

# PLAN FOR LAND & WATER

NATURE AND ENVIRONMENT POLICY PLAN  
CARIBBEAN NETHERLANDS 2020 -2030

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Ministries of Agriculture, Nature and Food Quality, Infrastructure and Water Management and Interior and Kingdom relations of The Netherlands

## Acknowledgement

This Nature and Environment Policy Plan would not have been able to encompass so many themes and topics if it had not been for the support and good cooperation of the public entities of Bonaire, Saba and Sint Eustatius and the valuable input of many stakeholders from the Caribbean Netherlands and European Netherlands. Their input has been crucial for us to develop a manageable Nature & Environment Policy Plan, which aims to integrate many themes, be exhaustive but also be feasible at the same time. The ultimate goal being to conserve and restore the unique and important nature of the Caribbean Netherlands and to build resilient ecosystems, allowing sustainable use, resulting in a prosperous society on Bonaire, Saba and Sint Eustatius.

*Photo Front page: Henk Jan Kievit (Shape)*



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# 1. Introduction

## 1.1 Background

The Caribbean Netherlands consists of three islands: Bonaire, Sint Eustatius and Saba, all located in the Caribbean Sea. Since 2010 each island is part of the Netherlands, considered as a public entity. Bonaire is the largest island by size and population with 20,104 permanent residents, while 3,138 people live on St Eustatius and approximately 1,915 on Saba, at the time of writing.

The Caribbean Netherlands is home to a wealth of natural resources, providing many ecological, cultural and economic services to the local population as well as regionally and globally. Nature-based tourism on the Caribbean Netherlands is not limited to marine activities such as snorkelling and diving but also extends to the appreciation of the terrestrial landscape of all three islands. Beautiful and unique features of the islands include the 'Saba Bank', one of the largest atolls in the world, located just a few miles from the coast of Saba, the 'Elfin Forest' and rainforest on top of Mt Scenery on Saba. The 'Quill', a dormant volcano on St. Eustatius with rainforest inhabiting its crater, and the pristine coral reefs around Bonaire, considered one of the most beautiful and healthy coral reefs of the Caribbean are all popular natural areas deserving of effective conservation. Regionally and globally the ecosystems are also of great importance. On all three islands the coastal waters and their reefs are within marine protected areas, which are internationally recognized. A high percentage of the terrestrial environment is also protected, for example as national parks, or the four wetland areas on Bonaire that are protected under the Ramsar convention. In addition, Important Bird Areas (IBAs) and Key Biodiversity Areas (KBAs) under the EU Biodiversity and Ecosystem Services in overseas Territories and regions (BEST) initiative have been identified on each of the islands. See Annex 5 for an overview of protected areas.

The well-being and prosperity of the islands and their residents is highly dependent on the quality of its natural environment. The socio-economic, cultural and ecological contexts of Bonaire, Saba and Sint Eustatius are unique, but they share similar challenges in varying degrees. Where the impacts of extreme weather events such as storms and hurricanes are much more pronounced on Saba and Sint Eustatius, the pressures of population and tourism growth are more deeply felt on Bonaire.

This Nature and Environment Policy Plan (NEPP) brings these shared and specific topics to the table, in order to develop an integrated framework that can be relied upon for the coming decade.

## 1.2 Policy objective

The NEPP aims to provide an integrated framework addressing responsibilities, policy targets, and legal obligations related to management of the natural environment in the Caribbean Netherlands. From this, the public entities of each of the three islands, with support of the national government, will develop their own, specific, implementation plans that function as the action plans for local nature and environmental policy on each island.

The ultimate goal of this process is to have sound management of the natural environment that facilitates responsible and sustainable use of natural resources.

This is achieved through the safeguarding and restoring of ecological processes and functions and addressing the drivers and pressures that put an increasing pressure on these fragile systems. The Netherlands have also committed to international nature conservation agreements and environmental standards that serve as a guideline for responsibilities on a national level. The aim of this NEPP is to align the needs for local conservation and socioeconomic development with the national and international commitments to biodiversity targets.

Special attention is given to protection and restoration of the coral reefs and to maximize their resilience in the face of climate change. The Dutch parliament requested an action plan to save the coral reefs in the Caribbean Netherlands. This document specifically answers that request by including policy instruments based on environmental legislation and projects that increase the resilience of the coral reef ecosystems.

This plan builds upon the Nature Policy Plan Caribbean Netherlands 2013-2017 and the report *Staat van de natuur van Caribisch Nederland 2017*<sup>1</sup>. Assessment of that plan raised several points for improvement, among which: improved cooperation between ministries, local administrators, the communities and other stakeholders through an integrated approach, a need for sufficient and structural funding in line with the local management capacities, and investments in sustained capacity for nature management to ensure lasting results. The lessons learned are incorporated in this NEPP.

### 1.3 Integrated approach

The complex and interdisciplinary challenges for nature conservation and socioeconomic development in the Caribbean Netherlands require an integrated approach that is tailored to the local context. Therefore, the NEPP addresses policy themes that are linked to nature conservation, such as environmental management, agriculture, fisheries, border patrol, coastal development, tourism and good governance. Additionally, transboundary challenges, such as climate change and migratory species, ask for a regional and international focus.

The integrated structure implies that all Ministries and especially that of Infrastructure & Water (I&W), Interior and Kingdom Relations (IKR), Economic Affairs & Climate (EAC), and the Ministry of Agriculture, Nature and Food Quality (ANF) will collaborate in the implementation of this NEPP. In addition, the ministries cooperate closely with the public entities and park authorities, who hold a key responsibility for the management of nature on the islands. A bottom-up approach has been initiated which involves, besides the local authorities, relevant stakeholders from a wide range of sectors. Their input and commitment on the different strategic goals has been incorporated in this plan.

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<sup>1</sup> Debrot, A.O., Henkens, R.J.H.G., Verweij, P.J.F.M. (reds.), 2018. *Staat van de natuur van Caribisch Nederland 2017: Een eerste beoordeling van de staat (van instandhouding), bedreigingen en managementimplicaties van habitats en soorten in Caribisch Nederland*. Wageningen Marine Research Wageningen UR (University & Research centre), Wageningen Marine Research rapport C086/17. 214 blz.

A key challenge for the national and local governments will be to jointly, in cooperation with the relevant stakeholders address the extensive themes that are part of the integrated approach in an effective way. Only then can the underlying causes of environmental degradation be addressed and a move towards truly sustainable island societies be achieved. The complex nature of the challenges ahead can only be addressed through a collaborative effort such as this.

#### 1.4 Local context

The local context of the three islands, Bonaire, Saba and Sint Eustatius differs with regards to environmental threats and pressures. Many relevant threats and pressures as discussed in this policy plan are present on the islands, however some are more pressing on one island than on another. Bonaire has witnessed an increase in population and number of visitors to be dealt with. On Saba, island erosion, waste management and dependence on imports are crucial topics to be addressed. Sint Eustatius experiences a slow but pervasive degradation of its natural environment resulting in erosion, affecting the resilience of its coral reefs and causing loss of land. Therefore, the priorities of the islands and their commitment to the different strategic goals in this NEPP vary.

The enabling environment determines which strategic goals are more feasible than others within their own local context.

#### 1.5 Structure

In the next section, this plan will describe the socioeconomic context of nature conservation in the Caribbean Netherlands. For a deep understanding of the roles and responsibilities, the legal framework will be discussed in detail on the local, national and international level. Chapter 3 describes the state of nature in the Caribbean Netherlands and the underlying drivers and pressures that have caused environmental degradation in the past decades. With a good understanding of the socioeconomic, legal and ecological context, the strategic goals and underlying targets of this NEPP are introduced in chapter 4. Finally, the elements that ensure effective implementation and evaluation of this NEPP are described.



## 2. Context

### 2.1 Nature, well-being and the economy

The contribution of nature to the Caribbean island economies and the well-being of its residents is profoundly clear for Bonaire, Saba and Sint Eustatius. It is understood that a lack of investment in the local ecosystems will have negative impacts on the well-being of current and future generations on the islands. Providing support through an integrated framework is essential to ensure that the provision of services from the natural environment continues to support society and the local economy.

The economies of the islands of the Caribbean Netherlands are highly dependent on tourism and fisheries, and thus on the natural environment. On average, the direct and indirect added value of tourism to the local economy of Bonaire represents approximately 30% of its gross domestic product (GDP), while roughly 23% of employment within the local community is related to tourism. Likewise, on Saba and Sint Eustatius, tourism is also one of the key economic sectors.

Coral reefs provide a key contribution to the income generated from the tourism industry on the islands. It is estimated that respectively 70% and 60% of Bonaire's and St Eustatius' tourists come for diving. The Islands are heavily dependent on repeat visitors who come for the underwater natural environment: 55% of the tourists on Bonaire are repeat visitors, and only 10% of those visitors would still be willing to return if the coral reefs became degraded. In the growing market of eco-tourism, the Caribbean Netherlands has a significant competitive advantage considering its intact natural environment. In other regions of the Caribbean mass tourism has already taken place and affected the coral reefs and ecosystems.

The unique Saba Bank contains the largest area of coral reefs in the Caribbean Netherlands, stretching along some 75 km, in addition to the richest seaweed fields of the region, extensive soft coral forests, nursery areas for sharks and humpback whales and a high diversity of fish species. It supports commercial lobster and snapper fisheries contributing some 2 million U.S. dollars per year to the economy of Saba (4% of GDP). The Saba Bank has a high diversity and cover of free-living corals that is unique<sup>2</sup> both in the region as well as beyond. Effective resource management is needed to ensure its protection and sustainable use.

Extensive investment has been made in nature conservation, management, and (academic) research, especially concerning the coral reefs of the Caribbean Netherlands that have proven to be attractive for researchers worldwide. They are also of international importance; Bonaire and Curacao are together working towards the nomination of their coastal waters for UNESCO World Heritage status. Natural areas of course often play an important role in regulating and mitigating the effects of environmental stress. Beyond the financial benefits directly obtained from coral reefs, they also play an essential role as natural barriers protecting the coasts of Sint Eustatius and Bonaire (Saba has a lower demand for this, considering its steeply rising coasts), which will likely be increasingly exposed to tropical storms from flooding and erosion. Investing in the conservation of healthy coral reefs ensures their ability to limit damage from extreme weather events and natural disasters.

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<sup>2</sup> <https://link.springer.com/article/10.1007/s12526-017-0712-5>, accessed on 29 of October 2019



Nature forms the basis for many social and cultural aspects of island communities, such as a healthy living environment, social cohesion and local culture. The cultural identity of the local community of Bonaire is, for example, closely connected with the sea, and its people are considered '*Homber di Laman*' (men of the sea). The national anthem, their flag, and ultimately their history is intertwined with their marine waters. Likewise, the cultural history and identity of Sint Eustatius and Saba are also grounded in their marine ecosystems, where treasures of the vibrant past of their people can still be found.

In short, prosperous sustainable economies on the islands of the Caribbean Netherlands are not possible without healthy ecosystems. As indicated in the *Staat van de Natuur 2017 Caribisch Nederland*<sup>3</sup>, the health of the ecosystems and iconic species on the islands is in a poor state. This calls for urgent and concrete measures in order to safeguard the well-being and the economies of the three islands. The intention of this integrated NEPP is to develop a framework with strategic goals and targets through which the nature of the Caribbean Netherlands can be conserved, restored and used sustainably, by both present as well as future generations.

## 2.2 Legal framework

### 2.2.1 International obligations

The Kingdom of the Netherlands is a contracting party of many international treaties and conventions, including the Convention on Biological Diversity (CBD) with a focus on the internationally agreed upon biodiversity targets (Aichi targets), the Ramsar Convention on wetlands (such as Lac and Pekelmeer), the Cartagena Convention for the protection and development of the marine environment of the wider Caribbean region and its protocols on specially protected areas and wildlife (SPAW) and marine pollution (LBS), the convention on Migratory Species of Wild Animals (CMS), Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), International Whaling Commission (IWC) and the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC). Additionally, the commitment to achieve and report on the Sustainable Development Goals<sup>4</sup> (SDGs) set by the UN has also been agreed upon by the Kingdom.

### 2.2.2 Nature

The Caribbean Netherlands largely has its own laws and regulations, the so-called BES-laws. Within this legal framework, the public entities have their own local legislation. Obligations derived by international treaties and conventions are incorporated into this legislation, specifically into the Nature Conservation Framework Act BES (Wet grondslagen natuurbeheer en bescherming BES). This Act requires

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<sup>3</sup> Debrot, A.O., Henkens, R.J.H.G., Verweij, P.J.F.M. (reds.), 2018. *Staat van de natuur van Caribisch Nederland 2017: Een eerste beoordeling van de staat (van instandhouding), bedreigingen en managementimplicaties van habitats en soorten in Caribisch Nederland*. Wageningen Marine Research Wageningen UR (University & Research centre), Wageningen Marine Research rapport C086/17. 214 blz.

<sup>4</sup> See <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

the Minister to develop a nature policy plan Caribbean Netherlands. It also requires the island council to protect the biodiversity, in which respect the requirements of the CBD are applicable. The CBD requires the development of National Biodiversity Strategies and Action Plans (NBSAPs). Thus, the ministerial nature policy plan is not only an implementation of the requirement to develop such a plan, but it will also function as an NBSAP for the region of the Caribbean Netherlands. Furthermore, the Nature Conservation Framework Act BES contains the obligation for the public entities of Bonaire, Saba and Sint Eustatius to develop an island level nature plan (the implementation plans), which must be aligned with the framework of the NEPP Caribbean Netherlands. See figure 1 for a schematic overview.

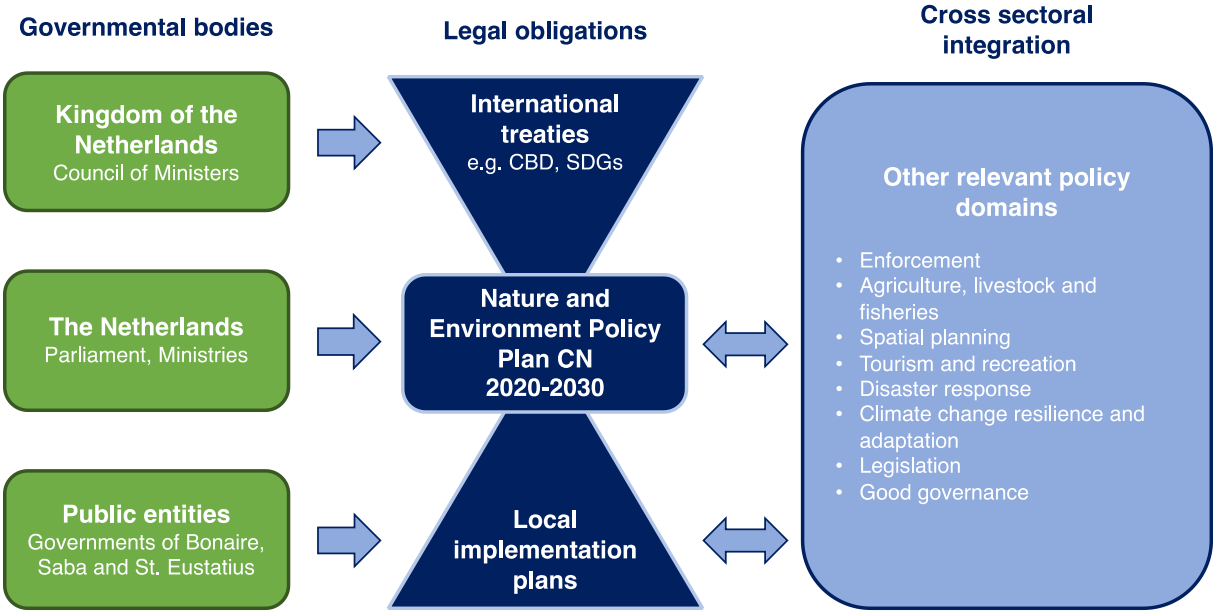


Figure 1 Overview of legal obligations within the Kingdom of the Netherlands for nature conservation

In addition, local laws and regulations are tools for the implementation of the policy objectives of the NEPP.

**2.2.3 Environment, Spatial development and other legislation**

Many other legal frameworks are relevant for the conservation, restoration and sustainable use of ecosystems. These frameworks address amongst others nature, environment, economic development and spatial planning for marine as well as terrestrial activities, such as fisheries and agriculture.

**Legislation on Environment**

The Environment Act BES (Wet VROM BES) addresses environmental pollution and environmental impact assessments, among other topics that need to be addressed by an environmental policy plan. Environmental policy instruments have been integrated and prioritized in this NEPP as far as these instruments are relevant for managing pressures on the coral reefs. Environmental policies in this plan cover topics such as wastewater, waste management, erosion and pollution. The Environment Act BES provides the framework for environmental policy by the national and local governments. This also includes the issuing of permits and the inspection, oversight and enforcement of environmental policy. The national

government is investigating how the Environment Act BES and associated legislation can be of support to and strengthen the NEPP.

### **Spatial development**

The Spatial Planning and Development Framework Act BES (Wet grondslagen ruimtelijke ontwikkelingsplanning BES) is important for achieving and guaranteeing a deeper and more effective integration of policy. The implementation of the spatial planning process needs to be consistent with nature conservation and environmental management efforts. Spatial planning encompasses, facilitates, interlinks, and thus strengthens many of the regulatory discretions mentioned above. The national government is investigating how the Spatial Planning and Development Framework Act BES can be of support to and strengthen the NEPP and local spatial development plans.

### **Protected areas**

The designation and legal protection of nature areas is a prerogative of each island's governing body. The islands themselves decide which areas should be protected. Their decision-making must be led by the criteria described in international treaties and conventions such as SPAW, Ramsar and the CBD. It is important that a comprehensive system of protected areas is put in place, with specific types of management to ensure conservation of biological diversity, taking into account size and connectivity to avoid the isolation of species in areas that are too small to ensure their survival. The various types of protected areas are described in Annex 5.

### **Fisheries**

The Fisheries Act BES (Visserijwet BES) prescribes the development of the fishery policy and management plans for the Caribbean Netherlands. The strategic goals and activities of the fishery policy and management plans BES in the NEPP will be closely interlinked and aligned with the strategic goals and activities of the NEPP.

### **Other relevant legislation**

Important legal frameworks relating to economic development and integration of sustainable management practices and mitigation of climate pressures are for example, the Electricity and Drinking Water ACT BES (Wet Electriciteit en drinkwater BES) and The Chamber of Commerce ACT (Wet KvK BES) for sustainable business. And the Maritime Management Act BES (Wet Maritiem Beheer BES), the regulation on agricultural herbicides (Regeling uitvoering Wet voorschriften bestrijdingsmiddelen BES) and BES regulation regarding topics related to veterinary affairs, phytosanitary affairs, and animal welfare could be relevant for the implementation of policy objectives contained in the NEPP. Moreover, the Financial Act BES (Wet Financiën BES) addresses regulations for the funding, implementation and division of roles and responsibilities between the national government in The Hague and the islands' governing bodies.

The responsibility for the decision-making, funding, monitoring and promotion lies with both the national and local government, whereas the islands' governing bodies with support of the national government, are responsible for developing, presenting and implementing actions resulting from their implementation plans under NEPP.

## 2.3 Regional cooperation

### 2.3.1 Caribbean region

Regional cooperation can assist with the further shaping of policy and overcoming shared challenges. Further regional cooperation is aimed at neighbouring countries Saint Kitts and Nevis, Venezuela, France, the Dominican Republic, the United Kingdom and the United States of America (U.S.A.). Memoranda of Understanding have been signed between The Netherlands for the *Yarari* Sanctuary, the U.S.A. for the Stellwagen Bank Marine Mammal Sanctuary, France for the French *Agoo* Sanctuary. The Netherlands is also participating in several Regional Fisheries Management Organizations (RFMOs), in particular the Western Central Atlantic Fishery Commission (WECAFC; which currently has a purely advisory status, but is moving towards becoming an organization with management powers to set limits and obligations, binding on the members); in the informal Western Hemisphere Migratory Species Initiative (WHMSI); and in the International Coral Reef Initiative (ICRI) and its Global Coral Reef Monitoring Network Caribbean initiative (GCRMN-Caribbean). (see Annex 2 for an overview and explanatory description of the relevant international treaties and conventions). Each of the islands, as a member of the Overseas Countries and Territories Association (OCTA) of the EU, also signed the Declaration on Oceans to emphasize the need for marine conservation.

### 2.3.2 Within the Kingdom of the Netherlands

This refers to all islands within the Kingdom of the Netherlands in the Caribbean region: Aruba, Curacao, Sint Maarten, Bonaire, Saba and Sint Eustatius. Within the Kingdom of the Netherlands, a Memorandum of Agreement (MoA) for the management of the marine biodiversity and fisheries in the waters of the Exclusive Economic Zone (EEZ) of the Caribbean part of the Kingdom has been signed by all except Aruba. The MoA establishes a Committee with representatives of each signatory and adheres to a management plan for the EEZ. The Committee meets twice a year to coordinate implementation of the EEZ management plan and ensure active management of the EEZ.

Another cooperative instrument is formed by the Dutch Caribbean Nature Alliance (DCNA), a network that unites the protected area management organizations of all six islands. DCNA is an important partner of the Ministry of ANF, strengthening cohesion between the Caribbean Netherlands and the other Dutch Caribbean islands for nature conservation.

### 2.3.3 Within the Caribbean Netherlands

At the BES level there is also the Fishery Commission BES, consisting of delegates from each of the three Public Entities, the Ministry ANF plus an independent chair. The Fishery Commission meets twice a year to advise the Minister on fishing permits. As part of a roadmap for review and adaptation of the fisheries regulations for the BES, the aim of the Fishery Commission is to seek to formally broaden their advisory role to other aspects of fisheries management as well.

Furthermore, the public entities and island organizations continue to work thoroughly on the sustainable development of their islands, including the implementation of sustainable, strategic tourism plans, bans on single-use plastics and bans on harmful sunscreen protectors. There are several local ordinances in place to protect, conserve and sustainably use their natural resources.

## 3. The state of nature in the Caribbean Netherlands

### 3.1 Habitats and species

The Caribbean Netherlands is part of the Caribbean "biodiversity hotspot", which is characterized by the presence of many endemic species; the Caribbean Netherlands has at least 200 endemic species and 143 endangered species, which depend on specific habitats and ecosystems of international importance. These include coral reefs, open and deep-sea areas, mangroves, sea grass beds, salinas, beaches and dry, tropical and cloud forest ecosystems. An overview of the key species in the Caribbean Netherlands is given in Annex 1.

The report *Staat van de natuur van Caribisch Nederland 2017*<sup>5</sup> describes the state of the ecosystems and species in the Caribbean Netherlands. The authors conclude that the Caribbean Netherlands' biodiversity is without exception in a *moderately unfavourably* to *very unfavourable* state. This is true for the ecosystems, as well as for the dependent species and species groups. In 2019, the Dutch Houses of Representatives are informed about the state of nature in the Caribbean Netherlands.

The recent sixth national report of the Kingdom of the Netherlands to the Convention on Biological Diversity (CBD, September 2019) also describes a very unfavourable state of affairs of nature, concluding that only four of the twenty Aichi Targets of the CBD have been achieved in the Caribbean Netherlands and highlighting the increased need for conservation management actions.

### 3.2 Threats and pressures

The report *Staat van de natuur van Caribisch Nederland 2017* additionally states that the existing approach addressing threats and pressures in the Caribbean Netherlands is inadequate. The predominantly negative trends will most likely continue, as there is no reason to assume that the rate of biodiversity loss will decline or stop. In general, many threats and pressures have been identified and too little is being done to stop or decrease the impact of these threats and pressures. The report states that continued inaction regarding the most significant threats and pressures will result in the state of nature becoming 100% *moderately unfavourably* or even *very unfavourable*. Moreover, the ecosystems that have been observed in an unfavourable state are also not sufficiently resilient to mitigate current and future effects of climate change. See figure 2 for an overview of the main threats to coral reef ecosystems in the Caribbean Netherlands.

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<sup>5</sup> Debrot, A.O., Henkens, R.J.H.G., Verweij, P.J.F.M. (reds.), 2018. *Staat van de natuur van Caribisch Nederland 2017: Een eerste beoordeling van de staat (van instandhouding), bedreigingen en managementimplicaties van habitats en soorten in Caribisch Nederland*. Wageningen Marine Research Wageningen UR (University & Research centre), Wageningen Marine Research rapport C086/17. 214 blz.

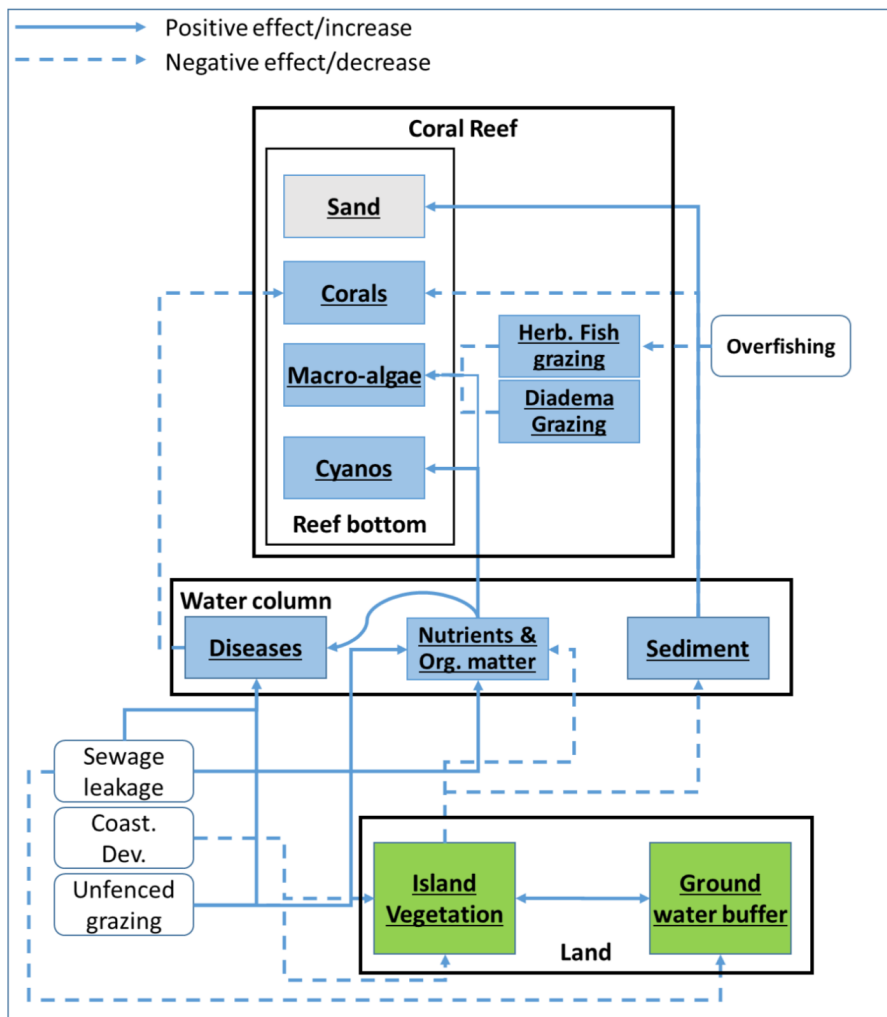


Figure 2 – schematic overview of the most relevant components of the coral reef ecosystem and local stress factors

Figure 2 provides a schematic overview of the main threats to coral reef ecosystems in the Caribbean Netherlands (source: *Achteruitgang koraalriffen Caribisch Nederland: oorzaken en mogelijke oplossingen voor koraalherstel*<sup>6</sup>). Population growth and increased economic activity (primarily in the tourism industry) have led to increased impact from wastewater and the production of solid waste. In addition, coastal development and roaming livestock have caused serious degradation of the terrestrial environment, resulting in high levels of erosion. These processes have led to a decrease in the level of the groundwater buffer and have caused an increase in nutrients, sediment, diseases and general pollution of the coastal water column. Together with the overfishing of herbivore fish species, various diseases, and extreme weather events, these pressures have led to a shift in the coral reef ecosystems of the Caribbean Netherlands. Where historically the reefs were covered by corals, now macro algae and cyanobacteria are dominating the reef floor.

<sup>6</sup> Meesters, E.h., Becking, L.E., van der Gees, M. (2019) *Achteruitgang koraalriffen Caribisch Nederland: oorzaken en mogelijke oplossingen voor koraalherstel*, Wageningen Marine Research rapport C061/19

The main drivers and pressures that cause coral reef degradation, also threaten other marine and terrestrial ecosystems. Overall drivers such as population growth, tourism and roaming livestock have caused severe degradation of dry and tropical forests, mangroves, seagrasses, beaches and salinas. This loss in habitat in combination with invasive species and increased disturbance have had a significant effect on many populations of key species. Annex 2 provides a full overview of the specific threats and pressures that have been identified by stakeholders, experts and in the reports mentioned above.

The unfavourable state of the precious ecosystems in the Caribbean Netherlands and inability to effectively deal with the drivers and pressures of environmental degradation in the past decades provide the basis for the targets specified in this NEPP for the Caribbean Netherlands.



## 4. Strategic long-term goals and targets

The objective of this NEPP is to develop a functional framework to support a vision in which nature in the Caribbean Netherlands can flourish and be sustainably used by current and future generations. This framework should ensure the well-being of the islands' inhabitants, including their culture and traditions. It should allow nature to provide the basis for a sustainable local economy and that investments are made and ensure ecosystems and species are resilient to local, regional and global pressures and threats.

These targets will set the integrated nature policy in the Caribbean Netherlands in the coming ten years and beyond to ensure that the nature of the Caribbean islands is ultimately able to attain a favourable state in 2050 according to the classification stated in *Staat van de natuur van Caribisch Nederland 2017*.

Each island will set their own priorities within this framework and these priorities will be concretized through local island implementation plans and implemented with support of the national government. The national and local governments have identified the coral reefs as a high priority and they, together with the island stakeholders, underscore that terrestrial and marine ecosystems are intrinsically connected. This NEPP aims for a holistic approach that focusses on both land and water. Achieving a favourable state for ecosystems and species will support the sustainable use of the islands' ecosystems and ecosystem services. In turn, this will contribute to sustainable local economies supporting the well-being of the island inhabitants, now and in the future.

<b>Vision</b> A prosperous society and cultural identity in balance with a resilient and healthy natural environment.		
<b>Strategic goal 1</b> Reverse coral coral reef degradation to enhance wellbeing in the CN	<b>Strategic goal 2</b> Restore and conserve the unique habitats and species in the CN	<b>Strategic goal 3</b> Sustainable use of land and water for the development of the local economy
1.1 Control erosion and runoff	2.1 Conservation and restoration of key habitats	3.1 Sustainable fisheries
1.2 Effective waste and wastewater management	2.2 Conservation of keystone and flagship species	3.2 Tourism industry in balance with nature conservation
1.3 Coral reef restoration	2.3 Prevent new and control established invasive species	3.3 Invest in sustainable local food production
<b>Strategic goal 4</b> Create the local conditions to ensure sustainable results of nature policy in the CN		
4.1 Create awareness through education and training	4.2 Create employment through investments in nature	4.3 Develop a structural research agenda

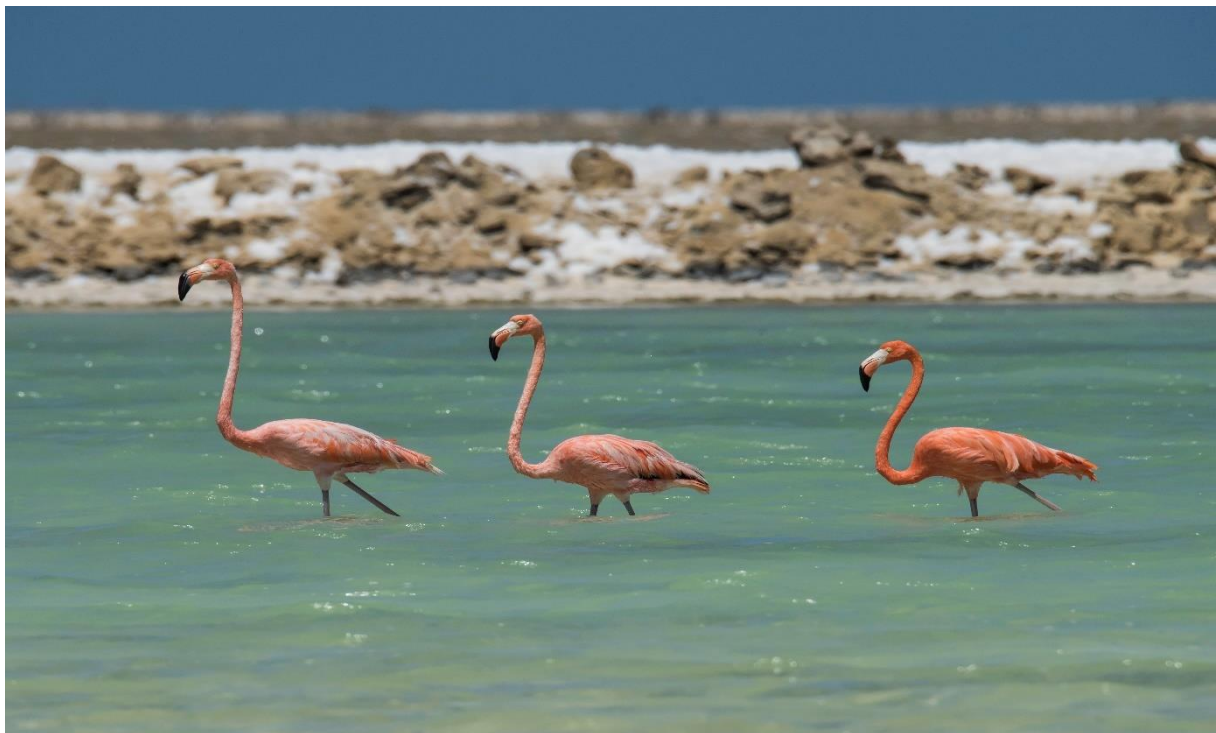
Figure 3 - Schematic overview of the strategic goals and targets.

This following section describes the goals for the conservation, restoration and sustainable use of nature in the Caribbean Netherlands and their underlying targets

for the period of this NEPP(2020-2030). In total, four strategic goals and twelve targets are specified (Figure 3). The parliament will be informed on the progress made towards these strategic goals in the annual progress report Nature by the ministry ANF. For a checklist on actions that could fall under each target please refer to Annex 3. As mentioned earlier each island will set its own priorities, which will be defined through the implementation agendas. In the next paragraph the most important themes per island are described.

### Strategic goals per island

On Bonaire, building resilient and healthy coral reefs is a crucial topic. Healthy coral reefs result in the increased well-being of island residents and support their cultural identity, contributing to public health and enhancing sustainable economic development. The Blue Destinations concept is an example of this pathway. Erosion control is a key challenge that must be addressed to achieve this sustainable development. Goat husbandry practices must be professionalized, and the issue of free-roaming animals must also be addressed. Inclusive sustainable spatial development is also of key importance on the island. The efficient treatment of wastewater, which can support and enhance sustainable agriculture in becoming increasingly self-supporting and less dependent on imports is of great importance. Finally, Bonaire has set a priority to respond quickly and effectively to the Sargassum inflow. The stakeholders want to prevent and mitigate the effects of Sargassum on local ecosystems and the potential impact on public health. All these priorities are aligned with a sustainable Bonaire surrounded by a stable environment and opportunities for all.



*Bonaire: Caribbean flamingo credit Hans Smulders*

On Saba it is very important that restoring and improving the health of the ecosystems goes hand-in-hand with providing benefits for the local community, through strengthened ecosystem services. Removing all free-roaming goats should not only result in reduced erosion but also create an opportunity for households to grow their own vegetables and fruit. Reforestation will not only reduce erosion but should also bring back indigenous plant species. Another challenge on Saba is improving the processing of solid waste. Saba wants to embrace a circular economy approach to look for opportunities transforming waste into commercial products, such as souvenirs for tourists or compost and fertilizer for local agriculture, while building local circular economy expertise. Another important strategic goal for Saba is the restoration of their coral reefs, for example via new and larger coral nurseries. These reefs provide services to the economy of the island. The Saban community understands that focusing on sustainable tourism and circular economy will generate sustainable income for the current and future generations of the island and is therefore supportive of sustainable development initiatives.



*Saba (source: HH)*

On Sint Eustatius the retention of rainwater is an important topic. In combination with the impact of climate change causing short periods of heavy rain fall followed with long periods of drought, this is considered a key challenge. The run-off caused by heavy rain is resulting in sedimentation, suffocating the reefs. Proper water management and road infrastructure in combination with the removal of the free-roaming animals and reforestation will prevent erosion, allowing the most important pressures to be addressed. Stopping the release of untreated or partially treated sewage, especially along the coastline, will also be essential to improve the health of the coastal environment. Moreover, rainwater that is collected can be used for local production of fruit and vegetables by farmers and households in the dry periods.



Importantly, Sint Eustatius wants to improve the health and resilience of their ecosystems and species. Therefore, efforts will be focus on restoration of the coral reefs, not only through out-planting corals but also by restoring key species associated with coral reef health, such as the sea urchins. Regarding sustainable economic development, Sint Eustatius embraces the concept of circular economy. The aim to create opportunities while addressing pressures on their ecosystems, such as creating new products from waste streams, is supported. These initiatives and investments need to contribute to the well-being and prosperity of the people of Sint Eustatius.



*Statia: credit Henk Jan Kievit*

**Strategic goal 1: Reversing the trend of coral reef degradation to create healthy, resilient and restored coral reefs, ensuring well-being in the CN**

Coral reefs are crucial for the well-being and prosperity of the islands in the Caribbean Netherlands and are highly valued on a national and international level as biodiversity hotspots. It is clear that immediate action is required to reverse the current trends of degradation and conserve these precious ecosystems. The aim is to invest in solutions for the most significant local pressures (i.e. erosion and pollution) and in active coral restoration to create the conditions for healthy reefs that are as much as possible resilient to climate change effects and other global drivers. Investing in coral reefs will contribute to a thriving tourism industry, protection of the shorelines and will provide a wide range of other benefits for the local communities.



### Target 1.1: Controlling erosion and runoff

Free roaming animals, uncontrolled coastal development and poor rainwater management are the main causes of erosion and unchecked runoff, one of the two main causes of poor water quality.

Investing in a professional livestock industry (including functioning slaughterhouses), fencing-in livestock, and removing all feral and free roaming grazers will allow for the vegetation to be restored, thereby stabilizing the soil and increasing its water retention capacity. These activities are currently being addressed through various projects by the local in collaboration with the Ministry of ANF and the indispensable support of the local community. It is envisioned that by 2024 the slaughterhouses will have sufficient capacity and that all active livestock farms are fenced. Removal programs should be implemented to remove all feral grazers by 2030.

The negative effects of construction in the coastal zone need to be addressed through a revision of spatial planning, including the delineation of a buffer zone from the shoreline in which construction activities are not allowed. The Ministry of IKR will work together with the local island governments and spatial planning departments to initiate this spatial planning process before 2024. The Ministry of I&W will formulate the necessary building requirements to further address erosion as a result of construction activities by 2024.

To control runoff, rainwater retention plans need to be developed. The Ministry of I&W will work together with the local planning departments to develop and implement such a plan by 2024. This plan will focus on the development of clever infrastructure and construction to increase the water storage capacity of the land, as well as nature-based solutions (e.g. re- and afforestation) and sustainable agriculture.



*Roaming goat credit Hans Smulders*

### **Target 1.2: Waste and wastewater management to improve water quality**

Improving water quality requires, among other things, effective treatment of wastewater. Effective wastewater management strategies for all islands will be established for 2024 and in progress where possible. By 2030, the aim is to significantly reduce the level of nutrients in groundwater and coastal areas, thanks to effective treatment of wastewater.

To reduce the effects of solid waste disposal, effective waste processing strategies will be developed by 2024, leading to a halt in landfill practices. Furthermore, the seepage of toxic substances from current landfills needs to be addressed and policies against illegal waste dumping need to be fully enforced by 2024. Through increased recycling and banning single-use plastics, the waste production will be significantly reduced.

### **Target 1.3: Coral reef restoration**

Recent coral restoration efforts have shown promising results for the nursery growing and transplantation of elkhorn and staghorn coral species. This provides an opportunity to actively restore degraded shallow reef areas in the Caribbean Netherlands to increase coral cover to historical baseline levels. The aim is to stimulate a community of practice, in which knowledge and restoration standards and protocols are shared in the region. A coordinated strategy needs to be implemented to track coral cover in restored areas and control sites to evaluate restoration success rates.

The Ministry of ANF will be the responsible Ministry in support of these coral reef restoration programs.

## **Strategic goal 2: Restore and conserve the unique habitats and species in the Caribbean Netherlands for current and future generations**

In addition to coral reefs, the islands are home to a wide range of other unique habitats and species. Many of these are impacted by the same pressures and drivers that are degrading the coral reefs. To conserve the key habitats for current and future generations, increased protection and restoration of degraded habitats is required. In addition, keystone and flagship species need to be targeted to ensure healthy populations. Furthermore, as small island ecosystems are exceptionally vulnerable to invasive species, increased preventive biocontrol measures are necessary, as well as increased efforts to control the established invasive species in both the terrestrial and marine environments.

### **Target 2.1: Conservation and restoration of key habitats**

Most of the important habitats in the Caribbean Netherlands are currently officially designated as protected areas, there are still some that are not, or are not effectively enforced. The *Yarari* Marine Mammal & Shark sanctuary will be legally established and a management plan will be developed. Effective implementation of the Saba Bank Management Plan will be continued and improved as necessary. Cave systems and important breeding areas for sea and shorebirds need to be protected by local regulation and management. Management in the Ramsar sites will be evaluated and improved by national and local government. The current



system of protected areas will be reviewed to ensure the protection of key habitat functions, such as migratory corridors, nursery and foraging areas in the context of the second State of Nature Caribbean Netherlands 2024. Finally, eligible protected areas that are of national interest, should be designated as National Parks.

The Ministry of ANF will work together with local partners to support restoration efforts in dry and tropical forest ecosystems and mangroves to stimulate the regeneration of endemic vegetation. It is crucial that the problem of roaming livestock is resolved before any large-scale restoration efforts take place (see target 1.1).

The increased inflow of sargassum, a surmised effect that has recently become apparent, needs to be addressed to prevent and mitigate the effects on local ecosystems and the potential impact on public health. A plan of action will be developed which includes an early warning system and effective response strategy.

### **Target 2.2: Conservation of keystone and flagship species**

The Caribbean Netherlands is home to an abundance of important species. Many of these species are protected under the Protocol for Specially Protected Areas and Wildlife (SPAW), by national or by local laws. To ensure healthy populations for these species, a coordinated monitoring strategy is to be developed as part of the overall monitoring strategy. Effective conservation strategies, including population targets, need to be implemented for protected and endangered species by 2030. Where necessary, breeding and nursery programs need to be implemented to stimulate endemic populations. The Ministry of ANF aims for healthy populations of all keystone and flagship species by 2030.

Annex 1 provides an overview of the protected species in the Caribbean Netherlands.



*Iguana iguana* credit Hans Smulders



### **Target 2.3: Prevent new and control established invasive species**

Currently, the Caribbean Netherlands suffers from a range of invasive species in the marine and terrestrial environments. To control invasive species populations, management strategies will focus on effective removal (for example, of lionfish, rats, and feral cats and dogs), and also on a holistic ecosystem restoration approach (for example for corallita and seagrass). An inventory will be established to monitor the populations of invasive species.

To control alien species entering the ecosystems of the Caribbean Netherlands through marine and aerial transportation, an effective biocontrol policy will be implemented mainly by customs and harbour personnel. Monitoring of high-risk species and early response strategies has to be in place to control alien species at an early stage.

The aim is to implement the biocontrol and management strategies by 2024 to control all invasive species populations by 2030.

### **Strategic goal 3: Sustainable use of land and water for the development of the local economy**

The small-island economies of Bonaire, Saba and St Eustatius depend heavily on the quality of local ecosystems. On all islands, tourism is a crucial industry that provides income and employment for a significant part of the population. However, the exploitation and use of natural resources leads to environmental degradation. By investing in sustainable tourism industries, fisheries and agricultural systems, environmental impact is minimized, while at the same time economic development is stimulated.

#### **Target 3.1: Invest in sustainable fisheries**

From a cultural perspective, fisheries are an important economic activity that forms an integral part of the island societies. Investing in a sustainable fishing industry is a crucial factor for effective marine conservation. Sustainable fisheries aim at stable fish stocks; stocks that will not diminish through good management of the whole marine environment. A sustainable fishing industry implies a regular income for fishermen through the utilization of healthy and stable fish stocks. This requires effective fishing regulations that ensure the protection of endangered species, such as sharks and groupers. However, investments need to be made to increase income from other commercial fish stocks. Currently, a fisheries policy plan is being developed and support is given to establish fishermen cooperatives. This should be realized before 2024. The aim is to achieve the fully sustainable exploitation of fish stocks by 2030.

#### **Target 3.2: Tourism industry in balance with nature conservation**

As for most islands in the region, tourism is a very important economic sector for the Caribbean Netherlands. What distinguishes tourism on Bonaire, Saba and St Eustatius from many other destinations, is the importance of nature-based tourism. All three islands have the strategic ambition to become sustainable destinations, where tourism and nature conservation are in balance. This is also reflected in the

Strategic Tourism Masterplan Bonaire (i.e. the vision of a “*blue destination*”) and in the Tourism Vision Statia.

In the past decade, tourist arrivals on Bonaire, have increased substantially, leading to uncontrolled and unsustainable (coastal) development and degradation of natural resources. To ensure balanced economies, the local government has to establish carrying capacities for the islands with regard to tourism and incorporate long-term tourism development strategies by 2024. In addition, these strategies need to incorporate instruments to use tourism revenues for the sustainable financing of nature management.

### **Target 3.3: Invest in sustainable local food production**

Although historically important, local agriculture and livestock industries have become marginal economic sectors in the Caribbean Netherlands, which now rely strongly on the import of food products. To improve landscape quality whilst also stimulating local economic development and increasing food security, investments need to be made to support local food production.

Currently, efforts are made by local and national government to professionalize the local livestock industries (see target 1.1) and to restructure the local agricultural department on Bonaire to become fully functional information centres for innovative agricultural production by 2024. To increase the capacity for circular agriculture and livestock production, infrastructure needs to be in place, including water supply and functional markets.

## **Strategic goal 4: Create the local conditions to ensure sustainable results of nature policy in the Caribbean Netherlands**

To ensure that the results of the NEPP are embedded in society, enabling conditions need to be created. As the challenges for nature management in the Caribbean Netherlands require a joint effort and collective sense of urgency by a wide range of stakeholders, awareness needs to be raised through ambitious education and training programs. Furthermore, employment opportunities need to be created to achieve sufficient capacity for the execution of the activities that will follow from this plan. Finally, studying the effects of climate change and formulating mitigation and adaptation strategies will be crucial to achieve the long-term strategic goals.

### **Target 4.1: Create awareness through education and training**

Increased awareness among the local population and the local and national institutions is a condition for successful nature management in the Caribbean Netherlands. This plan aims to engage departments and stakeholders from a wide range of sectors to support sustainable management of nature and natural resources. This requires a broad understanding of urgency that can only be achieved through training and education programs that target specific audiences on a regular long-term basis.. Awareness and education should furthermore become integral throughout the implementation of each of the targets formulated in this plan.

#### **Target 4.2: Create quality employment through investments in nature management**

To integrate nature management in society and create broad support for the goals and targets in this plan the benefits of nature conservation need be evident. The implementation of this NEPP requires a solid local workforce with sufficient capacity and expertise. Through the training of local staff and creating opportunities for employment, the benefits of nature conservation become tangible for residents.

Creating employment also aligns the nature conservation goals with those for socioeconomic development on the islands. For example, by creating reintegration programs for people with a distance to the labour market to implement ecosystem restoration strategies, social and environmental policy targets are aligned.

#### **Target 4.3: Develop a structural research agenda to build a consistent knowledge base for the conservation, restoration and sustainable use of nature in the CN**

Crucial for the monitoring and evaluation of nature and environment policy is the development of a structural knowledge base in which important indicators are assessed on a regular basis. Developing a research agenda relevant for the monitoring of these indicators requires a coordinated research approach. The monitoring mechanism as well as the knowledge base for the islands will be further developed by the national government in close cooperation with the local government, management organisations and DCNA.

In addition, there are currently important knowledge gaps. An example of such a gap is the lack of knowledge regarding the local effects of climate change on marine and terrestrial ecosystems in the Caribbean Netherlands. Insight in these effects is crucial to ensure sustainable results of nature policy.

## 5. Ensuring effective implementation and evaluation

To achieve the targets set out in this NEPP, several elements need to be in place. This chapter touches upon the development of implementation agendas, the necessary governance structure, legislation and enforcement, ensuring financial capacity, monitoring and evaluation, and the next steps for implementation

### 5.1 Implementation agendas

This NEPP provides the framework for nature policy in the Caribbean Netherlands for the coming 10 years. Within Caribbean Netherlands there are important differences between the island physically, economically as well as in capacity to fulfil responsibilities in the context of nature. In order to take these aspects into account detailed implementation agendas need to be developed for each island by local governments in close cooperation with the national government. The agendas will outline the necessary activities in order to achieve the formulated targets, including responsibilities, clear indicators and milestones (SMART). Next to capacity and financial aspect these agendas should also address potential social employment opportunities, how and for whom awareness should be raised and how local capacity is built within the different projects and programs. Especially the engagement and involvement of the local population need to be addressed.

The implementation agendas will also pay attention to the prioritization of activities. High-priority areas will be identified in which the most relevant conservation and restoration activities are executed first.

Finally, the implementation agendas should contain sufficient concrete information that the activities and goals can be judged on feasibility and be monitored on progress.

### 5.2 Governance

A solid governance structure will be implemented to monitor, coordinate, and evaluate the implementation of the goals and targets from the NEPP Caribbean Netherlands. For each island, the governance structure aims at establishing, within existing islands' governance frameworks as appropriate, a steering committee to lead the implementation of this NEPP and subsequent implementation agendas. This steering committee will be supported by a secretariat. To liaise between local and national governments the following responsible parties will take a seat in the committees: the island commissioner, the island governor, and representatives of the Ministry of ANF, the Ministry of I&W and the Ministry of IKR Other relevant ministries might be represented dependent of the agenda.

These steering committees will oversee the development of the implementation agendas. The committees will furthermore coordinate an annual review to assess the progress of the implementation agendas and report to the Dutch parliament and public entities. Based on the annual evaluations, the steering committees will advise the responsible ministers and executive councils on the necessary changes in the implementation.

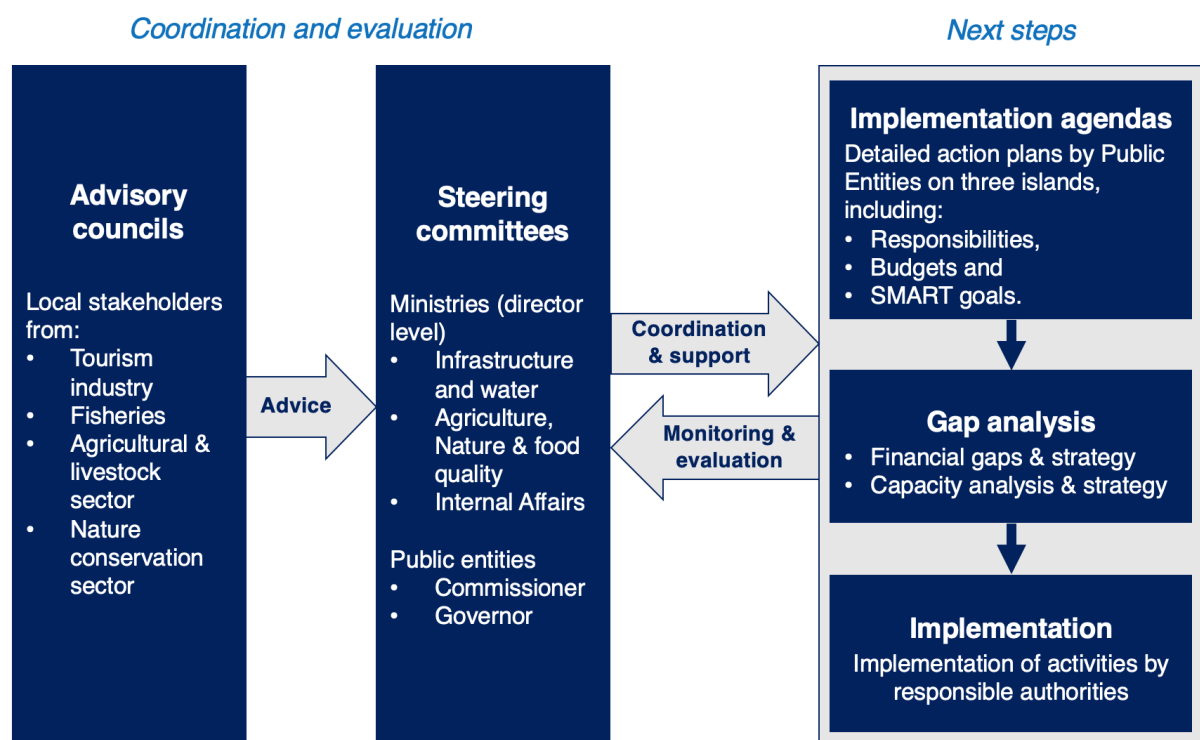


Figure 4 Governance structure for the implementation of the NEPP Caribbean Netherlands 2020-2030

Advisory councils (platforms) on nature and environment will be tasked on each island to inform and advise the steering committees. Invited parties include technical representatives of involved ministries and public entities and representatives of park authorities, private sector and civil society organizations. Where possible, the advisory councils and steering committees will be integrated with existing committees on the islands to minimize the administrative burden.

### 5.3 Legislation and enforcement

An evaluation of the existing fishery national and local legislation and regulations concluded that there are shortcomings that form obstacles for its adequate implementation.

Moreover, the lack of enforcement of the legislation and regulation have been a serious issue for the conservation and sustainable use of the ecosystems and biodiversity of the islands. Due to diverse legal responsibilities, enforcement involves many different institutions, such as the coastguard, the Netherlands shipping inspectorate, the police force, various departments of the public entities, park management organizations, and the public prosecutors. This makes effective and coordinated enforcement difficult.

### 5.4 Financial resources

#### 5.4.1 National Government

The Ministry of ANF has an annual budget of some € 1.3 million for nature conservation and management in the Caribbean Netherlands for the implementation of the national government's tasks concerning nature. In addition to the regular budget €1.5 million is allocated for the period 2020-2024 for the implementation of this plan of which 0.5 specifically is targeted to improve the quality of the national parks. The Ministry of I&W allocated €0,75 million towards implementation of

activities in relation to water quality and specifically on waste management. Ongoing environmental programmes such as the Bonaire waste management programme (budget 10 million) will be continued. Decisions concerning new priorities are possible depending on future implementation agendas.

The Ministry of the Interior and Kingdom Relations is to support the initiation of the planning process by executing research on the possibilities for the islands.

Specifically for reversing the trend of coral degradation the national government has allocated €7.2 million to enable the first phase of the protection of the ecosystems and biodiversity in the Caribbean Netherlands in the coming 5 years. This budget is in addition to the € 1.6 million already allocated in 2019 to the conservation of nature and the development agriculture (sustainable goat keeping) in the Caribbean Netherlands.

#### **5.4.2 Local funding**

The local governments are responsible for the nature conservation, restoration and sustainable use of their islands. They have mandated the conservation of the ecosystems and habitats within the national parks to local management organizations. Every year the islands' governing bodies receive a contribution from the BES fund, set aside for tasks that include nature management. The costs for the implementation of nature management were estimated in 2010 at a minimum of € 0.8 million a year. The governing bodies decide how the resources from the BES fund are to be spent, which means that these resources are not necessarily spent on nature conservation. The management of nature is executed by nature management organisations: Stichting nationale parken Bonaire (STINAPA), St Eustatius national park (STENAPA) en Saba Conservation foundation (SCF). Most of the funding available for management of the nature in the national parks is generated by user fees. The amounts vary widely between islands however. On Bonaire, STINAPA receives most of their total budget for nature management by means of user fees, for the Saba Conservation Foundation (SCF) on Saba this accounts for about half of their budget and for STENAPA on St. Eustatius this is even less. The differences are largely explained by tourist numbers coming to the islands or ships anchoring (St Eustatius). On Saba and St Eustatius, a small part of the exploitation costs of the designated protected areas is covered by direct subsidies from the islands' governing bodies.

Support is given by the national government to the local governments to realize new financing mechanisms or have existing mechanisms become more effective and efficient to conserve, restore and sustainable use nature on the islands.

Several local nature conservation NGOs contribute to specific areas of nature conservation on the three islands. Moreover, on Bonaire the multinational agricultural company Cargill as part of its agreement for solar salt exploitation with the island government, manages the unique nature of the salt ponds in the southern region of the island including the flamingo sanctuary.

Other financial support for the park management organizations in the Dutch Caribbean comes from private partners, WWF-Netherlands and the Dutch Society for the Protection of Birds. Moreover, WWF-NL together with the Dutch Caribbean Nature Alliance is financing workshops to develop sustainable financing mechanisms by the SCF, STENAPA and the Nature Foundation Sint Maarten.



### 5.4.3 Financial needs

The national government is allocating financial resources to the realization of several targets in the first phase of the plan focussing on the most urgent and promising results. The more concrete implementation plans should demonstrate whether the available capacity in place is able to ensure implementation of all activities realized with the financial means for the whole period up to 2030. An evaluation in 2025 should assess if the right approaches are taken before further investment could and should take place. The assessment of the results in the coming years should give an indication about the amount of financial resources needed to start the second phase of achieving the strategic goals set in the NEPP, to be achieved in 2030.

### 5.5 Reporting and evaluation

Crucial for success is the monitoring and reporting of the impact of the strategies initiated by NEPP. Reporting will be done at three levels.

First of all, the reporting will take place on the level of progress of the implementation agendas. This will be the reporting of the implementation organisations to the steering committee per island. Then the steering committee will report to the local and national government of the progress of the implementation agendas. This will be done on a regular basis.

Secondly, once a year the Dutch parliament will be informed about the progress in achieving the strategic goals set in this NEPP by the steering committees of the three islands.

Thirdly, in 2024 *Staat van de natuur van Caribisch Nederland 2024* report will be produced that describes the state of the ecosystems and species in the Caribbean Netherlands at that time. In 2025 a midterm evaluation will be made of the impact and results of the implementation plans on the conservation, restoration and sustainable use of the ecosystems in the Caribbean Netherlands, derived from this NEPP.

Moreover, the results need to be communicated to different stakeholder groups. To be able to monitor the NEPP Caribbean Netherlands a monitoring framework is proposed which is based on the criteria and principles defined by the OECD addressing results-based decision making<sup>7</sup>. See annex 4.

### 5.6 Planning of activities

In the start phase of this NEPP, the first step is to organise the steering committees on each island. These steering committees will coordinate the development of the implementation agendas on each island and define the responsibilities with the local and national partners. The implementation agendas will identify the need for funding, personnel and expertise.

The first phase ranges between 2020 and 2024 and will concern the initiation of new policies and strategies and the continuation of ongoing activities. This first phase focusses on the most urgent pressures and on building sustainable capacity. This should lead to tangible results in 2024. After the first phase, an evaluation process will inform the focus of activities in the second phase, which ranges between 2025 and 2030.

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<sup>7</sup> OECD, 2002. *Glossary of Key Terms in Evaluation and Results Based Management*



## Annex 1 –Protected species

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<b>PLANTS</b>								
All Cactaceae	All cacti: columnar cacti, prickly pear cacti, turks cap cacti	yatu, datu, kadushi, infrou, tuna, milon di seru	Alle cactussen: pilaarcactusen, lidcactusen, bolcactusen	-				<b>II</b>
<i>All Orchidaceae</i>	All Orchids	tur orkidea	alle orchideeen	-				<b>II</b>
<i>Cyathea arborea</i>	Tree fern		Boomvaren					<b>II</b>
<i>Syringodium filiforme</i> (= <i>Cymodocea manitorum</i> )	Manatee grass		zeegras	<b>LC</b>	<b>3</b>			
<i>Thalassia testudinum</i>	Turtlegrass	yerba di kaña	zeegras	<b>LC</b>	<b>3</b>			
<i>Halophila baillonis</i> (= <i>aschersonii</i> )	Tapegrass		zeegras	<b>VU</b>	<b>3</b>			
<i>Halophila decipiens</i>	Tapegrass		zeegras	<b>LC</b>	<b>3</b>			
<i>Halophila engelmannii</i>	Tapegrass		zeegras	<b>NT</b>	<b>3</b>			
<i>Ruppia maritima</i>	Wigeongrass		snavelruppia	<b>LC</b>	<b>3</b>			
<i>Rhizophora mangle</i>	Red mangrove	mangel tam	Rode mangrove	<b>LC</b>	<b>3</b>			
<i>Avicennia germinans</i> (= <i>nitida</i> )	Black mangrove	mangel blanku	Zwarte mangrove	<b>LC</b>	<b>3</b>			
<i>Laguncularia racemosa</i>	White mangrove	mangel blanku	Witte mangrove	<b>LC</b>	<b>3</b>			
<i>Conocarpus erecta</i>	Buttonwood	mangel blanku		<b>LC</b>	<b>3</b>			
<i>Guaiacum officinale</i>	Common lignum vitae	wayaká	Pokhout	<b>EN</b>	<b>3</b>			<b>II</b>
<i>Guaiacum sanctum</i>	Hollywood lignum vitae	wayaká shimaron	Pokhout	<b>EN</b>	<b>3</b>			<b>II</b>
<i>Nectandra krugii</i>	Black sweet wood			<b>EN</b>				
<i>Swietenia mahagoni</i>	West Indian mahogany		West-indische mahonie	<b>EN</b>				<b>II</b>
<i>Zanthoxylum flavum</i>	West Indian Satinwood	kalabari		<b>VU</b>				

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<b>CORALS</b>								
All Milleporidae	All Fire corals		brandkoralen	-	3			II
All Stylasteridae	All Lace corals		kantkoralen	-	3			II
All Antipatharia	All Black corals		Zwart koralen	-	3			II
All Gorgonacea	All Gorgonians		hoornkoralen	-	3			
All Scleractinia	All Hard corals		steenkorallen	-	3			II
Acropora palmata	Elkhorn coral		Elandgeweikoraal	CR	2			II
Acropora cervicornis	Staghorn coral		Hertshoornkokraal	CR	2			II
Agaricia lamarcki	Lamarck's Sheet coral		Lamarck's plaatkoraal	VU	3			II
Agaricia tenuifolia	Thin Leaf Lettuce Coral		Dun bladkoraal	NT	3			II
Dendrogyra cylindrus	Pillar coral		Pilaarkoraal	VU	3			II
Dichocoenia stokesi	Elliptical star coral		Elliptisch sterkoraal	VU	3			II
Montastrea franksi	Bumpy star coral		Bobbelig sterkoraal	VU	3			II
Orbicella annularis	Head star coral		Kinderhoofdjeskoraal	EN	2			II
Orbicella faveolata	Boulder starcoral		Pagodekoraal	EN	2			II
Mycetophyllia ferox	Rough cactus coral		Ruw cactuskoraal	VU	3			II
Millepora striata	Bladed box firecoral		Brandkoraal	VU	3			II
Oculina varicosa	Large ivory coral		Ivoorkoraal	VU	3			II
<b>OTHER INVERTEBRATES</b>								
<i>Strombus gigas</i>	Queen Conch	karkó	Kroonslak	-	3			II
<i>Typhlatya monae</i>	Mona cave shrimp		Mona grottengarnaal	VU				
<i>Panulirus argus</i>	Caribbean Spiny Lobster	kref	Caribische langoest	DD	3			
<b>FISHES</b>								

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<i>Pristis pectinata</i>	Smalltooth Sawfish		zaagvis	CR	2	1,2	1	I
<i>Pristis pristis</i>	Large-tooth sawfish		zaagvis	CR	2	1,2	1	I
<i>Manta birostris</i>	Manta Ray	manta	reuzenmanta	VU	3	1,2	1	II
<i>Manta alfredi</i>	Reef Manta Ray	manta		VU	3	1,2	1	II
<i>Aetobatus narinari</i>	Spotted Eagle Ray	chuchu aguila	Gevlekte adelaarsrog	NT				
<i>Cetorhinus maximus</i>	Basking Shark		Reuzenhaai	VU		1,2	1	
<i>Rhincodon typus</i>	Whale shark	tribon bayena	Walvishaai	EN	3	1,2	1	II
<i>Carcharodon carcharias</i>	Great White Shark		Witte haai	VU		1,2	1	II
<i>Alopias vulpinus</i>	Thresher shark		Voshaai	VU		2	1	II
<i>Isurus oxyrinchus</i>	Shortfin mako	tribon mulá	Kortvin makreelhaai	VU		2	1	
<i>Isurus paucus</i>	Longfin mako		Langvin makreelhaai	VU		2	1	
<i>Sphyrna mokarran</i>	Great hammerhead shark	tribon martin	Grote Hamerhaai	EN	3	2	1	II
<i>Sphyrna lewini</i>	Scalloped hammerhead	Tribon martin	Geschulpte hamerhaai	EN	3	2	1	II
<i>Sphyrna zigaena</i>	Smooth hammerhead	Tribon martin	Gladde hamerhaai	VU	3		1	II
<i>Carcharhinus falciformis</i>	Silky Shark		Zijdehaai	VU	3	2	1	II
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark		Witpunthai	CR	3		1	II
<i>Carcharhinus perezi</i>	Caribbean Reef Shark		Caribische rifhaai	NT				
<i>Hippocampus reidi</i>	Slender Seahorse	Kabai di awa	zeepaardje	DD				II
<i>Kajikia albida</i>	White Marlin	Balau		VU				
<i>Makaira nigricans</i>	Black Marlin	Balau		EN				
<i>Hippocampus erectus</i>	Lined Seahorse	Kabai di awa	zeepaardje	VU				II
<i>Dermatolepis inermis</i>	Marble grouper	hokfes pretu	Gemarmerde zeebaars	NT				
<i>Epinephelus flavolimbatus</i>	Yellowedge grouper			VU				
<i>Epinephelus itajara</i>	Goliath grouper	djukfes	Reuzenzeebaars	CR				
<i>Epinephelus morio</i>	Red Grouper		Rode Zeebaars	NT				

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<i>Epinephelus niveatus</i>	Snowy grouper/spotted grouper		Gevlekte zeebaars	VU				
<i>Epinephelus striatus</i>	Nassau grouper	jakupepu	Nassaubaars	CR	3			
<i>Balistes vetula</i>	Queen triggerfish	psihi porko rab'i gai	Koningin Trekkervis	VU				
<i>Lachnolaimus maximus</i>	Hogfish		Zwijnsvis	VU				
<i>Lutjanus analis</i>	Mutton snapper		Schaapssnapper	VU				
<i>Lutjanus cyanopterus</i>	Cubera snapper		Cubera Snapper	VU				
<i>Mycteroperca bonaci</i>	Black Grouper	Olito	Zwarte zeebaars	NT				
<i>Mycteroperca interstitialis</i>	Yellowmouth grouper		Geelbekbaars	VU				
<i>Mycteroperca venenosa</i>	Yellowfin Grouper	Olito	Geelvinbaars	NT				
<i>Calamus bajonado</i>	Jolthead porgy	Djent'i maishi		LC				
<i>Scarus guacamaia</i>	Rainbow parrotfish		Regenboog papegaaivis	VU				
<i>Thunnus obesus</i>	Bigeye tuna	Buní	Grootoogtonijn	VU				
<i>Thunnus thynnus</i>	Atlantic Bluefin Tuna	Buní	Blauwvintonijn	EN				
<i>Thunnus alalunga</i>	Albacore Tuna	Buní	Witte tonijn	NT				
<i>Thunnus albacares</i>	Yellowfin Tuna	Buní	Geelvintonijn	NT				
<b>MAMMALS</b>								
<b>Marine mammals</b>								
All Cetaceans			Alle walvisachtigen	-	2			II
<i>Tursiops truncatus</i>	Bottlenose Dolphin	Tonú	Tuimelaar	LC	2			II
<i>Lagenodelphis hosei</i>	Fraser's Dolphin		Sarawakdolfijn	LC	2			II
<i>Delphinus delphis</i>	Common Dolphin	Tonú	Gewone dolfijn	LC	2			II
<i>Stenella attenuata</i>	Pantropical Spotted Dolphin	Tonú	Slanke dolfijn	LC	2			II
<i>Stenella frontalis</i>	Atlantic Spotted Dolphin		Atlantische vlek dolfijn	DD	2			II
<i>Stenella longirostris</i>	Spinner Dolphin	Toniwa	Langsnuitdolfijn	DD	2			II

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<i>Stenella coeruleoalba</i>	Striped Dolphin		Gestreepte dolfijn	LC	2			II
<i>Stenella clymene</i>	Clymene Dolphin		Clymenedolfijn	DD	2			II
<i>Grampus griseus</i>	Risso's Dolphin/Grey Dolphin		Gramper	LC	2			II
<i>Ziphius cavirostris</i>	Cuvier's Whale		Dolfijn van Cuvier	LC	2			II
<i>Mesoplodon europaeus</i>	Gervais's Beaked Whale		Spitssnuitdolfijn van Gervais	DD	2			II
<i>Pseudorca crassidens</i>	False Killer Whale		Zwarte zwaardwalvis	DD	2			II
<i>Orcinus orca</i>	Orca - Killer Whale		Orka	DD	2	2		II
<i>Kogia breviceps</i>	Pygmy Sperm Whale		Dwergpotvis	DD	2			II
<i>Kogia simus</i>	Dwarf Sperm Whale		Kleinste potvis	DD	2			II
<i>Peponocephala electra</i>	Melon-headed Whale		Witlipdolfijn	LC	2			II
<i>Globicephala macrorhynchus</i>	Shortfin Pilot Whale	Kabe'i keshi	Indische Griend	DD	2			II
<i>Balaenoptera physalus</i>	Fin whale	bayena	Gewone vinvis	EN	2	1		I
<i>Balaenoptera borealis</i>	Coalfish whale	bayena	Noordse vinvis	EN	2	1		I
<i>Balaenoptera edeni</i>	Bryde's Whale	topo	Edens vinvis	DD	2	2		I
<i>Balaenoptera musculus</i>	Blue whale	bayena	Blauwe vinvis	EN	2	1		I
<i>Megaptera novaeangliae</i>	Humpback whale	bayena	Bulrugwalvis	VU	2	1		I
<i>Physeter macrocephalus</i>	Sperm whale	kachalote	potvis	VU	2	1		I
<i>Trichechus manatus</i>	West-indian manatee		Westindische zeekoe	VU	2			I
<b>Rodentia</b>								
<i>Calomys hummelincki</i>	Hummelinck's vesper mouse		Hummelinck's Vesper Muis	VU				
<b>Bats</b>								
<i>Leptonycteris curasoae</i>	Lesser long-nosed bat		Curaçoise bladneus-vleermuis	VU				
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat		Guanovleermuis	LC	2	1		

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<b>BIRDS</b>								
<i>Sarkidiornis melanotos</i>	Comb Duck		Knobbeleend	LC		2		II
<i>Buteo albicaudatus</i>	White-tailed Hawk	Falki	Witstaartbuizerd	LC				II
<i>Buteo jamaicensis</i>	Red-tailed Hawk		Roodstaartbuizerd	LC				II
<i>Pandion haliaetus</i>	Osprey	Gabilan piskadó	Visarend	LC		2		II
<i>Caracara cheriway</i>	Northern Caracara	Warawara	Caracara	LC	2			II
<i>Falco peregrinus</i>	Peregrine Falcon		Slechtvalk	LC	2	2		I
<i>Falco sparverius</i>	American Kestrel	Kinikini	Amerikaanse torenvalk	LC		2		II
<i>Falco columbarius</i>	Merlin	Kinikini grandi	Smelleken	LC		2		II
<i>Tyto alba</i>	Barn Owl	Palabrua	Kerkuil	LC				II
<i>Chrysolampis mosquitus</i>	Ruby-topaz Hummingbird	Blenchi tornasol	Rode kolibrie	LC				II
<i>Chorostilbon mellisugus</i>	Blue-tailed Emerald	Blenchi	Groene kolibrie	LC				II
<i>Eulampis jugularis</i>	Purple-throated Carib		Granaatkolibrie	LC				II
<i>Eulampis holocericeus</i>	Green-throated Carib		Groenkeelkolibrie	LC				II
<i>Orthorhyncus cristatus</i>	Antillean Crested Hummingbird		Antilliaanse Kuifkolibrie	LC				II
<i>Cinlocerthia ruficauda</i>	Brown Trembler		Sidderspotlijster	LC	2			
<i>Aratinga pertinax</i>	Brown-throated Conure	Prikichi	West-indische parkiet	LC				II
<i>Amazona barbadensis</i>	Yellow-shouldered amazon	lora	Geelvleugelamazone	VU	2			I
<i>Charadrius melodus</i>	Piping Plover		Dwergplevier	NT	2			
<i>Contopus cooperi</i>	Olive-sided Flycatcher		Sparrenpiewie	NT				
<i>Dendrocygna arborea</i>	West Indian whistling duck	patu	West-Indische Fluiteend	VU	3	2		
<i>Dendrocygna bicolor</i>	Fulvous Whistling-duck	patu	Rosse fluiteend	LC	3	2		

	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<i>Dendroica cerulea</i>	Cerulean warbler		Azuurblauwe Zanger	<b>VU</b>				
<i>Fulica caribaea</i>	Caribbean Coot		Caribische meerkoet	<b>NT</b>				
<i>Patagioenas leucocephala</i>	White-crowned pigeon		Witkapduif	<b>NT</b>	<b>3</b>			
<i>Phoenicopterus ruber</i>	Caribbean Flamingo	Chogogo	Caribische Flamingo	<b>LC</b>	<b>3</b>	<b>2</b>		<b>II</b>
<i>Pterodroma hasitata</i>	Black-capped petrel		Zwartkapstormvogel	<b>EN</b>	<b>2</b>			
<i>Puffinus lherminieri</i>	Audubon's Shearwater	Wedrego	Audubon's pijlstormvogel	<b>LC</b>	<b>2</b>			
<i>Pelecanus occidentalis</i>	Pelican		Bruine Pelikaan	<b>LC</b>	<b>2</b>			
<i>Sterna antillarum antillarum</i>	Least Tern		Dwergstern	<b>LC</b>				
<i>Sterna dougallii dougallii</i>	Roseate Tern		Dougalls stern	<b>LC</b>	<b>2</b>	<b>2</b>		
<i>Phaethon aethereus</i>	Redbilled tropicbird		roodsnavel keerkringvogel	<b>LC</b>				
<b>REPTILES</b>								
<b>Snakes</b>								
<i>Alsophis rijgersmai</i>	Leeward islands racer		grasslang	<b>EN</b>				
<i>Alsophis rufiventrus</i>	Red-bellied racer		Roodbuik grasslang	<b>VU</b>				
<b>Iguanas</b>								
<i>Iguana delicatissima</i>	Lesser Antillean Iguana		Antillenleguaan	<b>CR</b>	<b>3</b>			<b>II</b>
<i>Iguana iguana</i>	Green Iguana	Yuana	Groene leguaan	<b>LC</b>	<b>3</b>			<b>II</b>
<b>Sea turtles</b>								
<i>Chelonia mydas</i>	Green Turtle	tortuga blanku	soepschildpad	<b>EN</b>	<b>2</b>	<b>1,2</b>		<b>I</b>
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	karèt	karetschildpad	<b>CR</b>	<b>2</b>	<b>1,2</b>		<b>I</b>
<i>Caretta caretta</i>	Loggerhead Turtle	kawama	onechte karetschildpad	<b>EN</b>	<b>2</b>	<b>1,2</b>		<b>I</b>
<i>Lepidochelys olivacea</i>	Olive Ridley	tortuga bastiá	Warana	<b>EN</b>	<b>2</b>	<b>1,2</b>		<b>I</b>
<i>Dermochelys coriacea</i>	Leatherback Turtle	drikil	lederschildpad	<b>CR</b>	<b>2</b>	<b>1,2</b>		<b>I</b>



	common name	Lokale naam	Nederlandse naam	IUCN Category	SPAW Annex	CMS Annex	Sharks MoU	CITES Appendix
<b>INSECTS</b>								
<i>Danaus plexippus</i>	Monarch butterfly		Amerikaanse monarch	-		2		
<b>Total # species</b>	<b>115</b>							

## Annex 2 - Identified pressures and drivers

Threats and pressures on ecosystems & species	Policy themes
<ul style="list-style-type: none"> <li>Eutrophication (ground &amp; coastal waters)</li> <li>Diseases from bacteria &amp; fine particles</li> </ul>	(Waste)water management Water quality
<ul style="list-style-type: none"> <li>Unpaved roads</li> <li>Sedimentation</li> <li>Unchecked run-off</li> </ul>	Erosion control/ / fine particulates Rainwater management
<ul style="list-style-type: none"> <li>Free roaming animals</li> <li>Degradation of vegetation on land and corals in marine ecosystem</li> </ul>	Erosion control/ / fine particulates / Agriculture Enforcement Agriculture
<ul style="list-style-type: none"> <li>Construction</li> </ul>	Erosion control/ coastal development, spatial planning
<ul style="list-style-type: none"> <li>Overfishing (reef fish and pelagic fish)</li> </ul>	Fisheries
<ul style="list-style-type: none"> <li>Flora &amp; fauna invasive species in marine &amp; terrestrial ecosystems</li> </ul>	Invasive species management
<ul style="list-style-type: none"> <li>Landfill capacity</li> <li>Illegal dumping of waste</li> </ul>	Solid waste management Enforcement
<ul style="list-style-type: none"> <li>Pollution by plastics</li> <li>Pollution by chemicals</li> </ul>	Fine particulates and material Solid waste management Environmental regulation (permitting) Enforcement
<ul style="list-style-type: none"> <li>Physical disturbance and destruction</li> <li>Solid waste and wastewater</li> <li>Water and air pollution</li> <li>Coastal development (to accommodate visitors and growing population)</li> </ul>	Tourism and recreation
<ul style="list-style-type: none"> <li>Pollution by chemicals</li> <li>Ship grounding/ anchoring</li> </ul>	Incident / disaster response plans
<ul style="list-style-type: none"> <li>Tropical storms and hurricanes, coral bleaching, sea level rise, temperature increase, heavy rainfall, ocean acidification</li> </ul>	Climate change resilience and adaptation
<ul style="list-style-type: none"> <li>Land-use change</li> </ul>	Construction
<ul style="list-style-type: none"> <li>Lack of enforcement of legislation &amp; regulation</li> </ul>	Enforcement
<ul style="list-style-type: none"> <li>Gaps in legislation and lack of alignment with local, regional, national and international legislation</li> <li>Need for alignment with strategic goals and actions</li> </ul>	Enforcement, Governance
<ul style="list-style-type: none"> <li>Risks of oil spills and other damaging material disposal and emissions</li> <li>Risks of pollutants and nutrients from solar salt production</li> </ul>	Industrial Water quality monitoring
<ul style="list-style-type: none"> <li>Unregulated coastal development</li> <li>Need for buffer zones</li> </ul>	Spatial planning
<ul style="list-style-type: none"> <li>Insufficient capacity to address all threats on the islands</li> </ul>	Governance

## Annex 3 – Milestones per target for implementation agenda’s

The following tables provide concrete milestones per strategic goal and target that guide the implementation of nature policy in the Caribbean Netherlands. The milestones have been identified in close collaboration with stakeholders and experts and are considered necessary for the success of each target and strategic goal.

### Strategic goal 1 - Investing in a resilient coral reef to enhance well-being in the CN

<b>1.1. Control erosion and run-off</b>
<b>1.1.1 Control free roaming animals</b>
a) Keep all livestock kept within fenced-off properties by 2024
b) All feral free roaming grazers removed on Bonaire, Saba & Sint Eustatius (i.e. goats & sheep, donkeys, pigs, cows) by 2030
c) Investing in a professional and sustainable livestock industry (e.g. slaughterhouse, fodder, fences, enforcement, veterinary services) by 2024, water supply and fodder production organized sustainably by 2030
<b>1.1.2 Rainwater management</b>
a) Rainwater retention plan activated reducing surface water run-off by 50% based on research e.g. all social houses should contain gutters and water collection system, for each road construction by 2030
b) Water retention zones are restored and incorporated (e.g. catchment areas, buffer areas, repair dams, tanki's) into spatial planning by 2024
c) Promote the development of agricultural practices that enhance water retention capacity by 2024
<b>1.1.3 Sustainable coastal development</b>
a) Island-wide spatial development plans are reviewed/implemented to incorporate nature conservation goals
b) Define and implement an effective buffer zone to keep impact of construction activities within safe limits from the marine ecosystems
c) Have an alternative for the mining of natural resources for construction (e.g. diabase, sand) business and ban current practices
d) No beach enhancement through sand enhancement within or adjacent to MPAs if erosion cannot be prevented and alternatives provided
e) Mandatory and enforced EIAs and SEAs on all three islands
f) Commonly accepted and feasible plans on nature-based solutions for coastal protection

<b>1.2. Effective waste and wastewater management</b>
<b>1.2.1 Adequate wastewater treatment on all three islands</b>
a) Effective waste water treatment on all three islands (2030)
b) Implement the following targets for coastal seawater quality: inorganic matter concentrations of 0 - 0.07 µmol/l of phosphate, between 0 - 2.5 mg/l floating material, and between 0-1 µmol/l dissolved inorganic nitrogen; particular organic matter POM concentrations: POC 0-15 micromol/L; PON 0-1 micromol/L. Chlorophyll-a conc < 0.6 microgram/L by 2024
c) Implement an effective water quality monitoring program for ground- and seawater, including the necessary research facilities by 2024
d) Ban on irrigation with treated wastewater within and adequate distance from the high-water mark by 2024
e) Regulations including a ban on cesspits and which enables enforcement on leaking septic tanks on all three islands (2030)

f) Zero waste discharge of any vessel in the territorial waters and around the Saba Bank by 2024
g) Establish and enforce standards for environmental impact of industries by 2030
h) Reduced runoff from agrochemicals and stimulate the use of organic types of fertilizer / pest-control, integrated pest management (IPM) by 2030
<b>1.2.2 Solid waste management</b>
a) Zero illegal dumping by 2030
b) Complete stop of landfilling by investing in advanced waste processing and recycling by 2030
c) Control seepage of pollutants from current landfills into the ground and surface water by 2030
d) Invest in businesses that are using plastic/solid waste to produce new products by 2024
e) Ban on single-use plastics resulting in less plastic waste e.g. no plastic packaging of fruits and vegetables at local supermarkets and food stores by 2024
f) Regulate and enforce separation of waste at the industrial and household levels by 2024
g) Monitoring of marine litter and stimulate cleaning up the sea and coastal areas where plastics accumulate by 2024
h) (Fiscal) incentives and enforcement to achieve compliance with waste management policies by 2030

<b>1.3. Coral reef restoration</b>
a) Restore degraded reef areas that are suitable for restoration by 2024
b) Determine targets for coral cover based on historical baselines per island by 2024
c) Community of practice, sharing of knowledge on restoration standards and protocols between the 6 Dutch Caribbean islands based local expertise developed by 2024
d) Monitoring strategy implemented to track coral cover over the entire reef area and evaluate restoration success rate by 2024

## **Strategic goal 2 - Restore and conserve the unique habitats and species in the CN**

<b>2.1. Conservation and restoration of key habitats</b>
a) <i>Yarari</i> Marine Mammal & Shark Sanctuary as effectively enforced Nature Park by 2024
b) Effective conservation of key habitat functions (e.g. migratory corridors, nursery areas, foraging areas) by 2030
c) Eligible protected areas in the Caribbean Netherlands are designated as national parks by 2024
d) Designate currently unprotected key habitats as protected areas by 2030
e) Saba Bank Management Plan implemented and enforced by 2024
f) Improved and protected breeding areas for sea- and shorebirds by 2030
g) Develop and implement management plans for mangroves and sea grass areas by 2024
h) Protect caves and other key bat habitats by 2030
i) Prohibit deforestation and implement mitigation measures by 2024
j) Management plans developed, or updated, with stakeholder involvement and evaluated yearly for all protected areas including Ramsar sites by 2024
k) Comprehensive mapping of key conservation areas (ecosystems and habitats) with management guidelines by 2030
l) Capacity building resulting in LVV reforestation department on the three islands by 2024

m) Structural reforestation of dry forest, including herbaceous layer of 'native' species sourced on the island by 2030
n) Structural reforestation of tropical forest by 2030
o) The mangroves of Bonaire are restored to the original extend through the restoration of water flows by 2030

<b>2.2. Conservation of keystone and flagship species</b>
a) Develop and monitor population targets for keystone and flagship species (see Annex) by 2024
b) Implement conservation plans to protect key-stone and flagship species (see annex 1) by 2030
c) Where necessary, develop breeding programs to meet conservation targets by 2030
d) Develop financial mechanisms for monitoring, conservation and emergency response programs by 2025

<b>2.3. Prevent new and control established invasive species</b>
a) Caribbean Netherlands wide marine and aerial biosecurity protocol developed, implemented and effectively enforced (e.g. biosecurity plan) by 2024
b) Develop an invasive species inventory and monitor system by 2030
c) Develop and implement management plans to control invasive species populations by 2024
d) Control coralita through holistic ecosystem restoration approach on St Eustatius and Bonaire by 2024
e) Regulated recreational fishery to keep lionfish biomass on the reefs at least under less than 35 individuals per hectare by 2024
f) Good quality cover of native seagrass by managing encroachment and invasive seagrass species and by not removing high numbers of certain functional species (e.g. conch or fish) by 2030
g) Develop and implement management plans to control cats, dogs, rabbits, guinea pigs and rats (rodents) by 2030

### **Strategic goal 3 - Local economic development based on sustainable use of natural capital**

<b>3.1. Sustainable fisheries</b>
a) Implement the Sustainable Fisheries Policy Plan by 2024
b) Assessment and active monitoring of commercial fish, lobster and conch stocks to ensure sustainable exploitation by 2024
c) Organize fishing sector to build the capacity and infrastructure for a sustainable and profitable fishing industry by 2024
d) Further develop a local market for Lionfish including development of innovative methods of lionfish harvesting. Engage potential local customers like supermarkets, restaurants and hotels in order to let them become "launching customers (see invasive species) by 2024
e) Protect vulnerable top predators and key herbivores through fishing regulation by 2024
f) Increase no fishing zones to at least 30% of the coastal waters by 2024
g) Implement and enforce legislation that fishing from shore is only allowed at specific designated areas on the islands by 2024
h) Implement regional protocol to collect fisheries independent data in a central database with Aruba, Curacao and Sint Maarten included by 2024
i) Align existing fisheries national legislation with local legislation and marine protected areas regulation and communicate results transparent and clear to all stakeholders by 2024

<b>3.2. Tourism industry in balance with nature conservation</b>
a) Profound research of the maximum number of cruise- and stay-over visitors per year acceptable as ecological and social pressures to achieve sustainable tourism by 2024.
b) Regulate the amount and impact of tourist activities per location and/or habitat type, based on social, economic and ecological carrying capacity by 2030
c) Ecosystem and biodiversity conservation targets are incorporated in and aligned with the strategic tourism plans on the three islands, including in spatial planning by 2024
d) Guidelines, criteria and regulations to ensure investment in the tourism industry that are truly sustainable and in line with the long-term tourism strategy by 2030
e) Profound and solid sustainability certification schemes for accommodations, bars and restaurants, tour operators based on existing initiatives (e.g. Travel Life, Green Destinations, Quality Coast, Blue Flag destinations, etc.) by 2024
f) Develop and implement fiscal instruments for tourism industry to finance nature conservation investments by 2024

<b>3.3. Invest in sustainable local food production</b>
a) Facilitate the sustainable use of wastewater and other potential waste streams (e.g. compost) for agricultural production by 2024
b) Develop infrastructure and capacity to stimulate the consumption and production of local fruits and vegetables, animal fodder and other commercial crops by 2024
c) Develop infrastructure and incentives to stimulate the demand for local agricultural products by 2024
d) Develop an island wide strategy to stimulate circular production that is in line with EU circular economy strategies by 2030
e) Promote research and investment in salt resistant crops and algae and seaweed cultivation by 2030
f) Initiate integrated rural development projects to create buffer zones with sustainable forms of agriculture around natural areas by 2030
g) Develop guidelines and promote best practices for sustainable agriculture by 2024

**Strategic goal 4 - Create the enabling conditions for effective nature management and sustainable use in the CN**

<b>4.1. Create awareness through education and training</b>
<b>4.1.1 Education and training</b>
a) For all the topics in the NEPP content will be developed as part of a curriculum informing / educating children at the nursery, primary and secondary schools on the islands by 2024
b) Each implementation plan must address targeted education programs for all relevant stakeholder groups by 2024 and preferably build expertise that can be commercially exploited by 2030
c) Voluntary courses offered through existing educational programs on topics dealt with in this NEPP, such as water retention, circular economy, climate change etc. by 2030
d) Engage youth by creating nature related activities, e.g. monitoring, restoration by 2024
e) Programme educating local decision makers on content of this NEPP and its impact by 2024
f) Each implementation plan contains an engagement program to involve the local population and raise awareness about 'what's in it for me?' when preserving nature and especially coral reefs by 2024
g) Ensure that each implementation agenda contains opportunities for students from the islands to come back to their island by 2024
<b>4.1.2 Awareness</b>

a) Ensure that for each implementation agenda communication and outreach strategies focusing on the different target groups are developed and implemented by 2024
b) Awareness raised among 100% of the population on the benefits of healthy soils and sustainable water resource management for the natural environment and ecosystem services by 2030
c) Incorporate guidelines and outreach moments in order to ensure transparency in the realization of all projects and programs by 2024

<b>4.2. Create employment through investments in nature</b>
a) Mandatory that each topic in the implementation plan addresses if and if so what kind of social employment opportunities can be created for local island residents by 2024
b) Obligation to find alternatives to share the benefits of nature conservation when income cannot be realized through activities resulting from the NEPP by 2030

<b>4.3. Develop a structural research agenda to build a consistent knowledge base for the conservation, restoration and sustainable use of nature in the CN</b>
a) Develop a coordinated research agenda for the Caribbean Netherlands
b) Implement a research program to assess the local effects of climate change on marine and terrestrial ecosystems
c) Identify important knowledge gaps for the structural assessment natural and environmental quality

## Annex 4 – Monitoring and reporting

To be able to monitor the NEPP Caribbean Netherlands a monitoring framework is proposed which is based on the criteria and principles defined by the OECD addressing results-based decision making<sup>8</sup>. As shown in **Fout! Verwijzingsbron niet gevonden.**, from bottom to top, this kind of monitoring framework will allow to sequentially track expenditures related to the NEPP CN 2020-2030 (input) and assess the progress regarding the implementation of targets (process/activities). Additionally, the achievement of targets (output), the reduction of pressures to ecosystems (outcome) and contribution to long-term strategic goals for nature conservation (impact) as established by the local governments and stakeholders will be facilitated.

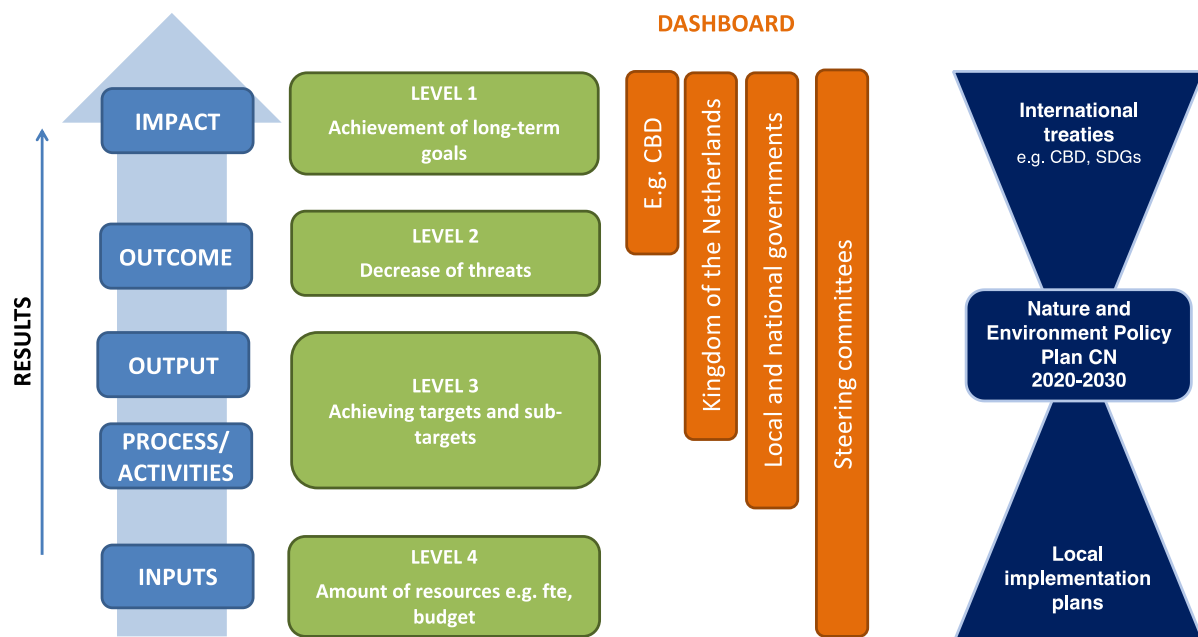


Figure 5 Schematic overview of monitoring framework

To measure and monitor progress of the nature conservation strategic goals and targets described in this plan, indicators will be developed at the various result levels, i.e. per sub-target, target, threat, and long-term strategic goal. As shown in Figure 5, the indicators used at the different monitoring levels can be used to inform different target audiences, i.e. by selecting relevant sets of key performance indicators, tailored dashboards can be used to inform different stakeholders (see bars, in orange).

Where possible, the definition of indicators should be based on existing data and monitoring efforts by local experts. Regional institutions (e.g. CBS Caribbean Netherlands, DCNA, Dutch Caribbean Biodiversity Database – DCBD) and other research institutes keep databases of structural monitoring data. A data gap assessment should be developed to provide insight in the available data for monitoring. Wherever there is insufficient data, monitoring programmes should be initiated to establish baselines, and measure progress. Local experts should define indicators, collect, and monitor data ensuring long-term monitoring on the islands.

<sup>8</sup> OECD, 2002. *Glossary of Key Terms in Evaluation and Results Based Management*



Local conservation organizations should develop a biodiversity monitoring strategy and set research priorities such as permanent water quality and sedimentation monitoring in coastal water. This can be supported by external experts as long as local capacity is built. These monitoring activities need to be part of the implementation plans.

The set of indicators should also be aligned with those established by the Convention on Biological Diversity to assess progress on the attainment of the Aichi Biodiversity Targets<sup>9</sup>, as well as those established to assess progress in achieving Sustainable Development Goals<sup>10</sup>. This will support the islands' efforts with regard to their reporting obligations on these international treaties.

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<sup>9</sup> There are 20 main Aichi targets. See <https://www.cbd.int/2010-target/framework/indicators.shtml>

<sup>10</sup> There are 17 SDGs and 169 sub-targets. See <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

## Annex 5 – Protected areas

### Internationally protected areas

#### *Ramsar-sites*

Five Ramsar sites have been designated on Bonaire: Slagbaai, Gotomeer, Klein Bonaire, Pekelmeer and Lac. Because the islands themselves decide which areas they wish to designate as protected area, under the Wet Grondslagen natuurbeheer en- bescherming BES, they themselves are also responsible for the management of the area according to the prevailing international standards. However, if an island is not able to meet the Ramsar standard, it may request assistance from the Minister.

The Ministry of ANF will provide support for the evaluation and management of various Ramsar sites on Bonaire, and where necessary it will assist in developing management plans and their implementation. The Ministry will also investigate how to give the Ramsar areas a higher profile and evaluate with the islands whether specific regulation is necessary to comply with the Ramsar Convention. In the Dutch Caribbean, Aruba and Curaçao also have Ramsar sites. The Ramsar Convention requires that each member state draws up an inventory of its wetland areas. This inventory has never been carried out for the Dutch Caribbean islands, but will be carried out for the Caribbean Netherlands within the framework of this policy plan.

#### *SPAW areas*

The criteria and procedure for placing Specially Protected Areas and Wildlife on the SPAW protocol list were only recently established by the parties. At present, The Quill/Boven National Park, the St. Eustatius National Marine Park, the Mount Scenery National Park, the Saba National Marine Park, the Saba Bank National Park and the Bonaire National Marine have been listed.

### Nationally protected areas

#### *Exclusive Economic Zone (EEZ)*

Based on the United Nations Convention of the Law of the Sea (UNCLOS, 1982) an Exclusive Economic Zone is a maritime zone over which a state has sovereign rights for the exploration and use of marine resources. It is the responsibility of the nation to establish the borders of an EEZ and for the Dutch Caribbean. In order to manage this large marine area effectively, an EEZ management plan was developed in consultation with each of the other countries within the Kingdom, titled 'Management Plan for the natural resources of the EEZ of the Dutch Caribbean' (IMARES, 2010). Implementation will be led by a dedicated committee for marine biodiversity and fisheries; the EEZ committee. This management plan not only includes all the EEZ waters, but also the territorial waters outside the borders of the marine parks around the islands.

#### *Marine mammal reserve*

The Yarari Marine Mammal and Shark Sanctuary was established in the Dutch Caribbean on September 1, 2015. The Yarari Sanctuary comprises all the waters of Bonaire and Saba, and as of September 2018, St. Eustatius. The sanctuary has the aim to protect marine mammals, sharks and rays.

#### *National parks*

In the Caribbean Netherlands the following national parks have been designated:  
Bonaire:

- Bonaire National Marine Park

Saba:

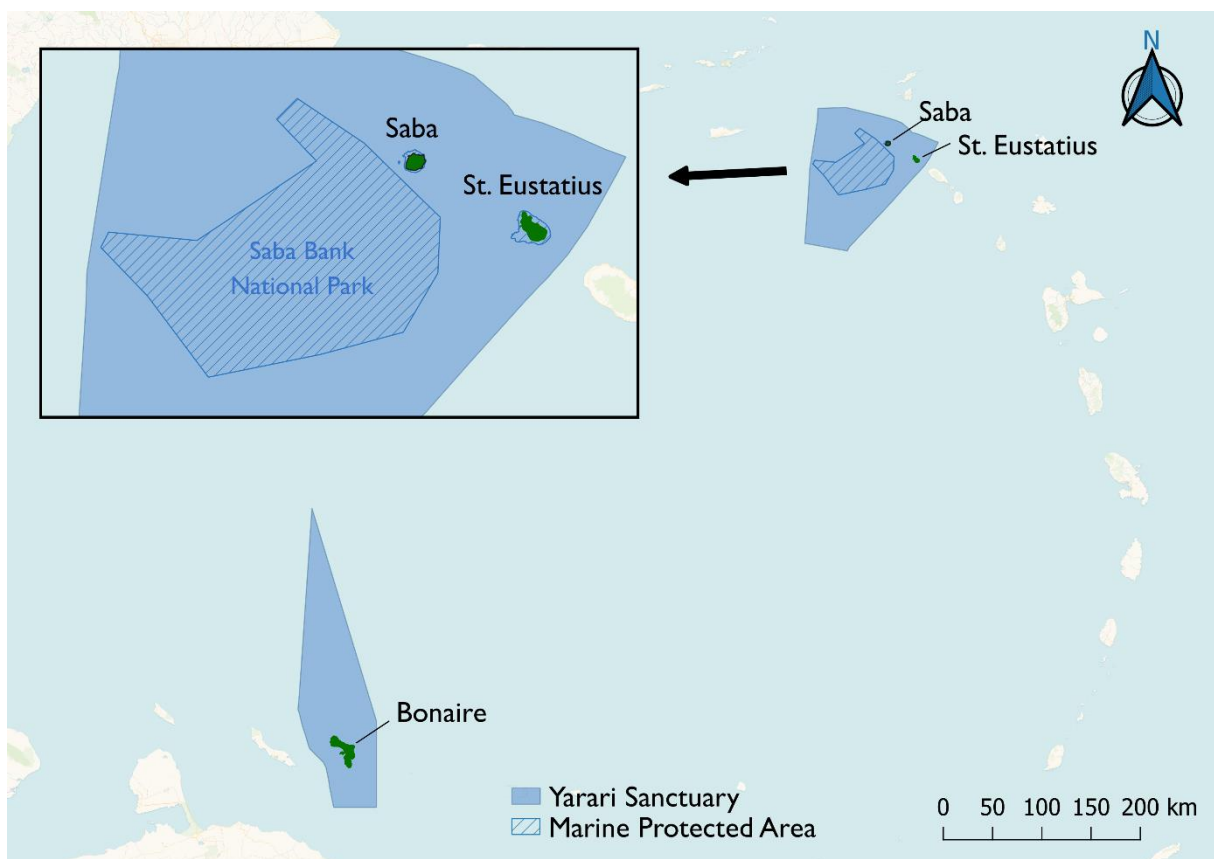
- Saba National Marine Park
- Saba Bank National Park
- Mount Scenery National Park

St. Eustatius:

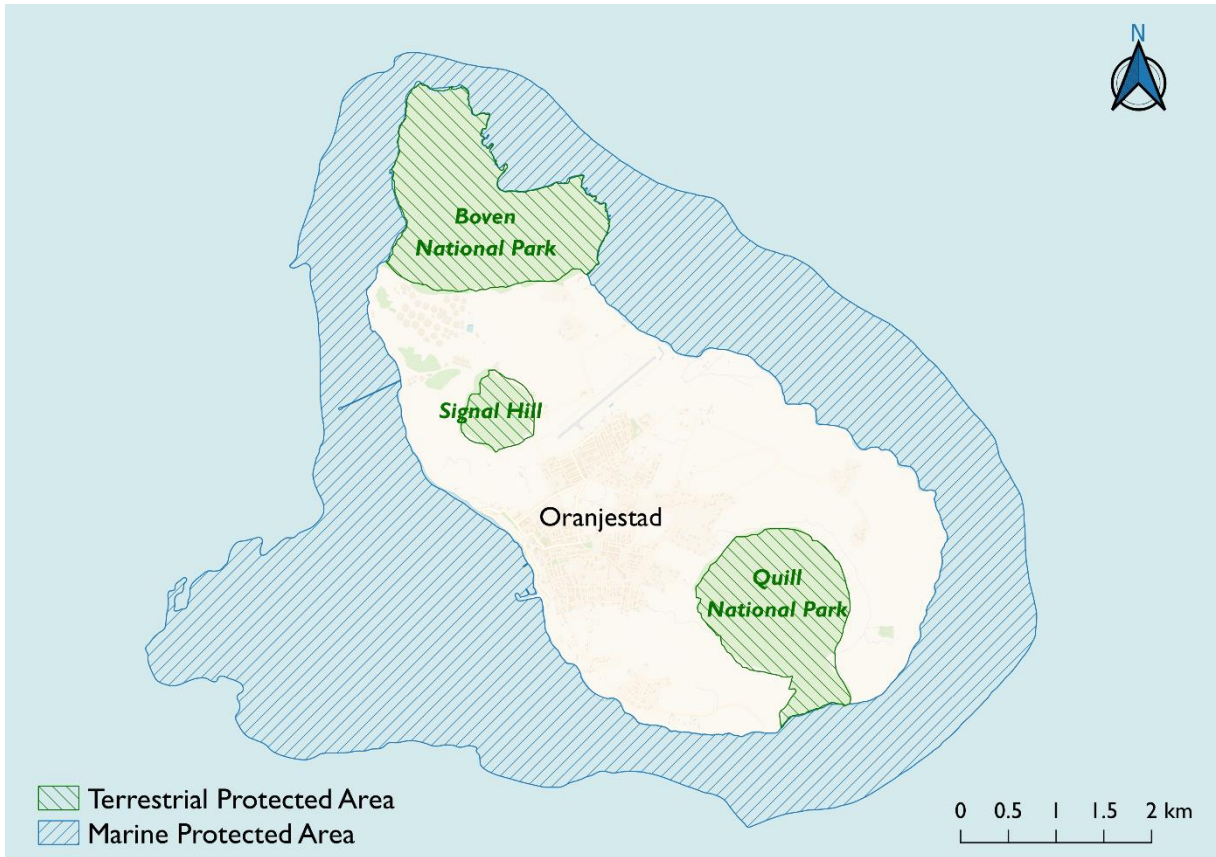
- St. Eustatius National Marine Park
- St. Eustatius Quill/Boven National Park

**Locally protected areas**

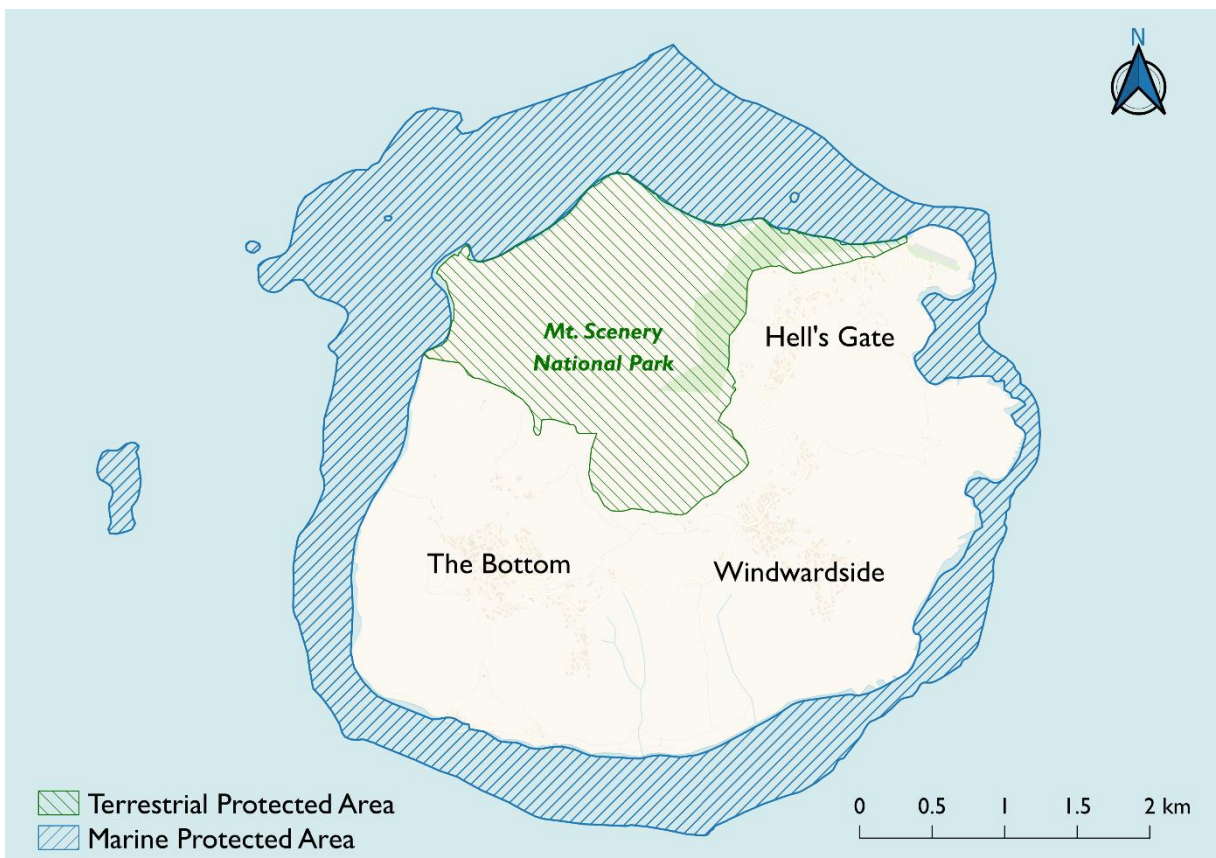
The following maps show the locations of the designated protected areas on the island of the Caribbean Netherlands.



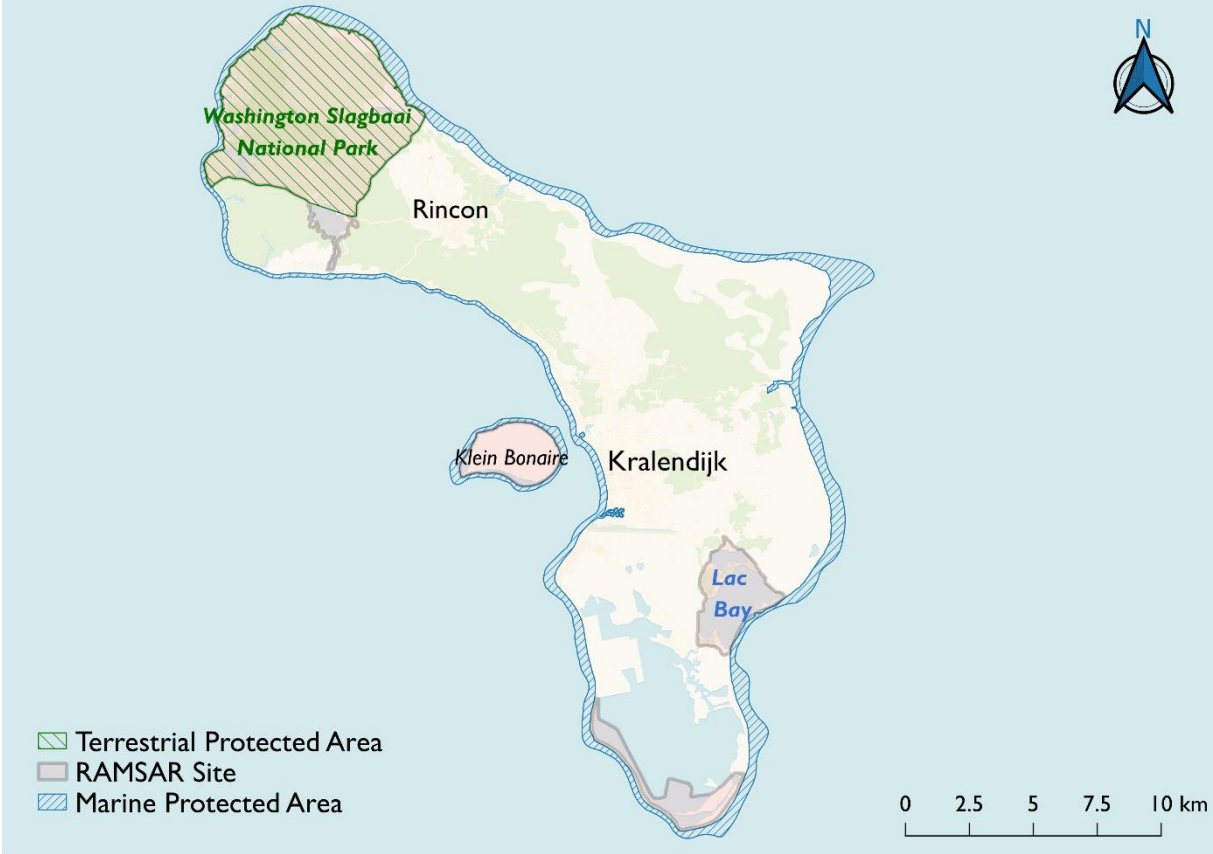
National Marine Park Sababank



St Eustatius national marine park and national park Quill/ Boven



Saba national marine park and national park Mount Scenery



Bonaire national marine park and protected areas