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Ninth Meeting of the Scientific and Technical
Advisory Committee (STAC) to the Protocol
Concerning Specially Protected Areas and Wildlife
(SPA)W) in the Wider Caribbean Region

Virtual meeting, 17–19 March 2021

PROPOSAL OF PARKE MARINE ARUBA FOR LISTING UNDER THE SPA)W) PROTOCOL

For reasons of public health and safety associated with COVID-19, this meeting is being convened virtually. Delegates are kindly requested to access all meeting documents electronically for download as necessary.

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

**Parke Marino Aruba
Kingdom of Netherlands**

Date when making the proposal: *January 30th, 2021, updated February 15th 2023*

CRITERIA SATISFIED:

Ecological criteria

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

Cultural and socio-economic criteria

Recreation
Traditional artisanal fishery
Ecosystem services associated with
mangroves and seagrass beds
Traditional uses including navigation.

Area name: Parke Marino Aruba

Country: Aruba

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Copies of planning and management documents

Chapter 1. IDENTIFICATION

a - Country:

Aruba

b - Name of the area:

Parke Marino Aruba

c - Administrative region:

Kingdom of the Netherlands

d - Date of establishment:

December 20th, 2018, Marine Park (AB 2018 no. 77)

May 5th, 2020, new protected areas, including IBA Sero Colorado and other Reef islands, and Mangrove areas (AB 2020 no. 67)

e - If different, date of legal declaration:

n/a

f - Geographic location

Longitude X: -69.968338
Latitude Y: 12.521110

g - Size:

60.2 km²

h - Contacts

Park address: Fundacion Parke Nacional Aruba, San Fuego 70, St. Cruz, Aruba

Focal Point address: Directie Natuur en Milieu, B. v/d Veen Zeppenfeldtstraat 7, San Nicolaas, Aruba

i - Marine ecoregion

66. Southern Caribbean

Chapter 2. EXECUTIVE SUMMARY

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

Table 1. Size of Aruba Marine Park and individual section names.	
MPA1. Arikok	1650 hectares
MPA2. Sero Colorado	1870 hectares
MPA3. Mangel Halto	1600 hectares
MPA4. Oranjestad Reef Islands	900 hectares
Total size in hectares	6020 hectares

Aruba is part of the Leeward Islands or ABC-islands (Aruba, Bonaire and Curacao) and is located in the Caribbean Sea, 24 km off the coast of Venezuela. Since 2009 the Government of Aruba (GOA) recognized the

importance of protecting coastal waters in its Spatial Development Plan[1]. After the

dissolution of the Dutch Antilles in 2010, Aruba was assigned an Exclusive Economic Zone (EEZ). The Dutch Kingdom transferred management responsibilities to the local government. Parke Marino Aruba (PMA) was officially established by law AB 2018 no.

77 on December 21st 2018 with support from the BEST 2.0 Program grant for establishment of Marine Protected Areas (MPAs) [2]The park is divided into four sections of the island that extend up to 2 km seaward (see Table 1 and Annex 1). These MPAs are not connected to each other.

These MPAs are managed as multi-use areas with application of ecosystem-based approaches. Important features include, but are not restricted to (Table 2.):

Table 2. Most important and vulnerable resources by area	
<p>MPA1. Arikok</p> <ul style="list-style-type: none"> > The entire marine environment > Sea turtle foraging and nesting sites > Shore bird nesting sites > Patchy coral reefs 	<p>MPA3. Mangel Halto</p> <ul style="list-style-type: none"> > Majority of mangroves > Sea turtle foraging and nesting sites > Shore bird nesting sites > Marine mammal nursery > Seagrass beds > Coral reefs > Watershed
<p>MPA2. Sero Colorado</p> <ul style="list-style-type: none"> > Sea turtle foraging and nesting sites > Shore bird nesting sites > Shark nursery areas > Coral reefs > Seagrass beds > Marine Mammal nursery and foraging corridor 	<p>MPA4. Oranjestad Reef Islands</p> <ul style="list-style-type: none"> > Sea turtle foraging and nesting sites > Shore bird nesting sites > Shark nursery areas > Marine mammal corridor > Mangroves > Coral reefs > Seagrass beds

The Parke Marino Aruba, is currently managed by the local not-for-profit organization, Aruba National Park Foundation, officially ‘Fundacion Parke Nacional Aruba’ (FPNA). FPNA is the conservation management organization of Aruba that manages all protected nature areas of Aruba, both terrestrial and marine. The Foundation has a permanent Supervisory Board consisting of five members who oversee activities and direct overall strategy. Board members have additional responsibilities in accordance with their respective positions. In 2019 the Foundation’s Articles of Incorporation [3]were amended to allow the Board to adapt their governance to a two-tier structure with a Supervisory Board, responsible for oversight and an Executive Board – consisting of the Chief Executive Officer and Chief Conservation Officer - responsible for day-to-day management of the protected areas.

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

The four areas are representative of Aruba’s marine resources, including: mangroves, seagrasses, coral reefs and deep-water habitats. These habitats are directly adjacent to even more protected mangroves and one important wetland (Spaans Lagoen, Ramsar #198). The designation of the areas warrants conservation and protection of biodiversity and habitats from unsustainable practices. The four MPAs that together form the marine park were indicated in 2009 as part of the national spatial development plan [1] to become marine reserves as part of island round marine spatial planning, as these areas have high value for national biodiversity.

As such, the park was created to primarily protect and conserve marine flora and fauna found in the coastal waters of Aruba. The FPNA aims to inspire and engage the community

at large to join in the protection and conservation of marine biodiversity and resources through ecosystem-based approaches, and sustainable recreational and economic practices. The Parke Marino is threatened by [4]–[6]

- Residential and commercial development around the sites;
- Unregulated marine and coastal recreation;
- Unsustainable and unregulated maritime activities;
- Unregulated and harmful extractive activities;
- Pollution from land-based sources as well as marine based;
- Invasive species and diseases;
- Wildlife feeding;
- Climate change and natural disasters.

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

Ecological Criteria

- a) Representativeness (All MPAs)
- b) Conservation value (All MPAs)
- c) Rarity (All MPAs)
- d) Naturalness (MPA Arikok)
- e) Critical habitats – (All MPAs)
- f) Diversity (All MPAs)
- g) Connectivity/coherence (MPA Arikok – Arikok National Park, MPA Mangel Halto – Spaans Lagoen Ramsar site #198, MPA Sero Colorado – connecting to mainland continental shelf, ecological corridor)
- h) Resilience (All MPAs)

Cultural and socio-economic criteria

- a) Productivity (nurseries, carbon-cycling)
- b) Cultural and traditional use (artisanal fisheries, camping)
- c) Socio-economic benefits (fisheries, tourism/recreation aesthetic and spiritual value)

Chapter 3. SITE DESCRIPTION

a – General features of the site

Terrestrial surface under sovereignty, excluding wetlands:

MPA Arikok is directly adjacent to protected nature area Arikok National Park (AB 2000 no 59[7]) with a surface area of 34 km².

Reef islands found in MPA Sero Colorado, MPA Mangel Halto and MPA Oranjestad total 0.042613 km².

In addition to the marine park that is currently up for SPAW listing, FPNA manages 24.3% of the Aruba island's terrestrial surface area as multi-use protected nature areas [8].

Wetland surface:

MPA Mangel Halto is directly adjacent to protected wetland area Spaans Lagoen (AB 2017 no 11, Ramsar site #198) and includes several protected mangrove areas[8]. No wetlands

are found within marine park.

Marine surface:

The marine park consists of four MPAs that together cover 60.2 km².

b - Physical features

Brief description of the main physical characteristics in the area:

Aruba as the smallest and western most island of the of the Dutch Leeward Islands forms part of the Aruba-La Blanquilla chain, consisting of little islands and atolls along the Venezuelan continental border. Aruba is situated north of the Venezuelan peninsula of Paraguana. Aruba is, contrary to Bonaire and Curacao, part of the Venezuelan continental flat [9]. Its highest peak is Mount Jamanota (189 m) and the island is generally considered to be flat.

Folded metamorphosed sedimentary and igneous rocks of the Cretaceous age are at the core of Aruba which may be overlain by Eocene, Neogene and Quaternary limestone deposits.

Its geological composition consists of three major units: the Aruba Lava Formation (ALF) in the central and northeastern part of the island, a tonalite/ batholite cover the center of the island, and Neogene and Quaternary limestones [10].

The sea level rise rate is -4mm per year [11].

Geology:



Image 1. From Derix, R. 2016. *Spatial Developments in the Aruban Landscape: A multidisciplinary GIS-oriented approach*. Chapter 3, Central Bureau of Statistics Aruba [10]. Figure shows main geological structures and distribution. Aruba Lava Rock Formation, Aruba Batolith formation, Gabbro formation, and Limestone formation.

Area Parke Marino Aruba	Description
MPA Arikok	Formed underwater by the volcanic ALF and the Pleistocene Limestone Terraces (PLT). The coastline alternates between ALF and PLT. Between the Natural Pool (Conchi) and Dos Playa there is a relatively low limestone terrace with a wide spray zone including sawah banks. The sawah banks at the edge of the limestone terrace provide a habitat for different plants and animals. At certain locations, large drainage channels were eroded over time in the limestone terraces due to the run-off of rainwater. In some locations this led to the development of bays. The rocky shores provide natural protection against storm waves.
MPA Sero Colorado	The coastline consists of Aruba Batholith near Punta Basora wherein a natural bridge has formed. Baby Beach and Rodger's Beach are significant bays that form part of the park. The east coast of Sero Colorado consists of sawah banks over a continuous stretch from Bachelor Beach to Sero Colorado point. The San Nicolas Bay Reef Islands consist of five reef islets located off the south coast of Aruba. The islands are separated from the mainland by a shallow (3– 15 m deep) lagoon adjacent to a large oil refinery and the town of San Nicolas.
MPA Mangel Halto	The vicinity consists of limestone cliffs of the Late Pleistocene Lower Terrace in combination with reef rubble. Between Spaans Lagoen and Mangel Halto, the coastline borders the lagoon and consists of a cliff, formed of the Late Pleistocene Lower Terrace. The lagoon is connected to Spaans Lagoen, which is permanently filled with salt water. During the rainy season 'fresh' water flows into the lagoon through rooi (stream) Frances, rooi Bringamosa and rooi Taki. The area borders with sandy and rubble beaches and a series of reef islets off the southwest coast. The islands are separated from the mainland by a shallow lagoon (approx. maximum depth 20 meters).
MPA Oranjestad Reef	The area surrounds several reef islets located off the southwest coast of Oranjestad. These islets are separated from the mainland by a deep shipping lane adjacent to a cruise and cargo ship terminal.

Soil:

n/a

Topography:

n/a

Bathymetry:

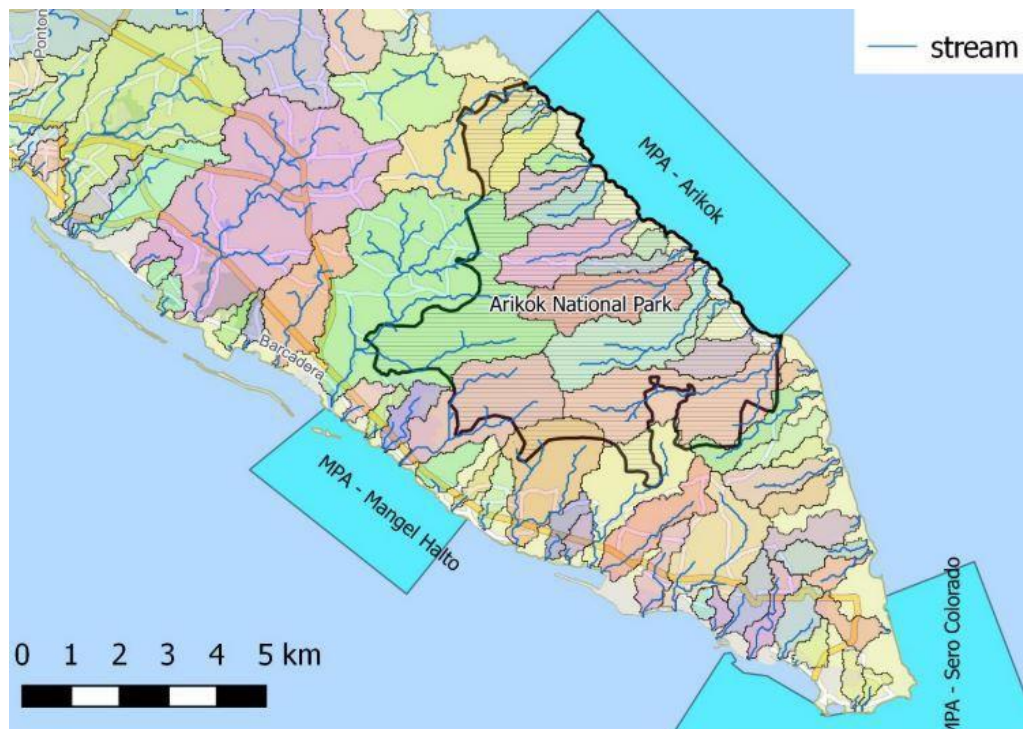
The continental shelf of Aruba merges with that of Venezuela and reaches a maximum depth of 200 meters. Between Aruba and Curacao, a deep-water trench over 1000 m depth is situated. The ABC-islands main surface circulation is dominantly affected by the Caribbean Current. The highest surface velocities can reach 70 cm/s along the coast of Venezuela and the ABC-islands. Currents run from the east to north alongside the coast. On the southeastern corner of the island, a gyre may form.

Aruba's tides vary strongly and are semidiurnal, meaning: that during springtides the tide is diurnal and during neap tide the tide is semidiurnal. The average tidal range is approximately 0.43 m. During spring tide the maximum tidal range is approximately 65 cm [4], [11].

Hydrodynamics:

‘The MPA Arikok is connected to watersheds located in the national terrestrial park Parke Nacional Arikok (Figure 1). The MPA of Sero Colorado is not connected to any major watershed. It is bordered by the Refinery of Aruba which is located/connected to relatively small watersheds causing concern for industrial contaminated runoff and groundwater leachate. The MPA of Mangel Halto is connected to two relatively large watersheds. One consists of Rooi Bringamosa and Rooi Taki which discharge the runoff in the wetland of Spaans Lagoon. Note that a significant portion of the urban area of Santa Cruz is located near this watershed. The other watershed consists of Rooi Manonchi which discharges its runoff into the mangrove forest connecting to MPA Mangel Halto’[4].

Figure 1. Drainage basins and streams. Source: [4], [11]



Volcanic formations:

Aruba Lava Rock Formation

Sand dunes:

In the terrestrial park (Arikok National Park) inland from MPA Arikok, there are dunes at Boca Prins beach, and minor dunes/sands at Dos Playa and Boca Keto. While these dunes do not fall under the Parke Marino Aruba MPAs, they are legally protected and connected to it as part of the connected ecosystem/biome of the Arikok National Park.

Underwater formations:

n/a

Others:

FRESHWATER INPUTS

Mean annual precipitation (in mm)

The presence of tropical storms makes mean annual precipitation variable/ Average annual rainfall in recent years (2000 to 2011) has been 588 mm. Higher than the island's long-term average of 410 mm measured between 1953 and 1972 [12] Trade winds and the island's topography decrease rainfall from the Southeast to the Northwest. Through limestone and along fault lines, cracks and fractures ~90% of the rainwater drains underground to the western coast. [10], [12]

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.):

Aruba is represented by a wide range of habitats. These range from xerophytic shrub covered cliff sides to wetlands, mangrove forests, seagrass beds, various coral reef communities. Parke Marino Aruba consists of four marine protected areas (MPAs). The following table describes the marine habitats and species associated with the Parke Marino Aruba in one or more of the MPAs or directly connected to Parke Marino Aruba.

Detail for each habitat/ecosystem the area it covers:

<i>Marine / coastal ecosystem categories</i> Detail for each habitat / ecosystem the area covers	Size (estimate)		Description and comments
	unit	Area covered	
<i>Mangroves</i>			
Mangroves	ha		Around Aruba, four species of mangroves can be found; Red mangrove (<i>Rhizophora mangle</i>), Black mangrove (<i>Avicennia germinans</i>), White Mangrove (<i>Laguncularia racemosa</i>) and Buttonwood (<i>Conocarpus erectus</i>). These are found along the coast of MPA Sero Colorado, the reef islets, MPA Mangel Halto and MPA Oranjestad Reef. Most mangrove areas are protected as part of the more recently designated nature areas, included in this nomination, and all individual mangroves are also protected as ecological valuable species [13]
<i>Coral reefs</i>			
Coral Reefs (total for island)	sq.km	20.1 (depth up to 10m)[8]	The Leeward coast of Aruba harbors 68 reef building coral species forming part of its shallow fringing reef. This number is relatively higher than other Caribbean countries [11]. The Southwest coast of Aruba is historically characterized by a sandy flat, populated with relatively few corals.

Seagrass beds			
Seagrass	sq.km	11.1	Seagrass beds are under immense pressure due to negative human interactions (such as land-based sources of pollution, trampling, anchoring and dredging). <i>Halophila stipulacea</i> (an invasive species) are observed taking over previously <i>Thalassia testudinum</i> (Turtle grass) dominated fields, an indicator of nutrient pollution and diminishing water quality. Specific seagrass species have been protected since 2017 [14], i.e., <i>Halodule wrightii</i> (shoal grass), <i>Halophila baillonis</i> (clover grass), <i>Halophila decipiens</i> (paddle grass), <i>Halophila engelmannii</i> (Engelmann's seagrass), <i>Syringodium filiforme</i> (manatee grass) and <i>Thalassia testudinum</i> (Turtle grass).
Rocks			
Rocky shores	m	3159.606	Shores of reef islands
<i>Sawah Banks</i>		unknown	Bordering MPA Sero Colorado and MPA Arikok
Sand cover			
Sandy bottom	sq.km	9.5*	*measured around whole island up to depth of 10m, 100m from coast.
Other marine ecosystems			
Terrestrial ecosystems	Size (estimate)		
	unit	Area covered	
Wetlands			
Wetlands/marshes	sq.km	0	Directly adjacent to the MPA Mangel Halto, including RAMSAR site #198, Spaans Lagoen also managed by FPNA as part of an interconnected ecosystem.
Other terrestrial ecosystems			
Beaches	sq.km	0	Directly adjacent to the MPAs, including several beaches also managed by FPNA as part of an interconnected ecosystem.
Reef islands	Sq.km	0.042613	The reef islets within the MPA areas have been designated as protected nature areas [8] and are managed by the same authority as the MPAs. These islets consist of coral rubble, mangroves, and other coastal vegetation. Some of these islets are also recognized as IBA and KBA for migratory bird species (including terns).

Flora

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

Within the MPAs there are some significant seagrass beds present that consist of *Thalassia testudinum*, *Syringodium filiforme*, *Halodule wrightii* and (invasive) *Halophila stipulacea*. Bordering the MPAs there are several protected areas with mangroves, including islets surrounded by the MPAs. Mangrove species consist of: *Conocarpus erectus*, *Rhizophora mangle*, *Avicennia germinans* and *Laguncularia racemosa*. Other flora species documented on reef islands of Sero Colorado and Oranjestad: *Suriana*

maritima, *Mallotonia gnaphalodes*, *Sesuvium portulacastrum*, *Euphorbia menbrianthemifolia*, *Thespesia populnea*, *Scaevola taccada* (invasive).

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
n/a		

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
<i>Thalassia testudinum</i> (Turtle grass)	Not given	Locally protected
<i>Syringodium filiforme</i> (manatee grass)	Not given	Locally protected
<i>Halodule wrightii</i> (shoal grass)	Not given	Locally protected
<i>Halophila decipiens</i> (paddle grass)	Not given	Locally protected
<i>Halophila baillonis</i> (clover grass)	Not given	Locally protected
<i>Halophila engelmannii</i> (Engelmann's seagrass)	Not given	Locally protected
<i>Rhizophora mangle</i> (Red mangrove)	Not given	Locally protected
<i>Avicennia germinans</i> (Black mangrove)	Not given	Locally protected
<i>Languncularia racemosa</i> (White mangrove)	Not given	Locally protected
<i>Conocarpus erectus</i> (Buttonwood)	Not given	Locally protected

List of plant 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
n/a	-	-	-

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
<i>Thalassia testudinum</i> (Turtle grass)	Not given	
<i>Syringodium filiforme</i> (manatee grass)	Not given	
<i>Halodule wrightii</i> (shoal grass)	Not given	
<i>Halophila decipiens</i> (paddle grass)	Not given	
<i>Halophila baillonis</i> (clover grass)	Not given	
<i>Halophila engelmannii</i> (Engelmann's seagrass)	Not given	
<i>Rhizophora mangle</i> (Red mangrove)	Not given	
<i>Avicennia germinans</i> (Black mangrove)	Not given	
<i>Languncularia racemosa</i> (White mangrove)	Not given	
<i>Conocarpus erectus</i> (Buttonwood)	Not given	

Fauna

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

Key fauna species groups in the MPA areas of particular importance include:

- Coral reefs
- Sea Turtles
- Marine Mammals
- Fish, including Sharks and Rays
- Migratory Birds
- invertebrates

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
<i>Globicephala macrorhynchus</i>	Not given	-
<i>Physeter macrocephalus</i>	Not given	-
<i>Stenella longirostris</i>	Not given	-
<i>Acropora cervicornis</i>	Not given	-
<i>Stenella coeruleoalba</i>	Not given	-
<i>Sterna dougallii</i>	75–225	-Delnevo 2008
<i>Grampus griseus</i>	Not given	-
<i>Kogia breviceps</i>	Not given	-
<i>Charadrius melodus</i>	Not given	-
<i>Falco peregrinus</i>	Not given	-
<i>Stenella attenuata</i>	Not given	-
<i>Pandion haliaetus</i>	Not given	-
<i>Orcinus orca</i>	Not given	-

<i>Lepidochelys olivacea</i>	Not given	-
<i>Caracara cheriway</i>	Not given	-
<i>Montastraea/ Orbicella faveolata</i>	Not given	-Wouters 2018
<i>Peponocephala electra</i>	Not given	-
<i>Caretta caretta</i>	Not given	-
<i>Dermochelys coriacea</i>	Not given	-
<i>Sterna antillarum antillarum</i>	15–255	-Delnevo 2008
<i>Megaptera novaeangliae</i>	Not given	-
<i>Eretmochelys imbricata</i>	Not given	-
<i>Chelonia mydas</i>	Not given	-
<i>Mesoplodon europaeus</i>	Not given	-
<i>Balaenoptera physalis</i>	Not given	-
<i>Pseudorca crassidens</i>	Not given	-
<i>Acropora palmata</i>	Not given	-
<i>Kogia sima</i>	Not given	-
<i>Ziphius cavirostris</i>	Not given	-
<i>Pelecanus occidentalis</i>	Not given	

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
<i>Dichocoenia stokesii</i>	Not given	
<i>Anthozoa, Scleractinia, all spp.</i>	Not given	
<i>Agaricia lamarcki</i>	Not given	
<i>Dendrogyra cylindrus</i>	Not given	
<i>Strombus gigas</i>	Not given	
<i>Mycetophyllia ferox</i>	Not given	
<i>Anthozoa, Alcyonacea, all spp.</i>	Not given	
<i>Montastraea franksi</i>	Not given	

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
<i>Rhincodon typus</i>	VU - Vulnerable	not given	Whale Shark
<i>Sphyrna mokarran</i>	EN - Endangered	not given	Squat-headed Hammerhead Shark
<i>Epinephelus itajara</i>	CR - Critically endangered	not given	Atlantic Goliath Grouper
<i>Epinephelus striatus</i>	EN - Endangered	not given	Nassau Grouper
<i>Balistes vetula</i>	VU - Vulnerable	not given	Queen Triggerfish
<i>Lachnolaimus maximus</i>	VU - Vulnerable	not given	Hogfish
<i>Lutjanus analis</i>	VU - Vulnerable	not given	Mutton Snapper
<i>Lutjanus cyanopterus</i>	VU - Vulnerable	not given	Canteen Snapper
<i>Mycteroperca interstitialis</i>	VU - Vulnerable	not given	Yellowmouth Grouper
<i>Scarus guacamaia</i>	Unknown	not given	Rainbow Parrotfish

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
<i>Anthozoa</i>	not given	
<i>Hydrocorallina</i>	not given	
<i>Cetacea</i>	not given	
<i>Caretta caretta</i>	not given	
<i>Chelonia mydas</i>	not given	
<i>Conus curassaviensis</i>	not given	
<i>Conus hieroglyphus</i>	not given	
<i>Conus wendrosi</i>	not given	
<i>Dermochelys coriacea</i>	not given	
<i>Epinephelus itajara</i>	not given	
<i>Epinephelus striatus</i>	not given	
<i>Eretmochelys imbricata</i>	not given	
<i>Lepidochelys kempii</i>	not given	
<i>Lepidochelys olivacea</i>	not given	
<i>Manta birostris</i>	not given	
<i>Melongena melongena</i>	not given	
<i>Oreaster reticulatus</i>	not given	
<i>Panulirus argus</i>	not given	
<i>Pelecanus occidentalis</i>	not given	
<i>Pristis pectinata</i>	not given	

<i>Sphyrna lewini</i>	not given	
<i>Sphyrna mokarran</i>	not given	
<i>Sterna antillarum</i>	not given	
<i>Sterna dougallii</i>	not given	
<i>Strombus costatus</i>	not given	
<i>Strombus gallus</i>	not given	
<i>Strombus gigas</i>	not given	
<i>Strombus pugilis</i>	not given	
<i>Strombus raninus</i>	not given	
<i>Thunnus thynnus</i>	not given	
Scaridae	not given	
<i>Diadema antillarum</i>	not given	

d - Human population and current activities

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

There are no residents inside the marine parks. There are residential areas, fishing docks and large-scale commercial developments on the coastline directly adjacent to three of the four MPAs. Seasonally, there may be a small group of residents that camp on the reef [15]islands within MPA Mangel Halto/Oranjestad in shacks made from scrap materials called Rancho' s.

Description of population, current human uses and development:

The population of Aruba counts approximately 112000 inhabitants (CBS). Human activities in the Marine Park MPAs are varied and include:

- Recreational activities (kayaking, swimming, snorkeling, diving, boating, sailing)
- Tourism
- Fishing and other extractive activities
- Shipping routes passing through.

Currently, these activities are regulated to some extent by national laws and decrees [16]– [18] After stakeholder engagement, the rules, regulations and zoning of the Marine Park will be formalized. It is expected that the potential negative impact of these activities will be reduced further, and each activity limited to specific zones.

	Inside the area		In the zone of potential direct impact	
	Permanent	Seasonal	Permanent	Yearly
Inhabitants	0	Occasional family camping in the shacks on the mangrove reef islands and seasonal at the end of Lent	112000	1.5 million

Activities	Current human uses	Possible development	Description / comments, if any
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Tourism	Significant	Expansion to 14.000 rooms	Planning of additional hotel rooms. COVID has slowed further development. 1.5 million tourists a year take part in various recreational activities: from snorkeling to mega yachting.
Fishing	Significant	Recreational/artisanal: Estimated by proxy 390 tons/yr of reef associated fishes. Illegal industrial fishing proxy: 359 tons/yr.	There is limited information on the fishing industry. An estimated 1700 fishers (1492 part-time and hobby fishers and 6 full-time fishers) and 56 active fishing boats present on the entire island. Spearfishing is considered culturally important, from what is known. Presence of commercial reef fish stocks are limited. Presence of functional species of invertebrates that are commercially important (conch, lobster) are virtually extinct on the leeward and most impacted coast [11].
Mining	Significant		Land based mineral mining for construction material has resulted in siltation of water streams and introduction of run- off soils to the marine environment.
Dredging		Dredging: adjacent to MPA Oranjesta d Reef	Dredged marine sediments further than 1 km off the coast are used for beach replenishment activities, with a high risk of negatively impacting intertidal habitats and species. Between the two sections of MPA Oranjestad reef there is the Cruise ship terminal and channel, which now also accomodates mega-cruiseships. This requires dredging activity, approximately once every 3 years. The last 2 dredging projects were in 2018 and 2022. Where in 2022 because of the new designation of the marine park, FPNA and DNM were included in the process to mitigate impact (mainly sediment plumes) of this dredging activity.

Agriculture	unknown	expansion	Due to the covid pandemic the government has fast-tracked agricultural activities for food security.
Industry	Significant	unknown	The Oil refinery in San Nicolas area has historically caused environmental damage. Since its closure, its impacts have remained limited. The desalination plant in Balashi supplies fresh water to the inhabitants. The brine waste produced by the reverse-osmosis technology is dumped at sea, downstream of MPA Mangel Halto and upstream from MPA Oranjestad
Forestry	Unknown	Unknown	Local xerophytic forests are converted into urban areas.
Others: Shipping	Unknown	Unknown	There are three shipping harbors: Oil refinery San Nicolas, Barcadera and Cruise ship terminal Oranjestad. The Oil refinery is currently inactive but when it was built, the reefs were destroyed to make space for navigation. The Barcadera harbor manages container freights. The cruise ship terminal brings in around 1 million visitors annually to the island.

e - Other relevant features

N/a.

f - Impacts and threats affecting the area

Detail description of threats in Appendix.

The Parke Marino Aruba is impacted by direct and indirect threats. Some of these threats are related to activities or developments on land or adjacent to the MPAs, others occur within the MPAs. The four MPA areas are threatened by [4], [5]

- Residential and commercial development around the sites;
- Unregulated marine and coastal recreation;
- Unsustainable and unregulated maritime activities;
- Unregulated and harmful extractive activities;
- Pollution from land-based sources as well as marine based sources;
- Invasive species and diseases, including lionfish, coral bleaching and SCTLD;
- Wildlife feeding;
- Climate change and natural disasters.

The Parke Marino Aruba is currently in a transition phase after its legal establishment. National laws and decrees and international treaties are applicable island wide, including within the MPAs. Based on a post-Covid extensive stakeholder engagement process in 2021-2022 and the monitoring of natural values since 2020, a Marine Park Management Plan will be produced for 2023- 2027 that will include additional rules, regulations and zoning within the MPAs to ensure the aforementioned threats are marginalized or mitigated completely. After that, the Management Plan will be adapted each term applying evidence based, adaptive and ecosystem-based management principles. A preliminary Marine Park Management Plan (2019-2021) [5] was developed to serve as a guideline for management during the transitions phase.

h - Information and knowledge available

Briefly describe what is known of the area and how well it is documented (attach a list of the main publications)

The area is understudied.

List of the main publications

- [1] Government of Aruba and, "Ruimtelijk Ontwikkelingsplan Aruba," no. April, 2009.
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- [18] Government of Aruba and Rho, *Ruimtelijk Ontwikkelingsplan met Voorschriften (ROPv) (AB2021 no.123)*, vol. 1. 2021, p. 52.

- [19] C. Johnson *et al.*, "Protecting Blue Corridors: Challenges and solutions for migratory whales navigating national and international seas."
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- [21] Government of Aruba, *Natuurbeschermingsverordening AB 1997 no.34*, no. AB 1997. 1995, pp. 1-7.
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- [24] Government of Aruba, "Ruimtelijk Ontwikkelingsplan: Naar een duurzame ontwikkeling," vol. 2019, 2019.
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Briefly indicate 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)
Coral Reef	Every other year	GCRMN since 2021, at 12 sites Modeled after first baseline executed by Carmabi in 2019
Seagrasses	annually	Since 2021, at 17 sites

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.)

a) Representativeness (All MPAs)

MPAs include seagrass meadows, coral reefs, mangrove forests and lagoon areas sheltered by reef islands that are characteristic of Aruba's Southwest coast. MPA Arikok includes the sawah banks and rough seas that are characteristic of Aruba's windward coast as well as rocky intertidal areas with rocky cliffs, platforms, rock pools and boulder fields.

b) Conservation value (All MPAs)

Bordering mangrove forests and adjacent to a wetland area and multiple beaches the MPAs connect marine nursery and nesting areas with the open ocean. A crucial connection for the conservation of many marine species including sharks, sea turtles and terns. This connection includes mangroves, seagrass beds, coral reefs and open ocean to cover all life stages of marine life cycles.

c) Rarity (MPA Mangel Halto, MPA Sero Colorado, MPA Oranjestad Reef)

Aruba's Southwest coast and marine habitat has a unique feature that is uncommon in the region. There is a gradual, slow slope, allowing for a large area of flora and fauna that

enjoy shallower and lighter conditions. Parallel to the main island's southwestern coastline, there is a chain of reef islets that protects an inner lagoon from rough seas and serving as a unique sheltered habitat for many species, including marine mammal nursery and recovery.

d) Naturalness (MPA Arikok)

Due to its remote location and low accessibility, this area has remained quite natural and undisturbed. The only serious anthropogenic disturbance in this MPA is (contaminated) sediment runoff from land sources through roois.

e) Critical habitats (All MPAs)

The MPAs include seagrass meadows that are critical foraging grounds for endangered and protected green turtles (*Chelonia mydas*), queen conch (*Strombus gigas*) and nursery grounds for fish (including diverse species of sharks and rays) and crustaceans. The MPAs also include birthing, resting and migrating areas used by marine mammals. The reef islets within the MPAs are IBAs and significant for the populations of breeding terns. The most numerous species is the "Cayenne" *eurygnatha* subspecies of Sandwich Tern *Sterna sandvicensis* with a globally important 1,300 pairs (Delnevo 2008). These islets represent the only nest sites for this species on Aruba. In most years, 30% of the island population nests on the Oranjestad reef islets (IBA), and 70% in the Sero Colorado reef islets (IBA). There is a proven between-year movement of breeding birds between these two nesting colonies. The population of 26 pairs of Common Tern *S. hirundo* is regionally significant (Delnevo 2008). Additionally, on the reef islets of MPA Sero Colorado (IBA) are highly "unique as it is the only place in the world where 10 species of terns gather"¹. The San Nicolaas IBA was designated as such in 2007 for its high abundance of Brown and Black Noddies, as well as Roseate, Royal, Least, Common, Bridled, Sandwich, Cayenne and Sooty Terns. Other species of terns that have been observed but have less data available "Black, Caspian, Gull-billed, and Large-billed Terns".

f) Diversity (All MPAs)

The combination of the four MPAs contains a variety of habitats and species, including mangrove forests, seagrass beds, complex coral reefs, open sea, sawah banks and reef islets, it includes a variety of KBA's and IBA's that provide diverse habitats for many species including endangered, protected, and SPAW listed species of flora & fauna (see Chapter 3c).

g) Connectivity/coherence (MPA Arikok – Arikok National Park, MPA Mangel Halto – Spaans Lagoen Ramsar site #198, MPA Sero Colorado – connecting to mainland continental shelf, ecological corridor, and is included in the Oostpunt RAMSAR site since 2022. MPA. Mangel Halto and Oranjestad Reef are both included in the new Zuidkust RAMSAR site since 2022.).

The MPA's are not only connected to terrestrial protected areas, within the MPAs multiple habitats and ecosystems are connected. Adjacent neighboring islands Curacao and Bonaire also protect their coastal ecosystems, together forming a protected area of regional significance. There is the potential to further expand the Yarari Sanctuary (currently EEZ of Bonaire, Saba and St. Eustatius) to include the EEZs of Curacao and Aruba for the conservation of migratory marine megafauna, such as marine mammals, sharks and rays.

¹ <https://www.birdwatchingdaily.com/locations-travel/featured-destinations/terns-in-paradise/> Terns in Paradise

- h) Resilience (All MPAs): At MPA Arikok, due to its windward and rough nature, the marine habitat is considered untouched and pristine. The species in this area contain vast genetic information. The other 3 MPAs on the southwestern and leeward coastline of Aruba have bays and lagoons that are sheltered from rough seas. Here you can find coral reserves of for example *Acropora palmata* and *Acropora cervicornes* that can weather hurricane seasons.

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).

Cultural and traditional use:

- Recreation
- Traditional artisanal fishery
- Ecosystem services associated with mangroves and seagrass beds
- Traditional uses including navigation.

Aruba is known to be highly dependent on its coastal and marine ecosystems for its economy and well-being. Tourism represents 88% of Aruba's GDP and the added value of nature for tourism is estimated at US\$ 269 million/year. Aruba government is aware of the link between a healthy environment and the tourism sector, for which the coastal and marine ecosystems are the major attraction (Localizing SDGS ref). It has been acknowledged that, like in many other island contexts, where this dependency is crucial, the linkages between the benefits provided by nature and sustainable development are as yet poorly recognised and integrated into policy-making [19] This underscores the need for action, of which the establishment of MPA's is a critical one.

Several studies have examined the cultural and socio-economic value of nature of Aruba. A key study has been the ecosystems and biodiversity study (TEEB) on Aruba [20]. Through an Ecosystem service valuation, the nature of Aruba has been evaluated, presenting an anthropocentric view on the value of ecosystems. Relevant for this nomination are the cultural, tourism, fisheries, non-use ecosystem services. Tourism and recreational values relevant to the marine ecosystem included: swimming, snorkeling, diving, kiting/surfing and boating/sailing.

The main conclusions of this report were the following.

- A natural capital assessment of tourist expenditures derived **US\$ 269 million** in value. The growth, employment benefits and economic rewards of the tourism industry are related to Aruba's environmental attributes
- Environmental degradation could lose 50% of visitors
- Aruba's small population relies and depends upon many different services provided by its ecosystems. The small fishing industry on Aruba provides its related natural capital with a value of US\$ 4.45 million.
- Aruba's local population values highly its natural surroundings: residents are willing to pay for an increased sized marine protected area. Also, increased fish catch, and natural areas, were indicated as priority services.

- Whilst the majority of Aruba's residents are not bothered by the increase in visitors, over 80% of want natural history and cultural heritage to be taught in schools. They want to see a larger share of government budget going towards nature protection.
- Carbon sequestration value on the island is estimated to be worth nearly US\$ 109,000 per year. This is largely due to the tropical dry forests in the northwest of the island.
- illegal fishing derives over US\$ 2.1 million in natural capital value
- Recreational fishing activity on Aruba derives 36% of the value of fishing-related natural capital. However, the largest beneficiary is the illegal industrial fishing industry. Nearly 50% of the value is attributable to foreign industrial fishing in Aruba's waters.
- In addition, an assessment on cultural ecosystem services on Aruba concluded that " 95% of the local community has the perception that nature has an influence on their overall well-being and the majority finds it extremely influential. Around 70% visit natural environments to destress and relax and natural areas also serve as a bonding opportunity with around 25% of the local community on Aruba visiting a natural environment to spend time with family and friends at least once a week and another 39% at least once a month (Wolfs, Laclé, Bubalo, van Beukering, & Pols, 2017).
- While the majority of cultural heritage hotspots (i.e. areas of high cultural value) have been identified on land, the coastlines of the proposed MPAs also overlap with these areas (Seroe Colorado and the Baby Beach Lagoon, Arikok National Park and Oranjestad). These hotspots are valued by the local community as important places of both natural and human history. These areas serve as a place of identity and continuity with past. People thus feel a sense of belonging to these areas, having memorable experiences or might miss these sites when having been away from them for a long time (Wolfs, Laclé, Bubalo, van Beukering, & Pols, 2017).
- While Aruba's fishery is not a largely developed sector, it is an important local food source. Moreover, fishing in Aruba also has high cultural recreational value, as it is part of social cohesion by strengthening the bond with family and friends.

The areas identified for MPA in Aruba have been characterized as the main areas where the socio-economic and cultural values are highest. Thus, these findings underscore the high importance of establishing an MPA in the identified areas for Aruba.

Chapter 6. MANAGEMENT

Guidelines and Criteria Section C/I

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:

Nature protection ordinance (Natuurbeschermingsverordening, AB 1995 no 02) Article 10 and associated laws to designate specific areas as nature reserves [21]:

- Parke Nacional Arikok (AB 2000 no.59) [7]
- Parke Marino Aruba (AB 2018 no.77) [22]
- Spaans Lagoen (AB 2017 no.11) [13]
- New Nature areas (AB 2020 no 67) [8]

The Nature protection ordinance (AB 1995 no.2) [21]Article 4 and associated law (AB 2017 no. 48) [14]protects a list of species of flora and fauna, either because there are threatened, listed (SPAW, IUCN) or of ecological significance to the Aruban environment.

The Nature protection ordinance (AB 1995 no.2) Article 9 and associated law (AB 2001 no. 115) [16], [23]prohibits the use or possession of spearguns (amended for subsistence fishers).

The Spatial Development Plan [24] and the Spatial Developpement Plan with specifications [18] according to the Spatial Development ordinance (Landsverordening Ruimtelijke Ontwikkeling AB 2006 no 38) [25]are aligned with the designated nature reserves according to the Nature protection

ordinance (Natuurbeschermingsverordening, AB 1995 no 02).

Current international treaties that are applicable to Parke Marino Aruba:

- The CITES convention
- Cartagena Convention and its SPAW Protocol
- Inter American Convention for the Protection and Conservation of Sea Turtles (IAC)
- Convention On Biological Diversity (CBD)
- Convention On The Conservation Of Migratory Species Of Wild Animals (“Bonn Convention” or CMS)
- Ramsar Convention On Wetlands (Ramsar)
- International Convention For The Prevention Of Pollution From Ships

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

While the entire Parke Marino Aruba does not all meet the description of just one IUCN category, the majority can be classified as IUCN category IV and category VI protected area.

b - Management structure, authority

Fundacion Parke Nacional Aruba (FPNA) is legally appointed [26] as the management organization for the Parke Marino Aruba.

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

Description of the management authority

The island government established The Aruba National Park Foundation (FPNA) in 2003 to protect and conserve the area of Arikok. Since then, the government has made the foundation responsible for management of Arikok National Park (2003), Spaans Lagoen (2017), Parke Marino (2018) and 16 Nature Areas (2020). The organization receives governmental funding and carries out its activities by a service level agreement. With these additions, FPNA now manages 24.3% of Aruba’s terrestrial surface and 0.2% of Aruba’s territorial waters.

FPNA is a professional nature conservation authority in Aruba, charged with the conservation and management of designated terrestrial and marine protected areas in Aruba.

FPNA is first and foremost a nature conservation management organization which focusses on the execution of species and habitat conservation programs for biodiversity enhancement, ecosystem restoration, and protected area management, while educating and raising public awareness, and making the protected areas sustainably accessible to visitors for their enjoyment.

FPNA’s purpose is based on its Articles of Association [3] and defines the scope and context of activities FPNA undertakes to manage nature conservation areas within the sustainable development framework of the nation of Aruba.

The Foundation is committed to the preservation, protection, and restoration of Aruba's heritage, seen from an ecological, environmental, geological, cultural, archaeological, and historical perspective.

While FPNA has from the onset operated under a one-tier governance structure, a two-tier structure based on principles of good corporate governance was introduced in 2019 so that the Foundation can operate under a professional Executive Board, as well as a Supervisory Board, with increasing commitment to Good Governance for accountability on how FPNA conducts its public affairs and manages public and donor resources in an efficient, effective and transparent way, guarantees an equitable and inclusive work environment and conduct that is essentially free of abuse and corruption, and with due regard for the rule of law, and is responsive to its stakeholders and consensus-oriented through a participatory approach.

Means to implement the framework.

- 1) Under article 10 of the Nature Conservation Ordinance (AB 1995 no. 2) nature reserves are established around the island by the island's government.
- 2) Under article 10, the law to establish the nature area Arikok was created (AB 2000no.59);
- 3) Article 3 of AB 2000 no.59 the Aruba National Park Foundation, formerly Arikok National Park Foundation, was founded in 2003 by order of the Minister of Health and Environment (AB 2003 no. 61);
- 4) Since then, FPNA is recognized as the national conservation management authority and has been appointed this duty for the areas: Parke Nacional Arikok, Spaans Lagoen, the Marine Park and 16 Nature areas. FPNA receives a government subsidy as part of the Service Level Agreement and generates income through legally mandatory nature conservation fee at the entrance of terrestrial Parke Nacional Arikok. Additionally, FPNA acquires project-based funding from multiple funds/grants and through corporate social responsibility projects from the private sector.

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

Goal 1: Establish a program of marine research and monitoring to support long-term active management and conservation of natural (and cultural) resources based on best available knowledge (science-based) and best practices.

Goal 2: Conserve and (where possible) restore native and regionally/globally important marine species, habitats, ecological processes, resilience and aesthetics, with particular effort given to protecting foundation, keystone, endemic and endangered species.

Goal 3: Promote positive, engaging, inspiring and informative relationships and dialogue with the community and all stakeholders.

Goal 4: Allow for sustainable use of the Marine Park by promoting non-destructive activities and working with stakeholders to establish guidelines and regulations to minimize negative impacts on the natural environment.

Goal 5: Ensure sufficient capacity for effective Marine Park management, finance and operations.

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

Management plan - date of publication

Parke Marino Aruba – Preliminary Management Plan 2019-2021.

<http://www.arubanationalpark.org/main/management-plan-marine-park/>

Management plan duration

Two years start-up transition phase. Transition phase extended due to Covid delays in stakeholder engagement and consequently the development of new management plan.

Date of Review planned

New Management Plan to be published in Q2 2023 for 2023-2027.

Based on the principles of the Conservation Standards (Theory of Change), the management plan will include:

- Scope
- Vision
- Threat assessment & Situation models
- Conservation targets:
 - Coral ecosystems
 - Seagrass ecosystems
 - Mangrove ecosystems
 - Reef fish abundance
 - Biodiversity enhancement (species richness)
 - Marine megafauna (mammals, turtles & sharks)
 - Coastal birds
- Human well-being targets,
- Conservation strategies, with results chains (Theory of Change)
- Monitoring plan

Operational plan

f - Clarify if some species/habitats listed in section III/c 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	Almost all mangrove areas legally protected and managed by FPNA	All mangrove species are locally protected as highly valuable species (AB 2017 no. 48)	Mangrove restoration (waterflow and silt traps) included in RESEMBID funded project to start Q2 2023	
Coral	Areas dedicated for coral restoration will be marked no-fishing zones. Anchoring will be	All coral species (Anthozoa and Hydrozoa) are protected as highly valuable species, the coral	Coral enhancement through artificial reefs included in RESEMBID funded project to start Q2 2023	

	prohibited in all MPAs	reef areas that were identified as most healthy (Carmabi 2019) are included in the MPAs		
Sea grass beds	Dedicated shallow seagrass zones for restoration will be marked to reduce trampling pressure. Anchoring will be prohibited in all MPAs	All native seagrass species are legally protected	Further evaluation needed for effective invasive seagrass mitigation (including water quality measures) as well as <i>Thalassia testudinum</i> restoration.	
Wetlands	unknown	unknown	unknown	
Forests	n/a	n/a	n/a	
Others	unknown	unknown	unknown	

Flora

Species from SPAW Annex 3 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
<i>Thalassia testudinum</i> (Turtle grass)	unknown	Locally protected	unknown	Regular assessments of seagrass abundance, diversity and health commenced in 2021
<i>Syringodium filiforme</i> (manatee grass)	unknown	Locally protected	unknown	
<i>Halodule wrightii</i> (shoal grass)	unknown	Locally protected	unknown	
<i>Halophila decipiens</i> (paddle grass)	unknown	Locally protected	unknown	
<i>Halophila baillonis</i> (clover grass)	unknown	Locally protected	unknown	
<i>Halophila engelmannii</i> (Engelmann's seagrass)	unknown	Locally protected	unknown	

Fauna

Species from SPAW Annex 2 present in your area	Management measures	Protection measures	Recovery measures	Comments/description of measures
<i>Globicephala macrorhynchus</i>	unknown	Locally protected	unknown	
<i>Physeter macrocephalus</i>	unknown	Locally protected	unknown	
<i>Stenella longirostris</i>	unknown	Locally protected	unknown	

<i>Acropora cervicornis</i>	unknown	Locally protected	unknown	
<i>Stenella coeruleoalba</i>	unknown	Locally protected	unknown	
<i>Sterna dougallii</i>	unknown	Locally protected	unknown	
<i>Grampus griseus</i>	unknown	Locally protected	unknown	
<i>Kogia breviceps</i>	unknown	Locally protected	unknown	
<i>Charadrius melodus</i>	unknown	-	unknown	
<i>Falco peregrinus</i>	unknown	Locally protected	unknown	
<i>Stenella attenuata</i>	unknown	Locally protected	unknown	
<i>Pandion haliaetus</i>	unknown	-	unknown	
<i>Orcinus orca</i>	unknown	Locally protected	unknown	
<i>Lepidochelys olivacea</i>	unknown	Locally protected	unknown	
<i>Caracara cheriway</i>	unknown	-	unknown	
<i>Montastraea/ Orbicella faveolata</i>	unknown	Locally protected	unknown	
<i>Peponocephala electra</i>	unknown	Locally protected	unknown	
<i>Caretta caretta</i>	unknown	Locally protected	unknown	
<i>Dermochelys coriacea</i>	unknown	Locally protected	unknown	
<i>Sterna antillarum antillarum</i>	unknown	Locally protected	unknown	
<i>Megaptera novaeangliae</i>	unknown	Locally protected	unknown	
<i>Eretmochelys imbricate</i>	unknown	Locally protected	unknown	
<i>Chelonia mydas</i>	unknown	Locally protected	unknown	
<i>Mesoplodon europaeus</i>	unknown	Locally protected	unknown	
<i>Balaenoptera physalis</i>	unknown	Locally protected	unknown	
<i>Pseudorca crassidens</i>	unknown	Locally protected	unknown	
<i>Acropora palmata</i>	unknown	Locally protected	unknown	
<i>Kogia sima</i>	unknown	Locally protected	unknown	
<i>Ziphius cavirostris</i>	unknown	Locally protected	unknown	

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

Within the territorial waters of Aruba, the first 2 kilometers from the coast are included in the national Spatial Development Plan [24] and the Spatial Development Plan with Specifications [18]. Where this coastal area is designated as either marine area (the Parke Marino Aruba MPAs) or marine zone. The marine zones also aim to preserve nature as much as possible but does include some dedicated zones for tourism or economic (shipping) purposes.

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

Aside from national laws and decrees and international treaties, there is currently no other regulation or zoning in place for the MPAs. Specific zoning and regulations for conservation purposes will be determined in the new management plan 2023-2027 (end of Q1 2023) after intensive stakeholder engagement and following the principles of Conservation Standards, Ecosystem-based- and Adaptive Management.

Current national legislation which will remain applicable on a national level includes:

- No wake zone of maximum speed of 10km/h for vessels within 50m of the low-tide line [17]
- Per our national Spatial Development Plan with Specifications (ROPV 2021) the following activities are prohibited in the MPAs:
 - recreational and commercial boating with jetskis, speedboats and similar motorized recreational vessels or water sports activities and commercial fishing, unless otherwise specified by the managing authority;
 - no activities at all within 150m of the Sero Colorado reef islands in relation to tern breeding.
- Per our national Spatial Development Plan (ROPV, 2021) kitesurfing is limited to two designated areas outside of the MPAs.
- The decree designating Parke Marino Aruba (AB 2018 no.77) as multi-use marine protected areas indicated clearly that no harmful or high impact activities are allowed that can cause harm to flora (Art. 7), fauna (Art. 8), or geological structures (Art. 9) within these areas. Construction or maintenance of infrastructures within the MPAs is prohibited without consultation with the managing authority (Art.10). The only exemption that can be made by the managing authority is extractive activities classified as artisanal fisheries (Art. 8), which is in line with SPAW protocol article 14.

i - Enforcement measures and policies

The Public Prosecution Service facilitates the enforcement policy regarding the marine protected areas. The marine protected areas resorting under the Public prosecutor in charge of cross-border cases. Coastguard, Marine Police, Immigration resort under this Public prosecutor. The Coastguard, Marine Police, Immigration and Public Prosecutor could ask DNM for specialized assistance.

Within the national legal framework, national enforcement authorities (Coastguard, Marine Police, Police, City Inspector, and the DNM) all have the authority to enforce all legislation in place to conserve nature as well as ensure public safety. In addition to these authorities, the marine park ranger monitors the MPAs for irregularities and reports these to the respective authority for enforcement action.

In the meantime, the Government of Aruba is in the process of adapting the legal framework to allow non-public servants, such as marine park rangers, to obtain legal authority to enforce national legislation and park regulations.

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

International status	y/n	Date of designation
Biosphere reserve	n	
Ramsar site	y	Spaans Lagoen (connected to MPA Mangel Halto) 23-05-1980 site #198 Oostpunt (overlapping with MPA Sero Colorado), since 2022 Zuidkust (overlapping with MPA Mangel Halto and MPA Oranjestad Reef and including the connecting marine zone), since 2022
Significant bird area	y	IBA reef islets, and adjacent wetlands
World heritage site (UNESCO)	n	
Key Biodiversity Area	y	TEEB 2016, Regional Ecosystem Profile, 2015
Others:	n	

Comments

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

The site fits in the National Strategic Plan 2020-2022 which is the sustainable development roadmap of Aruba. It sets accelerator goals for the short-term for sustainable development and it is aligned with the UN SDG. The park and its connection to other national parks contributes to a network of protected areas locally and regionally and directly forms part of SDG 14.

l - Available management resources for the area

Resources		How many/how much	Comments/description
Human resources	Permanant staff	2 dedicated to Marine Park: 1 Manager and 1 Ranger The full FPNA management team dedicates time and resources to the marine park (as well as terrestrial). Other FPNA associates support in daily operations where needed. The marine park dedicated staff is planned to increase to a total of 9 FTE during the implementation	FPNA, the managing organization, consists of an executive board, management team, supervisors and employees. FPNA manages all protected nature areas of Aruba

		timeframe of the upcoming management plan.	
	Volunteers	Multiple volunteers, 4-6 interns per year	Will increase in coming years. There is much interest from private sector to contribute as part of Corporate Social Responsibility, and Corporate Engagement programs to develop the volunteering possibilities further.
	Partners	FPNA has identified over 100 stakeholders; from other nature NGOs (p.e. Turtugaruba Foundation, Aruba Marine Mammal Foundation, Aruba Reef Care Foundation, Scubble Bubbles Foundation, Caribbean Lionfish Alliance, Aruba Birdlife Conservation) to private sector, to public sector (DNM, DLVV, DSA, etc.), government, institutions (including local and international universities), and regional and international networks (p.e. DCNA, GCFI, MPACConnect, NOAA) as well.	FPNA is a nature conservation NGO with many stakeholders on local, national, regional, and international level.
Physical resources	Equipment	Vehicle (2021) Snorkel equipment Research equipment (transect lines, quadrats, underwater cameras, slates, etc.) Dive gear and boat is currently rented for specific projects.	Vessel as well as diving equipment to be acquired 2023.
	Infrastructures	Current headquarters/office at joint office for all protected nature areas that FPNA manages.	Marine park specific infrastructure pending Management Plan 2023-2027 Will include at least: <ul style="list-style-type: none"> - Marine Conservation Center - Mooring buoys - Zoning buoys - Signage - Amenities to facilitate

			sustainable recreation and visitor flow management.
Financial resources	Present sources of funding	EU BEST 2.0 Medium- Grant Government of Aruba provided a startup sum for transition phase. Annual government subsidy and DCNA (for FPNA, including all areas)	
	Sources expected in the future	Government subsidy, Project based funding, Aruba Tourism Authority (ATA), donations, CSR projects. With the ambition of the Aruba Government to expand the MPAs to an island round model, there will be potential to generate funds through user fee structures in the future.	Currently receiving funding for projects: Blue marine foundation – annual small grant per year (2022-2024) RESEMBID – Artificial reefs and mangrove restoration ATA – for signage and beach amenities
	Annual budget (USD)	The Government of Aruba, as part of the Service Level Agreement, structurally contributes financially to FPNA for the nature conservation management service.	Exact amount dedicated to marine park is pending Management Plan 2023-2027

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 management framework and inclusion of the Conservation Standards ensures that the marine park management will focus their efforts efficiently in conservation actions and strategies that protect and restore natural values, while mitigating threats. The extensive stakeholder engagement process ensures inclusivity and community stewardship of stakeholders to be more successful as a marine park with the support and understanding of local stakeholder towards daily operations and conservation measures.

As a professional conservation management organization, FPNA will continue to develop and expand their capacity and talent to match the required roles and implementation of the marine park management plan.

With diverse sources of funding, FPNA is able to cover operational costs as well as specific conservation or education projects needs.

Chapter 7. MONITORING AND EVALUATION

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

A strategic summary in the management plan incorporates management planning and extensive stakeholder input, summarizing interaction between the goals, issues and strategies. The issues are evaluated, reviewed and reported on by the DCNA management effectiveness project. This is adequate for evaluation of conservation goals and reporting to the different institutions and stakeholders.

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

<i>Evaluation of management effectiveness</i>	
DCNA Management Success Project	Graphics and detailed analysis of management effort enables redirection of management effort if necessary.
Threats vs Efforts	Indicator of percentage of effort directed at specified threats enables redirection of efforts if necessary.
Time distribution	Managers personal log of time distribution compared to the organization outputs.
<i>Evaluation of conservation measures on the status of species populations within and around protected area</i>	
Fish landings	Landing of fish in the PA will provide indications of sustainability of fishing pressure and will allow adjustments of fishing regulations.
Queen conch densities (GCRMN)	Estimates of Queen conch will provide estimates for rate of recovery of conch populations.
Fish abundance and distribution (GCRMN)	Estimate and quantify change in core components of the reef community (e.g., fish abundance and distribution, coral abundance and distribution), attribute changes and impacts on coral reefs to key drivers, and identify and interpret reef recovery processes for maintaining and informing restoring efforts.
Marine mammal Monitoring	Species diversity, abundance and distribution estimates.
<i>Evaluation of conservation measures on the status of habitat within and around the protected area</i>	
Coral Reef Health (GCRMN)	Estimate and quantify change in core components of the reef community (e.g., coral abundance and distribution, fish abundance and distribution), attribute changes and impacts on coral reefs to key drivers, and identify and interpret reef recovery processes for maintaining and informing restoring efforts.
Seagrass Health (Seagrass Watch Monitoring system)	Estimation of seagrass health and recovery of seagrass habitats through species distribution and abundance, and associated biota.
<i>Evaluation of conservation measures on the status of ecological processes within and around the protected areas</i>	
Water quality	Measuring water quality parameters using remote underwater sensors to assess overall conditions for seagrass and coral health as well as human safety.
Lionfish predators	Number and size distribution of invasive Lionfish in the PA would provide an indication of the resilience of the ecosystem.

<i>Evaluation of the impact of management plan on the local communities</i>	
Visitor numbers	Baseline information of the number of visitors to the PA's distributed overtime and space. Visitor information can also be used to estimate the effect of visitors on the PA's.
Yacht visitation	Baseline information of the number of yachts to the PA's distributed overtime and space. Yacht visitation information can also be used to estimate the effect of visitors on the PA's.
Dive numbers per site	Baseline information of the number of divers per dive site in the PA's distributed overtime and space. Dive number information can also be used to estimate the effect of divers on the PA's.
Number of attendance at public presentations and engagement events	Yearly presentations will be provided to the community on the status of the PA's. The interests in the presentations will give an indication of the local impact of the management.

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

Stakeholder involvement	Involvement	Description of involvement	Specific coordination measures	Comments (if any)
Institutions	yes	Representatives participated in the stakeholder engagement process, including University of Aruba, UNESCO, Aruba Tourism Authority, Aruba Ports Authority.		
Public	yes	Representatives of the public sector participated, including enforcement authorities (KPA, Coastguard, City Inspector, harbormaster), government departments of Nature (DNM), fisheries (DLVV), spatial planning (DIP) and public works (DOW).		
Decision-makers	yes	Current designated area determined by Minister and government department representatives further included in stakeholder engagement process.		
Economic-sectors	yes	Representatives of recreational vendors / tourism industry within the areas,		

		including tour operators (kayaking, snorkeling, sailing, diving) and the Aruba Hotel and Tourism Association.		
Local communities	yes	Representatives of several community/neighborhood groups and social NGOs		
Others	yes	Representatives of fishers from different areas of the island.		

All stakeholders were invited to participate in extensive stakeholder engagement process to determine first management plan (conservations actions, zoning, and regulations). The ongoing process is communicated through a variety of media in order to be as inclusive as possible.

The stakeholder engagement process included:

- Ongoing individual meetings upon request
- Online stakeholder analysis survey:
Offered online and on paper and in 4 languages for inclusivity (n = 190);
- SWOT analysis workshop:
Where different sectors (nature, authority, tourism, fishery, community) jointly discussed Strength, Weaknesses, Opportunities, Threats, Solutions, Actions, and a Vision for Parke Marino Aruba; this was done in two 2-day sessions; with 64 participants total (excluding FPNA staff);
- Zoning & Regulation workshop:
Where different sectors (nature, authority, tourism, fishery, community) jointly discussed preliminary results of previous session, and particular zoning prompts, such as zoning for coral restoration, seagrass restoration, no-take or no-go zones, mooring buoy placement, maritime traffic routes, and potential regulation on high impact recreation or fishing activities.; this was done in two single day sessions; with 46 participants total (excluding FPNA staff).
- Planned for Q2 2023: validation of draft management plan (conservation actions, zoning, and regulations).
- Planned (continuous): ongoing engagement in the field and through social science methods to evaluate management success and adapt where needed.

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	FPNA utilizes diverse media (website, social media, press, etc.) to reach stakeholders and the community at large and build public awareness. Signage, tours, presentations, and stakeholder engagement are also part of the awareness programs.	

Capacity building of staff and management	yes	<p>FPNA staff and management participates in training, staff exchanges and conferences to enhance knowledge and skills. These are facilitated and further developed through a broad network of partners and work relationships: DCNA (and all individual park organizations), GCFI, MPACConnect, WWF-NL, etc.</p> <p>FPNA has a dedicated Marine Park Manager to oversee the transition phase (since 2019) and the team has expanded with a dedicated Marine Park Ranger since 2021.</p> <p>Per the FPNA Multi-Annual Corporate Strategy (2023-2032) and matching the ambitions of the Parke Marino Aruba, the marine park dedicated staff is schedule to expand to 3 in 2023 and further to 9 during the 5 year implementation of the management plan.</p>	<ul style="list-style-type: none"> - GCFI conference in November 2019; - GCRMN monitoring training in May 2021; - Work experience with STINAPA BNMP in July 2021; - MPA Enforcement Workshop in September 2021; - Course on Planning and Managing effective conservation projects by applying the Conservation Standards in April 2022; - Cetacean research training in August 2022; - Shark research training in September 2022; - Reef Futures Conference in September 2022 - MPA Management Workshop in November 2022; - MSP workshop in November 2022
Research, data storage, and analysis	yes	<p>GCRMN monitoring (every other year, since 2021)</p> <p>Seagrass monitoring (annually, since 2021)</p> <p>Lionfish catch per unit of effort monitoring for MPA Arikok</p>	
Surveillance and enforcement	yes	<p>MPAs are monitored regularly by marine park ranger.</p> <p>Irregularities/illegal behaviors are reported to legal authorities for enforcement assistance. Good working relationship with Coastguard, Marine Police, Police and City Inspector that do have legal enforcement authority.</p>	<p>Park rangers enforce park rules but do not have authority to enforce laws or investigate cases. Government is in process of providing legal framework for specific trained FPNA staff members to acquire legal enforcement</p>

			authority.
Participation of exterior users	no		
Alternative and sustainable livelihoods	no		
Adaptative management	yes	Nature Conservation following the Conservation Standards and through adaptive management is one of FPNA's core goals and purpose.	With introduction of the new Board and Tiered Management system adaptive management was employed (2018)

Chapter 10. OTHER RELEVANT INFORMATION

Contact addresses

	Name	Position	Contact address	Email address
who is submitting the proposal	Gisbert Boekhoudt	Director (DNM)	B. v/d Veen Zeppenfeldtstraat#7, San Nicolaas Aruba	Gisbert.boekhoudt@dnm-aruba.org
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Date when making the proposal

January 2021, third iteration updated February 2023

List of annexed documents

Name	Description	Category
Copies of legal texts	Rules and regulations	[3], [7], [14], [15], [17], [18], [21]–[23], [25]
Copies of planning and management documents	Preliminary marine park management plan	[5]
Existing inventories of flora and fauna species (with Latin names)	Species list Spaans Lagoen Species list in Marine Park Management plan	[5], [27]
List of the main publications and copies of the main ones concerning the site, and any relevant information available	Some historic, and more recent studies of Aruba's coast and biodiversity	[6], [28]–[41]

Appendix 1 References

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