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

**St Eustatius National Marine Park**  
**The Kingdom of the Netherlands**

Date when making the proposal : 7/10/14

**CRITERIA SATISFIED :**

***Ecological criteria***

Representativeness  
Conservation value  
Rarity  
Naturalness  
Critical habitats  
Diversity  
Connectivity/coherence  
Resilience

***Cultural and socio-economic criterias***

Productivity  
Cultural and traditional use  
Socio-economic benefits

**Area name: St Eustatius National Marine Park**

Country: The Kingdom of the Netherlands

**Contacts**

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# **SUMMARY**

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- Chapter 2 - EXECUTIVE SUMMARY
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- Chapter 5 - CULTURAL AND SOCIO-ECONOMIC CRITERIA
- Chapter 6 - MANAGEMENT
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- Chapter 8 - STAKEHOLDERS
- Chapter 9 - IMPLEMENTATION MECHANISM
- Chapter 10 - OTHER RELEVANT INFORMATION

# **ANNEXED DOCUMENTS**

- Economic Valuation St Eustatius Marine Park
- Management Plan St Eustatius National Marine Park
- Benthic Seascape map for the St Eustatius Marine Park
- Evaluating effectiveness of the reserves in St Eustatius
- St. Eustatius marine environment ordinance
- St. Eustatius Island Resolution AB 1996/04
- The Total Economic Value of Nature on St Eustatius
- The Tourism Value of Nature on St Eustatius
- The local cultural and recreational value of nature on St Eustatius
- Mapping the Economic Value of Ecosystems on St Eustatius
- Statia National Marine Park 2011 Annual Report
- A Management Capacity Assessment of Selected Coral Reef Marine Protected Areas in the Caribbean
- Population status and reproductive biology of queen conch (*Lobatus gigas*) in the coastal waters around St Eustatius
- The status of the Caribbean spiny lobster (*Panulirus argus*) and its fishery in the coastal waters of St Eustatius.

# Chapter 1. IDENTIFICATION

## **a - Country:**

The Kingdom of the Netherlands

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

St Eustatius National Marine Park

## **c - Administrative region:**

The Netherlands

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

1/9/96

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

not specified

## **f - Geographic location**

*Longitude X:* -62.987

*Latitude Y:* 17.479

## **g - Size:**

27 sq. km

## **h - Contacts**

*Contact address:* Lower Town, St Eustatius, Caribbean Netherlands

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

*Email address:* [manager@statiapark.org](mailto:manager@statiapark.org)

## **i - Marine ecoregion**

64. Eastern Caribbean

## Comment, optional

none

# Chapter 2. EXECUTIVE SUMMARY

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

The St Eustatius National Marine Park was created in 1996 and extends around the entire island from the high water line to 30m depth contour. The park covers an area of 27.5km<sup>2</sup> and protects a variety of habitats, including pristine coral reefs (drop off walls, volcanic ‘fingers’ and ‘bombs’, spur and groove systems) and 18th century shipwrecks. It includes two no-take zones (reserves) as well as general use zones and designated anchoring zones for large commercial ships.

The Marine Park's objectives are to conserve marine biodiversity, protect fish stocks and promote sustainable tourism.

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

The coral reefs of the Marine Park boast a high biodiversity. Over 50% cover (with over 43% coral and 15% sponges) has been recorded in the Reserves. A wide array of tropical reef creatures resides in and around these reefs as well. Among these species are: Angelfish, Butterflyfish, Flying Gurnard, Moray Eels, Spotted Drums, Frogfish, Sea Horses, Octopus, Lobster, Rays, Sharks, and Turtles. From January to April, the calls of Dolphins and Whales can often be heard as they migrate through the Marine Park. Healthy conch and lobster populations, especially in the no-fishing zones, form a recruitment source for neighbouring islands.

There are three main species of sea turtles nesting on St. Eustatius. These are the leatherback (*Dermochelys coriacea*), the green (*Chelonia mydas* – the major nesting species on Statia) and the hawksbill (*Eretmochelys imbricata*). All of them are endangered or critically endangered species as classified by IUCN. There has also been one unconfirmed report of a nesting fourth species – the loggerhead (*Caretta caretta*) which IUCN classes as threatened.

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

Representativeness  
Conservation value  
Rarity  
Naturalness  
Critical habitats  
Diversity  
Connectivity/coherence  
Resilience

### **Cultural and socio-economic criterias**

Productivity  
Cultural and traditional use  
Socio-economic benefits

# Chapter 3. SITE DESCRIPTION

## a - General features of the site

### Terrestrial surface under sovereignty, excluding wetlands:

*2 sq. km*

### Wetland surface:

*0 ha*

### Marine surface:

*27 sq. km*

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

The St. Eustatius marine park surrounds the entire island of St. Eustatius, extending from the shore to the 30 m depth line, covering a total area of 27 km<sup>2</sup>. It includes diverse coral reef, gorgonian reefs, seagrass, macro-algal beds, rubble and sandy bottom and rocky intertidal habitats. A zoning plan divides the park between recreational (diving) and commercial uses, including two fish reserves, and a designated anchoring zone for large ships, with a system of permanent mooring buoys in the recreational zones to facilitate diving and prevent anchoring damage to the corals.

Zeelandia beach is the index beach for nesting turtles. It is the only place where all three species (Leatherback, Green and Hawksbill) nest regularly. The beach is 1.4 km long, the width varies year to year depending upon sand accretion and depletion. Beaches on Statia have black sand which is made up from titanium and iron weathered from the volcanic rocks (Ippel, 2000). White sandy sections on Zeelandia beach are derived from sandstone between the two hilly sections north and south of the island. This is the only terrestrial surface included in the Marine Park. There are no wetlands on St Eustatius.

## b - Physical features

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

St. Eustatius lies at the north end of a continuous submarine bank, no deeper than 180m, that also contains the islands of St. Kitts and Nevis. The Marine Park varies in width between 1 and 3 kilometers. The monthly average sea surface temperature ranges from 25°C in January-March to 29°C in August-November. Visibility ranges from 15m to 30+m. There are usually two high tides and two low tides every day in St Eustatius, with about six hours between high tide and low tide. The average tidal range is around 45cm. The water has a constant salinity and is low in naturally occurring nutrients. The sea bottom is comprised of a mixture of biologically fixed silica and calcium carbonate, as well as clays, silts, and sand sediments.

### Geology:

Morphologically the island consists of two major components, the Quill stratovolcano and the Northern Centers. The former, which comprises the southern two-thirds of the island, is a young symmetrical, open crater cone built almost entirely by deposition of pyroclastic deposits from numerous eruptions. The latter is an older complex of Pelean domes, lava flows, and explosion

craters. These structures continue underwater with lava flows covered by coral

**Soil:**

n/a

**Topography:**

n/a

**Bathymetry:**

The submarine contours around St. Eustatius reveal that the Northern Centers lie in the middle of a circular submarine bank with the Quill positioned on the southeast margin (Fig. 30). The dominant tectonic trends (NE-SW and NW-SE) characteristic of the Lesser Antilles are also present on St. Eustatius. The northwest-southeast direction is exemplified by the elongation of the island itself, whereas the northeast-southwest direction is well shown by the extension, as defined by the 50 m submarine contour, on both sides of the island. The same structural direction is indicated by indentations in the 50 meter submarine contour on opposite sides of the submarine bank suggesting a northeast-southwest fault may cut through the bank between St. Eustatius and St. Kitts.

**Volcanic formations:**

See Geology

**Sand dunes:**

n/a

**Underwater formations:**

The sea bottom of the Marine Park is primarily a shallow sloping sandy plateau covered with seagrass beds and many shipwrecks. There are a variety of reef types on St. Eustatius, from shallow sloping reefs to patch reefs through volcanic boulders of various sizes to spur and groove type reefs with sandy channels divided by lava fingers. Each of these offer a hard substrate for coral and other animals to settle on.

## **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):**

The two most important ecosystems found on the seabed within the marine park are sea grass beds and coral reefs. Both are highly productive, fragile and valuable marine resources. Sea grass beds are found all around the island, from approximately 10m and deeper until about 35m. Little is known about the sandy habitats between the shores of St. Eustatius and the coral reefs. The habitat is understood to be home to various species of animals and plants including crustaceans, sea stars, shrimp, nudibranch, worms and fish. Marine plants also exist in some areas including species of seagrass and algae. Within the Southern Marine Reserve

the seabed slopes steeply towards the drop off which goes down to depths in excess of 100 metres. The reef slope here is divided by a spur and groove system with coral fingers divided by sandy channels. The 'rock fingers' are hardened, ancient lava flows from the Quill volcano. The walls, overhangs, ledges and tops of the fingers are encrusted with corals and other organisms which thrive in deeper waters such as Plate Corals, Sea Fans and Black Corals. Around the Southern, Western and Northern Marine Park areas, volcanic activity has produced patch reefs, where coral reef organisms have settled on volcanic boulders and blocs that have been blown out from the Quill many years ago. The basaltic rock of the Northern and Southern ends of St Eustatius slopes into the sea at a relatively shallow angle, forming large ridges, flat areas and ledges. Reef organisms have settled on these areas creating a varied and diverse habitat.

**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>Coral reefs</i>			
Coral Reef	ha	5	The reef habitat in St. Eustatius generally has low levels of rugosity, and after the bleaching event of 2010, low levels of coral cover (4.9%) and algae-dominated biotic cover (12.7%). Reef habitat was the most speciose habitat sampled and a total of 60 species were distinguished. Sponges and corals were equally important in terms of both cover and species richness. The main hard corals represented were: Meandrina meandrites, Montastrea annularis, M. cavernosa, and M. faveolata, Porites astreoides and Siderastrea siderea. Of the algae, Dictyota sp. was by far the dominant species and present at all stations while Lobophora variegata was also present at all stations. From: Debrot et al. 2013. Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius (attached)
<i>Sea grass beds</i>			
Sea Grass Beds	ha	1	Two different seagrass beds were distinguished: Dense seagrass beds dominated by the invasive Halophila stipulacea (between 45-95% cover) and sparse seagrass beds dominated by the native H. decipiens (between 8-25% cover). A third seagrass species was Syringodium filiformis, which was only found at densities of 2% or less. H. decipiens seagrass beds were more diverse than H. stipulacea seagrass beds with regards to associated algae. Seagrass beds of the invasive H. stipulacea showed the highest biotic cover of all benthic habitats. Seagrass beds of Thalassia, reported as being important in St. Eustatius by McRae and Esteban (2007) appear to have disappeared. From: Debrot et al. 2013. Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius (attached)
<i>Rocks</i>			
Rubble with algae cover	ha	6	Algae fields were found principally in rubble. Algae dominated in cover as well as in number of species but a variety of sponges and coral species were also found. Dictyota sp. is always present and in



			many case also <i>Lobophora variegata</i> . This habitat had the highest concentration of adult conch From: Debrot et al. 2013. Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius (attached)
<i>Sand cover</i>			
Sandy bottom	ha	8	Bare sand. No coverage of benthic species found. Habitat mostly found close to shore, but also between coral and gorgonian patches. From: Debrot et al. 2013. Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius (attached)
<i>Other marine ecosystems</i>			
Gorgonian Reef	ha	6	Hard or rubble bottom dominated by different gorgonian species, including sea fans, wire coral, sea plumes and sea fingers. From: Debrot et al. 2013. Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius (attached)
Terrestrial ecosystems	Size (estimate)	Area covered	

## Flora

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

The seagrass beds around St Eustatius are dominated by the invasive (*Halophila stipulacea*) and native (*Halophila decipiens*) together with small amounts of Manatee grass (*Syringodium filiforme*) and banks of calcareous algae (*Halimeda sp.*).

A number of different plant species live on the reef and sandy habitats, the most common being Encrusting fan-leaf algae (*Lobophora variegata*), and *Dictyota sp.* Mats of Red Algae grow in some areas. Seaweeds such as Sargassum and Green Feather Algae (*Caulerpa sertulanoides*) provide habitat and food for other animals.

### 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
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### 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
Hydrocharitaceae: <i>Thalassia testudinum</i>	not given	only scattered remnants are reportedly left of this once dominant sea grass species
Hydrocharitaceae: <i>Halophila decipiens</i>	not given	in seagrass beds
Cymodoceaceae: <i>Syringodium filiforme</i>	not given	scattered areas throughout the Marine Park

**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
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**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
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## Fauna

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

All four Caribbean species of turtle can be found in Statia’s open water: confirmed sightings of Hawksbills (*Eretmochelys imbricate*), Green Turtles (*Chelonia mydas*) and Leatherbacks (*Dermochelys coriacea*), and an unconfirmed sighting of Loggerhead (*Caretta caretta*). A number of Cetaceans are regular visitors both to the reefs and the waters around St Eustatius, including; Baleen Whale Species (*Balaenoptera sp.*), Pilot Whales (*Globicephala macrorhynchus*), Dwarf Sperm Whales (*Kogia simus*), Humpback Whales (*Megaptera novaeangliae*), Gervais's Beaked Whales (*Mesoplodon europaeus*), Killer Whales (*Orcinus orca*), Melon-Headed Whales (*Peponocephala electra*), Sperm Whales (*Physeter macrocephalus*), Pantropical Spotted Dolphins (*Stenella attenuate*), Striped Dolphin (*Stenella coeruleoalba*), Spinner Dolphins (*Stenella longirostris*), Bottlenose Dolphins (*Tursiops truncates*), Cuvier's Beaked Whales (*Ziphius cavirostris*). Manta Rays (*Manta birostris*) and Eagle Rays (*Aetobatus narinari*) also visit the Marine Park from Deeper waters.

There are a number of birds that live almost exclusively in the open ocean environment, using St Eustatius as a breeding ground or migratory stop over. These include Frigate Birds (*Fregata magnificens*), Red Billed Tropicbirds (*Phaethon aethereus*), Brown Pelicans (*Pelecanus occidentalis*) and Audubon’s Shearwater (*Puffinus lherminieri*)

The populaton of Redbilled tropicbirds is estimated at 800 individuals with between 300 and 500 nesting pairs. Together with Saba the two islands account for more than half of the Caribbean population of redbilled tropicbirds.

Significant invertebrates in the seagrasses of St. Eustatius include Queen Conch (*Strombus gigas*), Cushion Stars (*Oreaster reticulata*), Sea Cucumber (*Holothuria mexicana*), Sea Urchins (*Tripneustes venricosus*, *Lytechinus variegates*, *Meoma ventricosa*).

The waters surrounding St. Eustatius are teeming with life. The coral reefs are home to many fish species including Fairy baslets (*Gramma loreto*), Angel fish (*Holocanthus sp.* and many others) Groupers, Triggerfish, Scorpion fish, Moray eels (e.g. *Gymnothorax moringa*), Wrasse and Chromis, Parrot fish and roaming shoals of Blue Tangs (*Acanthurus coeruleus*). In sandy areas Garden eels (*Heteroconger halis*), Peacock Flounder (*Bothus lunatus*), Stingrays (*Dasyatis Americana*) and Flying Gurnard (*Dactylopterus volitans*) can all be seen. Near to the reefs in the blue water, Crevalle Jacks (*Caranx hippos*), Bar jacks (*Caranx rubber*), Shoals of Barracuda (*Sphyraena sp.*) shoals of up to 200 Horse-eye jacks (*Caranx latus*) and Wahoo (*Acanthocybium solandri*) meander looking to feed off the smaller reef fish.

In deeper areas, the coral communities are dominated by plate corals (*Agaricia sp.*), soft corals such as seafans and Wire Corals (*Ellisella sp.*). The main hard corals on shallower reefs include Mustard Hill Coral (*Porites astreoides*), Brain coral (*Diploria sp.*), various forms of Star coral (*Montastrea sp.*), Flower Coral (*Eusmilia fastiagata*), Maze Coral (Meandrina meandrites), Pillar Coral (*Dendrogyra cylindrica*) and the blade form of Fire Coral (*Millepora complanata*). Other coral species often found include Seafans, Seaplumes, gorgonians and Black coral (*Antipathes sp.*) at depths in excess of 20m, particularly at the drop off.

Aside from corals and fish, many other creatures inhabit the reef and other underwater habitats. These include a variety of sponges such as Giant Barrel Sponges (*Xestospongia muta*), Stove-pipe sponges (*Aplysina archeri*), Azure Vase Sponges (*Callyspongia plicifera*), Ball Sponges (*Cinachyra sp.*) and Elephant Ear Sponges (*Agelas clathrodes*). Countless other invertebrates inhabit the reefs such as Conch, Brittle stars, Magnificent Sea Urchin (*Astropyga magnifica*), Zooanthids, Crinoids, Brittle stars, Cork Screw Anemones (*Bartholomea annulata*), Giant anemones (*Condylactis gigantea*), Spiny Lobsters (*Panulirus argus*), Pederson shrimp, Arrow Crab (*Stenorhynchus seticornis*), Decorator Crabs (*Microphrys bicomuta*) and nudibranchs such as the Lettuce Sea Slug (*Tridachia crispate*).

Caribbean Reef Sharks (*Carcharhinus perezii*) and Nurse Sharks (*Ginglymostoma cirratum*). Seahorses (*Hippocampus sp.*) can also be seen clinging to gorgonians with their tails.

#### 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: <i>Caretta caretta</i>	Number of individuals: 5.5 - Unit used (individuals, spots, etc): not given	rare, unconfirmed sightings
Reptiles: <i>Chelonia mydas</i>	Number of individuals: 150 - Unit used (individuals, spots, etc): not given	quite common year round, nest on beaches
Reptiles: <i>Eretmochelys imbricata</i>	Number of individuals: 175 - Unit used (individuals, spots, etc): not given	quite common year round, nest on beaches
Reptiles: <i>Dermochelys coriacea</i>	Number of individuals: 8 - Unit used (individuals, spots, etc): not given	seasonal, nest on beaches
Birds: <i>Puffinus lherminieri</i>	not given	numbers unknown
Mammals: <i>Megaptera novaeangliae</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Physeter macrocephalus</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Kogia simus</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Ziphius cavirostris</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Mesoplodon europeus</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Orcinus orca</i>	not given	unknown numbers, migrate through the marine park
Mammals: <i>Globicephala macrorhynchus</i>	not given	unknown numbers, migrate through the marine park

Mammals: Peponocephala electra	not given	unknown numbers, migrate through the marine park
Mammals: Stenella attenuata	not given	unknown numbers, migrate through the marine park
Mammals: Stenella longirostris	not given	unknown numbers, migrate through the marine park
Mammals: Tursiops truncatus	not given	unknown numbers, migrate through the marine park
Mammals: Stenella coeruleoalba	not given	unknown numbers, migrate through the marine park

### 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	Present, but population size not mentioned in habitat mapping completed in 2013
Hydrozoa: Stylasteridae	not given	Present, but population size not mentioned in habitat mapping completed in 2013
Anthozoa : Antipatharia	not given	Present, but population size not mentioned in habitat mapping completed in 2013
Anthozoa : Gorgonacea	Area covered: 6 ha	Habitat mapping completed in 2013
Anthozoa : Scleractinia	Area covered: 1 ha	Habitat mapping completed in 2013
Molluscs: Strombus gigas	Number of individuals: 290000 - Unit used (individuals, spots, etc): not given	baseline data early 2013
Crustaceans: Panulirus argus	not given	annual catch reported to fisheries is 4000 - 5000

**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
Acropora: palmata	CR - Critically endangered	not given	Present, but population estimates were not given in the habitat survey completed 2013
Acropora: cervicornis	CR - Critically endangered	not given	Present, but population estimates were not given in the habitat survey completed 2013
Agaricia: lamarcki	VU - Vulnerable	not given	Present, but population

			estimates were not given in the habitat survey completed 2013
Agaricia: tenuifolia	Unknown	not given	Present, but population estimates were not given in the habitat survey completed 2013
Dendrogyra: cylindrus	VU - Vulnerable	not given	Present, but population estimates were not given in the habitat survey completed 2013
Dichocoenia: stokesii	VU - Vulnerable	not given	Present, but population estimates were not given in the habitat survey completed 2013
Montastrea: franksii	VU - Vulnerable	not given	Present, but population estimates were not given in the habitat survey completed 2013
Montastrea: annularis	EN - Endangered	not given	Present, but population estimates were not given in the habitat survey completed 2013
Montastrea: faveolata	EN - Endangered	not given	percent cover estimated at .38% during habitat survey completed in 2013
Millepora: striata	VU - Vulnerable	not given	Present, but population estimates were not given in the habitat survey completed 2013
Panulirus: argus	Unknown	not given	annual take reported to fisheries is 4000 to 5000
Epinephelus: flavolimbatus	VU - Vulnerable	not given	rare to uncommon
Epinephelus: striatus	EN - Endangered	not given	rare
Balistes: vetula	VU - Vulnerable	not given	uncommon
Lachnolaimus: maximus	VU - Vulnerable	not given	rare to uncommon
Lutjanus: analis	VU - Vulnerable	not given	uncommon - common
Lutjanus: cyanopterus	VU - Vulnerable	not given	common
Thunnus: obesus	VU - Vulnerable	not given	uncommon to common
Megaptera: novaeangliae	VU - Vulnerable	not given	migratory
Physeter: macrocephalus	VU - Vulnerable	not given	migratory
Dermochelys : coriacea	VU - Vulnerable	Number of individuals: 8 - Unit used (individuals, spots, etc): not given	Nest on Zeelandia Beach
Chelonia: mydas	EN -	Number of individuals:	common year round, nest on

	Endangered	150 - Unit used (individuals, spots, etc): not given	beaches
Eretmochelys: imbricata	CR - Critically endangered	Number of individuals: 175 - Unit used (individuals, spots, etc): not given	common year round, nest on beaches

### 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
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## 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	not given	not given	3500	275

### Comments about the previous table:

There are no live aboard boats or permanent residences inside the marine park. St Eustatius is a very small island, 32 square km, so every resident is in the zone of potential direct impact. Tourism is currently modest, any week may have as few as 50 tourists on the island or as many as 500.

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

There are about 29 fishermen on St. Eustatius, 15 of which fish full time. Considering the small size of the island's economy this is a significant sector of employment. The income that is generated by the fisheries sector is invested back into the St. Eustatius economy, since all the fishermen are locals. Taxes and income are generated from sales of fuel, two stroke oil, fishing gear, spare parts and engines. Such associated economic activities are also significant contributors to the island economy. The Spiny Lobster (*Panulirus argus*) fishery is without doubt the most important fishery on the island. The total lobster catch for 2003 was estimated to be 4 tons, which represents a gross value of 100,000 NAF (approximately US\$56,000) (Dilrosun, 2004). Recent monitoring of landings estimate that in 2012/2013 about 5 tons of lobster was caught.

The contribution of tourism to the economy of St Eustatius is unknown. Since the year 2000 the number of divers and yachts visiting the marine park have approximately doubled. This provides income for many of the services on St Eustatius, including hotels, restaurants and shops. In 2006 1052 divers registered with STENAPA and 835 yachts visited the island. July and December are consistently the most popular times for visitors to come to the island as shown in Figure 14.

Activities	Current human uses	Possible development	Description / comments, if any
Tourism	limited	increase	There are currently several plans under consideration

			for more hotels and resorts.
Fishing	limited	stable	There are currently 29 registered artisanal fisherman on the island
Agriculture	significant	stable	There is a large problem with free roaming livestock destroying vegetation and increasing erosion
Industry	significant	stable	There is a large oil transshipment facility on the island and a large number of oil tankers anchoring in the marine park
Forestry	absent	stable	occasionally individuals will cut certain trees for use in making fish traps.
Others	not specified	not specified	

## e - Other relevant features

The main industrial activity on St Eustatius takes place at the oil transshipment facility located immediately south of the northern marine reserve on the West coast and which has been in operation since 1982. Known as Statia Terminals NV, the venture expanded in 1993. The storage facility can be hired and is mainly used for oil being transported from the Middle East to the USA. It operates 50 storage tanks with a capacity of approximately 11 million barrels (1.75 million m<sup>3</sup>). The terminal has a jetty which serves two smaller tankers at a time and other berths include three floating barges, a floating hose station, floating dock and single point mooring for super tankers (at a depth of 65 meters (212 ft), making it one of the deepest installations in the world). The terminal has a product flow rate of up to 90,000 barrels (14,300 cubic meters) per hour to or from a ship ([www.cbi.com](http://www.cbi.com)).

Over 10% of the population of St . Eustatius work for/with Statia Terminals. 120 people are employed by Statia Terminals NV, with a further 350 being employed by contractors associated with the terminal. The most recent figures available for the fourth quarter 1999 reported that Statia Terminals International N.V. an operating cash flow, of \$7.8 million.

### **Educational feature:**

The National Parks Office and the local schools are currently the only institutions that utilize the Park as a learning tool for children. Tidal pools on the Atlantic side of the island are especially valuable in teaching the school children about nurseries and juvenile marine creatures.

### **Scientific feature:**

The reefs attract visiting researchers to the island. Because of the location and the protected status, there are many types of research that can be conducted within the Park. Many baseline studies need yet to be conducted but through lack of personnel and expertise this has not yet been done. With the establishment of the new Caribbean Netherlands Science Institute this will be made easier.

### **Research feature:**

Caribbean Netherlands Science Institute has opened on St Eustatius in 2014

### Historical feature:

The population on Statia is estimated to have been as high as 20,000 during the 1770-1780's – compared to 3500 today. This included merchants that lived in Oranjestad, planters that lived out in the country, slaves who worked on the plantations and in the warehouses, and the transient population of sailors. In 1778, 3182 ships arrived in Statia making St. Eustatius one of the busiest ports in the world.

### Archaeological feature:

Many shipwrecks from the 17th and 18th centuries, both charted and uncharted. Ruins of city walls and buildings also lie in the marine park.

## 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	stable	stable	Panulirus argus, Strombus gigas	coral reef, algae covered rubble, seagrass beds	artisanal fisheries
Exploitation of natural resources: Agriculture	significant	stable	decrease	all scleractinian corals	coral reef	roaming livestock reduce vegetation, increase erosion, run off and sedimentation into reef habitat
Exploitation of natural resources: Tourism	very important	stable	increase	all scleractinian corals	coral reef	minor physical damage from divers
Exploitation of natural resources: Industry	limited	not specified	not specified			no large industry other than oil transshipment
Exploitation of natural resources: Forest products	limited	not specified	not specified			minimal forestry exploitation
Increased population	limited	stable	stable	all areas of marine park	all areas of marine park	increasing population with limited capacity for garbage collection,



						wastewater treatment, etc
Invasive alien species	very important	increase	increase	native fish and seagrass populations	all areas of marine park	Lionfish, Halophila stipulacata
Pollution	very important	stable	stable	all areas of marine park	all areas of marine park	large oil transshipment facility on island
Other	limited	not specified	not specified			none

### 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	not specified	not specified			see above
Exploitation of natural resources: Agriculture	limited	not specified	not specified			see above
Exploitation of natural resources: Tourism	limited	not specified	not specified			see above
Exploitation of natural resources: Industry	limited	not specified	not specified			see above
Exploitation of natural resources: Forest products	limited	not specified	not specified			see above
Increased population	limited	not specified	not specified			increasing world population
Invasive alien species	limited	not specified	not specified			see above
Pollution	limited	not specified	not specified			see above
Other	limited	not specified	not specified			none

## h - Information and knowledge

### Information and knowledge available

All marine habitat from the high tide level out to the depth of 30 m is legally designated as the St. Eustatius National Marine Park by means of the St. Eustatius Marine Environmental Ordinance (AB 1996, No. 3). The total surface area of the marine park is 27.5 km<sup>2</sup>. The park is managed by STENAPA (St. Eustatius National Parks Foundation, which also manages two terrestrial parks on the island. Inside the St. Eustatius marine park two reserves have been designated in which no fishing or anchoring is allowed. Habitats include coral reefs (drop off walls, volcanic ‘fingers’ and ‘bombs’, spur and groove systems), 18th century shipwrecks and artificial reefs. The island’s marine environment is home, migratory stop over or breeding site for 4 IUCN Red List Species, 10 CITES Appendix I species and 98 Appendix II

species.

There have been several surveys done over the years and reports have been produced on these studies:

**Sufficient for the needs of St. Eustatius National Marine Park:**

Tide tables: Internet and GPS

GIS: Maps produced 2009

Baseline habitat maps

Socio-economic valuation: Total Economic Value of Nature on St. Eustatius

The local recreational and cultural value of nature on St. Eustatius

The Tourism Value of Nature on St. Eustatius

Mapping the Economic Value of Ecosystems on St. Eustatius

Status of commercially important species (conch, lobster)

Effectiveness of no-take reserves

**Not available:**

Maps of currents

Species lists

Status of endangered, threatened and endemic species

Bathymetric maps

Digital Satellite Images

All available publications (listed below) can be downloaded from the Dutch Caribbean Biodiversity Database: [www.dcbd.nl](http://www.dcbd.nl)

**List of the main publications**

Title	Author	Year	Editor / review
Habitat diversity and bio-diversity of the benthic seascapes of St. Eustatius	Debrot et al.	2014	<a href="http://www.dcbd.nl">www.dcbd.nl</a>
Breeding Success of Red-billed Tropicbirds at Pilot Hill, St. Eustatius – a follow-up study (2013-2014)	Hannah Madden	2014	<a href="http://www.dcbd.nl">www.dcbd.nl</a>
St. Eustatius National Parks Foundation Sea Turtle Conservation Program Annual Report 2012	Jessica Berkel	2013	<a href="http://www.dcbd.nl">www.dcbd.nl</a>
In-Water Monitoring of Sea Turtle Aggregations in St. Eustatius National Marine Park	Julia Smith	2008	<a href="http://ww.dcbd.nl">ww.dcbd.nl</a>
Tanker Anchoring Impact Study and Recommendations St Eustatius Marine Park	Nicole Esteban et al.	2007	<a href="http://www.dcbd.nl">www.dcbd.nl</a>
Population status and reproductive biology of queen conch ( <i>Lobatus gigas</i> ) in the coastal waters around St Eustatius	Melannie Meijer zu Schlochtern	2014	<a href="http://www.dcbd.nl">www.dcbd.nl</a>

The status of the Caribbean spiny lobster ( <i>Panulirus argus</i> ) and its fishery in the coastal waters of St Eustatius.	Suzanne Poiesz	2013	www.dcbd.nl
Status of Lobster and Conch populations and fisheries around St Eustatius. "Progress Report 2012"	Martin de Graaf	2013	www.dcbd.nl
St. Eustatius National Parks - Lionfish Response Plan	Tadzio Bervoets	2009	www.dcbd.nl
Cetaceans of Saba, Sint Eustatius & Sint Maarten: current knowledge and future monitoring	Meike Scheidat and Steve Geelhoed	2013	www.dcbd.nl
Classifying benthic habitats and deriving bathymetry at the Caribbean Netherlands using multispectral Imagery. Case study of St. Eustatius	Paula Nieto et al.	2013	www.dcbd.nl
The Total Economic Value of Nature on St Eustatius	J.A. Cado van der Lely et al.	2014	www.dcbd.nl
The Tourism Value of Nature on St Eustatius	S. van de Kerkhof et al	2014	www.dcbd.nl
The local cultural and recreational value of nature on St Eustatius	F. Fenkl et al.	2014	www.dcbd.nl
Mapping the Economic Value of Ecosystems on St Eustatius	K.F. Tieskens et al.	2014	www.dcbd.nl

**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)
Queen conch	daily	all landings of conch are monitored
Lobster	daily	all catches brought in by fishermen are monitored
Redbilled tropicbird	annual	breeding succes monitored
seaturtles	annual	nesting beach patrols

## 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.)*

### **Representativeness:**

The Statia National Marine Park contains corals that have colonized the range of volcanic substrates present, including bombs, lava blocks and solidified lava flows shaped like 'fingers'. The reef types can be referred to as fringing reef, patch reefs, spur and groove which occur in most of the volcanic island of the region. And then there are also artificial reefs. There are also seagrass beds within the boundaries of the Marine Park.

Around the reefs you will find, amongst many others, colourful Butterflyfish, Angelfish, Surgeonfish, Parrotfish and Groupers, whereas on the edges of the reef plentiful species include Jacks, Snappers, Grunts and Barracudas. This abundance is mainly thanks to the actively managed

marine park, with no fishing zones that creates a spill-over effect through the whole area.

There is a foraging population of green sea turtles and hawksbill sea turtles. Humpback whales pass through the Marine Park on their migration route from January to April. Whale sharks, hammerheads and manta rays also pass by and have been seen by divers.

Because the marine park encompasses the entire island to a depth of 30 meters, it contains all marine ecosystems of the island and the most sensitive ones (coral reef) are well protected in the marine reserve areas. The coral reef and the seagrass communities are representative of the coral reefs and seagrass communities in the northeastern Caribbean islands.

### **Conservation value:**

The St Eustatius National Marine Park contributes to the conservation of multiple species, subspecies and populations of flora and fauna present within its boundaries due to the presence of two no-take reserves within the boundaries.

There are studies underway which show for example that within the Marine Park boundaries there is seasonal settling of spiny lobster (*panilirus argus*) larvae as well as mating Queen Conch (*Strombus gigas*) which are commercially threatened in other areas of the Caribbean. Marine mammals and endangered sea turtles are protected year round within the boundaries of the Marine Park and in the territorial waters of the island.

Lobsters within the no-take zones have been shown to be larger than outside the no-take zones. Such large lobsters produce disproportionately larger amounts of larvae.

### **Rarity:**

The coral reef habitats found within The St. Eustatius National Marine Park have been depleted across their range throughout the wider Caribbean. Coral reefs and seagrass beds are globally threatened by anthropogenic stresses.

The Zeelandia beach area is the only nesting beach in the Caribbean Netherlands for endangered Leatherback turtles. Critically endangered hawksbill sea turtles forage on the sponges occurring in the marine park and endangered green turtles feed on the seagrass communities in the park.

Many other vulnerable or endangered species find refuge in the no-take zones of the St. Eustatius National Marine Park, such as the Nassau Grouper and the Cubera Snapper.

### **Naturalness:**

Within the Marine Park are two reserves, the Northern reserve and the southern reserve. Together, as is optimal, they make up just about 20% of the St Eustatius National Marine Park. These two reserves have been designated since 1996 and have been actively managed for 18 years. There are moorings to prevent anchoring and any activities within these reserves are supervised by dive professionals.

Because of the relative distance from shore, a boat is needed to get out to the reefs. Also because of the distance events such as large runoffs due to heavy rain do not disturb the reefs in the reserves. There is no access to the Northern reserve unless by boat and there are no dwellings in the north of

the island which keeps the area relatively protected from human influence.

Combined with the relatively small number of inhabitants of the island, low fishing pressure, and limited coastal development, the marine ecosystems around the island have been disturbed very little.

### **Critical habitats:**

The coral reef and the seagrass areas provide critical foraging habitat for populations of green sea turtles and hawksbill sea turtles. Humpback whales pass through the Marine Park on their migration route from January to April. Whale sharks, hammerheads and manta rays also pass by and have been seen by divers.

One of the many wrecks located in the park, named the Chien Tong and sunk in 2004, is a preferred habitat for the endangered sea turtles that forage in the local waters. The wreck is used as a sleeping area at night and as many as 40 sea turtles can be counted resting or sleeping in and on it in a single dive.

The seagrass beds are not only feeding grounds for green turtles but are also critical habitat for juvenile Queen Conch. The marine park is also home to a healthy population of Queen conch with high densities per hectare.

### **Diversity:**

The marine environment in St Eustatius is home to four important ecosystems: coral reefs, sea grass, beaches and open ocean. The coral reef types are fringing reefs, patch reefs, spur and grooves and artificial reefs with a high level of rugosity. Sea grasses form an important habitat for certain fish and shellfish and a nursery ground for juvenile reef and ocean fish. The fish diversity can be significant in sea grass meadows. The marine habitats of St Eustatius have different species zonation within them and play a wider role in the well-being of the coast by providing a range of ecological services.

When diving in Statia's waters you will find yourself amidst an abundance of marine life. The fish population has increased dramatically over the last 18 years since the marine park was established, benefiting both scuba divers and Statia's small group of fishermen.

Besides fish, many other creatures can be found inhabiting the reefs of Statia. There are Queen conch, Spiny lobster, different species of shrimp such as cleaner shrimp and Pederson's among others, octopus, starfish, long spine sea urchins, brittle stars, etc. Southern sting rays, Spotted eagle rays and schools of squids swim by. If you look closely you can spot a seahorse or a frogfish staying still among the gorgonians or on the reef. Three types of sharks you are most likely to come across in Statia are the Black tip Reef Shark, the Grey Reef Shark and the Nurse Shark. Although larger sharks such as hammerheads and whale sharks are spotted throughout the year.

Dolphins are always seen within the park and can be heard quite often when diving. Sea Turtles are undisturbed and are therefore unafraid of divers who have the privilege of getting quite close to watch them forage.

In addition to the known species, the marine park harbors many species that have not yet been identified and may well include new undescribed species. Because of the variety of habitats in the park the total number of species may be expected to be large. The rocky shores of the park have never been surveyed and harbor an unknown number of species, including the West-Indian topshell or whelk (*Cittarium pica*).

**Connectivity/coherence:**

The Marine park is located on St Eustatius which is within the island chain of the Eastern Caribbean. The island as well as its neighbors are affected by the Antillean current and the Caribbean current with a northward jet almost 100 km wide. Larvae of corals, fish, mollusks, lobsters, etc. arrive from other islands, or originate on St Eustatius and form a source of recruitment for the neighbouring islands.

The Marine Park is situated close to the Saba Bank which has been formally been designated a "Particularly Sensitive Sea Area" (PSSA). Also the Marine Park borders the French Antilles Agoa marine mammal sanctuary and works closely with them. This in effect creates a corridor for the Humpback whale migration north and south. The waters of the St Eustatius national marine park are known to be on the migratory route of Humpback whales.

The sea turtles nesting on the Zeelandia Beach come from all over the region, possibly grew up in the sargassum sea, then found a home in the shallow seas somewhere in the Caribbean before coming back to St. Eustatius to lay their eggs. The Leatherbacks nesting on the beach may even originate from the Northern atlantic. The green turtles and hawksbills that feed in the marine park have been born on other islands all over the region.

**Resilience:**

Because of the small population of the island, human impacts on the marine ecosystems of the island are very limited. There is little pollution or overfishing, and consequently the habitats and ecosystems in the St. Eustatius national marine park are considered to be relatively resilient.

## **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:**

On the edges of the reefs in the Marine Park you will find plentiful species including Jacks, Snappers, Grunts and Barracudas. This abundance is mainly thanks to the actively managed Marine Park, with no fishing zones in the reserves that creates a spill-over effect through the whole area. The fish population has increased dramatically over the last 15 years since the marine park was established which benefits the small local fishing population due to spill over.

The fishermen place their fish traps along the boundaries of the Marine Park where they know they will reap the most fish. Also the artificial reefs which were sunk for the fishermen in the general use areas of the Marine Park are seeing an increase in fish species and biomass.

Also because of the protected and no anchoring status of the reserves, the reefs within those areas are near pristine and attract divers from all over the world. The policy of the Marine Park is no unsupervised diving in order to keep the reefs in the condition that they are in at the moment.

Tankers and regional cargo boats visit the Marine Park in order to conduct their business and they have to remain within the zone designated for their operations in order to maintain integrity of the rest of the Marine Park.

### **Cultural and traditional use:**

The Marine Park has two no-take areas, one in the north, the northern reserve and one in the south, the southern reserve. Every other area is known as general use areas in which the local population can continue to fish in their traditional way but within the boundaries of the law. No dynamiting or using poison to fish for example. Also adhering to minimum sizes for the take of lobster and conch.

The tradition of fishing by seine is still carried out on the island's main beach during the blue runner/jack season.

The Marine Park includes the beaches of the island and seasonal traditional activities are still carried out by the local population such as camp outs on the beaches for the easter season.

The Marine Park and the beaches are very important to the population and it is therefore equally important that they be allowed to make use of it in a sustainable manner conform the guidelines of the management.

Within the Marine park there are over 200 ship wrecks from the 17th and 18th centuries. St Eustatius is a very historical island and the waters of the Marine Park portray this. The Marine Park is unique in that it is one of the few Parks in the Caribbean that is a destination for wreck divers. Besides the 200 and 300 year old wrecks there are also modern wrecks that are as "young" as 10 years old and which were originally sunk in order to create artificial reefs for the fishermen.

One of these more modern wrecks named the Chien Tong and sunk in 2004 is habitat for the endangered sea turtles that forage in the local waters. The wreck is used as a sleeping area at night and as many as 40 sea turtles can be counted resting

or sleeping in and on it in a single dive.

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

The Marine Park has regulations regarding fishing in the general use areas. Regulations pertain to minimum specimen size as in the case of the spiny lobster and in the case of the Queen conch to a maximum catch amount. There are two reserves which are no-take no-anchor areas in order to preserve the coral reefs and the marine life in those areas.

Statia's coral reef resources provide important goods and services to the economy of the island. The revenue that the resource is able to generate through coral reef associated tourism and fishery is approximately USD \$11,200,454. Although this number is high, and highlights the importance of coral reefs to the island, it also suggests that there is an increased need for conservation, so that the value does not diminish.

## **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 St Eustatius Marine park was originally legally established in 1996 by island ordinance including the designation of the no-take no-anchoring marine reserves, various other protective measures and a user fee for divers. A subsequent island decree designated Stenapa as management organization, established anchor and mooring fees, and regulated dive operations. (ordinance and decree attached)

In 2007 the marine park received the status of National Park of the Netherlands Antilles by ministerial decree. After the constitutional changes in the Kingdom of the Netherlands in 2010, with the dissolution of the Netherlands Antilles and the accession of St Eustatius to the Netherlands, the Dutch Minister of Economic Affairs, Agriculture and Innovation re-established the St Eustatius Marine Park as a National Park of the Caribbean Netherlands on the 20th of September 2012.

Internationally, St. Eustatius is also bound by:

The CITES convention

The Cartagena Convention and its SPAW Protocol

The Inter American Convention for the Protection and Conservation of Sea Turtles (IAC)

The Convention On Biological Diversity (CBD)

The Convention On The Conservation Of Migratory Species Of Wild Animals ("Bonn Convention" or CMS)

The Ramsar Convention On Wetlands (Ramsar)

The International Convention For The Prevention Of Pollution From Ships

These international agreements, signed by the Kingdom of the Netherlands, are also binding for the Caribbean Netherlands, Curacao, and St. Maarten (and, with the exception of the IAC, also for Aruba) and the island governments are required by law to implement the provisions of the international treaties. The Kingdom Government (for all practical purposes the government of the



Netherlands) is ultimately responsible for the islands' compliance and has the authority to annul any decisions by the islands that are in contravention of binding international agreements.

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

II

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

The St Eustatius National Parks Foundation (STENAPA) is a non-governmental, not for profit foundation ('stichting') incorporated in the Netherlands Antilles on 21st November 1988 and first registered with the St Maarten Chamber of Commerce and Industry on the 28th August 1995 (registration #80371).

The St Eustatius National Parks Foundation (STENAPA) is the only organization on St Eustatius with a mandate for environmental protection. STENAPA is legally mandated by the Island Government to manage all the island's protected areas (the Statia National Marine Park, the Quill/Boven National Park as well as the Miriam Schmidt Botanical Garden) on the 21km<sup>2</sup> island of St Eustatius. Collectively, the protected areas account for 33km<sup>2</sup> - more than the total land area of St Eustatius

As a Foundation, STENAPA is headed by a Board of Directors who determines the long term goals, and supervise the implementation of long term and annual objectives by the Manager.

The Board appoints a Director of National Parks who, in turn, directs the team of staff, interns and volunteers to carry out operational activities and special projects. The Director meets with the Board at monthly meetings to report on activities, update on actions to implement Board decisions, and respond to Board concerns. Board members are voluntary in nature, and do not receive payment for their work with respect to STENAPA.

Any interested person residing on St Eustatius can apply to become a member of the governing Board of STENAPA at any time. The Board has a minimum of five and maximum of 15 members who are appointed upon agreement of existing board membership.

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

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

Daily operations are managed by a Director who delegates work to the managers under him/her. There is a Terrestrial Areas Manager, a Marine Park Manager and an Office/Finance Manager. Rangers alongside international interns and volunteers carry out the daily field work.

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

The National Parks Foundation has a Visitor Center from which all operations are coordinated.

All departments have transportation, staff and equipment with which to carry out their duties. This includes a boat for the marine park

User fees, small grants, souveniere sales, funding and a small subsidy provide the monies necessary to carry out daily operations.

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

Objective	Top priority	Comment
Preservation	Yes	Preservation, protection and administration of parcels of land/water on St Eustatius, worthy of preservation, due to: •Scenic beauty and/or the presence of flora and fauna important in scientific or cultural respects or valuable from a geological or historical point of view; • Its purpose to serve for the well-being, the education and the recreation of the St Eustatius population as well as that of visitors, all this with due observance of the primary requirement of preservation.
Education	Yes	

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

The current Management Plan was written in 2007. It is the second management plan for the St . Eustatius Marine Park, the first management plan was written in 1997.

Part 1 of the Management Plan provides valuable background and contextual information. It can be used as a stand-alone introduction to the island and MPA and has been written with a range of audiences in mind. Part 2 will be of interest to those wishing to develop a more in depth understanding of the operational management and issues facing the MPA. Part 3 is of concern to those with an interest in the current activities of St. Eustatius Marine Park and the rationale behind actions being taken. The final part of the plan is intended to act as a place marker for updates, where management actions have led to outcomes that can be described or there has been a change in the tools available to the MPA.

The physical, social and political environment that St. Eustatius National Marine Park works within greatly influences the operations of the protected area. Resources available to St. Eustatius Marine Park are described, including the legal instruments, institutional arrangements, human and physical resources. The main issues facing St. Eustatius Marine Park are detailed and described before being summarized.

The actions that St. Eustatius Marine Park need to take to work towards the mission and goals are clarified. Day to day activities of the MPA staff are outlined and actions are recommended to tackle the management issues and external issues identified.

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

: 1/3/08

### **Management plan duration**

: 5

### **Date of Review planned**

: 9/15/14

## **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	Not present on island
Coral	yes	yes	yes	Protected within the Marine Park. No take regulation.
Sea grass beds	no	no	no	Protected within the Marine Park. No take regulation.
Wetlands	no	no	no	Not present on island
Forests	yes	yes	yes	Protected within the National Park. Re-forestration program
Others	no	no	no	

### **Flora**

Species from SPAW Annex 3 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Hydrocharitaceae: <i>Thalassia testudinum</i>	yes	yes	no	Protected within the Marine Park. No take regulation.
Hydrocharitaceae: <i>Halophila decipiens</i>	no	no	no	
Cymodoceaceae: <i>Syringodium filiforme</i>	yes	yes	no	Protected within the Marine Park. No take regulation.

### **Fauna**

Species from SPAW Annex 2 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Reptiles: <i>Caretta caretta</i>	yes	yes	no	Protected year round. Nesting beach protected.
Reptiles: <i>Chelonia mydas</i>	yes	yes	yes	Protected year round. Nesting beach protected.
Reptiles: <i>Eretmochelys imbricata</i>	yes	yes	yes	Protected year round. Nesting beach protected.
Reptiles: <i>Dermochelys coriacea</i>	yes	yes	yes	Protected year round. Nesting beach protected.

Birds: Puffinus lherminieri	no	no	no	Isolated and breeding area inaccessible
Mammals: Megaptera novaeangliae	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Physeter macrocephalus	no	no	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Kogia simus	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Ziphius cavirostris	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Mesoplodon europaeus	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Orcinus orca	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Globicephala macrorhynchus	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Peponocephala electra	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Stenella attenuata	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Stenella longirostris	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Tursiops truncatus	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Mammals: Stenella coeruleoalba	yes	yes	no	Protected year round in the Marine Park (and in territorial waters)
Species from SPAW Annex 3 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
Hydrozoa: Milleporidae	yes	yes	yes	Protected in the Marine Park. No take regulation
Hydrozoa: Stylasteridae	yes	yes	no	Protected in the Marine Park. No take regulation
Anthozoa : Antipatharia	yes	yes	no	Protected in the Marine Park. No take regulation
Anthozoa : Gorgonacea	yes	yes	yes	Protected in the Marine Park.

				No take regulation
Anthozoa : Scleractinia	yes	yes	yes	Protected in the Marine Park. No take regulation
Molluscs: Strombus gigas	yes	yes	yes	Protected in the Marine Park. Size limit and catch size limit
Crustaceans: Panulirus argus	yes	yes	yes	Protected in the Marine Park. Size limit and catch method restriction

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

St Eustatius is seeking to diversify its economy and improve the welfare of its citizens. The development policy and strategy of the Government encourages and facilitates the realization of these objectives. Statia is offering investors a competitive investment environment, including the availability of land for development at relatively low cost. Potential areas that the Island Government is looking at include tourism, maritime and air transportation, education and training, real estate, value-added oil based industries and telecommunications based services, to list a few.

Government is aware through the various reports and studies that fisheries and tourism bring in millions of dollars in revenue on an annual basis and are hoping to develop those two areas in a sustainable manner.

Hence the need for a management authority with expertise to regulate the activities within the Marine Park. This is in order for all stakeholders to achieve their potential but in a sustainable way.

## 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
reserve	no-take and no-anchoring
general use	no anchoring, fishery restrictions (size, gear), diving restrictions (fee, license), EIA required for potentially impacting coastal development
anchoring zone	anchoring allowed including large commercial ships anchoring fee set per BRT of ship

### Comments, if necessary

The St Eustatius Marine Park surrounds the entire island from the high water mark to a depth of 30m. Due to the shape of the sea floor this extends the furthest in the South West. There are two designated reserves, marked by large yellow buoys, one in the North and one in the South.

The Northern Marine Reserve is located at 17° 30'.5 N along the high waterline to the northern point, to the north to the 30 meter depth limit, to the west and south along the 30 meter depth limit until these lines pass the coordinate 17° 30'.5 N and back to Jenkins Bay. The Southern Marine Reserve is located at 17° 28'.5 N along the high waterline to the point of White Wall, south out to sea for half a nautical mile, to the west following the 30 meter depth limit to the crossing with the 17° 27'.7 N coordinate, to the north 17° 28'.5 N and back to Gallows Bay. Anchoring is not permitted within the Reserves. Fishing is not permitted within the reserves

Due to the heavy boat traffic using Statia Terminals NV, anchoring zones have been designated for bunker vessels with drafts up to 15m (50ft). The zones are situated in Oranje Baai between the City Pier and the Statia Terminal Jetty. The zones are located in water of 24m to 40m. Two of the zones fall entirely within the marine park while half of Zone A lies beyond the depth boundaries of the marine park. Tankers also use the area west of these designated zones for anchoring vessels.

There are general use areas within which anchoring, fishing and unsupervised recreational activities are permitted. The yacht and fishing boats anchoring zone is located in the near shore area just to the north of the city pier/harbor.

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

The St Eustatius National Parks Foundation utilizes a number of treaties in their daily work. Also the St Eustatius National Marine Park works under the local legislation as written in the St. Eustatius Marine Environment Ordinance AB1996, No. 03

Treaties implemented by the National Nature Conservation Ordinance such as CITES, SPAW protocol of the Cartagena Convention, Bonn Convention on migratory species, Inter-American sea turtle convention, Biodiversity convention and the Ramsar convention overrule certain regulations stipulated within this island ordinance.

## **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	yes	1/5/09
World heritage site (UNESCO)	no	
Others:	no	

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

The St Eustatius National Marine Park contributes to local sustainable development measures by protecting the natural resources found within the marine environment of the island.

Within the Park there are no take zones which serve to increase the fish numbers through protection of larger breeders and of juveniles. Also there is a no anchoring zone which serves to protect the coral reefs from destruction thereby preserving them as habitat for the fish and as attractions for recreational divers.

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

Ressources		How many/how much	Comments/description
Human ressources	Permanent staff	6	
	Volunteers	8	
	Partners	5	
Physical ressources	Equipments	4 trucks 1 patrol boat 1 dinghy Trail and Botanical Garden maintenance equipment mooring maintenance equipment	
	Infrastructures	1 Visitor Center on the waterfront Visitor center at the Botanical Garden Workshop at the Visitor center	

Financial ressources	Present sources of funding	Grant funding for projects User fees Small government subsidy Souvenir sales endowments	The annual budget for the WHOLE of STENAPA (including terrestrial Protected Area) in 2013 was \$ 364,293
	Sources expected in the future	Nature Funds from the Netherlands	
	Annual budget (USD)		

**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).**

All departments have their own staff and volunteers and a weekly set of objectives to accomplish. There is sufficient manpower to do this when interns and volunteers are included. Because of this interns and volunteers are recruited year round and months in advance so that there are no gaps in personnel.

All work is carried out under the supervision of a designated area ranger who is knowledgeable as to the tasks required to carry out daily duties.

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

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

It is vital for the Marine Park to have accurate and up to date information about the marine environment (both marine life and habitat) in order to establish appropriate rules and regulations to ensure adequate protection. To this end, the Marine Park arranges specific research projects to answer questions from management and from stakeholders or assist with determination of appropriate regulations. Ongoing monitoring programs provide information to compare change against time, and gauge whether management activities of the Marine Park are effective. Routine monitoring includes dive site use, Reef Check (substrate, fish and invertebrate populations), coral bleaching, Marine Life surveys and sea turtle nesting. A large number of research and monitoring projects have been conducted in recent years.

Highlights include:

**2004: fish populations increased as a result of protection offered by Statia Marine Park**

To assess the impact of the management strategies implemented in the Marine Park, a study was conducted in 2004 to collect data regarding the fish population; this was a more extensive repeat of a survey performed in 1992 which gathered baseline information about the fish population before the area was given protected status.

**2013: survey of artificial reef for fishermen indicates increased fish diversity**

An artificial reef project was initiated following a meeting with fisherman in February 2004; they requested that the Marine Park create an artificial reef designated solely for fishing, and not as a dive site. It was agreed at that meeting to locate the new reef at a depth of 75 feet, west of the Southern Marine Reserve. The reef was completed in February 2006 with the sinking of a pipe, concrete mix barrel and the tug boat "Miss Cathy".

A survey to assess the fish population after six months found that both fish diversity and density had increased when compared to the results of the survey conducted prior to the creation of the reef. Diversity increased from 14 to 18 species, and more than twice as many fish were recorded than in the initial survey. This survey is conducted annually with numbers in 2013 showing the number of species had risen to 44.

**2007: study shows tankers impact reef negatively**

Disputes have arisen in past years between the local fishermen and Statia Terminals NV when oil tankers going to the terminal run

over fish traps and cut away the markers turning them into ghost traps. This study (White *et al.*, 2007) was conducted from 2004-7 to assess the damage caused to the coral reefs in the Marine Park by both the setting and retrieval of the tankers' anchors as well as the damage done while the vessel is "stationary".

**Ongoing: Inwater Sea Turtle survey**

This survey is conducted every three years to assess the foraging population of sea turtles in the Marine Park. It is a visual survey along transects to calculate the cpue.

**Marine Life Survey**

This is done at the wrecks within the park to assess the diversity and populations of ALL marine life on the wreck. Not only does it include fish and invertebrates but coral and algae cover as well.

In addition to environmental monitoring, STENAPA has taken part in the Dutch Caribbean Nature Alliance (DCNA) Management Success Project for the last 10 years. The management success project is an ongoing DCNA project designed to measure the management effectiveness of each of the park management organizations in the Dutch Caribbean. The management success project has developed a tool for collecting data using objective indicators to measure 'success' across a broad spectrum of protected area management tasks and activities. Ultimately, the management success project can be used as a model for park organizations to improve accountability, transparency and professionalism.

**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>	
management success project	Graphics and detailed analysis of management effort enables redirection of management effort if necessary.
Threat vs effort	Independent evaluation of the threats facing the park vs effort spent addressing the threats
Time distribution	Managers personal log of time distribution compared to the organisations outputs.
<i>Evaluation of conservation measures on the status of species populations within and around protected area</i>	
Reef check, fish counts, marine life surveys	
<i>Evaluation of conservation measures on the status of habitats within and around the protected area</i>	
Reef Check, Coral Watch	
<i>Evaluation of conservation measures on the status of ecological processes within and around the protected area</i>	
marine life survey	
<i>Evaluation of the impact of the management plan on the local communities</i>	
Surveys, events, membership drives	

# 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**



Stakeholders involvement	Involvement	Description of involvement	Specific coordination measures	Comments (if any)
Institutions	yes	There are several institutions that have a close working relationship with the park but their involvement with management of the Parks is minimal or nonexistent		
Public	yes	The public informs the Park of any violations that occur that the staff is unaware of thereby helping the Foundation to better carry out their duties.	The public is encouraged to approach staff members or to call the Visitor anytime. There is no coordination as such.	
Decision-makers	yes	Government approaches the National Park Foundation for advice on certain issues and vice versa. The Island Government provides the Parks with a small subsidy in order that the work of managing the environment can be carried out. The Park provides the Government with annual reports, project reports and advice.	There is no coordination as such. There is a good open working relationship with government.	
Economic-sectors	yes	Close working relationship with the dive shops, fisheries and hotels on the bay front etc. Park organizes ad hoc workshops for these groups.	Annual meetings, dive shops (and sometimes fishermen) report infractions to the Park.	
Local communities	no	See public		
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	yes	Via an education officer, Monthly school visits, weekly after school programs, summer club sessions, quarterly newsletter, nature themed events, regular articles in	Seeking funding for television program highlighting work of the rangers and nature on St

programmes		regional newspaper and regular updates on Facebook page. Also dynamic easy to navigate website.	Eustatius
Capacity building of staff and management	yes	The Dutch Caribbean Nature Alliance (DCNA) sponsors some staff exchanges. Funded attendance to workshops on nearby islands. Visiting researchers train staff that assists them on their project to continue fieldwork in their absence. Funded attendance to international conferences by staff. Online diploma programs.	Upgrading is essential and the Park is constantly on the lookout for cost effective trainings for staff
Research, data storage, and analysis	yes	There are ongoing research and monitoring programs for which all staff is qualified for data collection. Data entry and report writing is done by rangers and MP manager and reviewed by the Director.	A data analyses workshop is scheduled for this year for upgrading of staff
Surveillance and enforcement	yes	There are regular patrols due to a daily presence on the water. There is close cooperation with the Dutch Coast Guard and even some cooperation with the coast guard from St Kitts.	
Participation of exterior users	yes	Neighboring sister island researchers and Park staff will at times come to the island for training in the Marine Park in areas where we on St Eustatius have more experience such as conch and lobster drop camera surveys	
Alternative and sustainable livelihoods	yes	There is the occurrence of small scale artisanal fishing within the marine Park, also small scale whelk collection.	
Adaptative management	yes	The Park is constantly adapting and changing as the local situation changes. Regulations are not set in stone and can be revised if it is in the best interest of conservation.	Within short work will commence on the strengthening of Park regulations and there will be revisions made to some.

	Name	Position	Contact adress	Email adress
who is submitting the proposal (national focal point)	HOETJES Paul	Policy Coordinator Nature		Paul.Hoetjes@rijksdienstcn.com
who prepared the report (manager)	Brown Irving	Board President of National Parks	Lower Town, St Eustatius, Caribbean Netherlands	manager@statiapark.org

## Date when making the proposal

: 7/10/14

## List of annexed documents

Name	Description	Category	
Economic Valuation St Eustatius Marine Park	Summary of surveys completed to establish cost of and revenue from the coral reefs of St Eustatius National Marine Park	Cultural and socio-economic criterias	<a href="#">View</a>
Management Plan St Eustatius National Marine Park	5 year management plan for the MPA	Management plan	<a href="#">View</a>
Benthic Seascape map for the St Eustatius Marine Park	Map and report concerning the benthic habitat of the Statia Marine Park. Description of the variety and coverage.	Physical features	<a href="#">View</a>
Evaluating effectiveness of the reserves in St Eustatius	This study determined that habitat differences among the survey sites affected reef fish populations more than reserve status. However, the no-take reserves may still be important for protecting reef fish populations.	Ecological criterias	<a href="#">View</a>
St. Eustatius marine environment ordinance	Legal establishment of marine park with reserves, dive fees and species protection regulations	Legal and policy framework	<a href="#">View</a>
St. Eustatius Island Resolution AB 1996/04	General Island Resolution of March 25th, 1996, regulating the conditions under which permits are issued to run a fill station, to transport persons and/or supervise divers in the Marine Park, the applicable conditions of anchoring and anchor fees and establishing the amount of the permit fees regarding the Marine Park.	Legal and policy framework	<a href="#">View</a>
The Total Economic Value of Nature on St Eustatius	Economic valuation of 8 different ecosystem services. The total economic value (TEV) is the sum of these ecosystem services provided by both the marine and terrestrial ecosystems of St Eustatius. It is calculated to be 25.2 million USD per year.	Cultural and socio-economic criterias	<a href="#">View</a>
The Tourism Value of Nature on St Eustatius	Valuation of the services provided by nature to tourists on St Eustatius. The value of the natural environment for the tourism industry of St Eustatius is estimated to be almost 3 million USD per annum	Cultural and socio-economic criterias	<a href="#">View</a>
The local cultural and recreational value of nature on St Eustatius	Evaluation of the local recreational and cultural services that ecosystems on St Eustatius provide to their residents and their value to the inhabitants	Cultural and socio-economic criterias	<a href="#">View</a>
Mapping the Economic Value of Ecosystems on St Eustatius	Spatial allocation of the economic value of ecosystems and comparison to current spatial policies. Existing boundaries for nature conservation appear to be in the right place. However, some small but very valuable areas are placed outside protective areas.	Cultural and socio-economic criterias	<a href="#">View</a>

Statia National Marine Park 2011 Annual Report	Annual report submitted to the board of STENAPA by the manager of the marine park	Management plan	<a href="#">View</a>
A Management Capacity Assessment of Selected Coral Reef Marine Protected Areas in the Caribbean	findings of an assessment of capacity building needs for the management of marine protected areas (MPAs) in the Caribbean region in 2011. A total of 27 MPA sites in 10 countries and territories were included in the assessment (incl. St. Eustatius National Marine Park).	Management plan	<a href="#">View</a>
Population status and reproductive biology of queen conch ( <i>Lobatus gigas</i> ) in the coastal waters around St Eustatius	Thesis. Queen conch was found to be abundant around St Eustatius, with mean densities of 57 (dive surveys) and 115 (video surveys) adults per ha. The total adult queen conch stock was estimated to be 184,100 in 2,700 ha Marine Park. Further, a higher conch abundance was found on rubble habitats and at greater depths (17-31 m).	Ecological criterias	<a href="#">View</a>
The status of the Caribbean spiny lobster ( <i>Panulirus argus</i> ) and its fishery in the coastal waters of St Eustatius.	Thesis. In 2012 a total estimated number of 4580 lobsters was landed from both pots and diving together with a total weight of 4546 kg, while in 2013 the total estimated number of lobsters landed is 2917, weighing 3292 kg in total. Mean carapace length was found to be significantly higher inside the no-take zones than in the adjacent fishing areas, indicating a possible effect of fishing activities.	Ecological criterias	<a href="#">View</a>