Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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1. Name and address of the compiler of this form:

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DD MM YY

Designation date | Site Reference Number

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2. Date this sheet was completed/updated:

28 July 2010

3. Country:

Philippines

4. Name of the Ramsar site:

Tubbataha Reefs Natural Park (TRNP)

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**
a) Designation of a new Ramsar site ❑; or
b) Updated information on an existing Ramsar site ✓

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:
or
If the site boundary has changed:
i) the boundary has been delineated more accurately ❑; or
ii) the boundary has been extended ❑; or ✓
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or ✓
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

The TRNP was expanded in 2006 by virtue of Presidential Proclamation 1126 signed by then President Gloria Macapagal-Arroyo. The inclusion of Jessie Beazley Reef enhances the park's ecological integrity because, in conjunction with the North and South Atolls of Tubbataha Reefs, it is one of the major sites for recruitment in the dispersal of fish and coral larvae throughout the Sulu Sea. Its sand bar serves as an additional roosting area for migratory seabirds especially the great crested terns while the waters surrounding the reef provide adequate food for most of the marine fauna found in the area. The proposed expanded Ramsar site boundaries coincide with that of the no-take zone of the park.

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i**) a hard copy** (required for inclusion of site in the Ramsar List);

ii**) an electronic format** (e.g. a JPEG or ArcView image) ✓;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ❑.

b) Describe briefly the type of boundary delineation applied:

The boundary is the same as the existing World Heritage Site and corresponds to the no-take zone of the TRNP.

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8. Geographical coordinates (latitude/longitude, in degrees and minutes):

8° 57′ N 119° 52′ E

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9. General location:

Tubbataha is located in the center of the Sulu Sea, 92 nm heading 126˚ southeast of Puerto Princesa City, the capital of the Province of Palawan, Philippines. It lies 60 nm heading 248˚ southwest of the island Municipality of Cagayancillo, Province of Palawan which has political

jurisdiction over it. There are no communities living within the Park boundaries. Only marine park rangers stationed at the Park stay at the ranger station on a 2-month rotation.

10. Elevation: (in metres: average and/or maximum & minimum)

Very few areas in the park are above sea level. About ten sand cays emerge in the North Atoll during extreme low tide. The South Atoll has an islet more or less four (4) meters above sea level at high tide while the North Atoll is the location of the Bird Islet which is about three (3) meters above sea level at high tide. The Jessie Beazley sandbar, on the other hand, is only about 1 and ½ meters above sea level at high tide.

11. Area: (in hectares)

96,828 ha

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

'Tubbataha' is a Samal word meaning "a long reef exposed at low tide" which aptly describes the place. It is the largest coral reef atoll in the Philippines and the only purely marine World Heritage Site in Southeast Asia. TRNP harbors a diversity of marine life equal to or greater than any such reef of its size in the world. As of the latest surveys, it has been found to harbor at least 359 species of corals (equivalent to about 80% of all coral species in the Philippines), 600 species of fish, 7 species of sea grass, 66 species of algae, two species of marine turtles, 13 species of sharks, and 13 species of cetaceans. Rays and skates are also commonly seen around the reefs. Pelagics such as tuna, mackerel, jacks and barracudas are observed in schools near the reef crests. The 1.1-hectare Bird Islet is the rookery and breeding ground of seven seabird species. In the Southeast Asian context, TRNP represents the only known breeding area of the Philippine endemic subspecies of Black Noddy (*Anous minutus worcestri*), one out of about four major remaining breeding areas of Sooty Tern and Brown Noddy, and it was the last known breeding area of Masked Booby in the Philippines, and probably in Southeast Asia. Most of the seabird species breeding at the Tubbataha Reefs can be considered threatened at national or regional levels. One globally critically endangered but migratory seabird species also occur: the Christmas Island Frigatebird *Fregata andrewsi*. (Jensen, 2008).

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
✓	✓	✓	✓			✓	✓	

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeography region.

TRNP represents a unique example of near pristine coral reefs with very high marine biological diversity. It lies in the middle of the Sulu Sea, the apex of the Coral Triangle, which, in turn, is known to be the biogeographic center of coral diversity in the world. Tubbataha is also one of the very few undisturbed breeding sites of seabirds in the Philippines (Jensen, 2008) and is a significant feeding area for cetaceans in the Sulu Sea (Aquino & Calderon, 2004).

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

TRNP is home to 180 threatened and near threatened marine species. It also functions as source and sink of fish and coral larvae for the whole of the Sulu Sea (Campos, 2007) which, in turn, comprises about one-third of the Coral Triangle. The table displays some of these species. Other species list is included in the appendix.

Scientific name	Common name	IUCN Status	CITES Status	CMS Status
FISH				
Balistes vetula	Queen triggerfish	VU	-	-
Cheilinus undulatus	Humphead wrasse	EN	II	-
Bolbometopon muricatum	Green humphead parrotfish	VU	-	-
Cromileptes altivelis	Humpback grouper	VU	-	-
Epinephelus lanceolatus	Giant grouper	VU	-	-
CORAL				
Acanthastrea hemprichii	Closed brain coral	VU	II	-
Acanthastrea hillae	Starry cup coral	NT	II	-
Acropora abrolhosensis	Staghorn coral	VU	II	-
Acropora aculeus	Dana staghorn coral	VU	II	-
Acropora acuminata	None known	VU	II	-
BIRDS				
Fregata andrewsi	Christmas Island Frigatebird	CR	I	-
Egretta eulophotes	Chinese Egret	VU	-	I
Gorsachius goisagi	Japanese Night-Heron	EN	-	I
Numenius arquata	Eurasian Curlew	NT	-	II
Limosa limosa	Black-tailed Godwit	NT	-	II
REPTILES				
Chelonia mydas	Green Turtle	EN	-	I
Eretmochelys imbricata	Hawksbill Turtle	CR	-	I

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

In a study on connectivity, Campos et al. (2007) showed that the TRNP serves as an important source as well as sink for both fish and coral larvae. The study further noted that these larvae eventually feed the fisheries of various communities lining the Sulu Sea. Several fish species of commercial importance can be found in substantial numbers within the waters of TRNP. TRNP coral species also represent

over 80% of all the coral species found in the country. Its white-tip reef shark population is comparatively denser than that of the Great Barrier Reef and the reefs of Cocus Keeling Islands (Walker and Palomar-Abesamis, 2005).

The Tubbataha Reefs Natural Park represents the only known breeding area of the endemic subspecies of Black Noddy (*Anous minutus worcestri*), and last known breeding area of Masked Booby in the Philippines

Criteria 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Two species of marine turtles regularly breed in the Park.These are the green turtle (*Chelonia mydas*) and the hawksbill turtle (*Eretmochelys imbricata*).The DENR Pawikan Conservation Project personnel that visited Tubbataha in May 2005 concluded that "TRNP is very important as a juvenile development habitat for these species.The two islets in Tubbataha also serves as an important rookery for migratory birds and is one of the last known safe breeding habitat of seabirds in Southeast Asia.

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

TRNP shelters over 600 species of fishes, not including the elasmobranchs species. Several fish species of commercial importance can be found in substantial numbers within the waters of TRNP such as jacks, tunas, groupers, and wrasses. The greater majority of the sharks species found in the park are threatened or near threatened, e.g., squat-headed hammerhead shark (*Sphyrna mokarran*). TRNP also harbors the world's highest density of white-tip sharks to date (Walker & Palomar-Abesamis, 2005).

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

The study by Campos et al. (2007) has proven what scientists have theorized in the past: that the TRNP is both source and sink of fish and coral larvae. This study also elucidated the significance of Jessie Beazley reef in the migration and recruitment of fish larvae coming from all over the Sulu Sea.

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15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
Indomalaya

b) biogeographic regionalisation scheme (include reference citation):
Udvardy, M. D. F. (1975). *A classification of the biogeographical provinces of the world*. IUCN Occasional Paper no. 18. Morges, Switzerland: IUCN.

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16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins – natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

TRNP is composed of two uninhabited atolls separated by a 5-nm channel and Jessie Beazley Reef is located about 14 nm north of South Atoll and about 10 nm northwest of the North Atoll. The oblong-shaped North Atoll is 10 miles long and three miles wide enclosing a lagoon of sand and corals 24 meters deep. The South Atoll is a triangular reef structure about 9 miles long and 2 miles wide. 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 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.

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.

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17. Physical features of the catchment area:
Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Not much is known about the circulation in the Sulu Sea. Wyrtki (1961) gave a very comprehensive account of the physical oceanography of the Southeast Asian Seas but because the Sulu Sea is one of the smaller basins in the region, the description was limited. A net cyclonic (counterclockwise) circulation for most of the Sulu Sea characterizes the surface circulation in the Sulu Sea as suggested by Wyrtki (1961). The relatively shallow connection of the Sulu Sea with the neighboring basins makes the deep layers isolated and very different from the deep waters of the South China Sea and the Pacific. For instance, the temperature of Sulu Sea waters at 1000m depth is about 10˚C warmer than South China Sea water at the same depth (Udarbe-Walker et al., 2002). In the upper layer, the residence time is in the order of about a year (Metzger and Hurlburt, 1996). The semi-enclosed nature of the Sulu Sea and the dominant monsoonal forcing also suggests that a large component of the flow just moves around the basin.

The observed sea level variations show that the tides in Tubbataha are of the mixed, diurnal-dominant type, which is typical for the Sulu Sea (NAMRIA, 2002). The highest tidal range of about 2m was observed on 18 May 2003 while the minimum range of 1m was observed during semidiurnal neap tides (Villanoy, 2004).

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18. Hydrological values:
Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

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19. Wetland Types

34. presence:
Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk©

b) dominance:
List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

TRNP has a total of 10,045 hectares of coral reefs with a few patches of seagrass meadows near the South Atoll.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

TRNP is composed of 10,045 ha of coral reef and surrounding waters. The study on connectivity conducted by Campos et al. (2007) proved that Tubbataha and Jessie Beazley are sources and sink of fish and decapod larvae to the eastern coast of Palawan, enriching fisheries in the area. These include commercial fish species such as tunas, jacks and groupers. The study done by Villanoy et al. (2002) describes the Sulu Sea as a type of transition area between the South China and Sulawesi Seas. Strong horizontal wind variations from the Mindoro Strait, Balabac Strait and Sulu archipelago, at times, create upwelling and downwelling events that influence primary productivity and thus has a large effect on the concentration and distribution of fishes and other marine life including cetaceans inside the TRNP.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

The fish biomass of a healthy Philippine coral reef is estimated to be 5-37 mt/km^2 (Alcala and Gomez 1985). The estimated fish biomass in Tubbataha was 318 mt/km², according to 2005 studies conducted by WWF-Philippines. This biomass estimate comprised mostly of pelagic and outlier species, such as unicornfishes (Subfamily Nasinae), jacks (Carangidae) and fusiliers (Caesionidae). There was a decrease in the demersal fish biomass at 93.94 mt/km^2 from last year's 125.77 mt/km^2. Despite a decrease in demersal fish biomass in 2006, the general trend plotted over time still shows an increasing trend, recording 278.27 mt/km^2 in 2009. In recent years, tiger sharks have become a regular sight in the Park further attesting to the stability and richness of its marine biodiversity.

A total of 28,049 adult individuals of eight regularly occurring seabird species were counted during the annual seabird monitoring activity in May 2010. Of these, six species were breeding; the Red-footed Booby (*Sula sula*), Brown Booby (*Sula leucogaster*), Great Crested Tern (*Sterna bergii)*, Sooty Tern (*Sterna fuscata*), Brown Noddy (*Anous stolidus*) and Black Noddy (*Anous minutus*). Unfortunately, the Masked Booby (*Sula dactylatra*), which was last observed in the Park in 1992, is believed to be locally extinct. (Annex 2).

Aside from the 65 threatened coral species, the 2008 coral assessment of IUCN has placed 85 additional coral species in the TRNP under the near threatened (NT) classification. Data from the 2008 fish census in Tubbataha is still undergoing review. Due to some discrepancies in nomenclature brought about by using several references, the total number of fish species could not be accurately determined and was just tentatively placed around 500.

The study conducted by Walker and Palomar-Abesamis (2006) noted that TRNP has the highest population density of white-tipped reef sharks (*Triaenodon obesus*) in the world. Comparing the results of their study with that of Robbins (unpublished) on Cocus Keeling Island and Great Barrier Reef, they found out that TRNP harbors more than double the population density of *T. obesus* given the same area, reaching as high as 13 individuals per ha in some of their study sites in the Park.

Because of the rich marine biodiversity in TRNP, it was no surprise that it proved to be a popular feeding area for small cetaceans in the Sulu Sea. A total of 13 cetacean species have been observed in TRNP since the first study conducted by Dolar and Alcala (1993). Large pods of dolphins have been observed to feed around the reefs of the North and South Atolls (Aquino and Calderon, 2004). Almost all of these pods had more than one calf in its group.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

- sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

TRNP is uninhabited and is managed under a no-take policy. No direct uses are allowed within the Park.

24. Land tenure/ownership:
a) within the Ramsar site:
State-owned

b) in the surrounding area:
State-owned

25. Current land (including water) use:
a) within the Ramsar site:

TRNP is managed under a no-take policy. The only uses allowed are tourism, for revenue generation, and research.

b) in the surroundings/catchment:

The surrounding areas of TRNP are open to fishing.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:

The planned exploration for oil in the Sulu Sea may have adverse impacts on cetaceans and other marine life. The Department of Energy (DOE) which has jurisdiction on oil explorations in the country, has already settled the overlap with the Service Contract they had previously issued to a private exploration company in favour of TRNP. The additional 10 nm buffer zone the TPAMB had requested for the perimeter of the Park, however, is still under negotiations. The buffer zone was requested as a mitigating measure for the possible negative impacts of oil exploration and extraction in the future.

Limited studies have been done of the population of the topshell *(Trochus niloticus)* in the Park. These studies are important in the context of the present illegal exploitation of the species by fishers from Palawan. The topshell is protected in the Philippines under Fisheries Administrative Order # 208 series of 2001. It is collected, exported and used for button-making and other decorative purposes. The exploitation of topshells in TRNP by indiscriminate fishers may lead to an imbalance in the population structure of the species within the Park.

Wild tamarinds *Leucaena luecocephala* were introduced to the North and South Islets to provide shade and as a navigational aid in the 1980s by residents of the Municipality of Cagayancillo. This invasive tree species has proven very challenging to eradicate. Nevertheless, this has been successfully eradicated as of 2008.

Recently, it was also noted that several proposed archipelagic sealanes run right smack into the park. Discussions with relevant authorities have been held during which TMO pointed out the potential problems related to this and further suggested that the Philippine Department of Foreign Affairs propose the park to be declared as a Potentially Sensitive Sea Area (PSSA) to the International Maritime Organization (IMO).

b) in the surrounding area:
Apart from oil explorations in the Sulu Sea and the garbage emanating from outside of the Park, the proliferation of fish aggregating devices outside of and around the Park boundaries is a matter of increasing concern for the TPAMB. Based on the study conducted by CI-Philippines (Tagarino et al., 2007), several of these FADs are found just outside of Park boundaries. The sheer number of these FADs causes alarm for migratory species coming from inside the Park, including cetaceans, marine turtles and sharks and rays. In addition, there have been instances over the past years where a few of these devices (metal tanks about 2 meters long attached by a chain to a sinker) were dislodged from their sites and had found their way into the TRNP. The damage caused by the dragging of their chains and the devices itself could not be accurately assessed since the path of the devices could not be determined. The only damages that could be recorded were those found in the immediate area where these devices finally hit the islets in TRNP.

Marine debris from outside Park boundaries is also increasingly becoming a concern for park management because of its impacts on marine life and the avian populations. Garbage collected inside the Park are mostly plastic food wraps, light bulbs, disposable lighters, etc. Seabirds nests are now largely composed of plastics and other non-biodegradable trash from the sea.

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27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site: II National Park

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The whole of TRNP has been designated as World Heritage Site as decided upon during the 33rd session of the World Heritage Committee held in Seville, Spain on 22-30 June 2009. The boundary of the Ramsar Site and the World Heritage Site is one and the same. TRNP is under the jurisdiction of the Province of Palawan, which is a Man and Biosphere Reserve, and is located at the center of the Sulu Sea which is at the apex of the Coral Triangle. On the national level the TRNP Act of 2009 or Republic Act 10067 has been passed into law last 6 April 2010. It specifically recognizes the outstanding universal value of the park by upholding the no-take policy and providing stiffer penalties for violators.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ❑;Ib ❑; II ☑; III ❑; IV ❑; V ❑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?:

Yes and it is being implemented. The first management plan was first developed in 1995 and has completed the cycle three times. The current management plan is due for updating this year (January 2011) in recognition of the recent passage of the TRNP Act of 2009 (Republic Act 10067) and will include management considerations for the 10-nautical mile buffer zone.

d) Describe any other current management practices:

TRNP is under IUCN Category II (National Park). It was established as a National Marine Park by the Philippine Government in August 11, 1988 and inscribed in the World Heritage List in December 11, 1993.

Park funds are generally sufficient only for law enforcement. Management planning for the Park was initiated by DENR in 1992. In 1995, when the Presidential Task Force of TRNP was established by then President Fidel Ramos, the plan was reviewed and modified in a participatory manner during several fora organized by the various players involved in TRNP, e.g., DENR, WWF-Philippines, Sulu Fund, Marine Parks Center of Japan, etc. The present Management Plan identifies the following major programs are paramount in the achievement of the goals of the TPAMB.

- **CONSERVATION MANAGEMENT.** The Tubbataha Protected Area Management Board (TPAMB) strives to effectively conserve and protect the marine and terrestrial resources of the Tubbataha Reefs for the long term by providing adequate physical, manpower and policy infrastructure required to achieve this goal.
- **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 dive tourism industry operating in Tubbataha.
- **ECOSYSTEM RESEARCH AND MONITORING**. A regular, uninterrupted monitoring regime is being maintained to provide understanding of biological resources and ecological processes in Tubbataha including their interrelationships. Dependable scientific assessments provide inputs for anticipating potential problems and serve as a basis for decision-making. Monitoring reports also help the TPAMB to measure management effectiveness and to adapt management approaches.
- **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 uplift the living standards in the locality.

(A pdf copy of the Management Plan of the TRNP is provided with this information sheet.)

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28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

A business plan for the TRNP has been drafted with the help of Shell Exploration BV in line with its commitment to the UNESCO to help World Heritage Sites achieve self-sustainability. The TRNP was chosen as one of the four pilot sites for the study. The plan is still undergoing its seventh revision although some of the identified measures in the business plan has already been accomplished. Furthermore, the current TRNP management plan is due for updating this July 2010.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The window of opportunity for the conduct of research activities in the Park is slightly wider than the tourism season. Most researches are undertaken in April to June, with a few brief research activities possibly being carried out up till October, before the onset of the northeast monsoon.

Annual Ecosystem Research and Monitoring has been conducted by WWF-Philippines, an NGO-member of the TPAMB, for the last 10 years. Park management presently cannot afford to conduct and has very limited capability. Researchers are boat-based and the only field station in the Park is used to house the marine park rangers stationed in the area year-round.

A monthly seabird census is also conducted by marine park rangers who have been trained by the TRNP seabird consultant. The marine park rangers are also currently conducting bird banding activities apart from their monthly and quarterly monitoring activities.

Permanent monitoring sites in TRNP marked by red circles.

In view of the significance of the Park as a marine turtle habitat, the DENR have likewise trained the marine park rangers to conduct turtle tagging and monitoring activities at regular intervals throughout the year. The marine park rangers have been likewise briefed on marine turtle hatchery management in the event of nesting occurrences at the sand bar in front of the ranger station. Marine turtle nests in the islets are only recorded but left practically untouched.

Sightings of large predators such as sharks and cetaceans are likewise noted in the rangers' quarterly report to the TMO but these are mostly opportunistic, i.e., sightings are often made during their regular patrols.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

CEPA has been focused primarily on visitors over the last few years. Park funds are generally sufficient only for law enforcement. However, official reports and periodic publications are provided to the academe, relevant government agencies, the media and other sectors of society. The TPAMB has put up a website, www.tubbatahareef.org, which contains extensive information about TRNP.

In 2008, TRNP has widened its base audience to include schools as well as the general public in its bid to be counted as one of the New 7 Wonders of Nature, an online search for the world's most unique and beautiful natural sites. Brochures, bookmarks, posters, and pins have been produced to increase familiarity with the name "Tubbataha" and what it represents: a pristine marine environment of outstanding universal value. These collaterals have been produced by partner NGOs and the provincial government of Palawan. In addition, a series of school and radio show visits have been targeted until the end of the year to promote awareness of Tubbataha conservation. Even after TRNP was removed from the list of candidates for the New 7 Wonders campaign, TMO continued its efforts in increasing awareness of the park within the country.

TRNP is a living laboratory of marine life and its potential for education is extensive. However, the isolation of the Reefs and the seasonal access to it limit the capability of the TPAMB to provide experiential learning opportunities for Palawan residents. Nevertheless, the TPAMB through its TMO

targets at least one trip a year to conduct a familiarization tour for locals. In 2008, the TMO took college students as well as local judges, fiscals and lawyers for a 2-day visit to Tubbataha to increase their understanding and appreciation for conservation efforts being undertaken in the Park.

Given the amount of information handled by the TMO, a database has been developed in the latter part of 2009. The information system was conceptualized to facilitate access to information both within and outside of the TMO. For security reasons, however, only a limited part of the database will be uploaded to the website.

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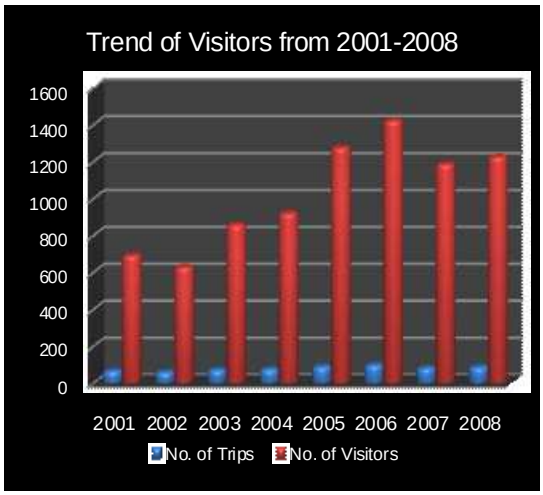
31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.



Tourism and research are the only directs uses allowed in TRNP. No seasonal closure is prescribed by the Board. However, due to weather conditions, tourism operations are conducted only from March to June. The beginning and the end of the diving season is determined by the arrival and departure of the scuba diving vessels that visit the Park each year. In 2008, a total of 1,226 individuals aboard 88 trips visited the Park from 9 March to 17 June. Not all of these visitors were scuba divers. Some, taking part in the World Heritage Expedition Tours conducted by WWF-Philippines, only visited the park for a day of snorkeling.

Of the Fifteen (15) mooring buoys were installed in the Park at the beginning, an additional 3 small buoys were installed by dive boats with permission from the TPAMB. The provision of these tourism facilities is truly a study in collaboration by the various interest groups. However, the system has proven to be of limited efficiency as the concrete sinkers tend to be dragged along the bottom during inclement weather conditions, inadvertently damaging the corals which are the main object of protection. This year, funds were provided by Petron, Inc. to install an embedded mooring system which is expected to be fully functional by next dive season. TMO is planning to install a total of 22 mooring buoys using the Halas system of embedment.

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32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

TRNP is under the jurisdiction of the Department of Environment and Natural Resources (DENR) and the Palawan Council for Sustainable Development (PCSD). It is covered by the TRNP Act of 2009 supplemented by two national statutes, the National Integrated Protected Areas System Act of 1992 under the DENR, and the Strategic Environmental Plan Law for Palawan of 1992 under the PCSD.

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33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Tubbataha Protected Area Management Board chaired by Palawan Governor Abraham Kahlil B. Mitra
Tubbataha Management Office headed by Park Manager Angelique M. Songco
41 Abad Santos Street, Barangay Masipag
Puerto Princesa City 5300
Palawan, Philippines
Telefax: 63 48 434 5759
Email: tmo@tubbatahareef.org

Website: www.tubbatahareef.org

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Aquino, T and VJ Calderon, 2004. Species Inventory of Cetacean Populations in the Waters Surrounding Tubbataha Reefs. TPAMB Report

Campos, W et al. 2007. Investigating Biodiversity Corridors in the Sulu Sea: Distribution and Dispersal of Fish Larvae. CI-Philippines Report. Unpublished.

Dolar, MLL and AC Alcala. 1993. Notes on the ichthyoplankton and marine mammals of the Sulu Sea, Philippines. *Silliman Journal (2).* pp43-57.

http://en.wikipedia.org/wiki/Ecozone

Jensen, A. 2006. Monitoring And Inventory Of The Seabirds And Their Breeding Areas In Tubbataha Reef Marine National Park, Cagayancillo, Palawan, Philippines. April 27 - May 1, 2006

Jensen, A. 2010. **Field Report: Monitoring and Inventory of the Seabirds and their Breeding Areas in Tubbataha Reefs Natural Park and World Heritage Site, May 12- 16, 2010.**

IUCN 2008. 2008 IUCN Red List of Threatened Species. <www.iucnredlist.org>. Downloaded on **16 October 2008**.

Udvardy, M. D. F. (1975). *A classification of the biogeographical provinces of the world.* IUCN Occasional Paper no. 18. Morges, Switzerland: IUCN.

UNEP-WCMC. 24 October, 2008. *UNEP-WCMC Species Database: CITES-Listed Species*

UNEP-WCMC. 25 October, 2008. *CMS Information System* http://quin.unep-wcmc.org/isdb/cms/2005/index.cfm

Villanoy C., *et al.* 2004. *Tubbataha Reef and Sulu Sea Oceanographic Study.* WWF-Philippines Report

Tubbataha Management Office Files

Walker, SPW and NE Palomar-Abesamis. 2006. Status report on the abundance of condrycthyian and pelagic teleost top predators at Tubbataha Reefs Natural Park, Philippines. Unpublished.

ANNEX 1. List of threatened and near threatened species found in Tubbataha Reefs Natural Park as of 2010.

	Fullname	English Name	IUCN Status		CMS	CITES
Cetaceans						
1	*Physeter macrocephalus*	Sperm whale	VU	A1d	I, II	I
Fishes						
2	*Balistes vetula*	Queen triggerfish	VU	A2d		
3	*Cheilinus undulatus*	Humphead wrasse	EN	A2bd+3bd		
4	*Bolbometopon muricatum*	Green humphead parrotfish	VU	A2d		
5	*Cromileptes altivelis*	Humpback grouper	VU	A4cd		
6	*Epinephelus lanceolatus*	Giant grouper	VU	A2d		
7	*Epinephelus malabaricus*	Malabar grouper	NT			
8	*Epinephelus polyphekadion*	Camouflage grouper	NT			
9	*Plectropomus areolatus*	Squaretail coralgrouper	VU	A4d		
10	*Plectropomus laevis*	Blacksaddled coralgrouper	VU	A2d+4d		
11	*Plectropomus leopardus*	Leopard coralgrouper	NT			
Corals						
12	*Acanthastrea brevis*	Closed brain coral	VU	A4ce		
13	*Acanthastrea hemprichii*	Closed brain coral	VU	A4c		
14	*Acanthastrea hillae*	Starry cup coral	NT			
15	*Acropora abrolhosensis*	Staghorn coral	VU	A4cde		
16	*Acropora aculeus*	Dana staghorn coral	VU	A4ce		
17	*Acropora acuminata*	None known	VU	A4ce		
18	*Acropora anthocercis*	Red coral	VU	A4ce		
19	*Acropora aspera*	Chuuk Shaggy Blue Stag'	VU	A4ce		
20	*Acropora austera*	Staghorn coral	NT			
21	*Acropora carduus*	Bottlebrush coral	NT			
22	*Acropora digitifera*	Plate acropora	NT			
23	*Acropora divaricata*	Stony coral	NT			
24	*Acropora donei*	Staghorn coral	VU	A4ce		
25	*Acropora echinata*	Bottlebrush coral	VU	A4cde		
26	*Acropora florida*	Staghorn coral	NT			
27	*Acropora formosa*	Staghorn coral	NT			
28	*Acropora granulosa*	None known	NT			
29	*Acropora horrida*	None known	VU	A4cde		
30	*Acropora humilis*	Finger staghorn coral	NT			
31	*Acropora hyacinthus*	Blue mesa acrpora coral	NT			
32	*Acropora indonesia*	None known	VU	A4ce		
33	*Acropora loripes*	None known	NT			
34	*Acropora lovelli*	Staghorn coral	VU	A4ce		
35	*Acropora lutkeni*	None known	NT			
36	*Acropora millepora*	Blue coral	NT			
37	*Acropora monticulosa*	Staghorn coral	NT			
38	*Acropora nana*	Tri color staghorn	NT			

39	*Acropora nasuta*	Staghorn coral	NT	
40	*Acropora paniculata*	None known	VU	A4ce
41	*Acropora polystoma*	Bushy acropora	VU	A4ce
42	*Acropora secale*	Tri color coral	NT	
43	*Acropora selago*	None known	NT	
44	*Acropora solitaryensis*	None known	VU	A4ce
45	*Acropora speciosa*	Staghorn coral	VU	A4ce
46	*Acropora striata*	None known	VU	A4ce
47	*Acropora tenuis*	None known	NT	
48	*Acropora vaughani*	None known	VU	A4ce
49	*Acropora verweyi*		VU	A4ce
50	*Acropora willisae*	Staghorn coral	VU	A4ce
51	*Alveopora allingi*	Daisy coral	VU	A4cd
52	*Alveopora excelsa*	Net coral	EN	A4c
53	*Alveopora fenestrata*	Club coral	VU	A4c
54	*Alveopora verrilliana*	None known	VU	A4cd
55	*Australomussa rowleyensis*	None known	NT	
56	*Caulastrea echinulata*	Finger coral	VU	A4cd
57	*Caulastrea tumida*	None known	NT	
58	*Cyphastrea agassizi*	Lesser knot coral	VU	A4c
59	*Cyphastrea ocellina*	Lesser knot coral	VU	A4c
60	*Diploastrea heliopora*	None known	NT	
61	*Echinopora ashmorensis*	Hedgehog coral	VU	A4c
62	*Echinopora horrida*	None known	NT	
63	*Echinopora pacificus*	None known	NT	
64	*Euphyllia ancora*	None known	VU	A4cd
65	*Euphyllia cristata*	Hammer or anchor coral	VU	A4cd
66	*Euphyllia divisa*	Frogspawn coral	NT	
67	*Euphyllia glabrescens*	Torch coral	NT	
68	*Favia helianthoides*	Knob coral	NT	
69	*Favia laxa*	Knob coral	NT	
70	*Favia maxima*	Knob coral	NT	
71	*Favia rotundata*	Knob coral	NT	
72	*Favia stelligera*	Knob coral	NT	
73	*Favites abdita*	Larger star coral	NT	
74	*Favites chinensis*	Brain coral favites	NT	
75	*Favites complanata*	Larger star coral	NT	
76	*Favites halicora*	Brain coral	NT	
77	*Favites paraflexuosa*	green crater coral	NT	
78	*Favites russelli*	None known	NT	
79	*Fungia fungites*	Common mushroom coral	NT	
80	*Galaxea astreata*		VU	A4cd
81	*Galaxea fascicularis*	Galaxy coral	NT	
82	*Galaxea paucisepta*	Galaxy coral	NT	
83	*Goniastrea deformis*	Lesser star coral	VU	A4c
84	*Goniastrea favulus*	Lesser star coral	NT	
85	*Goniastrea minuta*	Lesser star coral	NT	

86	*Goniopora lobata*	Stony coral	NT	
87	*Heliofungia actiniformis*	Plate coral	VU	A4cd
88	*Heliopora coerulea*	Blue coral	VU	A4cde
89	*Hydnophora exesa*	Spine coral	NT	
90	*Hydnophora microconos*	Velvet horn coral	NT	
91	*Leptastrea bewickensis*	Bewick coral, crust coral	NT	
92	*Leptoria phrygia*	Least valley coral	NT	
93	*Leptoseris incrustans*	Swelling coral	VU	A4ce
94	*Leptoseris striata*	Porcelain coral	NT	
95	*Leptoseris yabei*	Vase coral	VU	A4ce
96	*Lithophyllon undulatum*	Stone leaf coral	NT	
97	*Lobophyllia flabelliformis*	Lobe cactus coral	VU	A4ce
98	*Lobophyllia pachysepta*	Orange carpet lobo brain coral	NT	
99	*Montastrea annuligera*	Pineapple coral	NT	
100	*Montastrea colemani*	None known	NT	
101	*Montastrea magnistellata*	False knob coral	NT	
102	*Montastrea multipunctata*		VU	A4c
103	*Montastrea salebrosa*		VU	A4c
104	*Montastrea valenciennesi*	Brain coral	NT	
105	*Montipora altasepta*	None known	VU	A4cde
106	*Montipora caliculata*	None known	VU	A4ce
107	*Montipora capitata*	None known	NT	
108	*Montipora cebuensis*	Boody mary	VU	A4ce
109	*Montipora vietnamensis*	Pineapple coral	VU	A4c
110	*Montipora confusa*	None known	NT	
111	*Montipora crassituberculata*	Pore coral	VU	A4c
112	*Montipora efflorescens*	Pore coral	NT	
113	*Montipora foliosa*	Pore coral	NT	
114	*Montipora foveolata*	Pore coral	NT	
115	*Montipora gaimardi*	Pore coral	VU	A4c
116	*Montipora incrassata*	Pitted rice coral	NT	
117	*Montipora mactanensis*	Pore coral	VU	A4c
118	*Montipora palawanensis*	Disc coral	NT	
119	*Montipora peltiformis*	Pore coral	NT	
120	*Montipora samarensis*	None known	VU	A4c
121	*Montipora undata*	Indaho grape	NT	
122	*Montipora venosa*	Sandollar coral	NT	
123	*Oulophyllia bennettae*	Moonstone coral	NT	
124	*Oulophyllia crispa*	Intermediate valleycoral	NT	
125	*Pachyseris gemmae*	Disc coral	NT	
126	*Pachyseris rugosa*	Disc coral	VU	A4cd
127	*Pavona bipartita*	None known	VU	A4c
128	*Pavona cactus*	Potato chip coral	VU	A4cd
129	*Pavona decussata*	Cactus coral	VU	A4c
130	*Pavona minuta*	Leaf coral	NT	
131	*Pavona venosa*	None known	VU	A4c
132	*Pectinia alcicornis*	Antler coral	VU	A4c

133	*Pectinia lactuca*	Lettuce coral	VU	A4cd		
134	*Pectinia paeonia*	Lettuce coral	NT			
135	*Platygyra lamellina*	Closed brain coral	NT			
136	*Platygyra ryukyuensis*	Llesser valley coral	NT			
137	*Plerogyra sinuosa*	Grape coral	NT			
138	*Pocillopora elegans*	Antler coral	VU	A4ce		
139	*Pocillopora eydouxi*	Antler coral	NT			
140	*Podabacia motuporensis*	Bracket coral	NT			
141	*Porites annae*	Boulder coral	NT			
142	*Porites attenuata*	Stony coral	VU	A4cde		
143	*Porites rugosa*	None known	VU	A4cde		
144	*Porites cylindrica*	Hump coral	NT			
145	*Porites deformis*	None known	NT			
146	*Porites densa*	Finger coral	NT			
147	*Porites horizontalata*	Boulder coral	VU	A4cde		
148	*Porites lobata*	Lobe coral	NT			
149	*Porites negrosensis*	Brown lobe coral	NT			
150	*Porites nigrescens*	Boulder coral	VU	A4cde		
151	*Porites ornata*	Stony coral	EN	A4cde		
152	*Psammocora digitata*	Pitted petaloid coral	NT			
153	*Seriatopora aculeata*	Challenger coral	VU	A4c		
154	*Seriatopora caliendrum*	Birdsnest coral	NT			
155	*Stylophora pistillata*	Smooth cauliflower coral	NT			
156	*Symphyllia hassi*	Sinuous cup coral	VU	A4c		
157	*Trachyphyllia geoffroyi*	Open brain coral	NT			
158	*Tubipora musica*	Organ pipe coral	NT			
159	*Turbinaria peltata*	Cup coral	VU	A4cd		
160	*Turbinaria reniformis*	Plate coral	VU	A4c		
161	*Turbinaria stellulata*	Stony coral	VU	A4c		
Gastropods						
162	*Tridacna gigas*	Giant clam	VU	A2cd		II r
Birds						
163	*Fregata andrewsi*	Christmas Island Frigatebird	CR	B2ab(ii,iii,v)		
164	*Egretta eulophotes*	Chinese Egret	VU	C2a(i)	I	
165	*Gorsachius goisagi*	Japanese Night-Heron	EN	C2a(i)		
166	*Numenius arquata*	Eurasian Curlew	NT			
167	*Limosa limosa*	Black-tailed Godwit	NT			
Elasmobranchs						
168	*Rhincodon typus*	Whale shark	VU	A1bd+2d		
169	*Triaenodon obesus*	Whitetip reef shark	NT			
170	*Carcharhinus albimarginatus*	silvertip shark	NT			
171	*Carcharhinus amblyrhynchos*	Grey reef shark	NT			
172	*Carcharhinus longimanus*	Oceanic whitetip shark	VU	A2ad+3d+4ad		

173	*Carcharhinus melanopterus*	Blacktip reef shark	NT	
174	*Galeocerdo cuvier*	Tiger shark	NT	
175	*Stegostoma fasciatum*	leopard (zebra) shark	VU	A2abcd+3cd+4abcd
176	*Sphyrna mokarran*	squat-headed hammerhead shark	EN	A2bd+4bd
177	*Taeniura lymma*	Bluespotted ribbontail ray	NT	
178	*Nebrius ferrugineus*	tawny nurse shark	VU	A2abcd+3cd+4abcd

Testudines

179	*Chelonia mydas*	Green turtle	EN	A2bd
180	*Eretmochelys imbricata*	Hawksbill turtle	CR	A2bd

Annex 2. Indicative population development and trend (in %) based on minimum counts of breeding adult seabirds of North and South Islets, April – May 1981- 2006. *Source: Kennedy 1982, Heegård and Jensen 1992, Manamtam 1996 and WWF Philippines and TMO 1997 – 2006 (unpublished). Baseline year is underlined.*

Species/ Numbers	1981	1995	1997	2000	2002	2004	2005	2006	Trend (in %)
Masked Booby (*Sula dactylatra*)	150	0	0	0	0	0	0	0	Extirpated app. 1992
Red-footed Booby (*Sula sula*)	+ ?	0	0	0	26	1,485	1,783	1,826	+ 6,923
Brown Booby (*Sula leucogaster*)	3,760	1,500	1,750	757	422	618	1,000	630	- 83.2
Great Frigatebird (*Fregata minor*)	0	0	0	0	1) 38	3	21	11	Not breeding since 2003
Great Crested Tern (*Sterna bergii*)	2,260	200	2) 15	2,300	3,600	2,845	1,793	1,850	- 18.2
Sooty Tern (*Sterna fuscata*)	5,070	900	3,750	3,450	2,100	2) 1,200	3,502	3) 1,700	- 66.5
Brown Noddy (*Anous stolidus*)	1,500	600	175	500	775	335	378	200+	- 86.7
Black Noddy (*Anous minutus worcestri*)	145	4,000	3,500	4,535	4,850	2) 805	6,400	6,000	+ 4,030
Total	**12,885**	**7,200**	**9, 190**	**11, 542**	**11, 811**	2) **7, 291**	**14,877**	**12,217**	- 5.2

Notes: 1) Breeding population established in 2001 with 8 birds. No evidence of breeding in 2004, 2005 and 2006.
The figures represent adult birds present at North Islet.
2) Count figures are not representative.
3) The figure may only represent the first arriving portion of the breeding population