues, solutions; comparison of views between MPA staff and stakeholders; analysis of stakeholders' interest and participation in MPA management; assessment of stakeholders; level of satisfaction with their participation
7. Clearly defined enforcement procedure	Key informant interview; review of enforcement records	Presence or absence of enforcement guidelines & procedures, adequacy and availability of the guidelines, procedures to undertake enforcement actions
8. Degree of information dissemination to encourage stakeholder compliance	Key informant interview; review of records; social surveys	Assess training/IEC activities/program in terms of number & type provided, expenses against total budget, level of satisfaction of stakeholders; level of understanding/feedback from stakeholders

Socio-Economic Indicators

Relevant Indicator	Method	Unit of Measure
1. Local marine resource use patterns	Secondary data collection, primary data collection through KIs, FGDs, HH survey, observations (hh surveys every 4 years, KIs & FGDs on specific resource use as need arises)	Assess marine related activities, who are involved in each activity, technology used, location and boundaries, timing and seasonality
2. Level of understanding of human impacts on resources	FGDs, KIs, HH survey,	Assessment of threats to natural environment, changes due to these threats, and to what extent stakeholders believe their own activities affect the natural environment
3. Perceptions of non-market and non-use values (include other economic values i.e. direct use value, indirect use value and option value to get total economic value)	Analysis of secondary data, survey (WTP)	Economic valuation
4. Household income distribution by source	Household survey and analysis of secondary data	Income by occupation
5. Number and nature of markets	Key informant interview, analysis of marketing channels	Number of major marine products and their corresponding market channels (include characterization of market channels)
6. Distribution of formal knowledge to community	HH survey, FGDs	Types of information disseminated to stakeholders, level of confidence on the information

REFERENCES:

Pomeroy, R.S., Parks,J.E. and Watson, L.M.(2003). How is Your MPA Doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness. IUCN, Gland, Switzerland and Cambridge, UK.xv + 230pp.

IUCN. 2003. Recommendations, IVth IUCN World Parks Congress, Durban, South Africa

Management Plan for TRNMP and World Heritage Site. 1998

Nipas Act. R.A. No. 7586 and Implementing Rules and Regulations. DAO 25, s 1992. DENR

NOAA. 1996. Florida Keys National Marine Sanctuary. Final Management Plan/Environmental Impact Statement.

Republic Act No. 7611. Strategic Environmental Plan for Palawan. 1992.

Republic Act 8550 (The New Fisheries Code). A Primer. 1998. NGOs for Fisheries Reform

Republic Act 9147. 2001. An Act Providing for the Conservation and Protection of Wildlife Resources and Their Habitats, Appropriating Funds Therefore, and for Other Purposes.

Salm, R, J.R. Clark & E. Siirila. 2000. Marine and Coastal Protected Areas. A Guide for Planners and Managers. 3rd Ed. IUCN, Gland, Switzerland and Cambridge, UK

Soegiarto, A. 1986. Oceanographic assessment of the East Asian Seas. UNEP Regional Seas Reports and Studies No. 69: 173-184.

TMO Files

White, A. and Y. Arquiza. 2000. Tales from Tubbataha. 2nd Ed. The Bookmark, Inc., Philippines

WWF-Philippines. 2002. Introductory Seminar and Workshop on Protected Area Legislation for TRNMP

ANNEX 11. CI-Phils conservation plan for the Sulu-Sulawesi Seascape.

One fine day—local kids set out on a small boat in Cawili Island, Cagayancillo, Palawan.

Scalefin anthias (*Pseudanthias squamipinnis*) hovering over soft coral assemblage in Twin Rocks, Anilao, Mabini, Batangas.

THE FOUR PRIORITY MARINE BIODI

THE VERDE PASSAGE CORRIDOR

The Verde Passage Corridor occupies nearly 5,000 km² between the provinces of Batangas and Mindoro in the Philippines. A recent coral survey conducted in Anilao, Balayan Bay, recorded an impressive 319 species and 74 genera of hard corals. More than half the Philippines' documented fish species can be found here. Threatened species such as sea turtles, humphead wrasses, whale sharks, and giant clams thrive in the area.

The Corridor is one of the nation's richest fishing grounds and a top tourist destination. Intensifying tourism, the presence of port and energy facilities (oil, gas, and geothermal), as well as unsustainable fishing methods, pose grave threats to the area's marine resources.

Current Seascape Program activities in the Corridor focus on the establishment and management of a marine protected areas (MPAs) network. Recent initiatives include ichthyoplankton and oceanographic surveys, as well as marine mammal, seabird and sea turtle assessments. One current emphasis is on developing sustainable mechanisms for the capture of fish for the aquarium trade and strengthening coastal law enforcement (e.g., patrolling efforts and apprehension of illegal fishers).

THE CAGAYAN RIDGE CORRIDOR

The Cagayan Ridge Corridor comprises almost 50,000 km² in the middle of the Sulu Sea, off the coast of Palawan. The Corridor includes the recently expanded 1,000 km² Tubbataha Reef National Marine Park (TRNMP), which was declared as a World Heritage Site in 1991. Superb diving destinations along the Ridge include Jessie Beazely, Bancauan and Bancoran islands, and inhabited islands such as Cawili, Arena, and Cagayancillo.

The Ridge boasts diverse corals, reef fishes, and seagrasses, complemented by aggregations of megafauna like sharks and cetaceans. The islets on two of the atolls are known sea turtle nesting sites and important habitat for seabirds. These are threatened by encroachment by commercial fishing, intensifying tourism and boat traffic, which contribute to wildlife disturbance on small islands and destruction of corals from boat grounding and anchoring.

Current Seascape Program activities aim to strengthen management of the TRNMP, especially building enforcement capacity. Other efforts include scientific surveys that build knowledge needed to design MPAs and MPA networks. As there is exploration for oil and gas near the Park, the Program is pursuing potential collaboration with oil and gas companies to help protect the region.

ERSITY CONSERVATION CORRIDORS

THE BALABAC STRAIT CORRIDOR

The Balabac Strait Corridor occupies 6,000 km² surrounding the Balabac Group of Islands in southern Palawan. The Strait links the Sulu Sea with the South China Sea and serves as a passageway for plankton, fishes, sea turtles, cetaceans, nutrients, and pollutants, as well as large ocean-going vessels.

Balabac Strait is a haven for 24 mangrove species (70% of mangrove species reported in the Philippines). It is also significant to the life-cycle of sea turtles and qualifies as important Indian Ocean and South East Asian sea turtle habitat. Turtle survival is threatened, however, by slaughter through direct and incidental catch, egg collection and habitat destruction resulting from coastal development.

There are no major current threats to cetacean species, but the risk of incidental catch is rising due to fishing vessels employing several kilometer-long drift gill nets. These fisheries also kill thousands of sea turtles annually.

Further surveys and site characterization studies will determine species distribution and abundance and further quantify existing threats. Ichthyoplankton and oceanographic surveys will provide the scientific basis for designing MPAs and MPA networks within the Corridor. The Seascape Program will also focus on strengthening enforcement capabilities, as well as securing a bilateral agreement between Malaysia and the Philippines to establish a transboundary management regime, effectively conserving the Corridor's biodiversity.

House on stilts in a seaweed farm in Arenas Island in Cagayancillo, Palawan.

Sun, sea & reef—local kids enjoy an afternoon's swim amid a reef assemblage in Cawili Island, Cagayancillo, Palawan.

THE TRI-NATIONAL SEA TURTLE CORRIDOR

A showcase component of the Seascape Program is the Tri-National Sea Turtle Conservation Corridor, covering 80,000 km², encompassing five Priority Conservation Areas, and connecting Malaysia, Indonesia, and the Philippines.

These areas are critical to sea turtle survival in the Indo-Pacific region: the Corridor harbors the largest aggregation of nesting green turtles in the ASEAN region, as well as significant nesting populations of hawksbill turtles.

In addition, extensive mangrove forests, seagrass beds, and coral reefs characterize the Corridor. The area increasingly faces serious threats such as destructive fishing, overfishing, siltation from deforestation/upland farming, and poorly planned coastal development.

Seascape Program activities in the Corridor include MPA establishment and management, species conservation, establishing partnerships and alliances, awareness and capacity building, and developing sustainable financing options. Emphasis will be on demonstrating the links between human welfare development and biodiversity conservation.

A harlequin shrimp (*Hymenocera elegans*) feeding on starfish in Anilao, Mabini, Batangas.

SHEILA VERGARA © CI-PHILIPPINES

Boats of Mangsee—local boats known as lantsa are the usual mode of transport to ferry both people and all sorts of cargo across the Balabac Strait and the Sulu Sea.

HOW YOU CAN HELP

If you are interested in learning more or want to support the Sulu-Sulawesi Seascape contact:

SHEILA VERGARA
Senior Marine Biodiversity Specialist, Philippines
svergara@conservation.org

ROMY TRONO
Country Executive Director, Philippines
rtrono@conservation.org

ROGER MCMANUS
Senior Director, Regional Programs Division
rmcmanus@conservation.org

CI'S MISSION

Founded in 1987, Conservation International (CI) believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally, and economically. Our mission is to conserve the Earth's living heritage, our global diversity, and to demonstrate that human societies are able to live harmoniously with nature.

http://marine.conservation.org

PROGRAM GOALS

By 2012, CI and its partners will implement a sustainable seascape strategy designed to conserve the full range of biodiversity in the Sulu-Sulawesi Seascape. Long-term goals include capacity and institution building, and policy reviews and recommendations. Immediate actions include developing and implementing strategies on enforcement, strengthening MPAs, and communications. Projected outcomes are to:

- **Verde Passage Corridor:** Improve management of existing MPAs by providing enforcement support in selected municipalities by 2008. Establish new MPAs and design an appropriate MPA network. Empower local stakeholders to manage MPAs, MPA networks and enforce policies. By 2012, formally establish an ecologically functional network of MPAs and create sustainable financing mechanisms to support them.

- **Cagayan Ridge Corridor:** Determine the necessary bio-physical, socioeconomic, and institutional basis for additional MPAs and network of MPAs by 2007 and provide necessary enforcement support. By 2008, further strengthen the Tubbataha Reefs National Marine Park including updating the business plan to include appropriate enforcement.

- **Balabac Strait Corridor:** By 2007, academic, local government and local organizations in Palawan will collaborate on an integrated conservation and development strategy for the Municipality of Balabac, identify, create and/or improve MPAs and MPA networks in the corridor, and discuss a transboundary management regime with authorities in Sabah, Malaysia. By 2008, stakeholders will embrace the economic relevance of MPAs and networks and their role in marine conservation and management.

- **Tri-National Sea Turtle Corridor:** Strengthen existing MPAs by 2008, design a sea turtle MPA network, and establish a formal management regime.

- **Seascape Wide:** Develop an information, education, communication and capacity-enhancement strategy. Identify MPA, species and corridor-related policy issues in the four corridors and improve fisheries, oil and gas, and ecotourism policy by 2008. By 2012, stakeholders will understand the biophysical and socio-institutional importance of MPAs and their networks, maintaining ecosystem integrity, and implementing enforcement measures. Oil and gas companies will take part in Seascape conservation campaigns.

1919 M STREET, NW WASHINGTON, DC 20036 (202)912-1000 FAX (202)912-1030

ANNEX 12. 2008 Work and Financial Plan of TMO showing the four programs implemented.

MAJOR ACTIVITY	OUTPUT	TIMETABLE				BUDGET SOURCES (In Thousand Pesos)					
						TPAMB			PCG	Phil Navy	
		Q1	Q2	Q3	Q4	PS	MOOE	CO	PS	PS	MOOE
CONSERVATION MANAGEMENT											
Hold regular meetings of the TPAMB and Executive Committee	At least 4 TPAMB and 12 Executive Committee meetings held annually	***	***	***	***	111	20				
Efficient office and field administration	Unhampered field operations	***	***	***	***	1,631	352	93			
Regularly transport rangers and supplies to TRNMP	Timely transport and relieving of rangers 6 trips (2TMO, 2PN, 2 other source)	***	***	***	***	28	192				760
Conduct regular patrols to North & South Islets and Jessie Beazley Reef (JBR)	At least 2 patrols to North and South Islets carried out weekly and 2 patrols per month in JBR	***	***	***	***	351	414	1,050	258	1,188	329
Allocate funds for enforcement	All illegal use cases pursued	***	***	***	***	72	500				
Provide adequate field equipment in TRNMP	Timely maintenance and purchase of necessary equipment (GPS map, GPS, antenna for handheld radio, marine band base, megaphone)	***	***	***	***		50	488			
Repair, maintenance and improvement of ranger station	Improved foundation of ranger station and conducted timely necessary repairs		***				72				
Organize site visit for TPAMB members and other partners (to coincide with mooring buoy activity)	At least 2 TPAMB members and 4 partners visit TRNMP for the first time (to coincide with mooring buoy installation trip.)		***				11				
Manage tourism in TRNMP	All dive operators adhere to the permitting system		***				35	3			

	Production of tokens (1,500 pcs. luggage tags) for visitors		***				60				
	Intermittent boarding of dive boats before departure for TRNMP and while in the park		***								
	Annual meeting of dive operators held		***				25				
	Mooring system maintained throughout the dive season		***				95				
	Provide uniforms for rangers & staff	***					39				
	Complete database of visitors at the end of the diving season			***	***						
Capacity building for park staff and rangers (OBM training, IEC, Scuba Rescue Course and study tour, ranger trng)	All rangers have at least basic understanding of ecology and of apprehension procedures and park staff have increased skills and knowledge			***	***		481				
Refining and strengthening of current operations and evaluation of TPAMB	Improvement of existing regulations and guidelines	***					12				
	IRR drafted and approved by the TPAMB			***	***						
Refile TRNMP Bill	TRNP Law passed	***		***			160				
Produce and more rigorously market merchandise (t-shirt, bull cap, ladies shirt, bag, stickers, diving log book, etc)	Increase in earned income		***								
Prepare proposal for Prov'l Government	Proposal submitted before September budget hearing			***							
CONSERVATION AWARENESS											
Produce and distribute information materials for children and the youth	At least 1500 primers distributed					163	50				

Participate in events & festivals (Travel Mart), radio programs, seminars and workshops related to marine conservation	Increase appreciation and inspire support for TRNMP	***	***	***	***		50				
Update website regularly	Most recent information on TR uploaded to webiste regularly	***	***	***	***	60	14				
School-based marine conservation campaign for children (photo exhibit, quiz show, etc.)	At least 10 schools visited			***			50				
Conservation campaign in fishing villages to update information on park expansion, samong& seabird banding	At least 5 fishing villages visited			***	***		50				
ECOSYSTEM RESEARCH & MONITORING							100				
Conduct reef monitoring of environmental parameters to determine general reef and terrestrial health	Environmental status and trends in TRNMP determined		***	***							
	Biophysical indicators of management effectiveness monitored		***	***							
Conduct seabird monitoring & banding	Annual seabird monitoring report, seabird banding data submitted to DENR		***			88					
Conduct turtle tagging	Turtle tagging to be conducted regularly and reports submitted to DENR	***	***	***	***						
SUSTAINABLE RESOURCE MANAGEMENT											
Assist in the management of the micro-credit facility in Cagayancillo	Financial management of Pangabuhi-an Foundation improved	***	***	***	***						
Assist in the implementation of plans for local reserves		***	***	***	***						
						2,504	**2,832**	**1,634**	**258**	**1,188**	**1,089**

TOTAL-TPAMB	6,970	73%
PCG	258	3%
PN	2,277	24%
TOTAL BUDGET FROM ALL SOURCES	9,505	100%

ANNEX 13. News clippings of fishers caught in TRNP.

SATURDAY, JANUARY 27, 2007 The Philippine STAR NEWS 5

32 Chinese fishermen caught in Tubbataha move to appeal case

By KATHERINE ADRANEDA

In the wake of the dismissal of cases filed against 22 Chinese fishermen accused of poaching in Philippine waters, 32 more Chinese fishermen have moved to appeal their cases before the Department of Justice (DOJ).

The 32 Chinese nationals, through their lawyer Roniel Pe, asked the DOJ to dismiss the charges against them, saying they were victims of arbitrary detention and the evidence against them are inadmissible in court.

They sought to nullify the resolutions of the Palawan provincial prosecutor, which recommended the filing of criminal charges against them for poaching.

The 32 Chinese fishermen were caught within the Tubbataha Reefs Marine National Park last month aboard *f/v Hoi Wan* and their vessel yielded at least 2,000 live fishes, including hundreds of groupers and 359 Napoleon wrasse, locally known as *mameng*.

They have just posted additional bail so they would not be held in the Palawan Provincial Jail, park manager Angelique Songco said, after an arrest warrant was issued against them on charges that they violated Sections 97 and 100 of Republic Act 8550, otherwise known as Fisheries Code of the Philippines.

"We have not received yet a copy of their petition for review/appeal with the DOJ. I heard they snail-mailed it instead of personally delivering them even if they are here in Palawan, which we consider as part of their delaying tactics," she said.

To date, the Chinese fishermen have already paid bail bond totaling P2.5 million, Songco said.

Initially, the Chinese fishermen posted bail of almost P1 million for their temporary liberty. They were consequently herded to an apartment in Puerto Princesa City from the provincial jail.

On Jan. 23, the court issued a warrant of arrest against the Chinese crew, who then paid around P1.7 million bail. They were charged with violating Sections 87, 97, and 100 of RA 8550, but the prosecutor's office dismissed the case involving Section 97.

However, the accused, through their lawyer, reportedly used "every legal tactic available" to suspend the proceedings for the two cases until the DOJ resolution came.

– With Jose Rodel Clapano and Marvin Sy

A2 PHILIPPINE DAILY INQUIRER SATURDAY, JANUARY 27, 2007

EZ2 FOUR DIGIT
2 5 | 6 9 0 7
Mid-Day SUERTRES Evening
8 5 7 | 7 9 7
(All in exact order)
MEGALOTTO 6/45
3 6 9 11 13 22
P32,070,097.80

Second FRONTPAGE

E-mail: pr_news@inquirer.com.ph Website: www.inquirer.net/nation
Text us your feedback: inquirer news name/age/city/message to 2207 (Globe) or 283 (Smart)

WEATHER FORECAST

FORECAST: Northern and Eastern Luzon will experience mostly cloudy skies with rainshowers, while Mindanao will have mostly cloudy skies with rainshowers and thunderstorms. The rest of the country will be cloudy with isolated rainshowers or thunderstorms.

Metro Manila	Partly Cloudy	Iloilo/Bacolod	Partly Cloudy
Baguio	Partly Cloudy	Roxas	Partly Cloudy
Tuguegarao	Partly Cloudy	Cebu	Partly Cloudy
Laoag	Partly Cloudy	Tacloban	Partly Cloudy
Clark Zone	Partly Cloudy	Gen. Santos	Cloudy with Rains
Tagaytay	Partly Cloudy	Zamboanga	Cloudy with Rains
Legazpi	Partly Cloudy	Cagayan de Oro	Cloudy with Rains
Calapan	Partly Cloudy	Davao	Cloudy with Rains

COMPILED BY: KATE PEDROSO, INQUIRER RESEARCH/01/26/07 SOURCE: PAGASA

Sino poachers not off the hook

Presidential daughter is monitoring the case

By Armand N. Nocum

IF JUSTICE SECRETARY RAUL GONZALEZ WAS thinking of dropping a case against Chinese poachers caught off Palawan, a call from President Macapagal-Arroyo's daughter, Luli, has apparently helped change his mind.

Gonzalez yesterday assured environment conservation advocates that the Department of Justice was now going to pursue charges against 30 Chinese nationals reportedly caught poaching last December in the Tubbataha Reef Natural Park, which hosts one of the most diverse marine life in the world.

Earlier this week, the justice secretary received a barrage of criticism for releasing another group of Chinese poachers caught off nearby Mangsee island, in Balabac, Palawan, last October.

In a telephone interview, Gonzalez admitted that even the President's daughter, Luli Arroyo, is watching the new case closely, and is not happy about the poachers being allowed to go scot-free.

"Luli is following it up ... *gulit si Luli diyan* (Luli is angry at the Chinese poachers)," Gonzalez said.

GONZALEZ

LULI ARROYO

Gonzalez said there was no truth to reports that the DOJ was about to drop the case against the Tubbataha poachers, because of pressure from Chinese officials.

"We will not grant it (the dropping of charges against the poachers)," he said.

Yesterday, the lawyer of the 30 Chinese caught in Tubbataha Reef asked the DOJ to reverse the resolutions of the Palawan provincial prosecutor endorsing the filing of criminal charges against the crewmen of the Hoi Wan, saying they were victims of arbitrary detention. He said this made the evidence against them inadmissible.

"If this kind of evidence is admitted, it will encourage abuses among law enforcers," argued lawyer Roniel Pe.

But in a resolution dated Jan. 12, 2006, provincial prosecutor Alen Ross Rodriguez held that there was prima facie evidence that the 30 crewmembers of the Hoi Wan were poaching in Philippine waters, making the arrest valid. Marine rangers reported that the ship was loaded with live fish species.

The prosecutor also said the delay in bringing the respondents to Puerto Princesa for an inquest was justified since it was due to bad weather.

The provincial prosecutor recommended the filing of criminal charges against the crewmen before the trial court for taking of rare, threatened or endangered species in violation of RA 8550, or the Fisheries Code, and of RA 9147, or the Wildlife Resources Conservation and Protection Act.

The accused poachers have been temporarily released from jail after posting bail.

Meanwhile, Sen. Jamby Madrigal noted that around 900 foreigners, most of them Chinese, have been arrested for poaching in waters off Palawan alone and almost all of them have escaped prosecution by leaving the country after posting bail.

Only 17 Chinese fishermen, she recalled, were convicted of poaching in 2004.

Sen. Pia Cayetano, chair of the Senate committee on the environment, has expressed strong disappointment over release of the Mangsee Island poachers. She urged her colleagues in the Senate to immediately pass a bill declaring the Tubbataha Reef a national park and imposing stronger penalties against poachers.

ANNEX 14. Results of the Monitoring and Evaluation Program for the TRNMP (pp.64-68)

Workshop Output M&E Assessment

The assessment for the TRNMP was conducted by the M&E team during the training/workshop conducted in 28-29 May 2006. The results indicate that overall, the management of the TRNMP is successful. The negative items are the ones that should be addressed or mitigated by management.

Biophysical assessment:

TRNMP Goal: To preserve the globally significant biological diversity and ecological processes of the Tubbataha and to manage it and the surrounding areas in sustainable basis.		
Biophysical Objective: To protect biological diversity and ecological processes from unnatural threats and human impacts.		
Biophysical Indicators:	**Appraisal Against Baseline***	**Remarks**
1. Focal species abundance and diversity	Seabirds Diversity- **+** Abundance- **+**	Seabirds: Monitor **breeding species** only
	Turtles Diversity- 0	Turtles: no data to determine abundance
	Cetaceans Diversity- **?**	Cetaceans: Cannot directly attribute to management efficiency. *2004 data of TRNMP set as baseline
	Fishes Diversity- **+** Biomass- **+** Density**- +**	Fishes: *1997 data of WWF set as baseline
	Indicator Fish Biomass- + Density- +	Indicators: Pomacentridae (negative)
	Top Predators- ?	Top Predators: No sufficient data *use 2005 as baseline

	Benthic Mollusks- ?	*Review data from shallow transects of CI 2005 *Establish new baseline data using permanent shallow transects
	Corals- ?	*Check out White's paper in 1984 for baseline OR 2003 data of Fenner *Species diversity is relative; this indicator is not a priority as compared to previous focal species
	Seagrass- ?	*Seagrass: 2004 baseline data *Species diversity is relative; this indicator is not a priority as compared to previous focal species
2. Focal species population structure	Seabirds (?)	Except for brown booby which appears to have positive trend in the two- year sampling period; but trend can only be established within at least ten-year period; other studies not included in the list should also be considered (refer to 1994 TMO data).
	Turtles (?)	Cannot determine trend based on existing data
	Cetaceans (?)	Cannot determine trend based on existing data
3. Habitat distribution and complexity	Corals- ? Zonation	Trend uncertain. No sufficient data. Need more characterization (including dominant life forms) following 1982 baseline of Palaganas et al.
4. Composition and structure of the community	Hard and soft coral (+)	Generally positive change
	Seagrass (?)	Existing data suggest positive change but need more data to be conclusive
5. Type, level and return on fishing effort	Fishing gears- ?	Add this indicator to socio-economic indicators

6. Water quality	?	
7. Area showing signs of recovery	Coral Cover - **+** Susceptibility- ? Reef Fish - **+** Seabirds- **+**	*Results show recovery after bleaching event Insufficient data (susceptibility)
8. Area under no or reduced human impact	?	Existing data suggest positive change
Recommendations: 1. For population structure, gather and consolidate all available data in different institution to establish trends. Giant clams and top shell should also be considered as focal species. 2. Continuous monitoring and annual measurements of land area of North and South Islet. 3. Establish permanent study sites for mollusks; use WWF monitoring sites for other indicators		

Socio-economic Assessment:

Socio-economic Indicators:	**Appraisal**	**Remarks**
1. Local marine resource use patterns	+	Adapt 1986 baseline data
2. Level of understanding of human impacts on resources	+	Adapt 2004 baseline data
3. Perceptions of non-market and non-use values	?	Adapt 2004 baseline data *uncertain trend
4. Household income distribution by source	+	There was diversification of source of income and an increase in per capita.

5. Number and nature of markets	+	• Cagayancillo benefited from dive fees; more divers are visiting Tubbataha because of well-organized diving expeditions as a result of better marketing and management strategy. • There was an increase in the price of seaweed, thereby increasing the income.
6. Distribution of formal knowledge to community	+	• Look at the impact of distributed IEC materials • Diversify IEC media (Radio and TV) in the areas within Visayas considering that people of Cagayancillo mostly listen to Radio and watch TV stations.

Cluster conclusion:

Positive change towards meeting socio-economic objectives:

To increase income potential from ecosystems targeted for conservation.

To improve public understanding of the benefits of conserving TRNMP.

Governance Assessment:

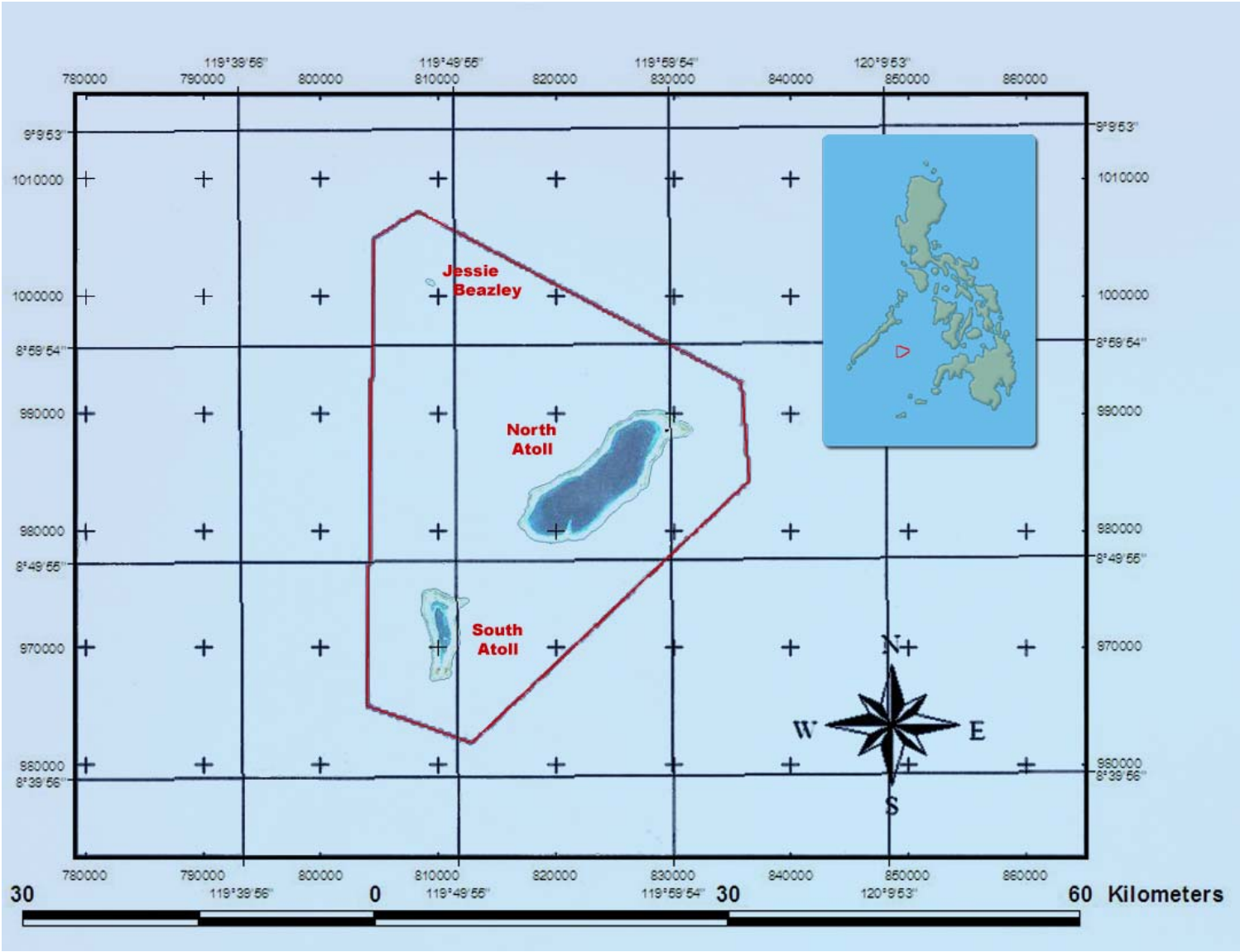
Governance Indicators:	**Appraisal**	**Remarks**
1. Level of resource use conflict	**+**	There is positive effort towards reduced conflictbut the people involved in the conflict has been changing. For example, though the previousresource use conflict between Cagayancillo and Puerto was already solved there now exists a different set of conflicts (such as, conflict between energy and fisheries, energy prospecting vs conservation, tourism vs fishing).
2. Existence of a decision-making and management body	+	Baseline data be TMO 2002
3. Existence and adoption of a management plan	+	none
4. Existence and adequacy of enabling legislation	+	none

5. Availability and allocation for TRNMP administrative resources	-	Funds were adequate due to external funding through UNDP-GEF 2000-2004. TMO funds were utilized in 2002 (these were from the collection)
6. Degree of interaction between managers and stakeholders	+	
7. Clearly defined enforcement procedures	+	TMO must conduct threat reduction assessment not only on the numbers of apprehension per year
8. Degree of information dissemination to encourage stakeholder compliance	+	Use radio as tool for information dissemination.

Cluster conclusion:

Positive change towards meeting governance objectives:
Legal and management structures are effectively maintained.
Stakeholder participation and representation ensured.

Map showing the boundaries of the Tubbataha Reefs Natural Park (TRNP)



Tubbataha Reefs Natural Park
Extension for Inscription in the World Heritage List

Supplementary Information to the Nomination Dossier

The Philippine Government underscores its unswerving support for the conservation of the Tubbataha Reefs Natural Park.

In terms of provision of resources from the government, the Provincial Government of Palawan is allocating at least Php4 Million (USD83,000) annually for the management of the Tubbataha Reefs Natural Park. The Provincial Governor and concurrent Chairman of the Tubbataha Protected Area Management Board (TPAMB) approved the budget during the Board's meeting last 16 November 2008. Attached for further reference are copies of the 2009 Work and Financial Plan of the Tubbataha Management Office and the TPAMB Resolution approving the plan and clearly indicating the financial contribution of the Provincial Government. A Memorandum of Agreement between TPAMB and the Provincial Government institutionalizing the aforementioned budgetary allocation is currently underway. This substantial increase in resources assured by the Provincial Government of Palawan reaffirms the commitment to safeguard this most outstanding natural heritage.

Caption here

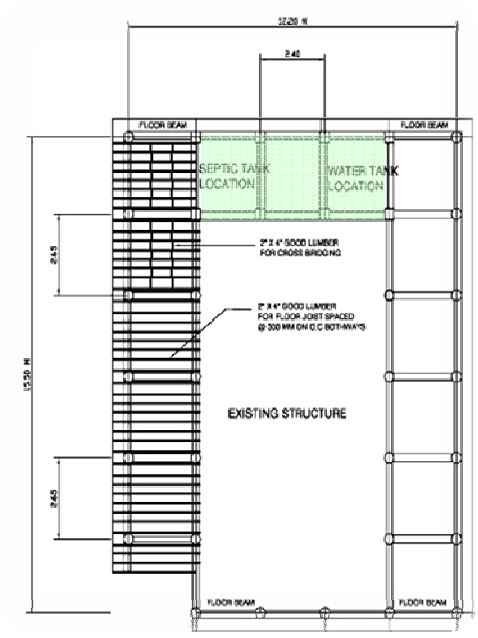
On the matter of specific immediate needs cited by IUCN, the Department of Tourism contributed two outboard engines in 2008 for one of the patrol boats in TRNP. Conservation International-Philippines is providing a new fiberglass patrol boat with engine this year. Outboard engines in TRNP are replaced every three years and funds are being set aside during the intervening years to ensure timely replacement. The hull of the new boat will replace a 12-year old hull and is expected to last as long.

The three-fold expansion of TRNP increased manpower requirements. Additional manpower will put a heavy strain on the financial resources of the Park. As its share in park management, the Municipality of Cagayancillo committed to augment the number of rangers from the local Bantay Dagat (Baywatch). Beginning in 2008,

Cagayancillo assigned its personnel as park rangers to augment the law enforcement ranks. Today, the composite team of marine park rangers in Tubbataha comes from four gencies: Philippine Navy, Philippine Coast Guard, Tubbataha Management Office and the Municipality of Cagayancillo.

Photo of the expansion of the ranger station, where a water cistern and new septic tank was constructed under the floor. Fresh water has been a major limitation. The cistern is now in use. Finishing touches will be completed by early March.

With regards to accommodation facilities, a Department of A griculture grant has enabled park management to conduct maintenance activities and construct an extension to the ranger station to increase the living space of the expanded law enforcement team. That activity was the first major maintenance work on the station since it was constructed in 2000. The first phase involved the replastering of the roof in January 2008. The second phase was the expansion of the station and will be completed by early March 2009, before the beginning of the scuba diving season in TRNP. Construction of the succeeding phases will commence after the tourist season. (See attached construction plan and photos)



Part of the Construction Plan for the TRNP Ranger Station. Colored segment shows Phase 2 of the expansion, which is presently

The active prosecution of illegal fishing cases over the last few years further attests to the effective collaboration among all stakeholders of the Tubbataha Reefs Natural Park. All cases of illegal use in TRNP have been filed by the Provincial Prosecutor in the proper courts, demonstrating their appreciation of the value of protecting the area. A legal consultant has been hired by TMO to pursue these court cases. Lobbying efforts with the Supreme Court of the Philippines, as well as the legislative arm of the government, will be purused to instate adequate sanctions and penalties to deter illegal fishing activities.

As State Party to the World Heritage Convention, the Philippine Government requests IUCN and the World Heritage

Committee to positively consider the extension of Tubbataha Reefs Natural Park for inscription in the World Heritage List on the 33rd Session of the Committee in June 2009.

AMB. PRECIOSA S. SOLIVEN
Secretary-General
UNACOM

COMM. CARMEN D. PADILLA
Chairperson
UNACOM Culture Committee

ANGELIQUE M. SONGCO
Park Manager, TRNP

Excerpts from the Minutes of the Special TPAMB Meeting
held at the Governor's Conference Room on December 16, 2008

Present:	1. Mayor Joel A Carceler, Cagayancillo	Acting Chairman
	2. Cdr John Eco, PN	Member
	3. Agnes Acosta-Magdaug, SP ENR Committee	Member
	4. Paciano B. Gianan, BFAR-Palawan	Member
	5. Joseph C. Padul, Cagayancillo	Member
	6. Ms. Jaynee Tabangay, CI-Philippines	Member
	7. Jehu P. Cayaon, Tambuli ta mga Kagayanen	Member
	8. Dr. Benjamin J. Gonzales, WPU	Member
	9. Fe V. Ricon, PSU	Member
	10. Felomino Racuya, PCSDS	Member
	11. Rhodora Ubani, DENR	Member
	12. Marivel Dygico, WWF-Philippines	Member

TPAMB Resolution No. 08-06

"A Resolution Approving the TMO 2009 Work and Financial Plan"

WHEREAS, in 1988, Presidential Proclamation No. 306 established the Tubbataha Reefs as a *national marine park with the objective of protecting and preserving the coral reef atoll and its* diverse marine resources;

WHEREAS, in 1993, the Park was inscribed as a UNESCO World Heritage Site due to its outstanding universal value;

WHEREAS, on August 23, 2006, President Gloria Macapagal-Arroyo issued Presidential Proclamation 1126 expanding the Tubbataha Reefs National Marine Park to include Jessie Beazley Reef and renaming the same as Tubbataha Reefs Natural Park;

WHEREAS, the Tubbataha Protected Area Management Board (TPAMB) is the sole policy-making and regulatory body for the Tubbataha Reefs Natural Park (TRNP);

WHEREAS, the TMO is charged with the preparation of the annual Work and Financial Plan, which serves as the basis for the release of funds by the TPAMB and its disbursement;

WHEREAS, the Provincial Government of Palawan contribution of PhP4M towards the management of TRNP forms 24% of the approved Financial Plan;

WHEREAS, the TPAMB has examined the 2009 W&F Plan and found it consistent with the provisions of the TRNP Management Plan;

NOW, therefore, be it resolved, as it is hereby resolved, that the attached TMO 2009 Work and Financial Plan is unanimously approved;

RESOLVED FURTHER, that the TMO is authorized to advance the payment of items and services charged to the Provincial Capitol and is instructed to immediately process the same for reimbursement.

APPROVED AND ADOPTED this 16th day of December, 2008 in Puerto Princesa City.

Prepared by:

ANGELIQUE M. SONGCO
Secretariat

Attested by:

MAYOR JOEL A. CARCELER
Acting Chairman

TRNP Work Financial Plan For 2009

MAJOR ACTIVITY	OUTPUT	TIMETABLE				BUDGET SOURCES								
						TPAMB			Provincial Govt			Partners (In-Kind)		
		Q1	Q2	Q3	Q4	PS	MOOE	CO	PS	MOOE	CO	PS	MOOE	CO
CONSERVATION MANAGEMENT (ADMIN)						**571,767**	**870,130**	**110,000**	**319,572**	**420,000**	**0**	**0**	**0**	**0**
Hold regular meetings of the TPAMB and Executive Committee	At least 4 TPAMB and 12 Executive Committee meetings held annually	***	***	***	***		160,800							
Efficient office and field administration	Unhampered field operations	***	***	***	***	571,767	566,280	110,000						
Manage tourism in TRNP	All dive operators adhere to the permitting system		***							420,000				
	Production of tokens (1,500 pcs. luggage tags) for visitors		***				75,000							
	Intermittent boarding of dive boats before departure for TRNMP and while in the park		***											
	Annual meeting of dive operators held		***				28,750							
	Provide uniforms for rangers & staff	***					39,300							
	Complete database of visitors at the end of the diving season			***	***				193,116					
Follow up TRNP Bill	TRNP Law passed	***		***										
Produce and more rigorously market merchandise (t-shirt, bull cap, ladies shirt, bag, stickers, diving log book, etc)	Increase in earned income		***											
Prepare proposal for Prov'l Government	Proposal submitted before September budget hearing			***					126,456					
CONSERVATION MANAGEMENT (FIELD)						**461,559**	**1,327,780**	**5,428,000**	**1,157,171**	**1,199,100**	**280,000**	**1,663,000**	**1,252,000**	**0**
Capacity building for park rangers, staff and TPAMB	All rangers have at least basic understanding of ecology and of apprehension procedures. Staff and TPAMB have increased knowledge on Park management			***	***		595,150							
Regularly transport rangers and supplies to TRNP	Timely transport and relieving of rangers, 4 trips (2TMO, 2PN)	***	***	***	***		377,630			547,700			1,252,000	
Conduct regular patrols to North & South Islets and Jessie Beazley Reef (JBR)	At least 2 patrols to North and South Islets carried out weekly and 2 patrols per month in JBR	***	***	***	***	461,559			995,027	401,400		1,663,000		
Allocate funds for enforcement	All illegal use cases pursued	***	***	***	***		355,000		162,144	250,000				
Provide adequate field equipment in TRNP	Purchase of necessary equipment (GPS 76, antenna for radio, SSB radio, marine band base,new solar power system, radar, night vision scope,safety equipment, new patrol boat w/ engine)	***	***	***	***			1,728,000			280,000			
	Embedment mooring system installed and maintained throughout the season		***					3,500,000						
Repair, maintenance and expansion of ranger station	Additional wing on both sides of ranger station constructed to include solar power and fuel storage space and proper garden and construction of observation tower		***					200,000						
Organize site visit for TPAMB members and other partners (to coincide with mooring buoy activity)	At least 2 TPAMB members and 4 partners visit TRNP for the first time (to coincide with mooring buoy installation trip.)		***											

MAJOR ACTIVITY	OUTPUT	TIMETABLE				BUDGET SOURCES								
						TPAMB			Prov'l Govt			Partners (In-kind)		
		Q1	Q2	Q3	Q4	PS	MOOE	CO	PS	MOOE	CO	PS	MOOE	CO
CONSERVATION AWARENESS						37,487	568,000	55,000	299,843	100,000	0	0	0	0
Produce and distribute information materials for children and the youth	At least 1500 primers distributed					37,487	271,000		299,843					
Participate in events & festivals (Travel Mart), radio programs, seminars and workshops related to marine conservation	Increase appreciation and inspire support for TRNP	***	***	***	***		22,000							
Change website host	Most recent information on TR uploaded to webiste regularly	***	***	***	***		30,000							
School-based marine conservation campaign for children (photo exhibit, quiz show, etc.)	At least 10 schools visited			***				55,000						
Conservation campaign in fishing villages to update information on park expansion, samong& seabird banding	At least 5 fishing villages visited			***	***		245,000							
Exposure trip for media, legislators & policy makers	At least 1 trip to TRNP									100,000				
ECOSYSTEM RESEARCH & MONITORING						238,000	0	0	0	240,000	0	0	0	0
Conduct reef monitoring of environmental parameters to determine general reef and terrestrial health	Environmental status and trends in TRNP determined		***	***						240,000				
	Biophysical indicators of management effectiveness monitored		***	***		150,000								
Conduct seabird monitoring & banding	Annual seabird monitoring report, seabird banding data submitted to DENR		***			88,000								
Conduct turtle tagging	Turtle tagging to be conducted regularly and reports submitted to DENR	***	***	***	***									
SUSTAINABLE RESOURCE MANAGEMENT						92,019	0	0	0	0	0	0	0	0
Assist in the management of the micro-credit facility in Cagayancillo	Financial management of Pangabuhi-an Foundation improved	***	***	***	***	92,019								
Assist in the implementation of plans for local reserves		***	***	***	***									
						1,400,833	2,765,910	5,593,000	1,776,586	1,959,100	280,000	1,663,000	1,252,000	0

TPAMB	9,759,743	58%
Prov'l Govt	4,015,686	24%
Partners (In-kind)	2,915,000	17%
Total 2009 Budget	16,690,429	100%