

Nature Policy Plan Curaçao 2024 - 2030

Development in harmony with nature

Policy plan to conserve and manage nature & landscapes
for the people of Curaçao now and in de future



Nature Policy Plan Curaçao 2024 - 2030

*Through this plan we lay out our ambition to
preserve and protect our ecosystems and
enhance Curaçao's unique and special natural
environment*



MINISTRY OF
HEALTH, ENVIRONMENT AND NATURE
SECTOR OF AGRICULTURE, ENVIRONMENT AND NATURE

Contact information:

Implementing organization environment and nature management
Sector of Agriculture, Environment and Nature
Ministry of Health, Environment and Nature
Roodeweg 49
Curaçao
Telephone number: +599 9 4325800

Acknowledgments

In writing the Nature Policy Plan Curaçao 2024 – 2030 (NPP) and later adaption to include a National Biodiversity Strategy and Action Plan (NBSAP) assistance and expert advice was provided by the Blue Marine Foundation, the Dutch Caribbean Nature Alliance (DCNA) and the CARMABI foundation.



**BLUE MARINE
FOUNDATION**



The Ministry of GMN would also like to thank the following NGO's, companies and government organizations for their input:

- Amigu di Tera foundation
- Curaçao Investment & Export Promotion Agency (CINEX)
- Curaçao Tourism Board (CTB)
- EcoVision N.V.
- Sea Aquarium
- Sea Turtle Conservation Curaçao foundation
- Uniek Curaçao foundation
- Ministry of Traffic, Transport and Spatial Planning (VVRP)
- Ministry of Economic Development (MEO)

Summary

Located in the South Caribbean, Curaçao is an island with an area of 444 km², semi-arid climate and home to various marine and terrestrial species, including endemic species and species of international conservation importance. The variety of land and marine ecosystems provides numerous ecosystem services: Curaçao is internationally recognized for the aesthetic value of its natural environment, welcoming about 582.000 stayover visitors each year (Curaçao Tourist Board, 2023). Curaçao's mangrove forests protect the coastlines against erosion and storm surges, while also serving as nurseries for fish and other marine species. The island's landscapes play a crucial role in regulating the local climate, soil health and freshwater availability.

The Nature Management and Protection Ordinance (P.B. 2018 no 66) obligates the Minister of GMN to draft a Nature Policy Plan every five years. This Nature Policy Plan (2024 – 2030) presents a framework for the use, management, and preservation of Curaçao's nature to ensure that the ecosystem services continue to support society, sustainable economic development and resilience of the island.

Curaçao vision for nature:

“To promote a sustainable and prosperous future for Curaçao, where nature conservation & management, preservation of biodiversity, and sustainable economic development co-exist, with respect for the island's nature, climate resilience, development, and the well-being of current and future generations.”

The Nature Policy Plan supports government entities, non-governmental organizations, and the community. It recognizes Curaçao's existing commitments to international and regional agreements, such as the Convention on Biological Diversity obligation to establish a National Biodiversity Strategy and Action Plan, as well as the obligations under the Nature Management and Protection Ordinance.

The framework of this Nature Policy Plan also presents three strategic objectives to be achieved within the 2024 - 2030 period, in accordance with the Convention on Biological Diversity:

1. Reduce threats to the natural environment of Curaçao;
2. Manage natural resources sustainably for the benefit of people in Curaçao;
3. Tools and solutions for implementation.

Moreover, it presents detailing, enablers and phasing to ensure effective implementation of the policy framework. The milestones addressed under the strategic objectives are prioritized in this NPP. Enablers for effective implementation of the strategic framework as strong coordinating structures and collaboration for support, structural funding, research and capacity are addressed in specific actions. A to be formed committee on nature management and protection helps to deliver the objectives and goals and assures an integral approach. Representation from society, will contribute to specific goals of this NPP. While setting up coordination and collaboration during the first phase (2024-2026), actions directly contributing to the strategic objectives will focus on the increase of awareness. During the second phase (2027-2030) actions focus on contributions to strategic objectives of reducing threats and to manage natural resources sustainably.

Content

Summary	4
1. Introduction	8
1.1. Policy background	8
1.2. Nature's value to the people of Curaçao	9
1.3. Challenges facing Curaçao's ecosystem services	10
1.4. Reading guidelines	11
2. Policy context	11
2.1. International agreements and related policies	11
2.2. National agreements and related policies	12
3. Strategic framework	14
3.1. Guiding principles for this Nature Policy Plan	14
3.2. Strategic objectives	15
4. Ensuring effective implementation	28
4.1. Creating improved conditions for implementation	28
4.2. Prioritization of milestones for the period 2024 – 2026	32
Appendices	34
Appendix I Outlined milestones per strategic objective 2024 – 2030	34
Appendix II Reference list	41

Appendix III Conservation, nature, park and agricultural designated areas on Curaçao⁴³

List of figures

Figure 1 Vegetation at Sint Joris, sea grass (<i>Thalassia testudinum</i>) in lagoon Rif Sint Marie, Red Mangroves (<i>Rhizophora mangle</i>) in Otrobanda.	10
Figure 2: Global Biodiversity Framework by the Convention on Biological Diversity (September 2020)	11
Figure 3 Six priority SDG's for Curaçao, selected by the Curaçao National SDG planning and Implementation Committee.	12
Figure 4 Overview of Curaçao Strategic Policy Framework.	15
Figure 5 Areas designated as conservation, park and agricultural areas in 2016 according to the Island wide Development Plan (some designations have changed after 2022).	43
Figure 6 Areas designated as Ramsar wetlands (in green) according to the convention of Ramsar. Not shown on the map is the island of Klein Curaçao also designated as Ramsar wetland.	44
Figure 7 Areas designated as marine reserve (dark blue) according to decree SPAW-gebied I.	45

List of Tables

Table 1 Priority actions for creating a strong coordinating structure	29
Table 2 Responsibilities, across the government, supportive of this NPP (adjusted from National Development Plan 2015 – 2030)	30
Table 3 Priority actions for collaboration for funding, sustainable investments and capacity building	32
Table 4 Milestones for strategic objective 1	34
Table 5 Milestones for strategic objective 2	36
Table 6 Milestones for strategic objective 3	38

1. Introduction

Curaçao is an autonomous constituent country within the Kingdom of the Netherlands. It is situated in the Caribbean region, recognized as a biodiversity hotspot. Home to coral reefs, mangrove forests, pocket rubble beaches, unique cave ecosystems, and Christoffel hill tops, Curaçao's nature is internationally significant and locally highly valuable. This report outlines the Nature Policy Plan (NPP) 2024 – 2030 with the aim to harmonize the development of Curaçao with nature.

1.1. Policy background

Maintaining and restoring healthy ecosystems and its services in Curaçao is essential for the island's future and the well-being of its inhabitants. To ensure that the services provided by nature continue to support society and the local economy, it is crucial to establish an integrated framework of support.

As nature is fundamentally a common good, this NPP aims to embed the recognition of nature's importance into the development of Curaçao and the relevant stakeholders. The ministry of GMN is the responsible party of this NPP, which builds on the former Environmental Policy Plan 2016 – 2021¹ and incorporates the relevant national, regional, and international obligations that Curaçao must adhere to.

The Nature Management and Protection Ordinance (P.B. 2018 no 66) obligates the Minister of GMN to draft a NPP every five years². Furthermore, the Convention on Biological Diversity (CBD)

¹ The formation of a Nature Policy Plan for Curaçao is a requirement within our national legislation. The Nature Ordinance (Landsverordening) states that the Minister will publish a national Nature Policy Plan once every five years. Due to the global biodiversity goals of the CBD, which are set for 2030, it has been decided to extend this NPP until 2030.

² Article 2 of the Nature Management and Protection Ordinance (P.B. 2018, number 66).

requires a Global Biodiversity Framework (GBF) by establishing a National Biodiversity Strategy and Action Plan³ (NBSAP). This NPP and action plan (see *Appendix I*) serves as Curaçao's National Biodiversity Strategy and Action Plan (NBSAP) during the period 2024-2030. To accommodate several international requirements, the NPP period was set to six years (2024-2030) instead of five years as required by the Nature Management and Protection Ordinance.

1.2. Nature's value to the people of Curaçao

Nature is highly valuable for the people of Curaçao. The variety of land and marine ecosystems provides essential services, also known as 'ecosystem services'. Examples of ecosystem services in Curaçao include the aesthetic and recreational value of nature, such as the beaches, coral reefs, and diverse land life that not only attract tourists (WAITT Institute, 2016) but also contribute to the island's cultural and historical heritage. Additionally, mangrove forests along the coastlines provide coastal protection against erosion and storm surges, while also serving as nurseries for fish and other marine species, supporting local fisheries and maintaining biodiversity (Asirvadam, 2014).

In July 2022 Curaçao opened its first twelve-hectare mangrove park within the city centre of Willemstad, showcasing the Government's commitment to combine green spaces within the built environment.

Curaçao's historic network of dams contribute to containment of water and infiltration of groundwater. These dams are not only beneficial to flora, but also contribute to fauna such as the diversity of local and migratory birds by providing breeding/resting grounds for these species.

Finally, the island's dry forests and cacti-strewn landscapes play a crucial role in regulating the local climate, preventing soil erosion, and preserving freshwater resources by capturing and storing rainwater (Banda-Rodríguez et al., 2016). Conserving Curaçao's biodiversity hotspot and its ecosystem services is thus of utmost importance as it contributes significantly to well-being, health, safety and economic development of the people of Curaçao.

³ Article 6 of the Convention on Biological Diversity.

1.3. Challenges facing Curaçao's ecosystem services

The National Development Plan (2015 -2030) and The Sustainable Development Goals (SDG) Roadmap for Curaçao (2018) already addressed key challenges to environmental sustainability. Species and habitats face significant threats (nature loss) from development (UNEP 2024) Pollution of air, soil and water poses a risk to crucial ecological processes (WAITT Institute, 2017; Erdoğan, 2021; Pulster et al., 2018). The result is, among other things, that the coral reef has been seriously degraded in recent years (WAITT Institute, 2017) and that plant and animal species are becoming locally rare or threatened with extinction. For instance, the recent decline in Parrot fish populations is worrisome (Carmabi, 2024) and the pressures of human activity continue to drive various species into further decline. Other issues with respect to nature conservation are the lack of capacity, enforcements possibilities (outdated legislation) and awareness on the importance of conserving nature.

Climate change also presents a major threat to the natural environment and ecosystem services of Curaçao. The consequences for terrestrial, marine and coastal ecosystems are predicted to be extensive including: further losses to the coral reefs, decline of biodiversity, erosion of coasts, beaches and terrestrial areas, salinification of groundwater sources, vegetation zones moving towards higher altitudes, subsequent losses in hilltop vegetation and flora, increases in various disease vectors, changes in ocean currents, fish recruitment and migration, and supporting the establishment of invasive species (DCNA Nature, 2016; Debrot & Bugter, 2010). Despite island economies contributing less than 1% of greenhouse gas emissions worldwide, they are most vulnerable to the effects of climate change (Simpson, 2010; Debrot & Bugter, 2010). A single disaster event can cause losses that exceed an island's GDP several times (Toré, 2023).

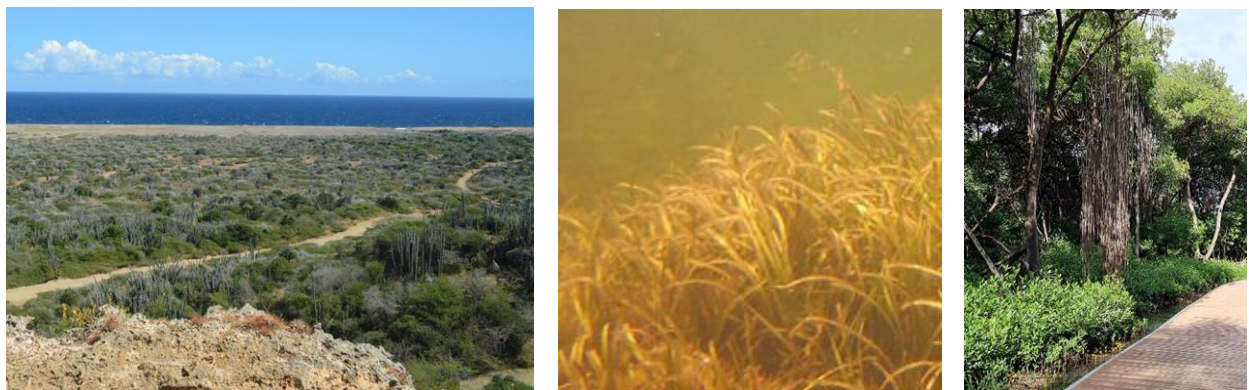


Figure 1 Vegetation at Sint Joris, sea grass (*Thalassia testudinum*) in lagoon Rif Sint Marie, Red Mangroves (*Rhizophora mangle*) in Otrobanda.

1.4. Reading guidelines

Chapter 2 elaborates on the policy context in which this NPP is embedded. Chapter 3 outlines a strategic framework for harmonizing the development of Curaçao with nature in the coming years. Chapter 4 describes the implementation plan for the policy framework, including the needed conditions for implementation and set priorities. In Appendix I the action plan with proposed milestones for 2024 – 2030 is presented.

2. Policy context

The call for effective policy and action on conserving environment and natural resources is also mentioned in other national and international programmes and frameworks.

2.1. International agreements and related policies

The Kingdom of the Netherlands is a party to many international treaties and agreements, including the Convention on Biological Diversity (CBD), which aims to achieve the internationally agreed biodiversity targets within the Kunming-Montreal Global Biodiversity Framework (GBF). The GBF succeeds the Aichi targets for 2020. Comprising of 23 targets for 2030, the GBF aligns with four main overarching global goals and vision for 2050 (Figure 2).

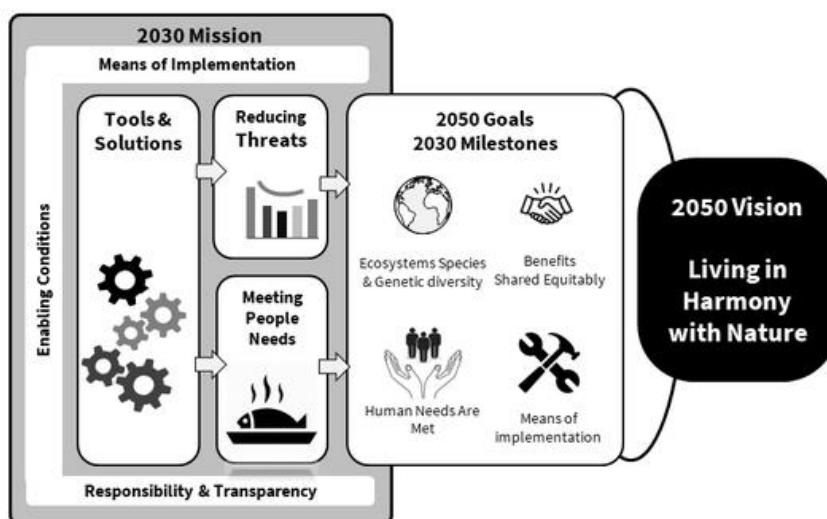


Figure 2: Global Biodiversity Framework by the Convention on Biological Diversity (September 2020)

The 23 targets are categorised in three main themes: (1) Reducing threats to biodiversity; (2) Meeting People's needs through sustainable use and benefit-sharing and (3) Tools and Solutions for implementation and mainstreaming. All parties to the CBD must translate the GBF into a National Biodiversity Strategy and Action Plan (NBSAP), in consultation with state and non-state actors (*whole-of-government* and *whole-of-society approach*) and adapted to the local context. This NPP, in combination with the action plan in *Appendix I*, also functions as the NBSAP for Curaçao for the period 2024-2030. A variety of governmental and societal stakeholders were consulted in the establishment of this NPP (see acknowledgments).

Other relevant international agreements include:

- The Ramsar Convention on Wetlands.
- The Cartagena Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region, as well as its protocols concerning specially protected areas and wildlife and pollution from land-based sources and activities (LBS).
- The Convention on the Conservation of Migratory Species of Wild Animals (CMS).
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- The Convention on Migratory Species (CMS, BONN-convention).
- The Inter-American Convention for the Protection and Conservation of Sea Turtles ("IAC").

Additionally, Curaçao has committed to working towards achieving the Sustainable Development Goals (SDGs) set by the United Nations. To this end, the National SDG Planning and Implementation Committee was set up and six priority SDGs were selected for implementation in Curaçao (Figure 3).



Figure 3 Six priority SDG's for Curaçao, selected by the Curaçao National SDG planning and Implementation Committee.

2.2. National agreements and related policies

The formation of a Nature Policy Plan for Curaçao is a requirement based on national legislation. Article II of the Nature Management and Protection ordinance states that the Minister will publish a national Nature Policy Plan once every five years. Other relevant, existing legislation for this

NPP are the Island Development Plan (EOP) (A.B. 1995 no. 36); reef management ordinance (P.B. 2017 no. 77); Nuisance ordinance Curaçao (P.B. 2017 no. 67); Nature management and protection ordinance (P.B. 2018 no. 66); Fisheries ordinance (A.B. 2007 no. 117); SPAW-gebied I decree (P.B. 2022 no. 106). Besides, the Island Development Plan (EOP) contains 12 designations or zones amongst which are 'conservation', 'water' and 'park' areas that provide a legal framework, amongst other goals, to protect and manage ecosystems and habitats. Next to legislation, for the preservation, restoration, and sustainable use of ecosystems, other existing policy frameworks are relevant for this NPP and guide further cross-sectoral collaboration. This NPP contributes to the goals of the National Development Plan 2015 -2030 (*policy theme 'sustainability'*), the SDG Roadmap 2030 (*framework for Environmental Sustainability*), the National Export Plan 2022 -2027 (*Blue Bio Economy Framework*), the Strategic Tourism Destination Development Plan 2022 – 2026 (*Sustainability principle, Environmental Sustainability Indicators*), and the Curaçao Climate Change Policy Assessment (2019) and Roadmap (2023).

3. Strategic framework

To promote a sustainable and prosperous future for Curaçao, where nature conservation & management, preservation of biodiversity, and sustainable economic development co-exist, with respect for the island's nature, climate resilience, development, and the well-being of current and future generations.

Vision for Curaçao

This Nature Policy Plan 2024 – 2030 aims to set out a strategic framework for the vision for Curaçao to preserve and enhance Curaçao's nature, recognising the crucial role it plays in the well-being of Curaçao's people, resilience and sustainable economic development of the island. This chapter begins by outlining the fundamental principles guiding the strategic framework. Subsequently, it delineates the primary strategic objectives and the associated underlying subgoals aimed at realizing the vision for Curaçao.

3.1. Guiding principles for this Nature Policy Plan

ECOSYSTEM APPROACH We recognise the interconnectedness of species, habitats and the natural processes that support them, and will seek to halt and reverse fragmentation of habitats and conserve and restore functioning ecosystems in all their complexity.

INTEGRATION OF NATURE AND DEVELOPMENT We understand that effective protection will only be achieved if strategic and operational decisions across all sectors of government and society consider biodiversity. We will ensure that the nature of Curaçao is recognised as an essential asset towards economic and spatial development, especially as this pertains to maintaining the sustainability of the tourism-driven economy. Also, effective protection will be beneficial for mitigating costs because of climate change.

PRECAUTIONARY PRINCIPLE We recognise that where there is a threat to a significant reduction or loss of nature and environment, a lack of scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

INFORMED DECISIONS We will ensure decisions are based on the best available knowledge and kept up to date through monitoring and research. There are many forms of knowledge, and we will draw on the experience of the local community as well as scientific research.

ADAPTIVE MANAGEMENT We will seek to adjust and adapt the management of Curaçao’s nature, utilising monitoring outcomes and resulting knowledge to improve the efficacy of strategies and interventions.

COMMUNITY We recognise the role humans play in Curaçao’s ecosystems and the social and cultural value of biodiversity. Everyone living in Curaçao will be encouraged to participate in protecting the island’s biodiversity and share in the benefits it creates.

COLLECTIVE RESPONSIBILITY We understand that protecting, managing and sustainably using the natural environment is the responsibility of the community as a whole, and as such needs to be supported and promoted by all governmental, societal and private entities to enable and empower all citizens to achieve this goal.

3.2. Strategic objectives

Figure 4 gives an overview of the vision, the three main strategic objectives and its associated subgoals. This framework delineates the integrated nature policy for Curaçao for the coming years until 2030.

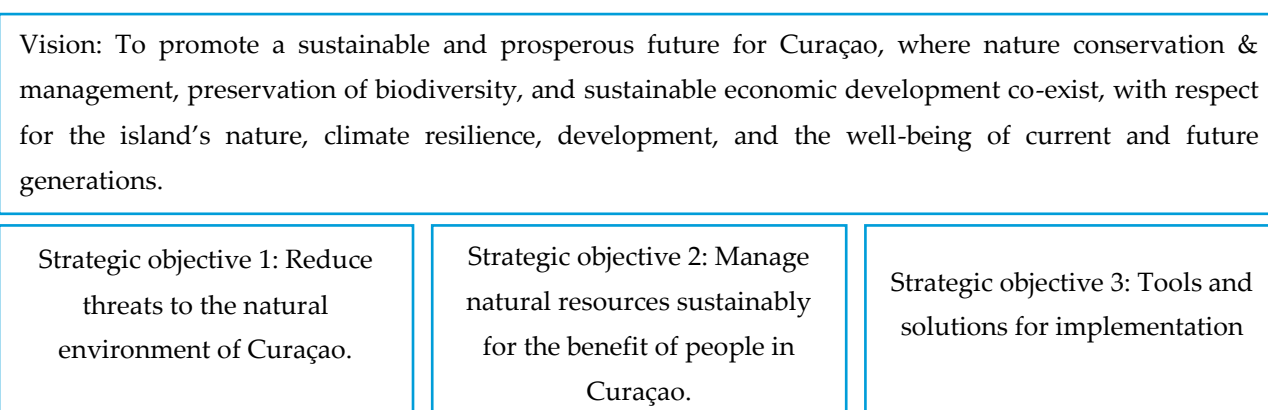


Figure 4 Overview of Curaçao Strategic Policy Framework.

3.2.1. Strategic objective 1: Reduce threats to the natural environment of Curaçao

From unsustainable resource-use and development, potential risks of fragmentation of habitats⁴, pollution, invasive species (such as the Lionfish (*Pterois volitans*), and the African Giant Snail (*Achatina fulica*)) to climate change, nature's integrity and ecological functions are threatened. Additionally, the terrestrial and marine biodiversity of Curaçao is threatened by the lack of effective restoration, conservation and management plans. Subgoals 1.1 to 1.3 contribute to the reduction of threats by the management and protection of nature on Curaçao. Doing so, these objectives enhance the resilience of existing nature and secures the provision of ecosystem services, such as nature's capacity to withstand extreme (climatic) events.

STRATEGIC OBJECTIVE 1: Reduce threats to the natural environment of Curaçao

Subgoal 1.1. Restore, conserve and manage land and marine ecosystems (30 by 30 target)

Subgoal 1.2. Reduce human caused stressors to Curaçao's terrestrial and marine biodiversity

Subgoal 1.3. Reduce the climate impact on biodiversity

Subgoal 1.1. Restore, conserve and manage land and marine ecosystems (30 by 30 target)

To preserve important habitats and threatened species on Curaçao and secure the provision of ecosystem services, the halt of fragmentation and improved restoration, conservation and management of important land and marine ecosystems is crucial. Genetically diverse populations are expected to have higher viability compared to populations with low genetic variation when faced with rapid environmental change (Kardos, 2021). Therefore, a special focus on enhancing genetic variation is needed. By 2030 at least 30 per cent of areas of currently degraded terrestrial, inland water, and marine and coastal ecosystems must be under effective restoration and protection, to enhance biodiversity and ecosystem functions and services. The ecological integrity of nature areas on Curaçao should be respected and enhanced by halting the fragmentation of nature areas and increasing the connectivity between them. Increasing the connectivity of natural areas could be achieved through realisation of biodiversity corridors that are both legally designated, for instance in the Island Development Plan (EOP, 1995), and under effective

⁴ Curaçao faces the challenge that decisions need to take place in a data-poor environment (Steward, 2024). One of the guiding principles of this nature plan is the precautionary principle, where lack of scientific certainty should not be used as a reason for postponing measures to avoid or minimize the threat to a significant or loss of nature and environment.

management and protection. A priority is to identify the most degraded ecosystems and ensure restoration projects are underway.

Key to preserving ecosystems, habitats and species is to ensure that protected areas are legally designated and that at least 30 per cent of all terrestrial and inland water areas, marine and coastal areas are effectively conserved and managed through the establishment and implementation of management plans. Currently not all required decrees under the National Ordinance for nature protection have been formalized or developed (ex. Ramsar areas). As a result, several nature areas on the island are poorly managed due to lack of capacity and a legal framework. The National Ordinance for nature protection states that where possible nature parks need to be designated considering the Island Development Plan.

An example hereof is the utilization of the island of Klein Curaçao. According to the Island Development Plan this area is designated as 'open land', though it has been submitted by Curaçao, and approved under the Convention of Ramsar as a wetland site of international importance. During the writing of this NPP a working group was finalizing a management plan. Current developments (clearing of vegetation) have showed the need for this plan and enforcement thereof⁵.

Land and marine ecosystems which are inhabited by keystone species or iconic species, such as the seagrasses, flamingo's, sea turtles, parrotfish, the white-tailed deer and migratory birds such as the least tern, must be prioritised.

Subgoal 1.2. Reduce human stressors to Curaçao's terrestrial and marine biodiversity

In line with the approach to achieve SDG 14 (National Development Plan 2015 – 2030), stressors must be minimized by actively protecting the terrestrial and marine biodiversity from habitat loss and fragmentation, invasive species, climate change, wastewater, chemicals, plastics and other macro-debris pollution. These pollutants damage the quality of air, water and land. To address invasive species (animal and plants) effectively, it is crucial to establish an Invasive Species Plan which addresses biosecurity measures to prevent the introduction and establishment of new species, actions for dealing with present invasive species, cooperation, and monitoring (DCNA,

⁵ Frontpage newspaper article Amigoe 'Bezoekers Klein Curaçao aan banden'; 24th of June 2024

2023). Adopting these measures should lead to reduced rates of introduction and establishment of potential invasive alien species by at least 50 percent by 2030.

Phasing out specific and undesired types of plastics, chemicals and other forms of pollution, a Pollution Action Plan for Curaçao must be established to reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services. Ceasing the discharge of wastewater (treated or non-treated) into the soil and ocean through integrated (waste) water resource management should be within the scope of the Pollution Action Plan. Finally, it is important to respond to the influx of sargassum. This goal mandates the prevention or mitigation of the consequences of sargassum on local ecosystems and the potential implications for public health and requires regional efforts.

Subgoal 1.3. Reduce the climate impact on biodiversity

As is stated in the Curaçao Climate Change Policy Assessment (2019), climate change is expected to impact the environment of Curaçao, society and economy over the coming decades. The Caribbean region is identified as vulnerable to the effects of climate change and this vulnerability is further compounded by limited financial, technical, and institutional capacity for adaptation (Simpson, 2010). The risks of natural hazards due to climate change include economic losses in coastal settlements that will affect both the population and tourism (houses, apartments, and hotels). The infrastructure of a significant part of the island will also be increasingly vulnerable to the risk of flash floods and coastal inundation, resulting in damage to infrastructure. Climate change also presents a threat to the natural environment and ecosystem services of Curaçao. The consequences for terrestrial, marine and intertidal ecosystems may include ocean acidification, further losses of the coral reefs, decline of biodiversity, erosion of coasts, beaches and terrestrial areas, ground water depletion and salinization of groundwater, vegetation moving towards higher altitudes, subsequent losses in hilltop vegetation and flora, increases in various vector diseases, changes in ocean currents, fish recruitment and migration and supporting the establishment of invasive species. It is necessary to perform further research on the impacts of climate change and ocean acidification on Curaçao's nature and consequently publish and implement a Climate Action Plan for Nature that complements existing climate policies and targets.

3.2.2. Strategic objective 2: Managing natural resources sustainably for the benefit of people and nature in Curaçao

As stated in the National Export Strategy 2022-2027, Curaçao can be a hotspot for biodiversity business opportunities. Many business opportunities arise from the island's biodiversity and

natural resources (Blue Bioeconomy). To ensure that the people from Curaçao benefit from these resources, now and in the future, sustainable management is paramount. Subgoals 2.1 to 2.3 support the sustainable management of natural resources for the benefit of people and nature in Curaçao.

STRATEGIC OBJECTIVE 2: Managing natural resources sustainably for the benefit of people and nature in Curaçao

Subgoal 2.1. Sustainable management plans for land and marine resources

Subgoal 2.2. Tourism sector in balance with nature

Subgoal 2.3. Greening the city: secure nature inclusive development

Subgoal 2.1. Sustainable management plans for land and marine resources

Natural resources (land or marine) are materials or substances that occur in nature and can be used for economic development, such as minerals, forests, fisheries, water, and fertile land. For example, Curaçao is surrounded by a fringing reef with a total surface of 103 km² that gives access to an important stock of marine genetic resources that can lead to biotechnological and commercial applications (NES 2022 – 2027). Coral reefs and nature are an important tourist destinations and the fishery sector relies on the presence of a healthy fish stocks. Fishery provides food for the population and our visitors.

Curaçao benefits from a move towards a model of sustainable use of the island's natural resources, ensuring their protection and preservation for the (economic) benefit of people living in Curaçao and visitors (tourists) – for both current and future generations. This subgoal is in line with the national targets for SDG 14, conservation and sustainably use of oceans, seas, and marine resources for sustainable development, from the National Development Plan 2015 - 2030. To preserve marine resources for the people of Curaçao, it is important to strengthen knowledge of local fisheries and ensure sustainable management of fisheries resources. A fishery management plan must be established and ratified, including a report on the current state, use and management of Curaçao's fisheries. It is important to involve local (small-scale) fish companies and/or communities in the creation of the plan. Also, the access to important marine genetic resources could be an opportunity for Curaçao to capitalize on its unique genetic and biochemical pool of marine biomes (Ministry of Economic Development, 2022). Any exploitation of these resources must be done in a sustainable manner, without any harm to the environment and with benefits for the people of Curaçao.

This subgoal also highlights the importance of the sustainable management of land resources. To preserve these natural resources for the people of Curaçao, it is crucial to develop and implement a land resource management strategy. This strategy must contain guidelines and innovative practices for sustainable and nature-positive agriculture, forestry, and water resource management (wastewater, rainwater) for nature and agricultural purposes. Examples of such projects are the neighbourhood food forest of Brievengat, developed together with the local community by the non-profit organization Orenda and the Hidden Green Movement that promotes local food production from and for the people of Curaçao. Furthermore, with the promotion of nature-inclusive agricultural and forestry projects surrounding natural areas, buffer zones can be created for extra protection of natural areas.

Subgoal 2.2. Tourism sector in balance with nature

Tourism has become an important pillar of the Curaçao economy. However, tourism can also be damaging to the natural environment if not managed sustainably, putting pressure on Curaçao's natural resources and ecosystems. The economy of Curaçao thus depends for a large part on tourism and tourism in its turn depends for a large part on the natural ecosystems. In Curaçao's Strategic Tourism Destination Development Plan 2022 – 2026, sustainability is a key-principle overarching the plan: *"The tourism sector should be able to provide long-term socio-economic, cultural and environmental advantages to the local community, without compromising the health of citizens and the natural environment"* (p. 7). To improve the sustainability of tourism, ensure the longevity of the industry, and the reputation of Curaçao as a unique destination, structural collaboration with the Ministry of Economic Development (MEO), the Curaçao Tourism Board (CTB), Ministry of GMN, the tourism sector and nature non-governmental organisations (NGOs) is needed. This collaboration will also enable further harmonization of tourism and associated activities with nature and facilitate research on the tourism carrying capacity according to the Statistical Framework for Measuring the Sustainability of Tourism (UN World Tourism Organization, 2024). Furthermore, reducing the environmental impact of tourism and fostering partnerships to accelerate environmental initiatives must be prioritized in the upcoming years.

Subgoal 2.3. Greening the city: secure nature inclusive development

Integrating nature into urban planning and development is essential for creating sustainable and resilient communities in Curaçao. Nature-inclusive urban development not only enhances the quality of life (including health) for residents by providing green spaces and recreational areas but also supports biodiversity, mitigates the impacts of climate change, and improves urban resilience.

To achieve this, it is crucial to ensure that all urban developments are planned and executed with an emphasis on environmental sustainability and ecological integration.

Environmental Impact Assessment

A key strategy for achieving nature-inclusive urban development is the mandatory requirement for all relevant developments to undergo an Environmental Impact Assessment (EIA). This can be formalised through the Nature protection and management ordinance (P.B. 2018 no 66). This ordinance provides a legal basis for implementing requirements of, among other conventions, the Convention on Biological Diversity⁶. Article 14 of this convention states that appropriate procedures requiring environmental impact assessment should be introduced. Selecting what are relevant development activities should be considered carefully as not to create unnecessary hurdles for investors. Introduction of EIA with specific scopes for specific types of developments may be considered. This should take into account and or complement other obligations regarding EIA as mentions in the *Nuisance Ordinance 1994* (GT 2017 no. 67).

The results of these assessments will be reviewed and enforced by GMN. An independent commission must be established to assess and ensure the scope, level of detail and quality of the performed EIA. This process will help identify potential negative impacts on the environment early in the planning stage and ensure that necessary mitigation measures are implemented to achieve a near-zero loss of sites of high biodiversity importance by 2030.

Building with Nature through Nature Based Solutions

The Building with Nature approach must be promoted and included in instruments such as permitting and exemptions. Promoting the implementation of Nature Based Solutions in urban areas, such as creating green roofs, parks, and community gardens, will support local biodiversity, reduce urban heat island effects, and provide social and health benefits to the community. Businesses and local communities must be supported to create these green spaces (example: community garden in Brievengat). The adoption of the Building with Nature approach

⁶ Convention on Biological Diversity, Article 14 Impact Assessment and Minimizing Adverse Impacts.

accommodates a sustainable future in which urban growth and nature coexist in a balanced and mutually beneficial manner in urban areas.

Publicly accessible natural areas

It is important to create and manage publicly accessible natural areas for people to enjoy and connect with nature. This includes revitalizing and managing existing recreational areas, such as designated park areas, in nature for the enjoyment and education of all people in Curaçao. Where the design, revitalization or management of recreational areas asks for renewed spatial planning, it is key to use a participatory approach to meet the needs of local communities.

3.2.3. Strategic objective 3: Tools and solutions for implementation

To advance the vision of this NPP, it is essential to address the necessary tools and solutions for implementation. Subgoal 3.1 focuses on the role of communication and education in establishing a shared recognition of the intrinsic value of nature for the people of Curaçao. This should lead to the development of nature awareness, appreciation and pride. Subgoals 3.2 to 3.4 aim to strengthen nature conservation efforts in Curaçao through establishing robust legislation, enhancing research and monitoring for decision-making, enforcing environmental regulations, and fostering collaboration among stakeholders.

STRATEGIC OBJECTIVE 3: Tools and solutions for implementation

Subgoal 3.1. Develop a mindset of nature awareness, appreciation, and pride in all sectors of community

Subgoal 3.2. Improved nature legislation, mainstreaming and enforcement

Subgoal 3.3. Promote qualitative and accessible research data on nature

Subgoal 3.4. Increase local, regional, and international cooperation for nature conservation management

Subgoal 3.1. Develop a mindset of nature awareness, appreciation, and pride in all sectors of community

Connecting people with nature is fundamental to fostering a deep appreciation for Curaçao's rich natural heritage and the regulations designed to protect it. Engaging the community in biodiversity conservation requires a multifaceted approach, starting with the active involvement of civil society and Nature NGO's in developing a national narrative around biodiversity protection. This narrative can highlight the intrinsic and economic value of natural resources, thereby encouraging community pride and stewardship. The primary focus of this subgoal is the

development of a government-led communication campaign and the enhancement and promotion of nature education.

Government-led communication campaign

Government-led communication campaigns on environmental awareness are crucial for disseminating information on Curaçao's nature and biodiversity. An accessible guide to Curaçao's natural wonders can encourage people to interact with and benefit from nature while raising awareness about threatened species. Through an online platform, Curaçao can provide easily accessible information on nature-related regulations, enhancing public awareness and compliance. Citizen science initiatives, like a national bird count, can further engage the public in conservation efforts. Leveraging storytellers and influencers can amplify the campaign's reach, while public-private partnerships and local initiatives, such as "Curaçao Doet!", can deepen community involvement and connection to the nature.

As elaborated on in subgoal 1.2, pollution is one of the stressors that damages land and marine resources. All people living in and visiting Curaçao have the responsibility to contribute to the reduction of the footprint of consumption. Through the government-led campaign, people are empowered to reduce food waste and reduce overconsumption, thereby also substantially reducing waste generation, and contributing to sustainable development (UNSDG, 2018). It is important to engage businesses (e.g. tourist branch, supermarkets) in this campaign to ensure outreach and action.

A key aspect of the campaign is also to ensure that informational materials, such as RAMSAR signs, are readable and engaging. These signs must be regularly maintained to prevent wear and tear and ensure they effectively communicate the importance of wetland conservation to visitors, cultivating a more environmentally conscious public. Targeting tourists with informative materials, such as safety cards at Hato Airport, and collaborating with local stakeholders, including dive schools and tourism operators, is crucial for further promoting nature awareness among visitors. These partners can serve as ambassadors for biodiversity.

Finally, effective communication is paramount to broadening the reach and impact of the communication campaign. Using simple language and accessible channels such as local newspapers, talk shows, and multilingual booklets produced by organizations such as the Uniek Curaçao foundation can significantly enhance island-wide awareness. This strategy ensures that

everyone, regardless of age or background, can learn about and appreciate the natural environment.

Nature education for the whole-of-government and whole-of-society

Incorporating nature education into all levels of the educational system in Curaçao is vital for fostering a generation that values and actively participates in environmental conservation. Starting from nursery through to secondary education, the curriculum should include engaging and hands-on activities such as nature walks, educational excursions, and interactive materials developed in collaboration with organizations like Green Kids. This immersive approach will help students develop a deep connection with their natural surroundings and understand the importance of preserving Curaçao's unique biodiversity. To further cultivate a culture of environmental stewardship, a program designed to attract talented Curaçao youth with an interest in nature conservation will be established. This program will be designed to offer traineeships in various nature, climate, and sustainability organizations, providing young professionals with invaluable experience and encouraging them to pursue careers in environmental conservation.

Furthermore, it is imperative to enhance nature education within governmental entities, relevant vocational courses, and corporate entities such as hotels. These stakeholders having a good understanding of the significance of nature will facilitate know-how and accurate responses to environmental issues. This knowledge is essential for governmental bodies to develop and enforce nature inclusive policies, for vocational courses to equip citizens with relevant skills and knowledge, and for corporate entities like hotels to implement sustainable practices that contribute to nature conservation efforts. Organizations, such as the Ministry of Education, Science, Culture and Sport, should be engaged with these educational programmes to ensure coordination and support at the policy level.

Subgoal 3.2. Improved nature legislation, mainstreaming and enforcement

Improved nature legislation

To achieve the ambitions outlined in this NPP, it is important to review and update current national policy and laws and establish a comprehensive framework for nature legislation in Curaçao. This framework should reflect the aspirations articulated in the NPP and be consistently enforced across all relevant government departments.

The main legislation requiring update is the Nature Management and Protection Ordinance. Furthermore, the Government must continue the drafting of a general environmental ordinance including legal limit values for certain types of pollution. The current environmental ordinance, the Nuisance Ordinance dates from 1994 and does not contain legally binding norms or regulations for the environmental compartments (air, water, soil, waste management odour etc.). Permits are used as tool the regulate the environmental impacts, but a stronger structure is needed⁷.

Integrating nature into all policies

As described in chapter 2.2. the value of nature is also recently addressed in goals for environmental sustainability, resilience and marine resource management, as an integral part of other policies, such as the National Development Plan 2015-2030 (*policy theme 'sustainability'*), the SDG Roadmap 2030 (*framework for Environmental Sustainability*), the National Export Plan 2022 - 2027 (*Blue Bioeconomy Framework*), the Strategic Tourism Destination Development Plan 2022 – 2026 (*Sustainability principle, Environmental Sustainability Indicators*), and the Curaçao Climate Change Policy Assessment and Roadmap (2019). It is a priority of this NPP to further integrate/involve nature into all decision-making frameworks with regards to planning and development processes.

Therefore, it is a priority to assess the role and value of nature in spatial developments and when adapting the Island Development Plan of Curaçao (EOP, Eilandelijk Ontwikkelingsplan). This Island Development Plan or related legislation may be used as an instrument to address environmental issues like climate change adaptation, conservation and watershed management. The EOP must prevent undesired development by enforcing clear zoning regulations to both the government and the private sector. Marine and terrestrial zoning plans detail land and sea usage, protected areas, considering measures for climate change adaptation and resilience. Furthermore, it is vital to prioritize the utilization of current unused spaces designated for development rather than expanding into new areas. This approach helps preserve natural habitats and reduces urban sprawl and its related costs.

⁷ Source: <https://antilliaansdagblad.com/nieuws-menu/29192-staten-bredere-milieuwet>, visited on the 19th of June 2024

Enforcement of nature legislation with improved capacity

Enforcement is crucial for the effectiveness of nature legislation because it ensures that laws and regulations aimed at protecting biodiversity and ecosystems are adhered to and respected. Without enforcement measures and sufficient environmental inspectors in place, there is a risk of non-compliance and activities that could harm the environment going unchecked.

Enforcement of the different chapters (and precursors) of the environmental and nature ordinances lies with the Inspection of Environment and Nature of GMN. However, this inspection department has not been designated as the competent authority under Curaçao law for all the relevant ordinances. It is a priority to ensure formalisation of the competent authorities and availability of budget for the management and enforcement of Curaçao's protected areas⁸ and species. For example, addressing the illegal clearing of (to be) protected vegetation must be enforced by a competent authority. To be able to comply with its functions, the Inspection needs enough capacity, not only in quantity, but especially quality. There is a need for improved knowledge of nature regulations within the government (like subgoal 3.2.). This includes providing training and resources to government employees, especially those responsible for enforcing environmental laws, to enhance their understanding of relevant issues and regulations. These actions will also contribute to better administrative compliance by Government agencies.

Subgoal 3.3. Promote qualitative and accessible research and data on nature

Research and monitoring are essential for building an effective nature policy because they provide the necessary scientific foundation and evidence for an informed decision-making processes. According to the roadmap for SDG implementation in Curaçao (UNSDG, 2018), a dispersion of data, data-sharing and analysis is an important bottleneck hindering various environmental interventions. The limited amount of available environmental data is scattered among institutions, NGO's, and individuals. A formal process of systematization and centralization of data is needed to ensure the available data is accessible and exchangeable for further analyses supporting decision-making. This would enable policymakers to make informed decisions that are grounded in scientific knowledge and tailored to the specific conservation needs of Curaçao's unique ecosystems. Research and monitoring provide stakeholders with a deeper understanding of

⁸ e.g. SPAW marine park

Curaçao's biodiversity, ecosystems, and the factors impacting them. This knowledge allows policymakers to identify key conservation priorities, assess the effectiveness of current policies, develop targeted actions, and implement adaptive management.

A further priority is to publish an island-specific list of vulnerable, threatened, and endemic species and to create a habitat map (terrestrial and marine) that details the current extent and state of all Curaçao habitats (baseline study). Utilizing high-resolution drone imagery will be instrumental in conducting this research. To understand more about the value of Curaçao's ecosystem services, an economic valuation will be undertaken. To stimulate further research and accelerate action, it must be ensured that biodiversity research and monitoring data are publicly accessible.

Subgoal 3.4. Increase local, regional, and international cooperation for nature conservation management

Cooperation at the local, regional, and international levels is pivotal for effective nature conservation in Curaçao. In cooperation on all levels, it is essential to ensure equitable and inclusive representation and participation of different stakeholders, irrespective of age, gender, ethnicity, (dis)abilities and education.

Issues related to nature and environment are often not bound by country borders and cooperation is essential to address these issues adequately. In collaboration with stakeholders from government, NGOs, educational institutions, and businesses, resources can be pooled, expertise can be shared, and efforts to protect our biodiversity can be coordinated. A priority action is to establish a committee on nature management and protection comprising key stakeholders. Establishing a committee on nature management and protection is already an obligation under article 3 of the nature management and protection ordinance. Also, structured bilateral engagement with neighbouring countries and throughout the Caribbean region on nature conservation and management topics (for example through the SPAW Protocol, and for ocean Exclusive Economic Zone (EEZ) management and protection) must be achieved.

An example is the collaboration on the management and conservation plan for Klein Curaçao, involving various stakeholders (Tourism sector, VVRP, Sea Turtle Conservation etc.) both within and outside the government. This collaboration uses the whole-of-government and whole-of-society approach to conservation. The plan includes measures such as setting a quota for

maximum tourist numbers, delineating areas closed to the public, protecting turtle habitats, and addressing rat-related issues. The implementation and compliance of the plan must continue.

4. Ensuring effective implementation

Appendix I outlines of actions and milestones for the period 2024-2030, offering concrete guidance how to achieve the three main strategic objectives of this NPP. To effectively advance these milestones, certain key conditions must be established. Creating improved conditions for implementation is, therefore, a priority for the first phase, the initial years of this NPP (2024-2026). High ranked priority milestones will be executed in this phase. The second phase (2027-2030) focusses on actions contributing to milestones reducing threats and managing natural resources sustainably.

4.1. Creating improved conditions for implementation

This paragraph outlines the essential priority actions required to establish the optimal conditions for the effective implementation of this NPP. Implementing this NPP is complex and challenging. While the NPP outlines ambitious and essential strategic objectives for nature and biodiversity conservation, translating these plans into tangible actions requires significant effort, collaboration and coordination. It is crucial to acknowledge these difficulties upfront and approach the implementation process with a realistic, yet determined, mindset.

To enable the effective implementation of the strategic framework, strong coordinating structures and collaboration for support, structural funding, research and capacity is essential. A lack of these conditions, or a minimised provision of, impedes progress on the strategic objectives of this NPP. Therefore, advancing towards these conditions is the top priority.

4.1.1. Strong coordinating structure for coordination, monitoring, and evaluation

A coordinating structure must be established to coordinate, monitor and evaluate progress towards achieving the main strategic goals and subgoals of this NPP. It is a priority to first establish a solid foundation for this coordinating structure by setting up a committee on nature management and protection. This committee is to be established under a current obligation in the nature management and protection ordinance, to ensure continuation, compliance, and a sense of ownership across the government and society. Table 2 highlights the responsibilities of ministries that intersect this NPP. Coordination for progress on specific goals must involve the relevant ministries.

Another priority action for the first phase 2024 – 2026 is to set-up a monitoring plan and prepare to report on the progress of this NPP to Parliament, including recommendations for the next steps. The monitoring plan will, be based on the Monitoring Framework of the GBF and must be established in coordination with the progress on the SDG Roadmap. Table 1 summarises the priority actions to establish the strong coordinating structure for the NPP.

Table 1 Priority actions for creating a strong coordinating structure

	Priority action 2024 - 2026	Key partner(s)
Strong coordinating structure for coordination, monitoring and evaluation	Set up a nature committee on nature management and protection to help deliver the objectives and goals laid out in this NPP, including yearly set priorities	Led by the Ministry of GMN, cross-department government representation
	Set up and implementation of committee on nature management and protection assigned with specific goals of this NPP	Representatives of the government, nature NGO's, university, civil organisations, tourist sectors, assigned with specific goals of this NPP
	Formalise the committee on nature management and protection	Council of Ministers
	yearly report on the progress of this NPP (following a monitoring plan with key-indicators per strategic objective), including presentation to Parliament ⁹ with recommendations for the next steps.	GMN

⁹ Reporting to Parliament is already a requirement according to article 2 of the Nature Management and Protection Ordinance.

Table 2 Responsibilities, across the government, supportive of this NPP (adjusted from National Development Plan 2015 – 2030)

Ministry	Responsibilities supportive of this NPP
Health, Environment and Nature	Reducing environmental pollution with associated health benefits Quality improvement of public green spaces with associated health benefits (in partnership with VVRP) Environmental and nature permits and exemptions Monitoring compliance with environmental laws and permits Integrated water resource management (in partnership with VVRP)
Finance	Identify new fiscal incentives Budgetary framework linked to real/feasible policy priorities through all ministries
Economic Development	Sustainable Tourism and doughnut economy New fisheries policy in partnership with GMN
Traffic, Transport and Spatial Planning (VVRP)	Integrated water resource management (in partnership with GMN) Liveable neighbourhoods (in partnership with GMN) Recreation and green spaces within the built environment (in partnership with GMN) Spatial planning Curaçao (In partnership with GMN)
Education, Science, Culture and Sport	Awareness and capacity building Education

4.1.2. Collaboration for funding, sustainable investments and capacity building

Once the committee on nature management and protection is established, it is crucial to focus on the proposed milestones (see *Appendix I*) for the strategic goals outlined in this NPP. However, to effectively advance on these milestones, it is widely acknowledged that, next to a strong coordinating structure, initial targets must be achieved in critical areas such as securing structural funding and sustainable investments and strengthening institutional juridical and enforcement capacity. While the Ministry of GMN has the primary responsibility for implementing this NPP, collaboration with government and non-government entities is essential to progress in these critical areas. Therefore, it is recommended that addressing these critical areas is prioritized as primary agenda items for the committee on nature management and protection during the 2024-2026 period. Table 3, along with the text below, describes the critical areas where results need to be achieved.

Structural funding and sustainable investments: Conserving Curaçao's biodiversity hotspot and its ecosystem services is of utmost importance as it contributes significantly to economic development, health, well-being, and safety of the people of Curaçao. Failing to invest in preserving Curaçao's natural environment and its ecosystem services now not only leads to significantly higher restoration costs in the future but also poses significant risks to the island's tourism industry and safety plus well-being of the local community. A perception of Curaçao having a declining state of natural marine and terrestrial environment (just or unjust), risks Curaçao losing its competitive edge in the global tourism market. If marine ecosystems are not protected, Curaçao's ambitions for its Blue Bioeconomy are at risk. Therefore, it is in the interest of the collective (government, society and private entities) to invest in the protection and strengthening of nature and its ecosystem services. Next to efforts to secure sufficient and structural public funding across governmental entities, it is a priority action to investigate the potential of sustainable private investment opportunities. Different Ministries, through their networks, are knowledgeable regarding the different sources of funds that can be applied for. By attracting private investors interested in nature positive, sustainable and regenerative projects, such as banks and insurance companies, Curaçao can leverage additional financial resources to support the preservation and restoration of its natural environment. This approach not only diversifies the funding base but also fosters innovative solutions and partnerships that can enhance the effectiveness of conservation efforts. An example is the creation of local financing labs in which investors and project initiators collaborate to pilot financial arrangements that offer win-win opportunities, yielding sustainable and nature positive outcomes for all parties involved. In organizing the local financing labs (or pilots), it is crucial to establish agreements with all involved parties regarding the desired outcomes the organization of the collaboration and timeframe.

Capacity-building: The growing attention for nature means that legislation and enforcement must be improved. A bottleneck, however, is the lack of capacity and expertise, both in the implementing department and in the enforcement capacity (inspectors). Currently (2024) capacity is missing to draft conservation and management plan, review and adjust legislation related to nature, and enforce the compliance of nature legislation by an inspection authority. A priority action is therefore to develop a comprehensive plan for capacity building to tackle this bottleneck.

Table 3 Priority actions for collaboration for funding, sustainable investments and capacity building

	Priority actions 2024 - 2026	Key partner(s)
Collaboration for funding, sustainable investment opportunities and capacity building	<i>Establish sufficient and structural public funding:</i> Analysis of the most promising public funding opportunities for further implementation of this NPP, including structural collaboration with the implementation of the NDP, NEP, SDG Roadmap for finding funding opportunities. Sources: local sources, international grants, payment for ecosystem services, fiscal instruments from tourist industry/tourist tax, EU subsidies.	GMN, Kingdom of the Netherlands, CBD, UNDP, tourism branch, NGO's.
	<i>Explore sustainable private financing opportunities:</i> exploration of possible public private partnerships for nature positive, regenerative pilots in Curaçao.	GMN, financial specialist, Academia, Private sector, NGO's, Kingdom of the Netherlands.
	<i>Capacity building:</i> develop a comprehensive plan for capacity building to ensure capacity to draft management plans, review and adjust nature legislation and guarantee supervision and enforcement of nature legislation.	GMN, Kingdom of the Netherlands.

4.2. Prioritization of milestones for the period 2024 – 2026

Chapter 4.1 outlines the essential conditions and associated priority actions necessary to establish a strong foundation for this NPP. Simultaneously, it is crucial to identify specific priorities and/or quick wins to advance on the strategic objectives alongside building the needed conditions for further implementation of this NPP. The tables in *Appendix I* outline milestones, including prioritization, for each strategic goal and subgoal, serving as a guide for implementing this NPP in Curaçao. These milestones are essential for achieving all strategic goals, however, it is not realistic to prioritize all these milestones. In one of the initial meetings of the new nature committee for this NPP, it is important to identify priority actions, within reach for the period 2024-2026, and taking into account the work in progress on the enabling conditions. Examples of priority milestones include increasing awareness about the importance of nature to garner broader support, collaborating with research institutes and

NGOs to conduct baseline research, and ensuring the accessibility of research findings. How the priority milestones are to be achieved must be detailed in concrete action plans. At the end of this first phase (2024 – 2026) a detailed plan will be developed by the nature committee on nature management and protection for the second phase, focussing on reducing threats and maintaining natural resources sustainably.

Appendices

Appendix I Outlined milestones per strategic objective 2024 – 2030

Chapter 4 details the essential initial steps to create the enabling conditions for implementation. Yet, more effort and activities must be undertaken to advance on the strategic objectives and the vision of Curaçao to develop in harmony with nature. Tables 4 to 6 provide an overview of the necessary milestones for each strategic goal to be undertaken during the period 2024–2030. Each milestone must be further detailed, in collaboration with partners, into formalized action plans that highlight the necessary actions, budget, planning, and responsibilities. Detailing the milestones must be carried out based on prioritization.

Table 4 Milestones for strategic objective 1

STRATEGIC OBJECTIVE 1: Reduce threats to the natural environment of Curaçao	Priority	Limitations and points of attention
<i>Subgoal 1.1. Restore, conserve and manage land and marine ecosystems (30 by 30)</i>		
a. Established and implemented management plans for terrestrial areas that are legally designated and protected: <ul style="list-style-type: none"> a. Covering at least 30 % of the terrestrial environment, and; b. Ensuring connectivity between areas via halted fragmentation, through designated biodiversity corridors between habitats under accurate management and protection. 	+++	<ul style="list-style-type: none"> • To establish management plans for areas designated as protected areas. • Institutional capacity • Funding for implementation • Limitations in current spatial design relating to connectivity between areas • Inter-ministerial consensus
b. Established and implemented management plans for at least 30 % of Curaçao’s territorial waters that are legally designated and protected, including marine protected areas and fisheries reproduction zones.	+++++	<ul style="list-style-type: none"> • Institutional juridical capacity • Institutional capacity to draft and implement the management plans • Enforcement in marine protected areas • Funding
c. Legally designated offshore marine protected area, covering 30 % of Curaçao’s Exclusive Economic Zone, as per the Sustainable Ocean Policy (Waitt Institute, 2016), with a management plan and sustainable financing plan in place.	+++++	<ul style="list-style-type: none"> • Examination of the national decree (institutional juridical capacity) • Political consensus to implement sustainable financing plan

STRATEGIC OBJECTIVE 1: Reduce threats to the natural environment of Curaçao	Priority	Limitations and points of attention
		<ul style="list-style-type: none"> Drafting of sustainable financing mechanism law
d. Identified and prioritized degraded ecosystems and ensured restoration projects are either planned or in execution.	++++	Capacity within ministry and funding
e. Restore and conserve mangrove forests.	++	
f. Publication of an island-specific list of vulnerable, threatened and endemic species which require protection.	+++++	Funding for drafting list
<i>Subgoal 1.2. Reduce human caused stressors to Curaçao's terrestrial and marine biodiversity</i>		
a. An established and implemented Invasive Species Plan, underpinned and enforced by regulation: <ol style="list-style-type: none"> Describing the biosecurity measures to be implemented to prevent the introduction of new invasive species. 	+++	<ul style="list-style-type: none"> Capacity to draft plan Drafting regulations Enforcement at the border Funding
b. An established and implemented Pollution Action Plan, underpinned and enforced by regulation: <ol style="list-style-type: none"> Addressing the prevention and mitigation of macro-debris pollution including the reduction in use of single-use plastics; Supporting the implementation of integrated (waste) water resource management ensure that more wastewater is captured, and sustainably and safely used for both nature and agricultural purposes, ceasing the discharge wastewater (treated or non-treated) into the soil and ocean; Phasing out use of undesired chemicals in agriculture, or in volumes, that are harmful to the environment. 	A: ++ B: +++++ C: ++	A: Drafting and implementing a plan to prevent (reduce, reuse and recycle) spread of pollution Institutional capacity B: Institutional capacity (ministry VVRP) Funding VVRP Adequate maintenance VVRP C: Lack of inventory of chemicals presently in use. Farmers not knowledgeable of alternatives
<i>Subgoal 1.3. Reduce the climate impact on biodiversity</i>		
a. Scientific insight in (and continuous research on) the impacts of climate change on Curaçao's nature, periodically published in a comprehensive report.	++	Funding research
b. Established and implemented Climate Action Plan for Nature, that: <ol style="list-style-type: none"> Addresses the importance of carbon storing habitats, and; Complements existing climate policies and targets, outlined in the Curaçao Climate Road Map 2023. 	+++++	Institutional capacity to draft and implement the Climate Action Plan for Nature Funding

Table 5 Milestones for strategic objective 2

STRATEGIC OBJECTIVE 2: Manage natural resources sustainably for the benefit of people and nature in Curaçao	Priority	Limitations and points of attention
<i>Subgoal 2.1. Sustainable management plans for land and marine resources</i>		
<p>a. Established and implemented land resource management strategy:</p> <ul style="list-style-type: none"> a. Containing guidelines and innovative practices for sustainable and nature-positive agriculture, forestry, and water resource management (wastewater, rainwater) for nature and agricultural purposes; b. Promote relevant guidelines and best practices for sustainable agriculture in line with the economic policy for food security (MEO, 2022); c. Promoting and initiating integrated rural development projects in the form of nature-inclusive agricultural and forestry projects adjacent to natural areas by 2030, functioning as buffer zones for extra protection of natural areas; d. Ensuring that sustainable management tools and techniques are widely accessible through the provision of materials and resources that encourage and support people and communities to conduct sustainable agricultural activities. 	+++	<ul style="list-style-type: none"> • Institutional capacity to draft and implement land resource management strategy • Funding
<p>b. Established and implemented sustainable fisheries policy plans, management plans, guidelines and best practice:</p> <ul style="list-style-type: none"> a. Legally designating and accurately prescribing the management activities to conserve fish reproduction zones covering 30 % of Curaçao’s offshore waters; b. Strengthening the knowledge of local fisheries and ensure sustainable management of fisheries resources; c. Periodically reporting on the state, use and management of Curaçao’s fisheries. 	<p>A: +++++ B: +++++ C: +++</p>	<p>A: Institutional capacity to draft and implement fisheries policy plans, management plans, guidelines and best practices. Legal capacity Funding</p> <p>B: Institutional capacity Funding</p> <p>C: Institutional capacity Funding</p>
<i>Subgoal 2.2. Tourism sector in balance with nature</i>		
<p>a. Established and implemented Sustainable Tourism Strategy for Curaçao, including:</p> <ul style="list-style-type: none"> a. Guidelines for hotels and a Nature Code of Conduct for tourists and tour operators; b. Integrated targets on ecosystem conservation, biodiversity, and climate resilience. 	+++	<ul style="list-style-type: none"> • Institutional capacity • Funding • Collaboration with ministry of MEO

STRATEGIC OBJECTIVE 2: Manage natural resources sustainably for the benefit of people and nature in Curaçao	Priority	Limitations and points of attention
b. Insight in the tourism carrying capacity concerning its impact on nature and subsequent action planning to reduce the environmental impact of tourism.	+++	Institutional capacity to determine impact of tourism on nature
c. Published and regulated guidelines, criteria and regulations for the tourism industry and enforcement of local legislation on pollution of the land and sea.	++++	<ul style="list-style-type: none"> • Institutional capacity to draft guidelines, criteria and regulations • Funding
d. Established structural collaboration with internal and external stakeholders, fostering: <ul style="list-style-type: none"> a. The harmonization of tourism and associated activities with nature in policy and action planning (with the ministry of Economic Development (MEO), the Curaçao Tourism Board (CTB), Ministry of GMN, Ministry of VVRP, the tourism sector and nature NGO's); b. Partnerships to accelerate environmental initiatives. 	+++	Institutional capacity
<i>Subgoal 2.3. Greening the city: secure nature inclusive development</i>		
a. All relevant developments undergo a mandatory Environmental Impact Assessment (EIA); the results of which are reviewed by an independent commission of experts (EIA Commission).	++++	<ul style="list-style-type: none"> • Institutional legal capacity for drafting EIA procedure and definition of relevant activities. • Institutional capacity to guide EIA procedure. • Funding
b. Widespread adoption of the Building with Nature principles and application of Nature-Based Solutions in urban development projects, as a result of efforts to: <ul style="list-style-type: none"> a. Support both businesses and local communities to create green spaces and other nature-enhancing initiatives; b. Include instructions on the Building with Nature principles and application of Nature-Based Solutions in exemptions and permitting. 	++++	Institutional capacity to adapt building code with nature-based solutions in the built environment (ministry of VVRP).
c. Integrated targets on ecosystem conservation, biodiversity, and climate resilience into spatial planning.	+++	Institutional capacity to define targets (ministry of VVRP)
d. Increased (and further increasing) number of accessible natural areas for people to enjoy and connect with nature: <ul style="list-style-type: none"> a. Revitalizing and managing existing recreational areas in nature for the enjoyment and education of all people; b. Using a participatory approach where the design, revitalization or management of recreational areas asks for renewed spatial planning to meet the needs of local communities. 	++++	(Institutional) capacity to manage the nature areas and funds

Table 6 Milestones for strategic objective 3

Strategic objective 3: Tools and solutions for implementation	Priority	Limitations and points of attention
<i>3.1. Develop a mindset of nature awareness, appreciation, and pride in all sectors of community</i>		
<p>a. Implemented government-led communication campaign on environmental awareness (with different focus groups) that addresses the value of nature for the people of Curaçao and explains the regulations in clear language, through:</p> <ul style="list-style-type: none"> a. An online platform that consolidates and communicates information on nature-related regulations in a way that is easy to access and understand; b. Ambassadors (storytellers, influencers) across government and society; c. Informational materials, such as RAMSAR signs, that are readable and engaging; d. Informational materials available at hotels, the airport and recreational areas; e. Published and disseminated a guide to Curaçao’s nature, including information and ideas on how people can interact with and benefit from nature, and highlighting threatened, endemic and invasive species. f. Published and disseminated public-facing guide to climate change in Curaçao, explaining impacts and mitigation measures; g. Citizen science initiatives that engage the public in conservation efforts (in cooperation with public-private partnerships and local initiatives). 	+++++	<ul style="list-style-type: none"> • Institutional capacity specifically pertaining to dedicated communication experts • Capacity to execute communication campaign and production of promotional materials (folders, posters, signs etc.). • Funding
<p>b. Incorporated relevant topics covered within this NPP into the curriculum for nursery, primary and secondary education in all schools in Curaçao, with engaging content developed.</p>	+++	<ul style="list-style-type: none"> • Curaçao deals with different semi-autonomous schoolboards under supervision of ministry of OWCS (coordination and legal advice). • Funding • Capacity
<p>c. Developed nature education for governmental and societal entities on the significance of nature to facilitate know-how and accurate responses to environmental issues, targeting at least:</p> <ul style="list-style-type: none"> a. Government entities b. Communities c. Corporate entities (e.g., hotels) 	++++	<ul style="list-style-type: none"> • Institutional capacity for creating and implementation of educational programmes • Funding
<p>d. Established programme to draw back Curaçao youth with an interest in nature (conservation) through e.g. traineeships/programmes in which young professionals can</p>	++	<ul style="list-style-type: none"> • Establish traineeship and job opportunities • Funding • Multisectoral collaboration

Strategic objective 3: Tools and solutions for implementation	Priority	Limitations and points of attention
work for different nature/climate/sustainable organizations (PMO, government, sustainable consultancy bureau etc.).		
<i>3.2. Improved nature legislation, mainstreaming and enforcement</i>		
<p>a. Reviewed and updated national policy and laws in line with this NPP (strategic objective 1 and 2), through:</p> <ol style="list-style-type: none"> a. Implementation of additional legislation for the protection of endemic, vulnerable and threatened species if needed; b. Completion of among others specific Decrees under the National Ordinance for Nature Management and Protection; c. Inclusion of local communities, NGO's and civil organizations in the reviewing process to gain their input; d. Combination of all the different ordinances concerning nuisance permits, solid waste management, wastewater management and environmental impact assessments in one consistent general environmental ordinance. 	<p>A: +++ B: ++++ C: +++ D: ++</p>	<p>Funding A+B: (Institutional) capacity within legal department and GMN D: Institutional capacity</p>
<p>b. Established and implemented marine and terrestrial spatial plans:</p> <ol style="list-style-type: none"> a. Detailing land and sea usage, protected areas and buffer zones, taking into account measures for climate change adaptation and resilience; b. Serving as foundation of permit issuing as the plans take into account all natural and biodiversity features of the zone in question. 	+++	<ul style="list-style-type: none"> • Interministerial consensus and collaboration • Funding
<p>c. Established sufficient, designated legislative capacity and competent legal specialists within the government, to enforce nature legislation, regulations under the EOP, Convention on Migratory Species (CMS), SPAW protocol, CITES convention and RAMSAR, by:</p> <ol style="list-style-type: none"> a. Educated and trained inspectors and relevant government officials. b. Ensured availability of a dedicated government budget for the management and enforcement of Curaçao's protected areas. 	+++++	<ul style="list-style-type: none"> • Funding • Limitations to increase formation places within Government
<p>d. Communicate any revised legislation within the government and with the local community for them to understand the framework and respective for the enforcement of the legislation.</p>	++	<ul style="list-style-type: none"> • Funding • Institutional capacity
<i>3.3. Promote qualitative and accessible research data on nature</i>		
<p>a. Completed baselines habitat surveys and produce habitat maps for marine and terrestrial habitats that detail the current extent and state of all Curaçao habitats. Implemented routine on monitoring of sensitive habitats.</p>	++++	<ul style="list-style-type: none"> • Institutional capacity • Funding

Strategic objective 3: Tools and solutions for implementation	Priority	Limitations and points of attention
b. Published list of island-specific list of vulnerable, threatened and endemic species. Implemented routine on monitoring of sensitive species.	+++	<ul style="list-style-type: none"> • Institutional capacity • Funding
c. Updated economic valuation of Curaçao's natural resources to demonstrate the value of nature.	+++	<ul style="list-style-type: none"> • Institutional capacity • Funding
d. Ensured public access to biodiversity research and monitoring data.	+++	<ul style="list-style-type: none"> • Institutional capacity • Funding
e. Published sustainable finance report for Curaçao's proposed offshore marine protected area (MPA).	++	<ul style="list-style-type: none"> • Institutional capacity • Funding
<i>3.4. Increase local, regional, and international cooperation for nature conservation management</i>		
a. Established a committee on nature management and protection supporting the achievement of objectives and goals laid out in this NPP (led by Ministry of GMN, with interministerial government representation).	+++	
b. Established a cycle of Nature Policy Review meetings, involving cross-sectoral stakeholders, including NGOs, businesses, and community groups, to discuss progress, challenges and collaborative opportunities.	++	Funding
c. Structured bilateral engagement with neighbouring countries and throughout the Caribbean region on nature conservation and management topics, prioritizing: <ul style="list-style-type: none"> a. Collaboration with Aruba, Sint Maarten and the Netherlands in the Memorandum of Understanding on nature, food security and food safety and the implementation of and contribution to international treaties and organizations. 	+++	Funding

Appendix II Reference list

- Asirvadam, L. (2014). The Mangroves of Curaçao: An Ecosystem Worth Protecting.
- Banda-Rodríguez, K., Weintritt, J., & Pennington, R. T. (2016). Caribbean dry forest networking: An opportunity for conservation. *Caribbean Naturalist*, 1, 63-72.
- Carmabi. (2024). As mentioned in: Carmabi vraagt duikers om informatie over dode papegaaivissen. Retrieved from: <https://paradisefm.cw/carmabi-vraagt-duikers-om-informatie-over-dode-papegaaivissen/> on May 16th, 2024.
- Curaçao Tourist Board. (2023). Tourism Performance 2023. Retrieved from: <https://www.curacaotouristboard.com/2024/01/15/curacao-achieves-remarkable-tourism-success-in-2023/> on June 4th, 2024.
- Curaçao Tourist Board. (January 2022). Strategic Tourism Destination Development Plan 2022 -2026.
- DCNA Nature (2016). Climate change impacts within the Dutch Caribbean. Retrieved from: <https://www.dcnanature.org/climate-change-impacts-within-the-dutch-caribbean/> on June 4th, 2024.
- DCNA. (2023). Invasive Alien Species in the Dutch Caribbean. Retrieved from: <https://www.dcbd.nl/document/invasive-alien-species-dutch-caribbean>
- Debrot, A. O., & Bugter, R. J. F. (2010). Climate change effects on the biodiversity of the BES islands: Assessment of the possible consequences for the marine and terrestrial ecosystems of the Dutch Antilles and the options for adaptation measures (No. C118/10). Alterra.
- Erdoğan, E. (2021). The terrestrial consequences of poor wastewater management in Curaçao: how exploring public health risks and ground water quality levels can provide insights into establishing its sustainable management for small island development states (Master's thesis).
- Government of Curaçao. (2018). Building on Strengths: National Development Plan Curaçao 2015-2030.
- Kardos, M. (2021). Conservation genetics. *Current Biology*, 31(19), R1185-R1190.
- Ministry of Economic Development of Curaçao. (2022). *Barika yen, Kòrsou kontentu; Economisch Perspectief van Voedselzekerheid gericht op groei van landbouw en veeteelt*, december 2022
- Ministry of Economic Development of Curaçao. (2022). National Export Strategy of Curaçao. Retrieved from: https://gobiernu.cw/wp-content/uploads/2022/10/4.-brochure-Curacao-6_web.pdf on June 12th, 2024.
- Pulster, E. L., Johnson, G., Hollander, D., McCluskey, J., & Harbison, R. (2018). Assessment of inhalable particulate matter associated with a refinery in Curaçao. *Journal of Environmental Protection*, 9(10), 1113-1128.

Simpson, M. C. (2010). Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean (Key Points and Summary for Policy Makers Document). In *Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean (Key Points and Summary for Policy Makers Document)* (pp. 32-32).

Steward, R., Chopin, P., Verburg P.H. (2024). *Supporting spatial planning with a novel method based on participatory Bayesian networks: An application in Curaçao*. Environmental Science & Policy Volume 156, 103733.

Toré, V. (2023). The economic impact of climate change on Curacao. Retrieved from: https://cdn.centralbank.cw/media/event_past/20231024_2economic_impact_of_climate_change_on_curacao.pdf on June 4th, 2024.

UNEP, 2024. UN Environment Programme; *Facts about the nature crisis*; Website: <https://www.unep.org/facts-about-nature-crisis>; Viewed on September 9th 2024.

UN World Tourism Organization. (2024). Statistical Framework for Measuring the Sustainability of Tourism. Retrieved from: https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/BG-4a-SF-MST-E.pdf

UNSDG. (2018). A roadmap for SDG implementation in Curaçao. Retrieved from: https://ndp.spin-cdn.com/media/sdg_roadmap_for_curacao/20190730_20181206_curacao_sdg_roadmap.pdf on May 16th, 2024

WAITT Institute, 2016. Economic Valuation of Curaçao's Marine Resources.

WAITT Institute, 2017. Marine Scientific Assessment. The State of Curaçao Coral Reefs.

Appendix III Conservation, nature, park and agricultural designated areas on Curaçao

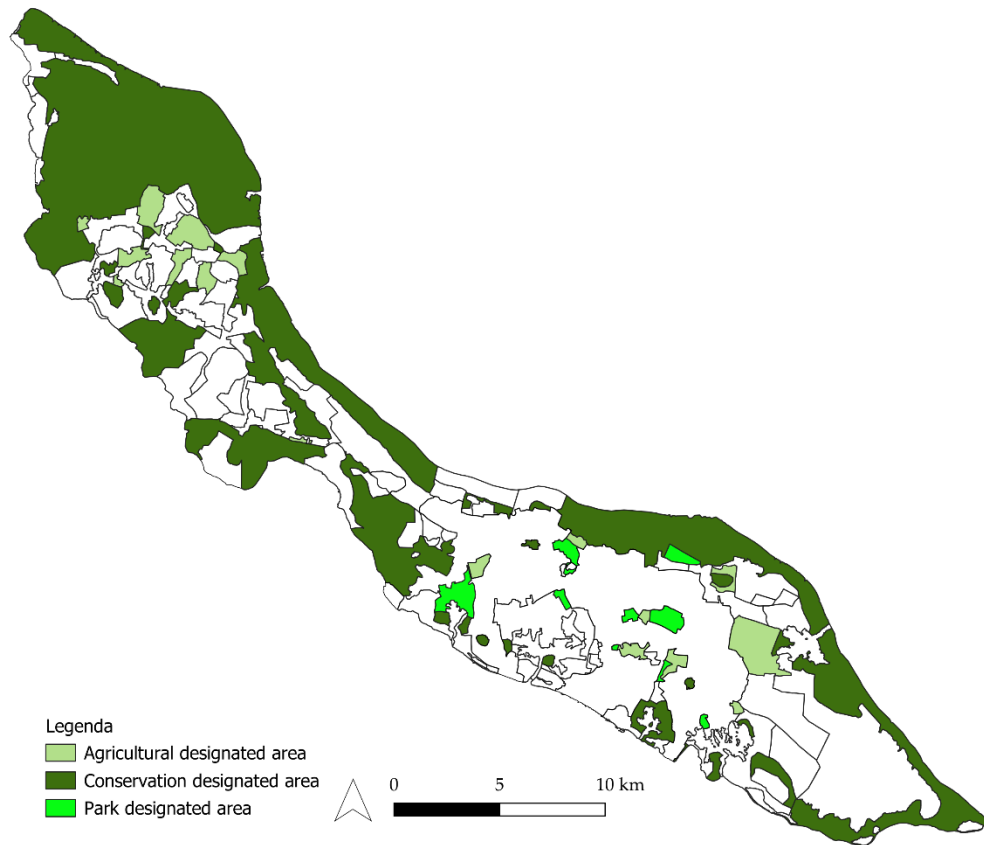


Figure 5 Areas designated as conservation, park and agricultural areas in 2016 according to the Island wide Development Plan (some designations have changed after 2022).

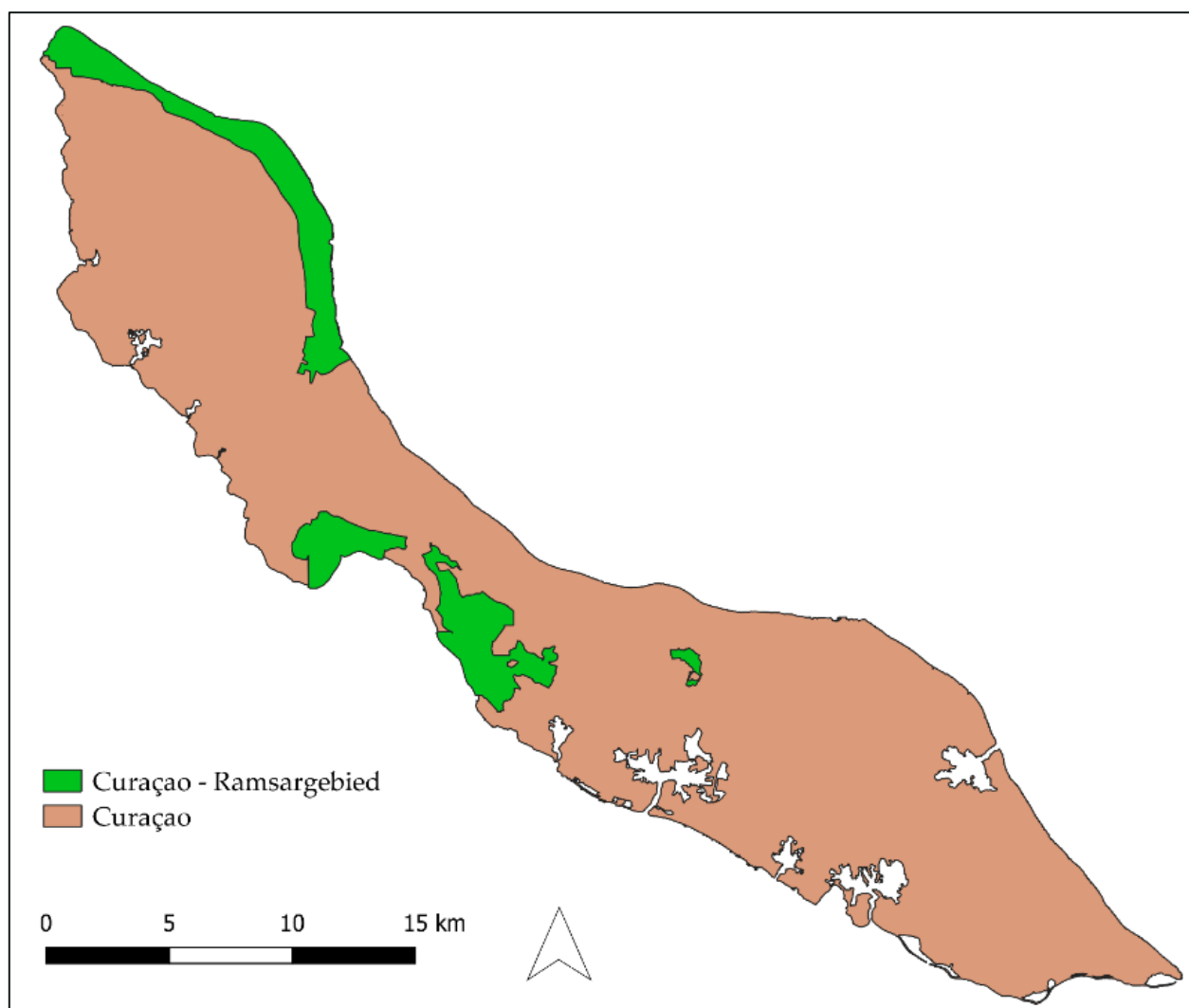


Figure 6 Areas designated as Ramsar wetlands (in green) according to the convention of Ramsar. Not shown on the map is the island of Klein Curaçao also designated as Ramsar wetland.

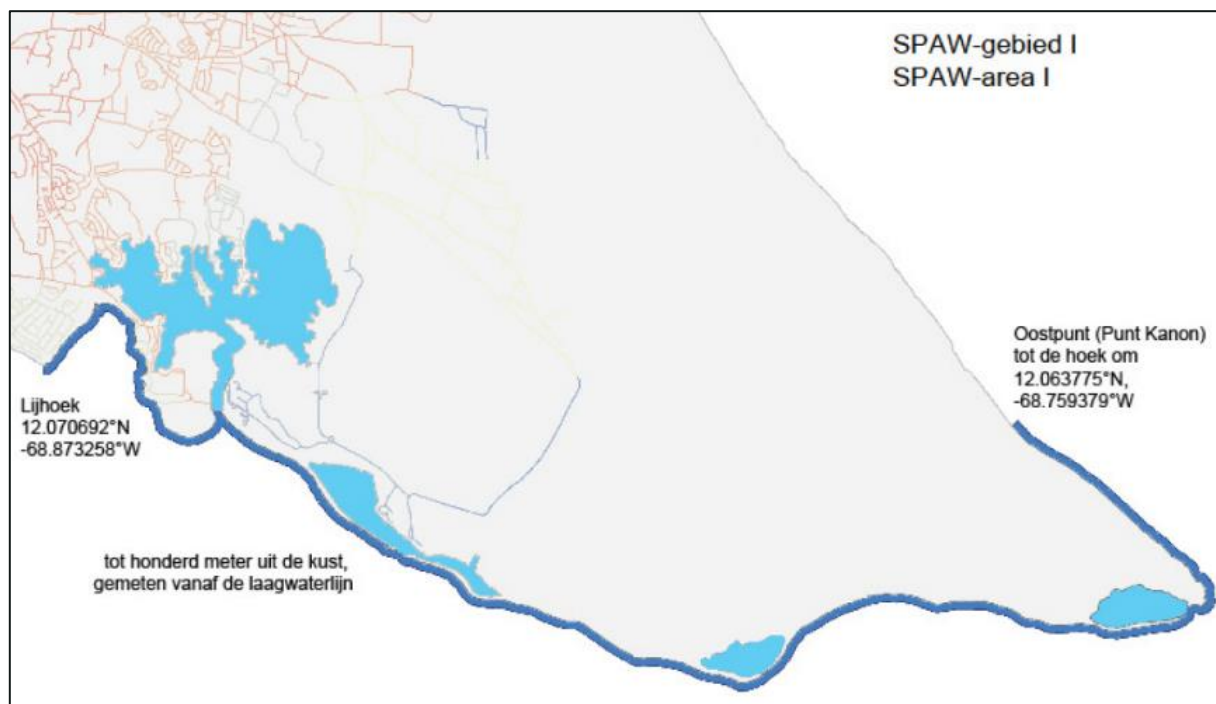


Figure 7 Areas designated as marine reserve (dark blue) according to decree SPAW-gebied I.