

**UNITED  
NATIONS**

**EP**



**United  
Nations  
Environment  
Program**



Original: ENGLISH

---

*Proposed areas for inclusion in the SPAW list*  
**ANNOTATED FORMAT FOR PRESENTATION REPORT FOR:**

**Tobago Cays Marine Park  
Saint Vincent and the Grenadines**

Date when making the proposal : *9/30/14*

**CRITERIA SATISFIED :**

**Ecological criteria**

Conservation value  
Rarity  
Naturalness  
Critical habitats  
Diversity  
Resilience

**Cultural and socio-economic criterias**

Productivity  
Socio-economic benefits

**Area name: Tobago Cays Marine Park**  
Country: Saint Vincent and the Grenadines

**Contacts**

**Focal Point** Last name: SAINT VINCENT  
First name: Focal point  
Position: Focal point  
Email: focal\_point@stvincent.com  
Phone: 002589748512

**Manager** Last name: WILLIAMS  
First name: Kenneth  
Position: Manager  
Email: kenawillo@hotmail.com  
Phone: 007844858191

# **SUMMARY**

Chapter 1 - IDENTIFICATION  
Chapter 2 - EXECUTIVE SUMMARY  
Chapter 3 - SITE DESCRIPTION  
Chapter 4 - ECOLOGICAL CRITERIA  
Chapter 5 - CULTURAL AND SOCIO-ECONOMIC CRITERIA  
Chapter 6 - MANAGEMENT  
Chapter 7 - MONITORING AND EVALUATION  
Chapter 8 - STAKEHOLDERS  
Chapter 9 - IMPLEMENTATION MECHANISM  
Chapter 10 - OTHER RELEVANT INFORMATION

# **ANNEXED DOCUMENTS**

Baldwin Mahon 2011  
Comley Summary Report 2002  
Deschamps, Desrochers, Klomp - Rapid Assessment 2003  
Ecoengineering OPAAL Report 2007  
Espeut OECS Report 2006  
Gill - Reefix 2010  
National Parks System Plan  
Simmons and Mcconney 2006  
TCMP Management Plan 2007-2009  
TCMP Map 2  
TCMP Strategic Plan 2013-2015  
TCMP Zoning Map  
Tobago Cays – SPAW application V7  
Turtle Survey 2011  
Turtle Survey 2012  
Wildlife Act 1987

# Chapter 1. IDENTIFICATION

## **a - Country:**

Saint Vincent and the Grenadines

## **b - Name of the area:**

Tobago Cays Marine Park

## **c - Administrative region:**

Southern Grenadines

## **d - Date of establishment:**

12/23/97

## **e - If different, date of legal declaration:**

not specified

## **f - Geographic location**

*Longitude X:* 12.6375

*Latitude Y:* -61.3625

## **g - Size:**

66 sq. km

## **h - Contacts**

*Contact address:* Clifton Union Island St. Vincent & the Grenadines

*Website:* [www.tobagocays.org](http://www.tobagocays.org)

*Email address:* [kenawillo@hotmail.com](mailto:kenawillo@hotmail.com)

## **i - Marine ecoregion**

64. Eastern Caribbean

## **Comment, optional**

The cays were designated a conservation area under Fisheries Regulations in 1987, but the Marine Park was only created in 1997.

This form is being completed by Nicholas Harris of the SVG National Parks Authority in collaboration with the TCMP. Please contact nicholasharris@outlook.com

## **Chapter 2. EXECUTIVE SUMMARY**

**Present briefly the proposed area and its principal characteristics, and specify the objectives that motivated its creation :**

The Tobago Cays are of great ecological, social, cultural and economic importance to St Vincent and the Grenadines and Grenada. The Tobago Cays Marine Park (TCMP) comprises of five small uninhabited cays, and one larger inhabited island, located in the Southern Grenadines. The area is stunningly beautiful, with pure white sand, crystal clear waters, plentiful coral reefs, and rich biodiversity. Four of the cays - Petit Rameau, Petit Bateau, Jamesby and Baradal – lie within a semi-circular reef, known as Horseshoe Reef, while the fifth cay (Petit Tabac) lies just outside the reef. Mayreau is a larger island to the west of the cays, inhabited by about 270 people.

The Tobago Cays were designated a conservation area in 1987 (under Fisheries Regulations), but the Tobago Cays Marine Park was not created until late 1997. The cays are surrounded by fringing and bank-barrier coral reefs, which are important for marine biodiversity conservation. There are sea grass beds within the cays which are important feeding groups for threatened turtles. Mayreau has patches of endangered mangrove ecosystem, and the islands and cays are host to many protected animal and bird species.

The area has long been a popular spot for tourists including yachts, divers, cruise ships and day trippers. Over 80% of yachts visiting the Grenadines visit the TCMP. The area was previously used as a fishing spot by locals, and protection of the area is likely to have benefited fishers by providing a safe breeding ground for fish. Tourism is central to the economies of the Southern Grenadines (including Union Island, Mayreau and Canouan) and the TCMP is a key tourism draw card.

**Explain why the proposed area should be proposed for inclusion in the SPAW list**

The Tobago Cays Marine Park (TCMP) should be included in the SPAW list because it contains very special ecological and socio-economic values, including populations of threatened marine and terrestrial species and important habitats.

The TCMP is an area of exceptional biodiversity and high conservation value. Much of this is due to its unique geology and topography, creating conditions for large coral reefs and sea grass beds. It contains many fringing coral reefs as well as the longest bank-barrier reef in the Southern Grenadines (Horseshoe Reef). These reefs are home to many marine species including many threatened species: Green, Hawksbill and Leatherback Turtles, Queen Conch, Caribbean Spiny lobster, and 20 species of threatened corals, including the critically endangered Boulder Star, Staghorn and Elkhorn corals. There are also many protected terrestrial species within the TCMP including the Brown Pelican, Brindled Tern, Iguana, and many migratory birds. The TCMP also contains mangroves and wetland ecosystems, which are becoming increasingly rare in the Caribbean. The TCMP is uninhabited and is relatively undisturbed by human activity, although there are threats and impacts from increased tourism.

The TCMP is crucial to the economy of the Southern Grenadines. It is one of the most popular tourism sites in the Lesser Antilles with over 50,000 visitors annually. The economy of the surrounding islands is heavily dependent on tourism through hospitality and accommodation, vending, tours, diving, cruising, transport and construction. Fishing is another major sector of the

Southern Grenadines economy and the TCMP provides an important breeding ground for many commercial species, and contributes to the health of broader marine biodiversity.

**According to you, to which Criteria it conforms (Guidelines and Criteria B Paragraph 2)**

Conservation value

Rarity

Naturalness

Critical habitats

Diversity

Resilience

**Cultural and socio-economic criterias**

Productivity

Socio-economic benefits

## **Chapter 3. SITE DESCRIPTION**

### **a - General features of the site**

**Terrestrial surface under sovereignty, excluding wetlands:**

*5 sq. km*

**Wetland surface:**

*1 ha*

**Marine surface:**

*60 sq. km*

**Global comment for the 3 previous fields (optional):**

These are estimate, there are are no exact figures.

### **b - Physical features**

**Brief description of the main physical characteristics in the area:**

The TCMP includes the four main islands of the cays (Petit Rameau, Petit Bateau, Jamesby and Baradal), Petit Tabac to the east and the larger island of Mayreau to the west. Three smaller islands are also found in the north of the park - Catholic Island, Jondall and Mayreau Baleine. The park includes the 4 km long Horseshoe Reef (the largest in the Southern Grenadines), Mayreau Gardens, World's End and Egg reefs. The Horseshoe reef provides vital protection from incoming wave action from the open Atlantic and is the major reef complex within the Tobago Cays. The bank-barrier and fringing reefs of the Tobago Cays are dominated by the branching Elkhorn coral (*Acropora palmata*) in shallow water and by various head corals in the deeper fore-reef zones. All of the three major marine ecosystems are present within the Tobago Cays. Mangroves are located on the eastern side of Petit Rameau and large areas of seagrass beds lie in the centre lagoon sheltered

by bank-barrier reefs to the east.

### **Geology:**

The Grenadines are geologically older than St. Vincent and are situated on an extensive shallow bank of volcanic origin – known as the southern Lesser Antilles arc platform (SLAAP). The SLAAP is a product of Miocene uplift (23–16 Ma) and characterized by Eocene to Pliocene extrusive to intrusive igneous rocks along with sedimentary rocks such as limestone, marl, and chert, and epiclastic arc-derived volcanoclastic units composed of mudstone, sandstone, and conglomerate. The islands are comprised of a variety of volcanic and sedimentary rocks. The area is an active subduction zone, and lies along the interface of the Caribbean and South American Tectonic plates. The shallow bank of the Grenadines extends from St Vincent to Grenada, and has a natural boundaries of the Tobago Trough to the east and the Grenada Trough to the west, where the depth increases rapidly. The shallow bank creates ideal conditions for the formation of productive seagrass beds, mangroves and coral reefs.

### **Topography:**

The cays are very flat - Mayreau is the largest island within the park with a highest point of 99m above sea level.

### **Bathymetry:**

The TCMP lie on the shallow Grenadines shelf which extends up to three times further to the east of the Grenadines than to the west. This shelf is not uniformly shallow, but is marked by a ridge on its eastern margin of some relic reef system. The wide shallow shelf is conducive to the formation of many coral reefs, and bottom slopes away rapidly after the 50m depth contour. The Tobago Cays lies in shallow water, conducive to reef formation.

### **Hydrodynamics:**

The dominant ocean currents in the vicinity of St. Vincent and the Grenadines flow from the east-southeast. Some upwelling of deeper ocean waters is thought to exist along the eastern part of the insular shelf. Tides throughout the islands are semi-diurnal. There is a predominant current flow from east to west of up to 3 knots, which brings seasonal influxes of surface fresh water from the Amazon and Orinoco estuaries. This prevailing flow is reversed by a weaker, shorter duration west to east flow every day. Localised currents and topography significantly affect the tidal stream. Currents tend to suppress the eastgoing stream and enhance the west-going stream, while narrow channels strengthen the west-going streams. Due to the prevailing north easterly winds, the sea often breaks at depths of less than 8 m on the eastern side of the island chain. Strong tidal currents exist in the TCMP – for example tidal channels bisect areas of harder substrate within the Mayreau Gardens reef, and the strong currents result in high biodiversity along the channels.

### **Volcanic formations:**

Geologically, the area lies along the interface of the Caribbean and South American Tectonic plates on the southern Lesser Antilles arc platform (SLAAP). The area is an active subduction zone with undersea volcanoes and seismic activity. Kick'em Jenny is an undersea volcano north of Grenada, and there is also another less active submarine named Kick'em Jack in the area. These volcanoes are important as their explosion may result in the creation of new land masses, and new marine life has been found by Northern Oceanic and Atmospheric Association in their vicinity.

### Sand dunes:

There are very small sand dunes on some of the islands, but no major areas.

### Underwater formations:

The Tobago Cays is renowned for its extensive coral reefs, including Horseshoe reef the longest bank-barrier reef in the Southern Grenadines (4 km long). Other major reefs include Egg, World’s End and Mayreau Gardens. There are also extensive fringing reef around the cays and islands. Additionally there are areas of sea grass beds which support endangered turtle populations.

## c - Biological features

### Habitats

**Brief description of dominant and particular habitats (marine and terrestrial)\*: List here the habitats and ecosystems that are representative and/or of importance for the WCR (i.e. mangroves, coral reefs, etc):**

Most of the TCMP is marine, with only around 5% terrestrial. There are small areas of wetland and mangrove forests, but most terrestrial ecosystems are beach or dry forest. Within the marine areas there are large coral reefs, both fringing and bank-barrier, as well as a areas of seagrass beds. The marine ecosystems provide habitat for a wide variety of marine life including turtles, conch, sea eggs, occasional large fish (such as sharks, jacks and barracuda) and many smaller and juvenile reef fish. Major corals include Montastrea, Porites, Acropora, Millepora and Siderastrea species.

### Detail for each habitat/ecosystem the area it covers:

<i>Marine / coastal ecosystem categories</i> <b>Detail for each habitat / ecosystem the area covers</b>	Size (estimate)		Description and comments
	unit	Area covered	
<i>Mangroves</i>			
Red Mangrove forest	ha	4	There is one small patches of Red mangroves ( <i>Rhizophora mangle</i> ) in Petit Rameau.
<i>Coral reefs</i>			
All coral reefs	ha	1336	Surrounding the Tobago Cays are several shallow fringing reefs around the islands, and a major bank-barrier reef known as Horseshoe Reef. Other major reefs in the park include World’s End Reef, Egg Reef and Mayreau Gardens. The fringing reefs around Mayreau and the Mayreau Gardens reef are considered to be the most biodiverse and healthy, with Horseshoe Reef and the reef around Petit Tabac being the next richest. Finally, the World’s End and Egg



			reef, as well as the other fringing reefs are considered to be the most degraded and least diverse in the park. The common corals on the reefs are Montastrea, Porites, Acropora, Millepora and Siderastrea species, as well as patches of soft corals such as Gorgonians (Sea Fans) and sponges. Large fish, such as barracuda and jacks, are occasionally found in the park, although most of the fish species are small. Algae and disease are prominent across all reefs and affect coral health. Surveys in 2007 concluded that most reefs were dominated by dead coral rubble and had live coral cover between 5% and 30%, and all reefs are considered to be in decline (OPAAL survey). The area estimate also includes estimates of the deep reef in the TCMP, however there is very little information about its composition, structure or biodiversity values
<i>Sea grass beds</i>			
Seagrass beds	ha	365	Most sea grass beds lie within the shallow ‘lagoon’ south of Baradal in the centre of the cays, although there are tiny patches of sea grass near the Horseshoe back reef. The main species of seagrass are Thalassia and Syringodium, with small colonies of loggerhead sponges (Spheciospongia verparium), various soft corals and small colonies of Porites and Siderastrea. The sea grass beds support several species of juvenile fish, green turtles (Chelonia mydas), starfish (Oreaster reticulates), conchs (Strombus gigas) and sea eggs (Tripneustes ventricosus), however there are also significant areas of algae.
<i>Sand cover</i>			
Beaches	ha	9	There are small beaches on all of the cays, and on certain areas in Mayreau.
Terrestrial ecosystems	Size (estimate)		
	unit	Area covered	
<i>Forest</i>			
Coastal and Riparian Forest	sq.km	166	Mostly dry forest, mainly on Mayreau.
<i>Wetlands</i>			
Salt Pond	sq.km	5	The salt pond in Mayreau is the only wetland in the TCMP.

## Flora

### Brief description of the main plant assemblages significant or particular in the area:

The terrestrial flora consists mainly of dry forest, grasses and shrubs, including species such as coconut, agave, cactus, coccoloba sp. and diospyros sp. There is one patche of Red Mangroves (Rhizophora mangle) on Petit Rameau– this species is rare within SVG (although listed as *least concern* under the IUCN Red List). There are some Melocactus Broadwayi on the cays, which are listed as *near threatened* under the IUCN Red List. Underwater, there are areas of seagrass beds which contain two listed species under SPAW Annex 3 – Manatee Grass (Syringodium filiforme) and Turtle Grass (Thalassia testudinum).

**List of plant species within the site that are in SPAW Annex I**

List of species in SPAW annex I	Estimate of population size	Comments if any
---------------------------------	-----------------------------	-----------------

**List of plant species within the site that are in SPAW Annex III**

List of species in SPAW annex III	Estimate of population size	Comments if any
Cymodoceaceae: Syringodium filiforme	Area covered: 232.5 ha	Manatee grass shares the same habitat as Turtle grass, and is generally found mixed in with the latter. Healthy sea grass beds around Baradal were dominated by Thalassia and Syringodium, with dispersed small colonies of Porites, Acropora, Siderastrea, Manicina and sponges. Within the sea grasses was an abundance of Dictyota (algae). There are no estimates of the number or area of Manatee Grass – so an range has been given based on the total seagrass area estimate.
Hydrocharitaceae: Thalassia testudinum	Area covered: 232.5 ha	A very abundant sea grass to sandy bottoms and areas of mixed sand and coral rubble. Isolated areas of small patches of sparse Thalassia were noted on the Horseshoe back reef. Sea grass beds around Baradal were dominated by Thalassia and Syringodium, with dispersed small colonies of Porites, Acropora, Siderastrea, Manicina and sponges. Within the sea grasses was an abundance of Dictyota (algae). There are no estimates of the number or area of Manatee Grass – so an range has been given based on the total seagrass area estimate.
Rhizophoraceae: Rhizophora mangle	Area covered: 4 ha	This species can reach heights of 80' ft under favourable conditions, but is often little more than a shrub. Locally it is one of the most important of the species constituting mangrove swamps, occurring where the salinity of seawater is diluted by freshwater. There is a mud flat grown up with Rhizophora mangle on the southern side of Petit Rameau.

**List of plant species within the site that are in the IUCN Red List. UICN red list :**

<http://www.iucnredlist.org/apps/redlist/search> You will specify the IUCN Status (CR:critically endangered; EN:endangered; VU:vulnerable).

List of species in IUCN red list that are present in your site	IUCN Status	Estimate of population size	Comments if any
--	-------------	-----------------------------	-----------------

**List of plant species within the site that are in the national list of protected species**

List of species in the national list of protected species that are present in your site	Estimate of population size	Comments if any
---	-----------------------------	-----------------

**Fauna**

**Brief descript<sup>o</sup> of the main fauna populations and/or those of particular importance present (resident or migratory) in the area:**

The TCMP contains a number of important threatened species, both terrestrial and marine. There

are populations of Brown Pelican, Bridled Terns and Iguanas in the park, and there are many migratory birds which pass through the area. The beaches and sea grass beds are feeding and nesting grounds for Green Turtles, Hawksbill Turtles and Leatherback Turtles. The reefs are home to many species of listed coral from the Milleporidae, Alcyonacea and Scleractinia families, there are also populations of Queen Conch and Caribbean Spiny lobster in the park.

**List of animal species within the site that are in SPAW Annex II**

List of species in SPAW annex II	Estimate of population size	Comments if any
Reptiles: Chelonia mydas	Number of individuals: 67 - Unit used (individuals, spots, etc): not given	Green Turtles are the most common in the park and breed and feed within the sea grass beds, especially along the coastline of Baradal. The Green Turtle is the largest hard-shelled sea turtle - adults of this species commonly reach 100 cm in carapace length and 150 kg in mass. Surveys from 2010 – 2012 captured and tagged between 49 and 85 turtles, although there is not enough data to determine the long term population trend.
Reptiles: Eretmochelys imbricata	Number of individuals: 4 - Unit used (individuals, spots, etc): not given	Hawksbill Turtles nest and feed within the park, although they are less numerous than Green Turtles. Surveys between 2010-2012 only found 8 total turtles, although they are less easy to locate than Green Turtles.
Reptiles: Dermochelys coriacea	not given	This turtle is the most specialized and unique of all sea turtles. It is the largest, reaching a length of 7 feet and weighing up to one ton with flippers up to 4 feet long. They travel the furthest and are undoubtedly the greatest migrants, traversing thousands of km over the open oceans and fast currents. They nest in tropical waters and yet forage also in cold northern seas. In the TCMP no Leatherback Turtles were recorded during the recent surveys, but there are older sightings, so it may be a rarer visitor to the park.
Birds: Sterna antillarum antillarum	not given	These birds are coastal, occasionally seen singly or in small groups offshore and in the open sea around the TCMP. There are no current population estimates.
Pelecanidae: pelecanus occidentalis	not given	This large bird is seen nesting in the TCMP during February to July but may also nest sporadically for the rest of the year. Plunges for food at the surface and will filter the contents of its bill for its food. There are no population estimates for the TCMP

**List of animal species within the site that are in SPAW Annex III**

List of species in SPAW annex III	Estimate of population size	Comments if any
Hydrozoa: Milleporidae	not given	Blade Fire Coral ( <i>Millepora complanata</i> ) and Branching Fire Coral ( <i>Millepora alcicornis</i> ) are found across the TCMP. Blade Fire Coral occur in colonies and have thin, upright blades or plates that extend from

		<p>an encrusting base. They inhabit shallow water reef tops, usually in areas with some water movement and most common in areas with constant surge. Surveys identify approximately 4% of corals on Horseshoe Reef, and it was also identified on Petit Bateau reef, and it is likely to be found across all reefs. Branching Fire Coral forms colonies of multiple branching structures, often encrusting and overgrow gorgonian colonies and taking their shape. They inhabit all marine environments and common in depths greater than 30 ft, there are no accurate surveys within TCMP, although they have been identified as present across all reefs.</p>
Anthozoa : Gorgonacea	not given	<p>Species in the Alcyonacea (previously Gorgonacea) order within the TCMP include Common and Purple Sea Fans (<i>Gorgonia flabellum</i> and <i>Gorgonia ventalina</i> respectively) and the Bipinnate Sea Plume (<i>Pseudopterogorgia biplinnata</i>). Sea Fans and Sea Plumes were found across all reefs; Sea Fans were particularly prevalent within Mayreau Gardens. There are no estimates of population or area.</p>
Anthozoa : Scleractinia	not given	<p>There are 15 species of Scleractinia order corals within the TCMP. Elkhorn coral (<i>Acropora palmate</i>) are generally the most dominant species on the fringing and bank-barrier reefs, with deeper reefs are dominated by various head corals. However disease and hurricanes have seriously affected the Elkhorn coral population across the park with many surveys noting large patches of dead or dying coral. Staghorn Coral (<i>Acropora cervicornis</i>) and Fused Staghorn (<i>Acropora proliferata</i>) are found on most reefs, but there are no good population or area estimates. Boulder Star Coral (<i>Montastrea annularis</i>) A very common and often predominant coral species - it is the dominant coral on the Horseshoe reef and is numerous on the Petit Bateau and Mayreau Garden's reefs. Boulder Brain coral (<i>Colpophyllia natans</i>). Generally inhabiting reef tops and seaward reef slopes. Colonies are found across the TCMP, particularly on the Horseshoe reef. Starlet Coral (<i>Siderastrea siderea</i>), Lesser Starlet Coral (<i>Siderastrea radians</i>). Both species are one of the most common corals across the TCMP. <i>S. siderea</i> tends to inhabit shallow to moderate reefs, generally in protected areas of shallow reefs and all deep reef environments. <i>S. radians</i> usually inhabit areas shallower than <i>S. siderea</i>, in shallow reefs and back reefs. Grooved Brain Coral (<i>Diploria labyrinthiformis</i>). This is a common coral across the TCMP. These inhabit seaward slope of reefs, most common between 15-50 ft. Finger Coral (<i>Porites porites</i>), Thin Finger Coral (<i>Porites divaricate</i>), Branched Finger coral (<i>Porites furcate</i>), Mustard hill coral (<i>Porites astreoides</i>) – all four corals are common across the reefs. A survey in 2003 estimated that Finger Coral and Mustard hill coral covering around 46% of the Horseshoe reef. Little is known about the rest of the corals, all are found across the TCMP, but there are no population or area estimates, and little other information. Yellow Pencil coral (<i>Madracis mirabilis/ Madracis auretenra</i>) Colonies form densely packed clumps of small pencil-sized branches with blunt tips. Common to the Caribbean and generally inhabit deeper, clear water, outer reefs. Lamarck's Sheet Coral (<i>Agaricia lamarcki</i>) A common Caribbean species, this coral inhabits sloping reef faces and walls. It is one of the most abundant coral on deep reefs and walls. Colonies form large, thin sheets or flattened plates that often overlap. Colonies' undersides have no polyps and are quite smooth. Star coral (<i>Madracis pharensis</i>) Thinly encrusting coral, spreading in long ribbons or may form numerous small knobs. This coral</p>

		grows in dark areas and most common in water deeper than 60ft. Ten-ray Star coral ( <i>Madracis decactis</i> ) Usually thinly encrusting forming small colonies with tightly bunched lobes and knobs. Inhabit most reef environments and form irregular encrustations in shaded, protected areas of the reef. Symmetrical Brain Coral ( <i>Diploria strigosa</i> ) An abundant reef coral, they inhabit many marine environments. Most commonly between 20-40 ft. Colonies form contoured plated with long valleys, often connected and convoluted. Green to brown, yellow-brown and bluish gray with valleys often brighter or of contrasting colour. Rose Coral ( <i>Manicina areolata</i> ) Common to coral reefs with colonies that grow in two patterns. The more common elliptical colonies and the less common hemispherical heads. Both patterns exhibit different habitats and behaviours. Golfball Coral ( <i>Favia fragum</i> ) A common coral, which inhabits shallow reefs and rocky substrates. They usually form hemispherical domes and occasionally encrusting. Easily distinguished from similar Elliptical and star corals by colonies' smaller size and less protrusion of corallites. Most of this information is from OPAAL Eco Report No. 06/2007
Molluscs: Strombus gigas	not given	Queen Conch ( <i>Strombus gigas</i> ) are found within the TCMP, especially within the seagrass beds.
Crustaceans: Panulirus argus	not given	Caribbean Spiny lobster ( <i>Panulirus argus</i> ) is found within the TCMP
Reptiles: Iguana iguana	not given	Green Iguana ( <i>iguana iguana</i> ). These species are abundant on Petit Rameau and Baradal and present on most of the other cays.

**List of animal species within the site that are in the IUCN Red List. IUCN Red List :**  
<http://www.iucnredlist.org/apps/redlist/search> You will specify the IUCN Status (CR:critically endangered; EN:endangered; VU:vulnerable).

List of species in IUCN red list that are present in your site	IUCN Status	Estimate of population size	Comments if any
Agaricia: lamarck	VU - Vulnerable	not given	
Chelonia: mydas	EN - Endangered	Number of individuals: 67 - Unit used (individuals, spots, etc): not given	See previous comments on the Green Turtle
Eretmochelys : imbricate	CR - Critically endangered	not given	See previous comments
Dermochelys: coriacea	VU - Vulnerable	not given	See previous comments
Acropora : cervicornis	CR - Critically endangered	not given	
Acropora : palmata	CR - Critically endangered	not given	
Montastrea : annularis	EN - Endangered	not given	

### List of animal species within the site that are in the national list of protected species

List of species in the national list of protected species that are present in your site	Estimate of population size	Comments if any
Iguana: Iguana	not given	Protected at the national level under The Wildlife Protection Act, 1987. There is a hunting season.
Zenaida : aurita	not given	Partially Protected Species under the Wildlife Act 1987
Larus: all species	not given	All species of sea gulls are Protected Species under the Wildlife Act 1987
Fregata: all species	not given	All frigate birds are Protected Species under the Wildlife Act 1987
Pelecanus: occidentalis	not given	Protected Species under the Wildlife Act 1987
Sula: leucogaster	not given	Protected Species under the Wildlife Act 1987
Sterna : antillarum	not given	Protected Species under the Wildlife Act 1987
Sterna : fuscata	not given	Protected Species under the Wildlife Act 1987
Sterna : hirundo	not given	Protected Species under the Wildlife Act 1987
Birds: most	not given	Many bird species are protected under the Wildlife Act 1987. Many of them are listed as Protected with a Hunting Season.

### d - Human population and current activities

#### Inhabitants inside the area or in the zone of potential direct impact on the protected area:

	Inside the area		In the zone of potential direct impact	
	Permanent	Seasonal	Permanent	Seasonal
Inhabitants	271	not given	not given	not given

#### Comments about the previous table:

Mayreau has a population of 271, none of the other islands have any residents.

#### Description of population, current human uses and development:

There is a permanent population of 271 people in Mayreau, along with tourist accommodation. The park gets around 45,000 visitors per year, mainly from yachts, cruise ships or day trips. Locals vendors travel to the park daily. January, February and March are the most popular months – around 6000-7000 visitors per month.

Activities	Current human uses	Possible development	Description / comments, if any
Tourism	very	stable	Tourism is the main activity within TCMP. Around 8000

	important		yachts visit the cays each year, which includes many charter yachts, and day trips. Snorkelling and scuba diving is a popular activity within the park, there are four local dive shops in the surrounding islands – the most popular sites for scuba diving are Mayreau Gardens, Horseshoe Reef and World’s End Reef. Cruise ships visit the park mainly in the high season from November to April. Visitors also use water taxis to visit the cays for a day trip, there are around 40 taxis in Union and 5-10 in Mayreau. There are a number of vendors in the park, selling T-shirts, handicrafts, ice, bread, fresh fish, fruits and vegetables to the visiting yachts. Vendors are restricted to the north beach of Petit Bateau. Wind surfing also occurs in the park. Hotels and restaurants in the surrounding islands are dependent on the park for drawing tourists to the area.
Fishing	limited	stable	Fishing is allowed in the park management zone west of Mayreau, but nowhere else in the park. Occasionally illegal fishers are caught elsewhere in the park. There are around 30 fisherfolk in Union, 11 in Mayreu and 22 in Canouan.
Agriculture	limited	stable	There may be some very small scale agriculture on Mayreau, but nowhere else in the park
Industry	absent	stable	
Forestry	absent	stable	
Others	not specified	not specified	

## e - Other relevant features

### Archaeological feature:

Some small excavations on Union, but none in the TCMP

## f - Impacts and threats affecting the area

### Impacts and threats *within* the area

Impact and threats	level	Evolution In the short term	Evolution In the long term	Species affected	Habitats affected	Description / comments
Exploitation of natural resources: Fishing	limited	unknown	unknown			There is very limited fishing within the TCMP – it is only permitted in the management zone to the west of Mayreau, far from the centre of the park. Occasionally

						people are caught illegally fishing within the area, it is not known how large illegal fishing is, but it is likely to be limited. At Saline Bay (Mayreau), 0.2 tons of fish is landed each year (although this is quite an old figure).
Exploitation of natural resources: Agriculture	limited	unknown	unknown			There is very small scale agriculture on Mayreau, however this is unlikely to increase, given the topography, limited water sources and fragile soils.
Exploitation of natural resources: Tourism	very important	increase	unknown	All listed coral and fish species are threatened by both physical damage to coral (boats, snorkelers, anchors) and water pollution. All listed fish species as well as lobster ( <i>Panulirus argus</i> ) are threatened by illegal fishing. Water pollution and physical damage are the two main threats to the biodiversity of the park. Surveys have shown that many reefs are in decline and are threatened by algal growth and disease, both	As mentioned above, all coral reefs are threatened by a variety of impacts – water pollution and physical damage being the most serious. Sea grass beds are threatened by anchor damage, as well as pollution. Terrestrial habitats (mangroves, beaches, wetlands) may be threatened by waste dumping, overcrowding, fires, physical damage from hiking and proposed tourism development.	Tourism is a significant threat to the biodiversity of the TCMP. There are many tourist activities which have an impact: <ul style="list-style-type: none"> <li>•water pollution (discussed more in the pollution section)</li> <li>•physical damage to the reef from snorkelling, diving, paragliding, boats and anchors</li> <li>•turtle disturbance</li> <li>•illegal fishing</li> <li>•dumping and fires on beaches</li> <li>•purchasing endangered merchandise</li> <li>•tourist development on Mayreau</li> </ul> A large amount of tourists visit the park each year, there are often up to 100 yachts moored in the park in the high season, although the carrying capacity is estimated at only 50 yachts. Without some consideration of overcrowding, many of these impacts will



			<p>of which can develop as reefs are degraded by pollution and physical damage. All turtle species and Queen Conch (<i>Strombus gigas</i>) are threatened by damage to sea grass beds, disturbance from tourists when resting, feeding and nesting, and hunting by locals for merchandise (although this may not occur in the park).</p>	<p>be more difficult to tackle. The main impact is water pollution from yachts – dumping sewage and other waste into the waters of the park. This causes nutrient overload and eutrophication and algal growth. This is a key threat to the health of the reefs. Physical damage includes anchor damage to reefs and sea grass beds, although the main sea grass bed near Baradal is now off limits to yachts. Unsupervised snorkelers often damage the reef by accidentally or deliberately touching coral, and stirring up sediments. Boats and dinghies may accidentally run into coral reef, and paragliding (and other water sports) may also damage the reef. A popular area for snorkelers is the sea grass beds around Baradal because of the presence of turtles, however snorkelers often disturb turtle feeding and resting. Additionally some snorklers feed turtles, which may encourage them to congregate and make them more vulnerable to predation. The presence of people on the beach may discourage and impact on turtle nesting.</p>
--	--	--	--	---

					<p>There is only one small toilet in the TCMP, and there are no rubbish bins. Visitors are expected to take their rubbish with them, but dumping still occurs. Vendors in the TCMP may also improperly dispose of rubbish. Fires are frequently lit (sometimes to burn waste) and this may impact on terrestrial vegetation. Some vendors sell merchandise made from CITES listed species (such as turtle or conch) – it is not illegal to sell it, but it is illegal to transport it across national borders – although most tourists do not realise this and take the souvenir back home. This encourages further hunting of threatened species. Illegal fishing is also a problem, although the extent is not known. Both locals and tourists have been caught fishing and using spear guns – these are both prohibited in the main areas of the park. There are some proposed tourist developments on Mayreau, including a marina (on the salt pond) and a new resort on the west coast. These developments may impact on threatened wetlands, pollute marine</p>
--	--	--	--	--	---

						resources and clear other terrestrial vegetation.
Exploitation of natural resources: Industry	limited	not specified	not specified			There is no industry in the park
Exploitation of natural resources: Forest products	limited	not specified	not specified			There may be very small use of forest products on Mayreau.
Increased population	limited	increase	increase			The population of Mayreau is growing slowly, but any new tourism development may increase this more rapidly.
Invasive alien species	significant	increase	increase		Lionfish threaten coral reefs through predation of fish species which are essential to keep the reef healthy	There are two alien species within the park – goats and lionfish. The goats still remain on Petit Rameau in small numbers - The introduction of goats to the islands is also believed to have had a negative influence on the vegetation cover and composition. The goats are reportedly still present on Petit Rameau in small numbers, although occasional culling by the police and the rangers has reduced the population. Lionfish have rapidly spread across the Caribbean and are a huge threat to marine fish species. They are present in the park. They are very aggressive predatory fish who eat small and juvenile fish, and they breed and spread very rapidly.
Pollution	very	increase	increase	All coral	Coral reefs	Water pollution is one

	important			species		<p>of the most significant threat to the biodiversity of the TCMP. Within the last 20 years several formal and informal reports have suggested that there has been a slow degradation of the coral reef ecosystems in the Tobago Cays. Water pollution from yachts, mainly sewage, threatens corals reefs because it leads to eutrophication, may disturb breeding and fish movement, and encourages algal growth. The centre of the park, where the most yachts moor, is most threatened by pollution. Surveys have noted high levels of faecal coliforms across the park. Solid waste is often left on the islands by visitors as well, sometimes including faeces since there are inadequate toilet facilities.</p>
Other	significant	unknown	unknown	All coral species, particularly Acropora palmate	Coral reefs	<p>Recent hurricanes and storms have done considerable damage to coral reefs, particularly World's End reef where corals were destroyed due to wave action. White-band disease and black-band disease has impacted coral species, and soft corals have been affected by Aspergiliosis. Elkhorn coral (Acropora palmate) has been especially impacted by</p>

						white-band disease. Damage to reefs by other impacts (especially water pollution) makes them more vulnerable to disease. Bleaching has occurred across Horseshoe reef, caused by ocean warming, perhaps linked to climate change.
--	--	--	--	--	--	---

**Impacts and threats *around* the area**

Impact and threats	Level	Evolution In the short term	Evolution In the long term	Species affected	Habitats affected	Description / comments
Exploitation of natural resources: Fishing	limited	unknown	unknown			Fishing occurs outside the park boundaries, and may be a mix of local fishers and larger boats from other nations (Grenada, Trinidad etc.). Fishing of large species may affect the biodiversity within the park, however it is probable that the park helps fishing stocks outside its boundaries by providing a safe nursery for juvenile fish.
Exploitation of natural resources: Agriculture	limited	not specified	not specified			The park is far away from surrounding islands
Exploitation of natural resources: Tourism	very important	increase	increase			Increase in tourism in the region may bring more tourists to the park, increasing visitor impacts.
Exploitation of natural resources: Industry	limited	not specified	not specified			The park is far away from surrounding islands
Exploitation of natural resources: Forest products	limited	not specified	not specified			The park is far away from surrounding islands, and there is unlikely to be any forestry on Mayreau.
Increased population	limited	increase	unknown			Increase in the population of surrounding islands may

						indirectly place greater pressure on TCMP by hampering efforts to establish carrying capacity limits, and through increased vendor competition.
Invasive alien species	significant	increase	increase			Unless lionfish are controlled across the Southern Grenadines, any efforts within the park will be futile, since the species spreads very quickly.
Pollution	limited	not specified	not specified			Water pollution and sediments from surrounding islands may have a small impact on the park.
Other	limited	not specified	not specified			Any disease in surrounding areas may make it into the park.

## h - Information and knowledge

### Information and knowledge available

In general there is a lack of good, reliable and up-to-date data on the TCMP. There have been a number of studies of the TCMP, although these have been sporadic and ad hoc. There is no central data repository and few internal funds or programs for data collection. There is currently a turtle monitoring program, but like most of the data collection, it is reliant on external expertise and funding. Much of the data available has been generated from one-off surveys, which makes it difficult to track trends over time.

### List of the main publications

Title	Author	Year	Editor / review
Tobago Cays Marine Park 2007-2009 Management Plan	Dr Daniel Hoggarth	2007	TCMP and OECS
A geospatial framework to support ecosystem based management and marine spatial planning for the transboundary grenadine islands	Kimberly Baldwin, Robin Mahon	2011	CHC Indies
Tobago cays marine biodiversity conservation project - Summary report	James Comley	2002	Coral Cay Conservation
OPAAL Project - Opportunities for Sustainable Livelihoods Report	Peter Espeut	2006	OECS
OPAAL Project - Tobago cays site report	Ecoengineering Caribbean Limited	2007	OECS
A rapid assessment of Horseshoe Reef	Deschamps,	2003	Atoll Research

	Desrochers, Klomp		Bulletin
St. Vincent and the Grenadines ReefFix Exercise	D Gill	2010	OECS
Tobago Cays Marine Park: Are the conditions for successful co-management likely to be met?	Bertha Simmons, Patrick Mcconney	2006	CERMES
Strategic Plan For Tobago Cays Marine Park, 2013-2015	Emma Doyle	2012	TCMP and CERMES
Sea Turtle Surveys in the Tobago Cays Marine Park	Doyle and Harvey	2011	WIDECAST
TCMP Zoning Map	TCMP	2010	TCMP
TCMP Basic Map	TCMP	2006	TCMP
Wildlife Act 1987	Government of SVG	1987	Government
Sea Turtle Surveys in the Tobago Cays Marine Park	TCMP	2012	TCMP

**Briefly indicate in the chart if any regular monitoring is performed and for what groups/species**

Species / group monitored (give the scientific name)	Frequency of monitoring (annual / biannual / etc...)	Comments (In particular, you can describe here the monitoring methods that are used)
Turtles	Annual	A two week program which captures and tags turtles, and records statistics about the animal and if it has previously been captured. This program is a partnership with Barbados Sea Turtle Project and experts from The Wider Caribbean Sea Turtle Network

## Chapter 4. ECOLOGICAL CRITERIA

*(Guidelines and Criteria Section B/ Ecological Criteria) Nominated areas must conform to at least one of the eight ecological criteria. Describe how the nominated site satisfies one or more of the following criteria. (Attach in Annex any relevant supporting documents.)*

### Conservation value:

The TCMP contains many species of flora and fauna of high conservation value. It is renowned for its beautiful and diverse marine life, and its extensive coral reefs and sea grass beds. It is home to populations of rare Green, Hawksbill and Leatherback turtles which feed on the sea grass beds and nest on beaches. The extensive coral reefs are home to many rare species of coral from the Milleporidae, Alcyonacea and Scleractinia families, such as Sea Fans, Elkhorn and Staghorn corals, Fire corals, Boulder corals and Brain corals among others. Other rare marine life includes the Queen Conch and the Caribbean Spiny lobster. Sea grass beds are composed of the threatened manatee and turtle grass.

Although most of the cays is marine, there are a few terrestrial species of high conservation value including Red Mangroves, Iguanas, Brown Pelicans and Bridled Terns. There are also a number of migratory birds (listed under the Wildlife Act 1987) which pass through the area including sea gulls, frigate birds, boobies and terns. There is also one small wetland on Mayreau.

**Rarity:**

The Tobago Cays contains many rare species, habitats and ecosystems. Across the Caribbean there has been a severe decline of coral reef cover, now down to 10% of cover. The TCMP contains extensive coral reefs, including Horseshoe Reef, one of the longest bank-barrier reefs in the region. These reefs are composed of at least 20 rare species of coral including the highly threatened Elkhorn and Staghorn corals. It also contains many rare flora and fauna including sea turtles (Green, Hawksbill and Leatherback), Queen Conch, Caribbean Spiny Lobster, many of which live in sea grass beds dominated by the rare Manatee and Turtle grasses. There are many more species which live or pass through the area which are protected under St Vincent law. The preservation of this collection of rare and threatened species is an urgent priority.

**Naturalness:**

Mayreau is the only island within the TCMP that has been settled, the remaining cays are relatively undisturbed by humans. Apart from Mayreau there are no permanent structures within the TCMP (except for one small toilet on Petit Bateau), and most of the islands and reefs retain their natural values and character. The pristine nature of the TCMP is why it is the premier tourism attraction in the Grenadines, additionally, Pirates of the Caribbean was partly filmed on Petit Tabac because of its pristine landscape. While recent impacts from tourism are a serious concern, the park is relatively preserved, and with good management it could quickly regain some of its lost environmental values.

**Critical habitats:**

There are many threaten species within the park and many rare ecosystems. Coral reefs are threatened across the Caribbean and the TCMP contains a wider variety of shallow and deep water reefs which are home to over 20 rare species. These species include rare species of coral from the Milleporidae, Alcyonacea and Scleractinia families, such as Sea Fans, Elkhorn and Staghorn corals, Fire corals, Boulder corals and Brain corals among others. The park is also home to sea grass beds composed of rare Manatee and Turtle grasses, which are a feeding and nesting habitat to populations of rare turtles, and populations of Queen Conch and Caribbean Spiny lobster.

**Diversity:**

The TCMP contains a variety of sea grass beds, unspoilt beaches and uninhabited cay and shallow and deep coral reefs, including the longest bank-barrier reef in the Southern Grenadines. These seascapes and landscape are home to 29 species listed under the SPAW Annexes, as well as more listed under the IUCN Red List and SVG legislation. These species include 20 species of coral, 3 turtle species, Queen Conch, Caribbean Spiny lobster, iguana, Brown Pelicans, Bridled Terns and many migratory birds.

**Resilience:**

The TCMP has high level of resilience because of its rich biodiversity and relatively undisturbed



nature. Horsehoe Reef provides a barrier against Atlantic ocean waves, allowing the fringing reefs and cays to persist and flourish. The park undoubtedly provides a safe haven for marine life such as fish and turtles to breed and grow without threat of hunting. Coral reefs can recover quickly if well protected and undisturbed, they then provide habitat for fish as well as a variety of ecosystem services. The Reefix exercise estimated that the TCMP provides over US\$23 million to the Vincentian economy through fishing and tourism benefits, and that the total ecosystem services it provides amount to US\$141 million. This includes values related to resilience including biodiversity and shoreline protection.

## **Chapter 5. CULTURAL AND SOCIO-ECONOMIC CRITERIA**

*(Guidelines and Criteria Section B / Cultural and Socio-Economic Criteria) Nominated Areas must conform, where applicable, to at least one of the three Cultural and Socio-Economic Criteria. If applicable, describe how the nominated site satisfies one or more of the following three Criteria (Attach in Annex any specific and relevant documents in support of these criteria).*

### **Productivity:**

The TCMP is a key tourism attraction and vital to the economy of the region, and it also contains many valuable natural resources which provide other ecosystem services to locals. The stunning natural beauty and recreational values of the TCMP (particularly the unspoilt cays and reefs) are what attracts nearly 50,000 visitors to the park each year. Additionally, the park provides a reserve for marine species, and thus contributes to the health of the surrounding fishing stocks by providing breeding grounds and nurseries to fish. Reefix estimated that the value of fishing and tourism provided by the TCMP was over US\$23 million per year. Factoring in other ecosystem services the estimate was that the TCMP was worth up to US\$141 million. The health of the TCMP is directly and indirectly connected to the health of the Grenadines economy, as well as the economy of Grenada and SVG.

### **Socio-economic benefits:**

The TCMP is crucial for the economy of the Southern Grenadines, although it's effects spread much wider than this. Many local livelihoods are either directly or indirectly connected to the TCMP including hostels, restaurants, vendors, taxis, fishers, sailors etc. The local islands are economically vulnerable, there are few other options past tourism or fishing. Much of the population is poor and any income derived from tourism or fishing is vitally important in their livelihoods. Looking after the TCMP is thus vital to the continued social and economic health of the Southern Grenadines.

# Chapter 6. MANAGEMENT

## **a - Legal and policy framework (attach in Annex a copy of original texts, and indicate, if possible, the IUCN status)**

### **National status of your protected area:**

The Tobago Cays was designated a marine conservation area in 1987, under the Fisheries Act. In December 1997 the TCMP was upgraded to a marine protected area, overseen by a Marine Parks Board. It has also been declared as a wildlife protection area under the Wildlife Act 1987. The forested areas of the park are also listed under the Forestry Act. In December 2006 the Tobago Cays Marine Park was re-launched using a user fee system, where resources users are charged a fee based on the activities that they undertake within the boundaries of the Park. Today, the Tobago Cays Marine Park is the only fully functional marine protected area in St. Vincent and the Grenadines. The express objective of the TCMP is “to protect, conserve and improve the natural resources of the Tobago Cays”. The key legal documents are:

- Marine Parks Act, 1997
- Marine Parks Act (Tobago Cays) Declaration Order, 1997
- Marine Parks Act (Tobago Cays) Regulations, 1998
- Fisheries Act, 1986 (amended 1986 and 1989)
  
- Wildlife Act 1987

### **IUCN status (please tick the appropriate column if you know the IUCN category of your PA):**

unknown

## **b - Management structure, authority**

The TCMP is governed by a Marine Parks Board, which contains 10 members, including a chairperson. The 10 members are comprised of: 2 NGO representative, 1 nominee of the Ministry of National Security, 1 nominee of Ministry of Tourism, Director and Deputy Director of Grenadines Affairs, the Chief Fisheries Officer, the Director of Finance (or nominee), the Solicitor General (or nominee) and the Commander of the Coast Guard (or nominee).

The Park Manager runs the operations of the TCMP, with a number of rangers, wardens, office attendants and administrative assistants. There is a total of 13 staff.

## **c - Functional management body (with the authority and means to implement the framework)**

### **Description of the management authority**

There are 13 staff working at the Marine Park Authority in Union Island. There is a Park Manger and a number of rangers and office staff. The authority is self-financed, it does not rely on government subventions. The authority has its own headquarters, which doubles as a visitors centre.

### **Means to implement the framework**

The estimated annual income and expenditure for the TCMP is around \$630,000 EC. All the income id from fees, mainly charged to tourists. Over half the expenditure is on staff salaries, other expenses include fuel and maintenance.

<b>Description</b>	<b>Quantity</b>
Computers	2
Laptop	3
Printers	2
Desks	8
Chairs	11
Tanks	2
Oversuits	5
Fan	1
Radio	2
Mobile Radio	2
Fridge	1
Laminator	1
Guillotane	1
Transformers	3

Air Conditioners	5
Television	1
Filing Cabinets	4
Boats	3
Tool Kit	1
Book Shelves	1
Display Shelves	7
Safe	1
Storage Shelves	3
Cupboards	2
Aquarium (Incomplete)	1
Clothes Racks	3
Dvd	1
Wii	1
Water Fountain	1
Lionfish Spears	5
Cutlass	1
Wheel Barrow	1
Fire Extinguisher	1
First Aid Kit	2
Bcd	7
Regulator	5
Fins	7
Masks	5

Life Jackets	15 Adults/ 9 Children
Moorings	30

### **d - Objectives (clarify whether prioritized or of equal importance)**

Objective	Top priority	Comment
Enhanced conservation and management of biological diversity.	Yes	
Sustained economic benefits from the use of existing natural resources.	Yes	

### **e - Brief description of management plan (attach in Annex a copy of the plan)**

The TCMP Management Plan 2007-2009 is the current management plan, despite never being approved by Cabinet and 5 years out of date. The plan outlines the legal basis for the TCMP, its history, environmental and social values, as well as impacts and threats. It outlines the mission, goals and objectives of the authority, its organisational framework, administrative and financial arrangements and the structure and role of the board. The management of the park is discussed including the zoning of the park, fees, licences of vendors and tourism operators, and participatory measures. Also it gives guidance on monitoring and evaluation, research, surveillance and enforcement, and the need for education and awareness campaigns.

#### **Management plan - date of publication**

: 1/1/07

#### **Management plan duration**

: 3

#### **Date of Review planned**

: not specified

### **f - Clarify if some species/habitats listed in section III are the subject of more management/recovery/protection measures than others**

#### **Habitats**

Marine / costal / terrestrial ecosystems	Management measures	Protection measures	Recovery measures	Comments/description of measures
Mangroves	no	no	no	

Coral	no	no	no	
Sea grass beds	no	no	no	
Wetlands	no	no	no	
Forests	no	no	no	
Others	no	no	no	

## Flora

Species from SPAW Annex 3 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Cymodoceaceae: Syringodium filiforme	no	no	no	
Hydrocharitaceae: Thalassia testudinum	no	no	no	
Rhizophoraceae: Rhizophora mangle	no	no	no	

## Fauna

Species from SPAW Annex 2 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Reptiles: Chelonia mydas	no	no	no	
Reptiles: Eretmochelys imbricata	no	no	no	
Reptiles: Dermochelys coriacea	no	no	no	
Birds: Sterna antillarum antillarum	no	no	no	
Pelecanidae: pelecanus occidentalis	no	no	no	
Species from SPAW Annex 3 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Hydrozoa: Milleporidae	no	no	no	
Anthozoa : Gorgonacea	no	no	no	
Anthozoa : Scleractinia	no	no	no	
Molluscs: Strombus gigas	no	no	no	
Crustaceans: Panulirus argus	no	no	no	
Reptiles: Iguana iguana	no	no	no	

## g - Describe how the protected area is integrated within the country's larger planning framework (if applicable)

The Tobago Cays is the only Marine Park in St Vincent. It falls under the National Parks and Protected Areas System Plan 2010-2014. This policy outlines the series of protected areas across land and sea, which are managed by a variety of bodies. The TCMP authority has limited involvement in this plan, and operates independently.

## **h - Zoning, if applicable, and the basic regulations applied to the zones (attach in Annex a copy of the zoning map)**

Name	Basic regulation applied to the zone
Protection zone	to provide protection from extractive uses such as fishing while allowing entry and recreational use (excluding fishing) to the waters and islands of the Cays, on payment of the park entry fee.
Buffer zone	To maintain the natural appearance of the coastline of Mayreau on the eastern side of the island facing the Tobago Cays.
Management zone	To provide for relatively unrestricted activities of the residents of Mayreau and visitors to that island, while providing the option to apply local restrictions in future as needed.
Anchoring zones and mooring buoys	To provide safe and secure options for anchoring and mooring of different sizes of vessels while protecting the park's marine resources from anchor damage.
Windsurfing zone	To provide a location for wind surfing within the park, that is close to the Cays, but clearly separate from the anchoring zones and reef areas.
Conservation exclusion zones	One for sea grass/turtles and one for sea birds. Objective (1): To provide protection to species of special concern (e.g. vulnerable, threatened, endangered or over-exploited species of high commercial value) and to any habitats which are critical to the survival of such species (e.g. breeding, nesting, nursery, feeding and roosting grounds). Objective (2): To set aside some parts of the park and restrict any human use, access or influence and thereby provide 'control' locations to estimate the effects of use in other open areas and provide guidance for management.

## **i - Enforcement measures and policies**

Article 6.(3) of the Marine Parks Act (No. 9 of 1997) allows for a fine not exceeding \$5,000 and/or a term of imprisonment not exceeding one year for any person committing the following offences while in a marine park:

- fishing in the sea forming part of the marine park;
- removing any object from the marine park;
- removing or damaging any facility or equipment including buoys;
- damaging or impairing the growth of any flora or fauna;
- by any negligent act or omission damaging the substrata or causing pollution of the air or the sea;
- carrying on any commercial activities except in an area designated for this purpose; or
- any other act which is prohibited by the Act or Regulations.

In cases where equipment has been removed or damaged, the culprit shall also be liable for its replacement or repair. According to Article 6.(4) of the Regulations, any person in breach of the rules against commercial activities shall in addition to the prescribed penalty be liable to have their articles of trade confiscated. Article 21 of the Marine Parks (Tobago Cays) Regulations (No. 26. of 1998) further allows for the same fine or imprisonment for any person committing the following offences:

- anchoring, mooring, diving or filming in the TCMP prior to paying the prescribed fees;

- anchoring or mooring a vessel outside an area designated for this purpose;
- carrying out or participating in any activity that could endanger the health or safety of a member of the public;
- keeping or rearing any animals;
- erecting any camp or engaging in camping activities; or
- exceeding a speed of 10 knots per hour while in charge of a vessel within 240 yards or an anchorage or mooring site.

### Authorised Officers

The Marine Parks Board is empowered under Article 5 of the Marine Parks (Tobago Cays) Regulations (No. 26. of 1998) to appoint ‘officers’ for the purpose of enforcing the regulations relating to marine parks.

Section 20 of the 1998 Regulations describes the powers of arrest of the park’s authorised officers. Where a person who commits, attempts to commit or is suspected of committing any offence against the park regulations (as listed in Section 22.1), an authorised officer may demand that the person stops committing the offence and require the person to give his or her name and address. If the person refuses to stop, or is suspected of giving a false name and address, the authorised officer may then (and only then) arrest the person without a warrant and deliver him or her to the nearest police station to be charged.

## **j - International status and dates of designation (e.g. Biosphere Reserve, Ramsar Site, Significant Bird Area, etc.)**

International status		Date of designation
Biosphere reserve	no	
Ramsar site	no	
Significant bird area	no	
World heritage site (UNESCO)	no	
Others:	no	

## **k - Site’s contribution to local sustainable development measures or related plans**

not specified

## **l - Available management resources for the area**

Ressources		How many/how much	Comments/description
Human ressources	Permanent staff	13	
	Volunteers		
	Partners		
Physical	Equipments		There is a list of equipment in Chapter 6.



ressources	Infrastructures		MANAGEMENT - Legal framework, management body.
Financial ressources	Present sources of funding	Funded through entry fees and other fees and fines.	The budget changes each year depending on visitor numbers. Over the last 5 years income has been between \$340,000 and \$180,000 USD.
	Sources expected in the future		
	Annual budget (USD)	230000	

**Conclusion Describe how the management framework outlined above is adequate to achieve the ecological and socio-economic objectives that were established for the site (Guidelines and Criteria Section C/V).**

The TCMP has an management plan that is being implemented effectively. The TCMP is self-funded and has a clear management structure. It has dedicated staff and a good amount of equipment and resources. It has good connections with other conservation organisations across the Eastern Caribbean, as demonstrated in the turtle monitoring with WILDCAST. The park has clear zones, and has made good efforts to set out conservation areas to protect biodiversity, while also seeking social and economic benefits. The management framework has excellent management measures for each zone, backed by effective enforcement measures. It has worked closely with local stakeholders and has a good relationship with local NGOs such as SusGren. The National Parks and Protected Areas System Plan 2010-2014 applauded the effective management of the TCMP. The TCMP has recently completed a strategic plan which sets out measures to improve the management effectiveness of the Board, particularly around strategic issues (rather than daily park management), which should result in improved monitoring and evaluation of progress. Overall the TCMP is making good progress towards its overall goal “to protect, conserve and improve the natural resources of the Tobago Cays”.

## **Chapter 7. MONITORING AND EVALUATION**

**In general, describe how the nominated site addresses monitoring and evaluation**

The TCM Management Plan contains a list of indicators to be monitored. These include biophysical indicators (water quality), species-specific actions (turtles) as well a community engagement, staff performance and management effectiveness indicators.

Last year the TCMP developed a Strategic Plan, which set out a clear program of monitoring and evaluation to reinforce and expand the targets identified in the Management Plan. The five priority areas are:

- Visitor security
- Human resources management
- Status or condition of natural resources

- Community relations
- Sustainable financing strategies

**What indicators are used to evaluate management effectiveness and conservation success, and the impact of the management plan on the local communities**

Indicators by category	Comments
<i>Evaluation of management effectiveness</i>	
Monitor numbers of staff employed and their performance against their job descriptions	
Monitor financial information	
Monitor time spent by each staff on different activities	e.g. for patrolling, community liaison, administration etc
Monitor enforcement coverage	
Monitor estimated numbers of rule infringements;	e.g. numbers of bookings (or tickets issued) for offences; and numbers of successful and unsuccessful prosecutions
<i>Evaluation of conservation measures on the status of species populations within and around protected area</i>	
Monitor impacts of human use	e.g. numbers of yachts, divers and other users; levels of poaching; damage to corals by careless divers
Monitor using Reef Check system for key species within park	
Monitor number of turtles observed in the park	
Survey birds, reptiles, vegetation on each island every 3-5 years	
<i>Evaluation of conservation measures on the status of habitats within and around the protected area</i>	
Monitor coral reef abundance, quality and diversity	
<i>Evaluation of conservation measures on the status of ecological processes within and around the protected area</i>	
Monitor levels of pollution or climate change	e.g. using weather data recorded at Union Airport - rainfall, wind, air temperature
Rangers to monitor dumping of garbage inside the park	
Collaborate with Fisheries Division to monitor water quality	
<i>Evaluation of the impact of the management plan on the local communities</i>	
Monitor number of events held for the public, commercial operators resource users etc.	
Monitor level of understanding of human impacts on marine resources	
Monitor incomes or wealth ranks of different stakeholder groups, giving due sensitivity and confidentiality to the	

data, and using methods acceptable and relevant to community members	
Monitor number of visitors, numbers of yacht and cruise liner visits etc	
Monitor visitors' satisfaction of resource status and tourism services using anonymous questionnaires	

## Chapter 8. STAKEHOLDERS

**Describe how the nominated site involves stakeholders and local communities in designation and management, and specify specific coordination measures or mechanisms currently in place**

Stackeholders involvement	Involvement	Description of involvement	Specific coordination measures	Comments (if any)
Institutions	yes	The Marine Park Board is composed of relevant institutions including the Ministry of Tourism, Fisheries Division, Coast Guard, the Ministry of National Security, Ministry of Grenadines Affairs, Director of Finance and the Solicitor General.		
Public	yes	Two local NGOs have board positions. The public is also involved in conservation programs on an ad hoc basis		There have been a number of studies that have undertaken public consultations and surveys – the Grenadines MarSIS ( <a href="http://www.grenadinesmarsis.com/Files_and_Maps.html">http://www.grenadinesmarsis.com/Files_and_Maps.html</a> ) is an excellent example of this. There is also a proposal to include more local groups on the board such as the water taxi organisation.
Decision-makers	yes	The Board contains many powerful decision-makers such as the Solicitor General and the Director of Finance.		

		Additionally the park was relaunched by the Prime Minister, and documents are approved by cabinet, showing high level involvement		
Economic-sectors	yes	The local hotel and tourism industry is represented on the board.		
Local communities	yes	Two local NGOs have board positions. The public is also involved in conservation programs on an ad hoc basis		There have been a number of studies that have undertaken public consultations and surveys – the Grenadines MarSIS ( <a href="http://www.grenadinesmarsis.com/Files_and_Maps.html">http://www.grenadinesmarsis.com/Files_and_Maps.html</a> ) is an excellent example of this.
Others	no			

## Chapter 9. IMPLEMENTATION MECHANISM

**Describe the mechanisms and programmes that are in place in regard to each of the following management tools in the nominated site (fill only the fields that are relevant for your site)**

Management tools	Existing	Mechanisms and programmes in place	Comments (if any)
Public awareness, education, and information dissemination programmes	yes	The Management Plan sets out specific objectives for public engagement: <ul style="list-style-type: none"> <li>• To enhance public awareness of environmental issues and thereby build a national constituency for sound resource management</li> <li>• To contribute to public education in the interpretation of the natural environment</li> </ul> To achieve these objectives the Management Plan sets out a number of actions – these include maintaining the website, producing brochures and providing a useful visitors office. Ad hoc studies have enabled the management to gain insights into public opinion and tailor communication.	
Capacity building of staff and management	no	The TCMP realises the importance of continued training and capacity building efforts for management and staff. Staff are encouraged to attend training and conferences across the region. A recent notable training was the turtle monitoring held by WILDCAST – this is now being repeated each year.	

Research, data storage, and analysis	yes	Due to the iconic status of the marine park, a number of studies have been completed by research institutions in partnership with TCMP. However, these studies are ad hoc and rely on external funding and technical support	
Surveillance and enforcement	yes	Park rangers have the power and training to enforce park rules. Rangers and wardens visit the park daily to collect fees and monitor visitor behaviour and enforce the rules.	
Participation of exterior users	yes	The authority has undertaken communication and participation efforts for the wider local community (see first point)	
Alternative and sustainable livelihoods	yes	The TCMP has a close working relationship with users of the park who make their living from vending, diving, tourism, hospitality, fishing etc. The TCMP has not undertaken its own livelihood initiatives, but supports other sustainable livelihood efforts which complement their conservation goals.	
Adaptative management	yes	The TCMP uses new information and studies to change its management practices, for example beginning turtle surveys and using Reef Check.	

## Chapter 10. OTHER RELEVANT INFORMATION

### Contact addresses

	Name	Position	Contact address	Email address
who is submitting the proposal (national focal point)	SAINT VINCENT Focal point	Focal point		focal_point@stvincent.com
who prepared the report (manager)	WILLIAMS Kenneth	Manager	Clifton Union Island St. Vincent & the Grenadines	kenawillo@hotmail.com

### Date when making the proposal

: 9/30/14

### List of annexed documents

Name	Description	Category	
Baldwin Mahon 2011	A GEOSPATIAL FRAMEWORK TO SUPPORT ECOSYSTEM BASED MANAGEMENT AND MARINE SPATIAL PLANNING FOR THE TRANSBOUNDARY GRENADINE ISLANDS	Others	<a href="#">View</a>
Comley Summary Report 2002	TOBAGO CAYS MARINE BIODIVERSITY CONSERVATION PROJECT SUMMARY REPORT - Prepared by - James Comley, CCC Senior Field	Others	<a href="#">View</a>

	Scientist Melanie Mason, GIS Co-ordinator Kurt Cordice, Manager, Tobago Cays Marine Park Peter Raines, CCC Managing Director - December 2002		
Deschamps, Desrochers, Klomp - Rapid Assessment 2003	Deschamps, Desrochers, Klomp - Rapid Assessment 2003	Others	<a href="#">View</a>
Ecoengineering OPAAL Report 2007	ENVIRONMENTAL AND SOCIO-ECONOMIC STUDIES FOR OPAAL DEMONSTRATION SITES	Others	<a href="#">View</a>
Espeut OECS Report 2006	Opportunities for Sustainable Livelihoods in One Protected Area in Each of the Six Independent OECS Territories, for the OECS Protected Areas and Sustainable Livelihoods (OPAAL) Project	Others	<a href="#">View</a>
Gill - ReefFix 2010	St. Vincent and the Grenadines ReefFix Exercise. Economic Valuation of Goods and Services Derived from Coral Reefs in the Tobago Cays Marine Park	Others	<a href="#">View</a>
National Parks System Plan	National Parks System Plan	Legal and policy framework	<a href="#">View</a>
Simmons and Mcconney 2006	CERMES Technical Report No 6. Tobago Cays Marine Park: Are the conditions for successful co-management likely to be met? BERTHA SIMMONS AND PATRICK McCONNERY	Others	<a href="#">View</a>
TCMP Management Plan 2007-2009	Tobago Cays Marine Park 2007-2009 Management Plan Revised November 2007 Draft updated to include OPAAL Baseline Studies and related documentation	Management plan	<a href="#">View</a>
TCMP Map 2	TCMP Map	Zoning map	<a href="#">View</a>
TCMP Strategic Plan 2013-2015	STRATEGIC PLAN FOR TOBAGO CAYS MARINE PARK, 2013-2015	Management plan	<a href="#">View</a>
TCMP Zoning Map	TCMP Zoning Map	Zoning map	<a href="#">View</a>
Tobago Cays – SPAW application V7	Tobago Cays – SPAW application V7	Others	<a href="#">View</a>
Turtle Survey 2011	Sea Turtle Surveys in the Tobago Cays Marine ParkSt. Vincent and the Grenadines. Emma Doyle, Project Manager WIDECASST and Olando Harvey, Marine Biologist TCMP	Others	<a href="#">View</a>
Turtle Survey 2012	Turtle Survey 2012. Sea Turtle Assessment in the Tobago Cays Marine Park.	Others	<a href="#">View</a>
Wildlife Act 1987	Wildlife Act 1987	Legal and policy framework	<a href="#">View</a>