A status report of nature policy development and implementation in the Dutch Caribbean over the last 10 years and recommendations towards the Nature Policy Plan 2012-2017

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Summary

The National Nature Policy Plan 2001-2005 (NPP-5) and its current status of implementation was assessed as a first step towards a new Nature Policy Plan for the Caribbean Netherlands (Bonaire, Saba, St. Eustatius). The purpose of this exercise is to determine which action points of NPP-5 are still relevant, and to identify key new developments to be aware of when setting goals and strategies for the new Nature Policy Plan for the Caribbean Netherlands. The NPP-5 was the first formal nature policy plan of the Netherlands Antilles. It lists a total of 47 policy goals and projects in the text for the period 2001-2005. Based on these, 61 action points were listed in an Action Matrix for the period 2001-2005. Of these 31 were achieved to a high degree of completion between 2001 and 2010, notwithstanding the serious and chronic lack of both funds and manpower (NEPP-7). Based on this assessment, a total of 40 action points may be brought forward based on the NPP-5. These not only include most “one-time” action points not yet achieved but also several action points that were achieved but which are of an on-going nature.

While much has been achieved in terms of policy development and legal frameworks over the last 10 years, climate change implies that future nature management will be confronted with an increasingly rapid succession of major ecological problems such as coral bleaching, hurricane impacts, and invading species.

Our quick-scan assessment showed that policy development over the last 10 years has suffered significantly from challenges in terms of both capacity and funding, as well as in decision-making in reaching its goals. Controversial topics regarding “rules and regulations”, “cooperation”, and “financial instruments” largely failed to be achieved due to problems in the decision making process, whereas less controversial action points such as “reporting”, drawing up “plans”, doing “research” and “education”, especially suffered from a lack of capacity and funding.

Several main topics are identified that will need attention in the new nature management plan. The new nature policy will have to meet standard and basic policy needs, information and management needs, and also have to accommodate the latest conceptual developments and the pressing realities of global climate change and alien species invasions. Notable is that a large number of new and serious threats have come to the forefront since the NPP-5 was set 10 years ago.

Because the diverse, colourful and unique natural ecosystems of the Caribbean Netherlands also represent the single most important local economic resource on which to build long-term prosperity of the inhabitants of these islands, the nature policy plan needs to be recognized as much more than simply a way to protect nature and avert ecological crisis. It is in fact a key policy tool by which to actively safeguard and create economic well-being and opportunity for these islands.

Contents

1 Introduction

On the 10th of October 2010, the three Caribbean islands, of Bonaire, Saba and St. Eustatius, which until then had been part of the Netherlands Antilles, acceded into The Netherlands as special municipalities ("Bijzondere Eilandelijke Status") or the so-named "BES islands", and are now formally referred to as the "**Caribbean Netherlands**". (This term should be considered distinct from the term "Dutch Caribbean" which refers jointly also to Aruba, Curaçao and St. Maarten.) In the process The Netherlands gained final responsibility over a great amount of new biodiversity, as the islands form part of the larger Caribbean biodiversity hotspot (Myers et al. 2000; Roberts et al. 2002) on the basis of their species richness and high level of endemism. Between 10,000 and 15,000 species occur on and around these islands. In addition the area hosts six Ramsar sites (5 on Bonaire and one on Aruba) and the Saba Bank, the world's tenth largest atoll, and is home to some 200 endemic life forms and more than 35 internationally endangered species (Jongman et al. 2010). The Ministry of Economic Affairs, Agriculture and Innovation (EL&I) carries final responsibility for nature policy and management. In accepting this new role, EL&I has been directing nature policy development for the Caribbean Netherlands through its affiliated institutions, and has decided that an updated nature policy plan for the Caribbean Netherlands should be finished by the end of 2011.

1.1 General Objective

In this report, the National Nature Policy Plan 2001-2005 (NPP-5) and its current status of implementation is discussed as a first step towards a new Nature Policy Plan for the Caribbean Netherlands (2012-2017). The NPP-5 was the first formal nature policy plan of the Netherlands Antilles. The NPP-5 was extended till 2010 by Ministerial decree (Ministry of VSO, Volksgezondheid en Sociale Ontwikkeling; Public Health and Social Development)). For reasons of funding those NPP-5 priority action points deemed to be realistically achievable within a three-year period were elaborated and incorporated into the National Environmental Policy Plan 2004-2007 (NEPP-7), a broad policy plan covering both nature and environmental management (i.e. of "grey" environment, pollution, waste, waste water that now fall under a separate ministry namely, the Ministry of Infrastructure and Environment). The NEPP-7 was specifically drafted to enable the expenditure of Dutch co-operative development funds for sustainable development for the Netherlands Antilles. In light of this, as well as the fact that this analysis is intended to serve as a meaningful starting point up to 2010 for formulation of a new nature policy in 2011, the nature and conservation sections of the NEPP-7 were included in this evaluation.

1.2 Purpose and scope

The whole institutional and jurisdictional setting and context of nature management in the Caribbean Netherlands has changed dramatically since 2010. Several of the key institutions, jurisdictional issues and funding sources that were relevant pre-2010 today no longer apply. With a view to these changes, detailed lessons for improvement of the NPP-5 itself and its (former) implementation structure are less relevant. Also, in the future, dealing with the consequences of rapid global climate change will call for new paradigms in nature management. While many of these are known to the conservation sector in global terms, the real challenge is how to effectively implement these ideas in a local context. In fact, several of these concepts were mentioned in the NPP-5 and subsequent NEPP-7 plans but were not successfully followed-up or implemented. The purpose here is to provide a rough global assessment so as to identify key and most urgent needs as a first step towards charting the course forward. Therefore, while the action points are all explicitly given some attention, a fine-grid analysis was beyond the scope of this report. Policy areas that lie outside the main mandate of the Ministry of EL&I, such as issues relating to environmental contamination, land-use planning, tourism development, all of which can be of

profound impact and importance to nature management, also fell largely beyond the scope of this assignment. Finally this report was explicitly not intended to provide an evaluation of the NPP-5 neither was it intended to provide an overview of the broader policy context in which nature policy should ideally be framed.

The basic objectives of this report were limited to two items, namely:

1. Review the current status of the listed action points of the NPP-5 to see which still remain to be carried forward to the new plan period (2012-2017)
2. Based on current knowledge and recent developments recommend any additional priority matters for the 2012-2017 planning period.

1.3 Lay-out of this report

Following this general introduction, Chapter 2 gives a point by point sequential presentation of all the action points listed in the NPP-5, following the same nine functional categorizations as used in the NPP-5. A table is provided showing how many action points of the NPP-5 were incorporated into the broader more inclusive NEPP-7 plan.

The current status of completion of each NPP-5 action point is reported and the importance and relevance of each action point is evaluated with respect to the new planning period. Principal impeding factors are identified. Each of the nine functional subsections, ranging from “general policy and reporting” all the way to “financial instruments” is concluded with an overall assessment in which key conclusions are highlighted.

The largest functional category dealt with in Chapter 2 is understandably that concerning the topic of “management and protection”. With its focus on species and area protection, this forms the traditional core of nature conservation. Action items listed and discussed under this heading understandably often overlap strongly with other functional headings. and include items concerning such functional categories as policy, rules and regulations, research needs and databases.

Whereas most discussion of the various issues and action items is provided in Chapter 2, Chapter 3 helps identify the cardinal recurrent and new issues that will need to be dealt with in the NPP 2012-2017.

From the onset of this project, island government agencies and nature management NGO’s were informed of project goals and objectives and asked to contribute their input. Meetings were also held with these organizations to discuss the progress of this assessment. The organizations were asked particularly about their own experience with the implementation of the NPP-5 over the last ten years and for feedback on the content of an earlier draft of this report. All parties were also offered the option to contribute written reactions for incorporation into this report. DROB (Dienst Ruimtelijke Ontwikkeling en Beheer) Bonaire made use of this option and their contribution has been attached as an appendix.

2 Assessment of the NPP 2001-2005

Introduction to the assessment

In this report we start our assessment of the NPP 2001-2005 with the state of current implementation of the NPP-5 goals and action points. An overview is provided in Table 1. The NPP-5 lists a total of 47 policy goals and projects for the period 2001-2005. Based on these, 61 action points were listed as an Action Matrix (Table 1). The action points have a broad range in terms of both nature and scope and included anything from formulation of policy plans and biological inventories to small adjustments in legislation. No prioritization was given.

The NPP-5 was not formally evaluated but more or less absorbed into and superseded by the more inclusive "National Environmental Policy Plan of 2004-2007 (NEPP-7). From that point on many or most of the action points not yet completed, remained "in effect". Table 2 shows how NPP-5 action points were expressed in the NEPP-7. In this exercise we do not intend to evaluate the NEPP-7, but the fact that many action points remained active in the NEPP-7 meant that our evaluation could not ignore it. In certain respects the NEPP-7 represented an improvement over and update of the NPP-5. The plan gave a more detailed time planning for implementation included new additional themes and better reflected the need for cross-sectoral bridging and several additional environmental issues as critical to nature conservation. The latter policy plan was separately and independently evaluated by DHV BV in 2008, and provides valuable insights of relevance to the evaluation of the NPP-5.

For each action point from the NPP-5 (and the NEPP-7), our table indicates their current status of implementation as "achieved" (green), "not achieved" (red) or "partially achieved" (yellow). For the action points judged to have been "achieved", this still does not settle the question as to whether that which was achieved is or will remain sufficient to address the problem for which it was attended ten years ago. Natural resource policy development and management are essentially a "work in progress" and continually need to adapt to deal with inevitable and increasingly rapid change. A fine-grid analysis of all policy and management documents was beyond the scope of this exercise.

Several topics of more direct responsibility of the island governments are also briefly discussed. While management and policy responsibilities have been allocated to different levels of government, selected topics (such as the grazing problem) are so critical to conservation as a whole, that a policy vision is needed at the national level as well. The national policy envelope ultimately should encompass all critical nature policy issues regardless of the level implementation or the division of responsibilities.

A rough indication ("quick-scan") of the likely reasons that results were not achieved is also provided in the tables. These are expressed in terms of "capacity" (C), "funds" (F) and "decision-making" (D). Actually it must be kept in mind that these are judgment calls and they are only very rough categories which may show overlap. For instance, capacity is intricately related to funding because without funds there can be little or no capacity (aside from volunteers who generally are rare). So a distinction is not always clear and may be somewhat arbitrary. Also an apparent lack of capacity may not so much be due to an actual lack of manpower, but to the fact that the available capacity was assigned to other priorities. Finally the term "decision-making" also does not pretend to be clear cut. This is because problems in decision-making can occur at various levels within the decision chain. Lack of decision-making can occur within a sector, due to differences of opinion between sectors, at the level of government departments at the level of elected officials that carry official mandate to take decisions for the nation, or even at the intergovernmental level. Here in our overview we make no attempt to present a detailed analysis, or

extensive justification and documentation for our choice, but do base our categorization on expert judgment.

In the NPP-5, the action items had been organized roughly cross-sectional according to functional categories (e.g. “policy”, “management and protection”, ”education and awareness”, “regulations”, “financial instrument”, etc.). Consequently we also chose to apply this functional subdivision to the assessment.

Table 1 *Evaluation of action matrix NPP-5 by 2011. Actions are numbered according to the Action Matrix of NPP-5. Status indicators; Red= not achieved, Yellow= partly achieved, Green= fully achieved. F= funding-limited, C= capacity limited, D= problems in decision-making. Involved institutions: e= the five islands forming the Netherlands Antilles (Bonaire, Curaçao, St Maarten, Saba, St Eustatius), V= Ministery of Volksgezondsheid en Sociale Ontwikkeling, C = CARMABI, b= nature management organisations, J = Department of Legal Affairs NA, customs = customs Netherlands Antilles, NGO = non-governmental organisations, BBB= Foreign Affairs Department of the Netherlands Antilles, sectors = community and governmental sectors, EL&I = Ministry of Economic Affairs, Agriculture & Innovation, Finance = Ministry of Finances NA. NEPP-7, numbers refer to the sections in the NEPP-7 document.*

nr	Action Item	Involved institutions	Status NPP-5 01-05	Status NPP-5 01-10	NEPP-7
General policy and reporting					
0.1	Nature Policy Plans Islands	e			3.4.1
0.2	Memorandum nature research	V, e, C, b			
0.3	Guidelines distribution genetic natural resources	V			
0.4	Annual report Nature Policy	V	C	C	
0.5	Reporting treaties	V			6
General management					
5.1	Establish management authority for treaties agreements	V			
5.2	National registry by management organizations (~CITES)	V			
Management and protection					
5.3	Designate protected areas	e			3.4.1
5.4	Potential Ramsar areas	V, e		D	3.4.1
5.5	Network National Parks	V, e			
5.6	Designate protected species	e			
5.7	Compose tools for species identification	V, b, C		F	
5.8	Species database	V, C			3.4.1
5.9	National Red List of endangered species	V, C, b			3.4.1
5.10	Pilot project management model Ecosystems	V, C, b		C	3.4.1
5.11	Management plan Saba Bank	V, Saba			3.4.3
5.12	Management regulations species CITES II and SPAW III	V, C		F	

nr	Action Item	Involved institutions	Status NPP-5 01-05	Status NPP-5 01-10	NEPP-7
Science (general, ecosystems, areas, species)					
6.1	Scientific research (general)	C		F	3.4.2
6.2	Netherlands Antilles Coral Reef Initiative	V, b, C, NGO's			
6.3	Inventory and description ecosytems	V, C		F	3.4.2
6.4	Inventory biodiversity Saba Bank	V, C, Saba			3.4.2+3.4.3
6.5	Inventory local species	V, C			
Education and awareness					
7.1	Education general	V, e		C	4.1
7.2	Training CITES	V, e, customs			
7.3	Education and awareness biodiversity and ecosystems	V, e		C	4.1
7.4	Specific education targeting stakeholders	V, e		C	
7.5	Education and awareness CITES	V, e			
7.6	Education and awareness importation non-endemic species	V, e		C	
7.7	Awareness campaign for endangered species	V, e		C	
7.8	Education and awareness nature in relation to sustainable tourism	V, e		C	
7.9	Education and awareness consequences free roaming cattle	V, e		C	
7.10	Education and awareness sustainable fisheries	V, e		C	
7.11	Programme Environment and Natural history	V, e		C	
Rules and regulations					
8.1	Adapting national framework law for nature	V, J			
8.2	Feasibility study for regulating importation of endangered species	V, J		C	
8.3	Contribution to the national law on hazardous substances	V, e		C	I&M
8.4	Island nature laws	e			
8.5	Implementing island nature laws	e			
8.6	Guidelines for EIA legislation	V, e			
8.7	Legislation on importation of exotic plants and animals	V, J		D	5
8.8	Framework law for groundwater management	V, J		D	I&M
Enforcement					
8.9	Enforcement treaties general	V, e		D	5
8.10	Enforcement CITES	customs			
8.11	Registration CITES, Bonn, SPAW-species	V			
8.12	National legislation regulating enforcement officers	V			5

nr	Action Item	Involved institutions	Status NPP-5 01-05	Status NPP-5 01-10	NEPP-7
8.13	Island legislation regulating enforcement officers	e		D	5
Cooperation					
9.1	Commission nature management and conservation	V, e			
9.2	Scientific authority for formal advisory function	V			
9.3	Nature forum	V, e			3.4.2
9.4	Partnership for Nature	V, sectors		D	
9.5	Forum environment and nature	V, e		D	
9.6	Ramsar agreements with Venezuela	V, Bonaire, BBB			3.4.1
9.7	Ramsar agreements with manager Flamingo Sanctuary	V, Bonaire, b			3.4.1
9.8	Extending cooperation treaty LNV-VSO	V, EL&I			6
9.9	Regional and international Cooperation	V			3.4.1
9.10	Formal nature cooperation NA en Aruba			C	3.4.1
Financial instruments					
10.1	Fiscal arrangements favoring sustainable development	V, Finance		C	
10.2	Feasibility study Trustfund	V, Aruba			
10.3	CITES permitting system[5]	V, Finance			6
10.4	Fee system CITES permits			D	
10.5	KNAP-fund for small nature projects	V, EL&I			4.2

Table 2 *The current status of implementation of NPP-5 nature conservation and management action points as subsequently incorporated in the NEPP-7. Status; Red= not achieved, Yellow= partly achieved, Green= fully achieved. F= funding-limited, C= capacity limited, D= problems in decision-making.*

OUTPUT INDICATORS	NPP-5 action point	Status NEPP-7 04-07	Status NEPP-7 2010
3.4.1 Implementation National Nature Policy Plan			
At least two additional effectively managed protected areas[1]	5.3	C	
At least two more Ramsar areas	5.4	D	C/D
Structured bilateral cooperation with neighbouring countries on conservation of shared species populations and special areas[1].	9.6/9.7/9.9/ 9.10	C	C
Publicly accessible biodiversity database;	5.8	C	C
Policy plans and up to date nature ordinances on all islands[1]	0.1-8.1-8.8		D
National and island red lists of endangered flora and fauna;	5.9	C	C
Alternative conservation management models.	5.10	C	C
3.4.2 Netherlands Antilles Coral Reef Initiative			
Regular NACRI meetings	6.1	C	C
Examples of cooperation, at least 3 joint project implemented	9.3	C	
Coral reefs monitoring on all islands[1]	6.3/6.4	C	C

Central monitoring database established	5.8	C	C/F
3.4.3 Sustainable Management of the Saba Bank			
Preliminary map of Saba Bank biodiversity	6.4	F	
integrated sustainable management plan for the Saba Bank	5.11	F	F
4.2 Education and public awareness			
At least 5 projects funded yearly by the KNAP or MINA Fund respectively	10.5		
6 Cooperation			
SPAW, IAC, Ramsar, CITES, and ICRI reporting obligations met	0.5		
Participation in meetings (ICRI, SPAW, CITES, RAMSAR etc)	9.9		
Extending cooperation treaty LNV-VSO	9.8		
CITES permitting fee system	10.4		D

2.1 General policy and reporting (Action points 0.1-0.5)

The framework for the Nature Policy Plan of the Netherlands Antilles was the National Nature ordinance (Landsverordening Grondslagen Natuurbeheer) of the Netherlands Antilles. Under the new constitutional arrangement, this framework law was translated basically unchanged into the Dutch national legal framework as the “Wet Grondslagen Natuurbeheer- en Bescherming BES” (Nature Conservation Law BES). This law again calls for a nature policy plan, which is directed to the 2012-2017 planning period.

2.1.1 Island nature policy plans (Action point 0.1)

Notwithstanding the legal requirement for each island to develop a nature plan, only Bonaire in fact developed such a plan. None of the other islands implemented a nature policy plan, although draft plans were developed by each island with the help of MINA and expert assistance from the then Dutch Ministry of LNV. Under the new “Nature Conservation Law BES” a new nature policy plan for the Caribbean Netherlands is needed, while each island is again bound to adopt its own nature plan. Since Saba and St. Eustatius still need to develop such a plan, this action point is directed to the 2012-2017 planning period.

2.1.2 Memorandum on nature research (Action point 0.2)

The memorandum for nature research was not accomplished within the planning period and strict NPP-5 context due to limited capacity within the involved institutions. However, the equivalent has since been achieved. More recently, several initiatives outline research priorities for nature research in the Dutch Caribbean. Recent reports pinpointing research priorities for policy development include: Jongman et al. 2010; Meesters et al. 2010) and more are underway, all funded by Min. EL&I. Priorities are not static and change during the course of time. Consequently, an action point for the yearly setting of research priorities can be directed to the new planning period.

2.1.3 Guidelines on the use of genetic natural resources (Action point 0.3)

Articles 15, 16 and 19 of the Convention on Biological Diversity (CBD) state that a country has the sovereign rights to its natural resources and the authority to determine access to the genetic resources on mutually agreed terms. To this end, the Netherlands Antilles Ministry of Public Health and Social Development (VSO) drafted a concept Material Transfer Agreement (MTA) in 2009. This was based on

the Access and Benefit Sharing (ABS) proposal as drafted in Bonn under the CBD. In the draft MTA, intellectual property rights to any process, substance or idea derived from the research on these genetic resources will be shared by user and provider, to the extent that the provider will have the right to one third of royalty fees, which part will be paid to a conservation fund (E. Newton, pers. comm.). Most bio-prospecting only involves the collection of small amounts of any given species and if set up properly, does not need to conflict with the goals of biodiversity conservation.

With respect to bio-pharmacy opportunities it is important to know that there have already been several instances in the past in which products developed from species collected from Bonaire and/or Curaçao have been or are in the process of being developed for their bioactive properties without any requirements for sharing of the resulting benefits. It is clear that regulations are urgently needed for such situations. Furthermore, collecting of biological specimens should meanwhile strictly be limited to non-prospective purposes.

Guidelines for the distribution of genetic resources drafted by VSO were never formalized because of problems in decision making. This action point will be directed to the draft list of actions points for the policy plan 2012-2017.

2.1.4 Annual reports on nature policy (Action point 0.4)

Annual reports describing the progress and perspectives of the nature policy plan, as prescribed by the National Nature Ordinance, were not produced due to limited capacity within the involved institution. Because of the lack of island nature plans (with the exception of Bonaire) there were no reports either on island implementation of nature policy. Bonaire's nature policy plan was evaluated in 2010 and the report was offered to both the island government and to the (former) MinVSO. This action point is recurrent (reports should be delivered on a yearly basis) and therefore remains an action points for the policy plan 2012-2017.

2.1.5 Reporting for treaty compliance (Action point 0.5)

This action has been fulfilled. This is an ongoing action, and will thus be directed to to the draft list of actions points for the policy plan 2012-2017.

2.1.6 Recommended action points:

- Island Nature Policy Plans (NPP-5 Action Point 0.1)
- Implement Access and Benefit Sharing legislation (NPP-5 Action Point 0.3)
- Provide annual nature policy reports for the Caribbean Netherlands (NPP-5 Action Point 0.4)
- Provide ongoing reporting for treaty compliance (NPP-5 Action Point 0.5)

2.2 General management (Action points 5.1-5.2)

2.2.1 Establish management authority to address treaty and convention agreements (Action point 5.1)

This action point was termed "instellen beheersintantie verdragen" in the action matrix of the NPP-5, and flows from the National Nature Ordinance that requires this authority to maintain records of CITES,

SPAW or CMS listed species kept in captivity, records of import and export of such species and records of exemptions for such species provided under article 78 of the Ordinance. This was accomplished early on by the Netherlands Antilles with the appointment of Eric Newton as official CITES management authority to keep such records of CITES listed species, as well as of SPAW and CMS listed species. Under the new situation for the Caribbean Netherlands the management authority now lies in The Hague with Min EL&I, The RCN Min EL&I unit has signing authority for permits to be issued for the Caribbean Netherlands.

2.2.2 National registry kept by the management organization (Action point 5.2)

This article translates the CITES requirements to keep records of everything that is regulated by CITES, i.e., a registry of CITES I species that are kept in captivity (e.g. a registry of captive lora's, sea turtles etc.), a registry of all import and export occurrences of CITES listed species, and a registry of all recognized breeders/cultivators of CITES listed species. In the NPP-5 it was listed as an important action by which to implement the "Law Grondslagen Natuurbeheer en –bescherming of the Netherlands Antilles". This was in fact achieved. It is a routine task and is directed to the planning period 2012-2017.

2.2.3 Recommended action points:

- National registry kept by the management organization; continue CITES-required registry for the Caribbean Netherlands (NPP-5 Action Point 5.2).

2.3 Management and protection (5.3-5.12)

The islands and surrounding seas contain a variety of natural habitats that fulfill important ecological functions and provide ecosystem services. These include the marine pelagic habitat, coral reefs, seagrass beds and mangroves, saliñas and rain forests, cactus scrub and various types of coastal woodlands. These interconnected and interdependent habitats need to be protected via:

1. an interconnected protected areas network, analogous to the Dutch Ecologisch Hoofdstruktuur (EHS) (National Ecological Network). The EHS is a concept introduced into the Netherlands nature policy planning in 1990 (LNV 1990) that takes into account the need for corridor functions and buffer zones.
2. land-use zoning plans. The need to contribute to land-use zoning plans was indicated in the NPP-5 in the text (section 4.1) but was not stated as an action point in NPP-5.

2.3.1 Designation of protected areas (Action point 5.3)

Over the last 10 years some expansion of formally protected areas in the Dutch Caribbean have taken place and the Man-o-War Shoals Marine Park of St. Maarten was established in 2010.

In 2001 Klein Bonaire was officially added to the Bonaire Marine Park as a rare goat-free area (Campbell and Donlan 2005). In 2008 two no-fishing reserves were legally established on Bonaire as a demonstration project to help counter the effects of overfishing on the reef.

On October 1, 2010, the former Netherlands Antilles, passed and published a National Decree (2010, no. 94), one of its last official acts, designating the Saba Bank as "a protected area in the sense of art. 4 of the SPAW Protocol". The decree prohibits anchoring (by tankers and other large ships) on the entire Bank, both in territorial waters and in the EEZ, with a few exceptions such as fishing boats from Saba, St. Eustatius, and St. Maarten which have a permit to fish on the Bank. The Netherlands reaffirmed this designation with a Ministerial Decree published on December 21, 2010, and will ensure that the area will

be actively managed. A management Plan for the Saba Bank was developed which now only needs to be implemented.

In September 2010 an application was submitted to to the International Maritime Organization (IMO) to designate the Saba Bank as a Particularly Sensitive Sea Area (PSSA) (Meesters 2010). Attaining the PSSA status is important as it will provide the legal basis by which to regulate international shipping and its associated risks, on and around the bank.

Expansion of the network of protected areas is an ongoing action, and is directed to the 2012-2017 planning period.

Table 3. Present terrestrial and marine protected areas for the BES-islands

	Bonaire	**St. Eustatius**	**Saba**
Strict Nature Reserve	Pekelmeer/Flamingo-Sanctuary		
Nature Park	Washington-Slagbaai	The Quill/Boven National Park	Saba National Marine Park
	Lac	Statia National Marine Park	Saba National Park
	Klein Bonaire	Botanical Garden	
	Bonaire National Marine Park		
Nature monuments	Saliñas		
	Caves		
Island Nature Area	Brasil-Labra		
	Terrassenlandschap Midden-Bonaire		
	Zuidelijk Bonaire		
Protected landscape	Rincon		

2.3.2 Potential Ramsar areas (Action point 5.4)

Several of the protected areas of Bonaire have a special international legal status with respect to the RAMSAR Convention (Table 4). The Convention on Wetlands (Ramsar, Iran, 1971) – also called the "Ramsar Convention" -- is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories. The protection of these sites is obligatory.

Table 4. The Ramsar areas of the Caribbean Netherlands (Bonaire).

Area	**Location**	**Surface (ha)**
De Slagbaai	Bonaire	90
Gotomeer	Bonaire	150
Lac	Bonaire	700
Pekelmeer	Bonaire	400
Klein Bonaire island and surrounding sea	Bonaire	600

An action point in NPP-5 was to designate new wetlands under Ramsar (JanKok and Janthiel in Curaçao). This action point was not completed due to problems in decision making. In addition, key stakeholders in Curaçao were unwilling to tackle terrestrial legislation and establish Ramsar sites. For the Caribbean Netherlands establishing new Ramsar-designated sites is not a priority as the most important sites (all on Bonaire) already have this status. The priority will be to improve the management of these sites. This action point needs to be adjusted in the 2012-2017 planning period.

2.3.3 Network of national parks (Action point 5.5)

The National Nature Ordinance required that the Nature Policy Plan contain a list of National Parks. The requirements for the status of National Park were specified in the Policy Paper "Outline of Environment and Nature Policy of the Netherlands Antilles 1996-2000" (Contourennota van het milieu- en natuurbeleid van de Nederlandse Antillen 1996-2000), which gave rise to the Nature Policy Plan. In 1998 two protected areas were designated as National Park by Ministerial Decree based on those criteria. These were the Saba National Marine Park and the Quill-Boven National Park. This was followed by designation of National Park status for the St. Eustatius Marine Park in 2007.

The Nature Policy Plan also sought official registration of the National Parks under the relevant international conventions, in this case the SPAW Protocol. This resulted in two National Parks, The Quill/Boven National Park on St. Eustatius and the Bonaire National Marine Park, to be among the first nine protected areas in the Caribbean to be officially recognized by the SPAW protocol in October 2010. The action point is ongoing and is directed to the 2012-2017 planning period.

2.3.4 Designate protected species (Action point 5.6)

In 2000 the Inter-American Sea Turtle Convention (IAC) was ratified by the Netherlands Antilles and came into force in 2001. The registration of CITES protected species (appendix I) in captivity was achieved for Curaçao and Bonaire where most CITES-listed species were being kept. On Saba and St. Eustatius this was much less urgent as there was less than a handful of cases of people owning CITES I species there. This registration is required by law but also intended to enable people to keep long time pets such as parrots.

Bonaire adopted an Island Ordinance in 2010, specifying a list of protected species at the insular level. Although St. Eustatius also has a list of legally protected species this list needs to be updated and linked to the National Nature Ordinance. Saba has a draft list of species that should be protected but has not yet adopted the necessary legislation. This action point was thus only partly achieved. The National Nature Ordinance and now the "Nature Conservation Law BES" provides the option for all islands to have a list of protected species, beyond those protected by international agreements such as SPAW and CMS. Species listed under CITES appendix I, SPAW annex I and II and CMS are also granted full protection under the Nature Conservation Law BES. The action point is directed to 2012-2017.

2.3.5 Compose tools for species identification (Action point 5.7)

Development of species identification tools for the experts, NGOs and Customs Department as an aid in species identification was not achieved due to limited funding. Availability of such tools is important for effective enforcement and are directed to the 2012-2017 planning period.

2.3.6 Species database (Action point 5.8)

MINA, in consultation with Carmabi commissioned the design of a national biological database to make information more accessible. Subsequently CARMABI was commissioned to fill the data base. By the end of 2010 just over 4000 species had been added to the database. The “Dutch Caribbean Biodiversity database” can now be viewed at: http://www.dcbiodata.net/explorer. This database needs further development but is a good starting point. The general need for a modern and functioning knowledge and information system is currently being addressed more fully by the Ministry of EL&I.

2.3.7 National Red List of endangered species (Action point 5.9)

This action was completed, and the national Red list of endangered species was on the MINA website, which alas, now no longer exists. For the Caribbean Netherlands this list should be included in the biodiversity database IMARES and Alterra is working on currently. The DCBiodata.net website can now also give a list of species based on their IUCN red list status, however, this does not include species that may only be endangered or vulnerable locally (e.g. Saba Black Iguana). This action item is directed to the 2012-2017 planning period.

2.3.8 Pilot project management model for ecosystems (Action point 5.10)

The key ecosystems of the islands, be they marine or terrestrial are generally tightly-packed with species and complex. Therefore an integrated approach in nature policy that spans the full range of concerns, environmental, social and economic, is essential. The need for an integrated approach that includes sustainable human use is even more essential in the light of the great importance that nature and ecosystem services play in both social and economic well-being for the inhabitants of the islands.

The ecosystem-based approach was expressed as a policy objective in the NPP-5. However, the translation into specific action points and implementation proved difficult. Due to limited capacity this action item was only partly achieved. For Rincon (Bonaire) a project was developed, but due to illness of the project manager not (yet) completed. This action item is directed to the 2012-2017 planning period.

2.3.9 Management plan for Saba Bank (Action point 5.11)

This action item is achieved. A management plan has been drafted and now needs to be implemented. The implementation of the Saba Bank Management Plan is directed to the 2012-2017 planning period.

2.3.10 Management regulations species CITES II and SPAW III (Action point 5.12)

This action item was not achieved due to limitations in funding. The role of the Netherlands is to support and facilitate this process but the drafting and implementing the management regulations is an insular responsibility. This item will thus be directed to to the draft list of actions points for the policy plan 2012-2017.

2.3.11 Recommended action points:

- Designation of protected areas (Action Point 5.3)
- Improve the management of current Ramsar sites (Adjusted action point 5.4 Potential Ramsar sites)
- Network of National Parks (Action point 5.5)
- Designate protected species (Action Point 5.6)
- Compose tools for species identification (Action point 5.)7

- Species database (Action point 5.8)
- National Red List of endangered species (Action point 5.9)
- Pilot project management model for Ecosystems (Action point 5.10)
- Management Plan Saba Bank (Action point 5.11)
- Management regulations species CITES II and SPAW III (Action point 5.12)

2.4 Science (6.1-6.5)

2.4.1 Scientific research (Action point 6.1)

The specific science goals of the NPP-5 have by and large not been achieved (due to lack of funding). Nevertheless, many advances in scientific knowledge were achieved fortuitously via initiatives outside the NPP-5 plan.

Important advances towards increased scientific insight include completion of preliminary biological inventories and fishery surveys of the Saba Bank. This was made possible by funding and expertise provided through a cooperative program with Conservation International (U.S.A.) and some funding from the Dutch Ministry of Transport and Water. The cooperation with Conservation International also made possible some exploratory surveys of the vegetation of Saba and St. Eustatius by the New York Botanical Gardens, contributing much new knowledge and leading to a unique virtual herbarium of the plants and lichens of Saba. Finally the cooperation with Conservation international also led to an initial surveys of the insects of Saba and St. Eustatius. As an aid towards development of fishery policy, quick scans of the fishery of Bonaire and St. Eustatius were conducted in cooperation with the Department of LVV of Curaçao. Fieldwork for baseline stock assessments of groupers for Bonaire was conducted by Carmabi but the data still need to be analyzed such that results are not yet available.

Unconnected to the nature policy plan, a large number of scientific contributions can be listed for the islands, and again, most of this work was based on outside funding and capacity, based on outside research priorities and agendas, but in some cases initiated by the island Parks to address specific management questions. Yet much basic knowledge remains lacking for the natural resources of the Dutch Caribbean. This is especially so for the Dutch Windward Islands as the focus of most past scientific research was in the Dutch Leeward Islands. Greater interest in the Leeward Islands had been particularly based upon coral reefs which are much better developed around the Leeward Islands. The item is ongoing and is directed to the 2012-2017 planning period.

2.4.2 Netherlands Antilles Coral Reef Initiative (Action point 6.2)

This action point was achieved. NACRI (Netherlands Antilles Coral Reef initiative) is established. Every other year the status of coral reefs is reported. This item is directed to the draft list of actions points for the policy plan 2012-2017 but as part of a monitoring plan.

2.4.3 Inventory and description of ecosystems (Action point 6.3)

This action item was not achieved due to lack of funding. This item is directed to to the draft list of actions points for the policy plan 2012-2017.

2.4.4 Inventory biodiversity Saba Bank (Action point 6.4)

A first rough inventory was accomplished. A well-publicized expedition resulting in discovery of new species, extensive mapping and a fishery baseline catch survey was conducted, in cooperation with Conservation International. This resulted in a series of publications in the online journal Plos One. The inventory of Saba Bank biodiversity is far from complete and this item is directed to to the draft list of actions points for the policy plan 2012-2017.

2.4.5 Inventory local species (Action point 6.5)

This action items was partly addressed through the co-operation program with Conservation International. Botanical surveys on Saba and St. Eustatius and insect surveys on Saba and St. Eustatius were initiated but need to be continued. This item is directed to the draft list of actions points for the policy plan 2012-2017.

2.4.6 Recommended action points:

- Scientific research (Action point 6.1)
- Netherlands Antilles Coral Reef Initiative (Action point 6.2)
- Inventory and description of ecosystems (Action point 6.3)
- Inventory biodiversity Saba Bank (Action point 6.4)
- Inventory local species (Action point 6.5)

2.5 Education and awareness (7.1-7.11)

2.5.1 Education general (Action point 7.1)

This action point was not achieved due to a prolonged period of absence of the communication officer. Basically this can be interpreted as a lack of capacity. This item is directed to to the draft list of actions points for the policy plan 2012-2017.

2.5.2 Training for CITES (Action point 7.2)

This action point was achieved. A training for customs officers was organized on Curaçao in cooperation with CITES and NL customs. Follow-up trainings were also held on St. Maarten and St. Eustatius. Training is an on-going process and should be directed to the new planning period 2012-2017.

2.5.3 Education and awareness on biodiversity and ecosystems (Action point 7.3)

This action point was not achieved due to lack of capacity. This item is not directed to to the draft list of actions points for the policy plan 2012-2017 as a separate item.

2.5.4 Specific education targeting stakeholders (Action point 7.4)

This action point was not achieved due to lack of capacity. This item is not directed to to the draft list of actions points for the policy plan 2012-2017 as a separate item.

2.5.5 Education and awareness on CITES (Action point 7.5)

Flyers were made and distributed. Development of educational and awareness material is an important and on-going issue and an important part of achieving results in any theme. It is directed to the new planning period 2012-2017.

2.5.6 Education and awareness on importation non-endemic species (Action point 7.6)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.7 Awareness campaign for endangered species (Action point 7.7)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.8 Education and awareness on nature in relation to sustainable tourism (Action point 7.8)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.9 Education and awareness on consequences of free roaming livestock (Action point 7.9)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.10 Education and awareness on sustainable fisheries (Action point 7.10)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.11 Programme Environment and Natural History (Action point 7.11)

This action item was not achieved due to lack in capacity. This action items is not directed to the draft list of action items for 2012-2017 as a separate item.

2.5.12 Recommended action points

- Training for CITES (NPP-5 Action Point 7.2)
- Education and awareness CITES (Action point 7.5)
- Assist the islands with the development of communication, education and public awareness (CEPA) strategies and integrate the local plans into a national strategy (i.e. all other action points under this section but not as separate action points)

2.6 Regulations (8.1-8.8)

2.6.1 Adapting the national framework law for nature (Action point 8.1)

The National Nature Conservation Ordinance was successfully amended on several small points to better correspond to various treaties. This action item has been achieved.

2.6.2 Feasibility study for regulating the import of exotic species (Action point 8.2)

This action item has not been achieved due to lack of capacity. It is intricately tied to action point 8.7. This action items is therefore directed to the draft list of action items for 2012-2017.

2.6.3 Contribution to the national law on hazardous substances (Action point 8.3)

This action point was probably mistakenly included in the action plan of the nature policy plan since it falls under environmental policy. Obviously hazardous substances can directly affect endangered species, and remain to be addressed further. This action item is fully left to the Ministry of M&I and is therefore not directed to the draft list of action items for 2012-2017.

2.6.4 Island nature laws (Action point 8.4)

The National Nature Ordinance requires each island to pass its own nature legislation to ensure compliance with international obligations. This action item was partly achieved. Only St. Maarten and Bonaire formulated and passed island nature ordinances.

In 2003, St. Maarten passed an island nature ordinance that conformed to the National Nature Conservation Ordinance, but as yet without any implementing Decrees. In 2005 Bonaire also passed a nature ordinance based on the National Nature Ordinance, and in 2010 followed this with three implementing Decrees. Although Saba has a marine environment ordinance, it lacks legislation to protect biodiversity on land. St. Eustatius has both marine and terrestrial nature legislation but both are outdated and, like the Saba marine environment ordinance, not based on the National Nature Ordinance. The function of RCN-EL&I in this is to assist and facilitate the islands to adopt island legislation compliant with the current Nature Conservation Law BES. This action item is directed to the draft list of action items for 2012-2017.

2.6.5 Implementing island nature laws (Action point 8.5)

This action item has partly been achieved. Only Bonaire actually passed several “implementing decrees” (“Uitvoeringsbesluit”) for its nature ordinance. It is also the only island that has an updated list of protected species through one of the implementing decrees. St. Eustatius does have a list of protected species but it is outdated and not connected to the National Nature Ordinance. In 2009 Curaçao upgraded its fishery rules and regulations for its territorial waters (A.B. 2009, No. 48) and these were implemented through executive order or a so-called “Eilandsbesluit houdende algemene maatregel” (EBHAM) in September 2010, with important restrictions on the use of fish traps and gill nets. This action items is directed to the draft list of action items for 2012-2017.

2.6.6 Guidelines for EIA legislation (Action point 8.6)

On small islands, large development projects invariably have environmental consequences in other areas of the island ecosystem, even when they take place in areas designated for such development in land-use plans. Therefore, the need for scientifically sound, objective and integrated Environmental Impact Assessment (EIAs) is essential for all projects, including seemingly small projects that may set important precedents. Today, assessments are sometimes requested by the government on a case by case basis, but only Bonaire through one of the implementing decrees of its nature ordinance has the legal framework to guarantee an integrated, objective and scientifically sound assessment of the broader ramifications a project may have for the island ecosystem.

General guidelines for EIA regulation were drafted within the National Environmental management Ordinance (Landsverordening Grondslagen Milieu) but this law was never passed. In the near future the "VROM Wet BES" (Housing, Spatial Planning and Environment Law BES), which was based on the National Environmental Management Ordinance, is expected to be adopted by the Netherlands. This new law will regulate EIAs for the three Caribbean Netherlands islands.

This action item was partly achieved. Since it will in the future be addressed through the Ministry of I&M it is not directed to the draft list of action items for 2012-2017.

2.6.7 Legislation on the import of invasive plants and animals (Action point 8.7)

A species is invasive when it enters an ecosystem outside of its historic or native range, establishes itself and interferes with local ecological processes. Common sources of invasive species introduction include ballast water, aquaculture escapes, imported plants and livestock, the pet trade, and accidental and/or intentional introductions. The main consequence on the ecosystem that is affected by invasive species is loss of biodiversity (Millennium Ecosystem Assessment 2005). The impacts of invasive species can be economically devastating (Pimental et al. 2001) and are ecologically complex, operating at ecosystem, habitat, community, species and genetic levels. After habitat destruction, invasive species represent the single greatest threat to global biodiversity and are a costly burden to agriculture worldwide, with invasive weeds alone responsible for some 13% reduction of agricultural production (Kaiser 1999, Mooney 2001). This action item was not achieved due to problems in decision-making process. This action items is directed to the draft list of action items for 2012-2017.

2.6.8 Framework law for groundwater-management (Action point 8.8)

This action item was not achieved due to problems in the decision-making process. Groundwater extraction is an issue on Bonaire and St. Eustatius. However, this will now fall under the responsibility of the Ministry of I&M and hence this item can be dropped from list of action items for nature policy for 2012-2017.

2.6.9 Recommended action points

- Feasibility study for regulating importation of exotic species (Action point 8.2)
- Island nature laws (Action point 8.4)
- Implementing island nature laws (Action point 8.5)
- Legislation on importation of invasive plants and animals (Action point 8.7)

2.7 Enforcement (8.9-8.13)

2.7.1 Enforcement treaties general (Action point 8.9)

The national government has a responsibility to enforce international agreements, partly this is delegated to the islands through their own island level legislation, but final responsibility for implementation remains with the National Government which is required to step in and enforce international agreements if they are infringed upon. In one case of impending violation of the Ramsar Convention by the island of Bonaire, the national government, advised by MINA, stepped in and annulled the island decision. This action item was thus achieved. Since this issue requires constant ongoing vigilance the action item is directed to the draft list of action items for 2012-2017.

2.7.2 Enforcement CITES (Action point 8.10)

This action item has been achieved. This action item is on-going and is directed to the draft list of action items for 2012-2017.

2.7.3 Registration CITES, Bonn, SPAW-species (Action point 8.11)

This action item was achieved partly. CITES species are only registered on Bonaire and Curaçao. This action items is directed to the draft list of action items for 2012-2017.

2.7.4 National legislation regulating enforcement officers (Action point 8.12)

This action item was achieved through Ministerial Decree appointing Customs as the enforcement agency for CTES-related matters. However, due to the constitutional changes this needs to be revisited and is directed to the action items for 2012-2017.

2.7.5 Island legislation regulating enforcement officers (Action point 8.13)

This action item was not achieved due to problems in decision-making process. This action item is directed to the draft list of action items for 2012-2017.

2.7.6 Recommended action points:

- Enforcement treaties general (Action point 8.9)
- Enforcement CITES (Action point 8.10)
- Registration CITES, Bonn, SPAW-species (Action point 8.11)
- National legislation regulating enforcement officers (Action point 8.12)
- Island legislation regulating enforcement officers (Action point 8.13)

2.8 Cooperation (9.1-9.10)

Cooperation is necessary at various levels and between various sectors. Cooperation can take place at the global level, regional level, the Kingdom level and at the insular level. Cooperation is necessary between elected officials, government departments, NGO and private sector, stakeholders and the

general public. Topics may vary from (non-controversial) science and education, to (controversial) rules and regulations and may or may not be costly. Finally, cooperation can be informal or highly formal in nature.

In the international scene, the Netherlands Antilles took a pivotal role in regional cooperation for the environment, particularly with respect to the Cartagena Convention. The Netherlands Antilles also became actively involved in the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC). Conservation within the Netherlands Antilles was stimulated via several platforms.

2.8.1 National commission on nature management and conservation (Action point 9.1)

This action item was partly achieved. The commission met once. The new "Nature Conservation Law BES" differs from its predecessor the National Nature Ordinance in that it does not direct the establishment of a Nature Commission, but only provides the option of doing so. Consequently there is still a question on whether to establish such a commission or not. This needs further discussion and is therefore referred to the list of action items 2012-2017.

2.8.2 Scientific authority for formal advisory function (Action point 9.2)

The scientific authority represents a group of officially appointed experts that serve to advise on whether specific exports of certain species endangers those species and on the identification of species (especially in the context of CITES. The scientific authority was established, with representatives from all islands. After the constitutional changes CARMABI was assigned as the new scientific authority (2010). The action item is achieved.

2.8.3 Nature forum (Action point 9.3)

This action item was achieved. The nature forum resulted in an NGO plan to join forces in a Dutch Caribbean Nature Alliance, DCNA which then became the platform for nature conservation focusing more on long term sustainable funding and developing joint projects and products, and to a lesser extent helping to develop nature conservation policy. This item is not referred to the new plan period.

2.8.4 Partnership for nature (Action point 9.4)

This action item was not achieved due to lack of capacity (illness of staff). This item is not referred to the new plan period.

2.8.5 Forum for environment and nature (Action point 9.5)

This action item was not achieved due to lack of support among stakeholders. This item is not referred to the new plan period.

2.8.6 Ramsar agreements with Venezuela (Action point 9.6)

This action item was partly achieved on an informal basis. This is a valuable objective but the international political situation was not conducive to implement the action. The action item is directed to the draft list of action items for 2012-2017.

2.8.7 Ramsar agreements with manager Flamingo Sanctuary (Action point 9.7)

This action item was partly achieved on an informal basis. Research has shown that the endangered and regionally critical breeding terns of the salt complex could probably easily benefit from a few simple management measures (Debrot et al. 2009). These should definitely be pursued and this item is directed to the draft list of action items for 2012-2017.

2.8.8 Extending cooperation agreement LNV-VSO (Action point 9.8)

This action item was achieved. The latest agreement is from period 2006-2009. This item is no longer relevant to the current situation. However, in the new constitutional situation co-operation between the Ministry of EL&I and the different entities of the Dutch Caribbean should be pursued. This item is directed to the draft list of action items for 2012-2017.

2.8.9 Regional and international cooperation (Action point 9.9)

This action point has been achieved. In the international scene, the Netherlands Antilles took a pivotal role in regional cooperation for the environment, particularly with respect to the Cartagena Convention. The Netherlands Antilles also became actively involved in the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC). Furthermore active participation within SPAW, ICRI regional meetings, WHMSI and regional RAMSAR initiatives takes place. This is an ongoing item and is directed to the draft list of action items for 2012-2017.

2.8.10 Formal nature cooperation NA en Aruba (Action point 9.10)

This action item was not achieved due to lack of institutional capacity on Aruba. Integration of management with Aruba is valuable goal, particularly with respect to the joint and coordinated management of the EEZ. Now, under the new constitutional arrangements, the same holds for Curaçao and St. Maarten. Even in terms of connectivity of terrestrial biodiversity both for flora and fauna, and issues of invasive species, inter-insular cooperation is critical. Therefore, this item is also directed to the draft list of action items for 2012-2017.

2.8.11 Recommended action points:

- Commission nature management and conservation (Action point 9.1)
- Ramsar agreements with Venezuela (Action point 9.6)
- Ramsar agreements with manager Flamingo Sanctuary (Action point 9.7) see also Action Item 5.4
- Extending cooperation agreement EL&I--island governments (Action point 9.8)
- Regional and international Cooperation (Action point 9.9)
- Formal nature cooperation between Kingdom partners (Action point 9.10)

2.9 Financial instruments (10.1-10.5)

2.9.1 Fiscal arrangements favouring sustainable development (Action point 10.1)

This action item was not achieved due to lack of capacity. This is most relevant to situations with much private land ownership (Saba, St Eustatius) and is directed to the draft list of action items for 2012-2017.

2.9.2 Feasibility study Trust Fund (Action point 10.2)

This action item was completed and furthermore used to set up a trust fund under DCNA.

2.9.3 CITES permitting system (Action point 10.3)

This action item was achieved and valid permits for export of endangered flora and fauna can be issued.

2.9.4 Fee system CITES permits (Action point 10.4)

This action item was not achieved due to problems in decision making and is directed to the draft list of action items for 2012-2017.

2.9.5 KNAP-fund for small nature projects (Action point 10.5)

This action item was successful, during the period of 2000-2007 when the fund ended, a total of 32 projects had been funded. Considering its success a similar funding tool for small nature projects should be considered in the new constitutional situation. This item is directed to the draft list of action items for 2012-2017.

2.9.6 Recommended action points

- Fiscal arrangements favoring sustainable development (Action point 10.1)
- Fee system CITES permits (Action point 10.4)
- Small nature projects Fund (Action point 10.5)

2.10 Overview Action Items NPP-5 recommended for NPP-2012-17

The NPP-5 was ambitious but, all told, by 2010, a great deal could be reported as having been achieved, notwithstanding a serious and chronic lack of funds and manpower. Nevertheless, a significant number of action items remain that need to be completed.

Our overall assessment of the 61 action points listed in the NPP-5 indicates that 33 have been achieved to a high degree of completion between 2001 and 2010. Based on this review, 40 action points are recommended to be carried over directly from or correspond closely to the NPP-5 for the new planning period of 2012-2017. These can all be found in tables 1 and 2 but for ease of overview they have been accumulated separately here as well (Table 5).

From an examination of Table 1, it is evident that for less controversial action points such as “reporting”, drawing up “plans”, doing “research” and “education”, it is lack of capacity and funding (C and F) that were indicated as the main problems. In contrast the more controversial topics regarding “rules and regulations”, “cooperation”, and “financial instruments” largely failed to be achieved due to problems in the decision making process. This was to be expected and is now also reflected in the results. Basic challenges of capacity, funding and decision-making are recurrent issues.

Table 5. Overview of action point evaluated and brought forward from the Nature Policy Plan 2001-2005.

No.	Policy area/Action point	NPP-5 No.
	General policy and reporting	
1	Island Nature Policy Plans	0.1
2	Implement Access and Benefit Sharing legislation	0.3
3	Provide annual nature policy reports for the BES	0.4
4	Provide ongoing reporting for treaty compliance	0.5
	General Management	
5	Continue CITES-required registry in the BES	5.2
	Management and protection	
6	Designation of protected areas	5.3
7	Improve the management of current Ramsar sites	5.4
8	Network of National Parks	5.5
9	Designate protected species	5.6
10	Compose tools for species identification	5.7
11	Species database	5.8
12	National Red List of endangered species	5.9
13	Pilot project management model for Ecosystems	5.10
14	Management Plan Saba Bank	5.11
15	Management regulations species CITES II and SPAW III	5.12
	Science	
16	Scientific research	6.1
17	Netherlands Antilles Coral Reef Initiative	6.2
18	Inventory and description of ecosystems	6.3
19	Inventory biodiversity Saba Bank	6.4
	Education and awareness	
20	Assist the islands with the development of communication, education and public awareness (CEPA) strategies	7.1, 7.6-7.10
21	Training for CITES	7.2
22	Education and awareness CITES	7.5
	Regulations	
23	Feasibility study for regulating importation of exotic species	8.2
24	Island nature laws	8.4
25	Implementing island nature laws	8.5
26	Legislation on importation of invasive plants and animals	8.7
	Enforcement	
27	Enforcement treaties general	8.9
28	Enforcement CITES	8.10
29	Registration CITES, Bonn, SPAW-species	8.11
30	National legislation regulating enforcement officers	8.12
31	Island legislation regulating enforcement officers	8.13

	Cooperation	
32	Commission nature management and conservation	9.1
33	Ramsar agreements with Venezuela	9.6
34	Ramsar agreements with manager Flamingo Sanctuary	9.7
35	Extending cooperation agreement LNV-VSO	9.8
36	Regional and international Cooperation	9.9
37	Formal nature cooperation between Kingdom partners	9.10
	Financial Instruments	
38	Fiscal arrangements favouring sustainable development	10.1
39	Fee system CITES permit	10.4
40	Funding mechanism for small nature projects	10.5

3 Special conservation issues

Since the NPP-5 was written and implemented, many basic goals with respect to nature policy have been achieved. At the same time global change has meant that new threats to nature have been forcefully coming to the fore-front. Effective nature policy is constantly developing. Therefore, it is not surprising that several key threats to nature in the Caribbean Netherlands were not addressed in the NPP-5. These need to be addressed in the new planning period 2012-2017.

One that is particularly acute in the Caribbean Netherlands and must be dealt with is the grazing issue. This topic was not discussed in any detail and not translated into a point for action in the NPP. It was only mentioned as a subject for awareness project that ultimately was not realized. The same is true for the issues of nutrient leaching into coastal waters which today is recognized as being the greatest (local) risk factor for coral reef health, as well as the issues of overfishing, climate change, oil pollution and tourism. None of these were addressed in the old NPP-5 but require directed attention during the new planning period.

While the direct responsibility for development of policy with respect to several of the threats summed up in this section do not lie strictly with the Ministry of EL&I, they are nevertheless issues that are often critical determinants of ecosystem health. Because tropical, small-island ecosystems are particularly sensitive, inter-connected and vulnerable they require an integrated approach to dealing with the many threats. For an integrated approach, the nature policy plan must allow for and count on contributing to such initiatives as the development of contingency plans, baseline pollution studies, sensitivity maps, and a new vision for sustainable tourism**.** While many of these topics largely regard island government level policy development and implementation, there remains an important role for the Ministry and RCN in terms of facilitation, support, and regulation where possible. The key issues at hand are briefly framed below.

3.1 Feral livestock

Overgrazing by feral or free roaming cattle is a serious problem on all three islands of the Caribbean Netherlands. Even though it is illegal to let livestock roam, this has become the accepted practice of

husbandry on all three islands. Aside from invasive species, overgrazing by livestock is the single greatest threat to terrestrial biodiversity in the Caribbean Netherlands (Fig. 1). It has been known to be an issue for a long time (Coblentz 1980, Brink, 1998, Debrot and Sybesma 2000, Freitas et al. 2005). Grazing takes place in conservation areas owned by the national parks organizations as well as on public lands. It is easier to address in the areas owned by national park organizations than on public lands. It has effectively been addressed on Curaçao in the Christoffel park as well as on the islands of Klein Curaçao and Klein Bonaire (Campbell and Donlan 2005).

The best perspectives for addressing the overgrazing issue in the Caribbean Netherlands are inside the Washington Slagbaai Park in the section of Slagbaai, which is privately owned and where the park management has full authority to deal with the problem. Preparations have been made for eradication by separating Slagbaai from Washington section with a perimeter fence to prevent goat movement, and experienced volunteers to guide this effort have been identified. A recent review by Staatsbosbeheer stresses the urgent need to address this issue for the park (Blok 2010).

Figure 1. Feral grazers endanger the population of a key-stone food source in the Washington-Slagbaai National Park--by gnawing-off the bark of adult candelabra cacti (Photo: A. Debrot).

Elsewhere (on public lands) in the Caribbean Netherlands the issue of feral livestock remains a more complex issue. Attempts to address this issue island-wide on Saba and St. Eustatius failed to muster sufficient support and had to be postponed. A phased approach will be needed. Possibilities include the buy-out of goats, fencing off of areas, developing and demanding other and better possibilities for fodder production. In the end the issue is completely dependent on the political will on the island to address the problem, and it comes down to public awareness campaigns and demonstration projects to change ingrained attitudes.

3.2 Nutrients in groundwater and surface run-off

Notwithstanding all management successes, the reefs of Bonaire are under high pressure and have been undergoing a steady decline since the 1970 (Bak et al. 2005, Sommer et al. 2010, Sommer et al. 2011). Aside from overfishing recent research has made it increasingly clear that nutrients of anthropogenic origin are one of the greatest local problems to impact coral reefs (Metcalf et al. 2011), including those of Bonaire (IUCN 2011). In recent years significant attention has been devoted to this issue and at present a sewage treatment plant is under construction for Bonaire that partially addresses the sewage problem. As coastal development continues and the use of septic tanks is widespread on the island, the problem is far from solved and probably will continue to increase in the coming years. The challenge will be to design a monitoring protocol that is able to assess the effectiveness of the sewage treatment plant. It is also important to study and understand the natural processes affecting nutrient concentrations discharged into different geological formations (volcanic versus carbonate rock). The topic addressing the input and fate of nutrients in the ecosystem deserves special focus in the new NPP. This problem is probably much less acute on the islands of St. Eustatius and Saba due to the smaller scale of development and (possibly) due to differences in geology.

3.3 Overfishing

In the Dutch Caribbean the impacts of overfishing are mainly within the Territorial waters close to the coast and often within the marine park boundaries. Within the EEZ overfishing may be a problem on the Saba Bank, but a large part of this fishing occurs within the Territorial waters of Saba.

Legislation is currently in place stating that all fishermen on the Saba Bank must report species composition and quantities of catches, their effort, fishing location and fishing gear used to the Fisheries Commission. However, the required infrastructure to collect and analyze this information is not yet in place. Improvement of capacity (science, policy, compliance) in the near future is important to manage and maintain a sustainable fishery sector.

Preventing overfishing of large migratory pelagic species such as wahoo, dolphin fish, tuna and swordfish in the EEZ can only be accomplished through international co-operation in fishery management organizations like ICCAT (International Commission for the Conservation of Atlantic). Considering the small and negligible impact of local artisanal fisheries on these pelagic fish stocks, the Netherlands Antilles have generally sold their fishing rights to other nations. As current markets for such fish are strictly local, and the real prospects for developing a significant own pelagic fishery are limited, the added value of participating in a regional FMO as ICCAT is debatable. Nevertheless, the pelagic fisheries are of local importance and deserve to be monitored.

Until now the marine parks of the Dutch Caribbean have generally had no legal instruments with which to control or limit gears or effort in fisheries. However, coral reef ecosystems are able to withstand only low fishing levels (Coblentz 1997) and are prone to overfishing and stock-collapse. Such a collapse of large commercial reef fish stocks has taken place throughout the Caribbean Netherlands (e.g Meesters et al. 2010; Debrot and Criens 2005). Studies by IUCN on the reefs of Bonaire also indicate overfishing as a key threat to the reef ecosystem (IUCN 2011), especially since coral reef fish populations also face a combination of other serious threats, such as the deterioration of the coral reef habitat itself, particularly in shallow waters where nursing areas among branching corals have completely disappeared. Overfishing further greatly reduces the attractiveness of the reef to dive tourism in general. This problem can be best tackled by banning destructive or overly efficient fishing methods and by using area closures or so-called fish reserves, which have been proven to improve and restore reef fish stocks and catches (Meesters et al. 2010). In 2008 Bonaire declared two small fish reserves as a pilot to explore this method for Bonaire. Traditional fishing targeting breeding aggregations of groupers is a major problem on the Saba Bank (Meesters et al. 2010). Measures are urgently needed to protect breeding aggregations of commercially important species. This is a key subject to address in the new NPP.

3.4 Climate change

New insights indicate that, contrary to 10 years after the first nature policy plan was drafted for the Caribbean Netherlands, there is broad international consensus that large-scale climate change can no longer be averted or reversed. While the severity of the expected impact still varies according to the model used, and recent measurements suggest that current models underestimate both impacts and rate of change, there can be little doubt that climate change will have massive impacts on nature this century and will create enormous challenges and costs to society, especially in developing countries and in the Caribbean (ECLAC 2009, Simpson et al. 2010). These islands are in the front lines of vulnerability to climate change. The Intergovernmental Panel on Climate Change, better known by its acronym IPCC, among others predicts hotter air and sea surface temperatures (approx. 1,4 - 3,2ºC), sea-level rise (approx. 0,18 - 0,59 m), ocean acidity increase, precipitation changes, increased tropical storms, hurricanes and other extreme weather events. This all poses a severe threat to the ecosystems of the islands, as well as to the benefits the inhabitants derive from them, especially in the form of coastal defense and income from tourism.

The threat of climate change is high regardless of the fact that the Caribbean region itself has contributed little to the release of greenhouse gases. Though local efforts alone can never solve this global problem, they can substantially minimize the negative impacts. The key words here are ‘resilience management’, meaning increasing the ecosystems capacity for adaptation to climate change. In practice this means the reduction of man-induced local stress factors as much as possible. As local biodiversity and local economy are strongly linked, this will be beneficial for the well-being of the island communities as well.

A policy for implementation of climate-change adaptation measures are clearly needed in the Caribbean Netherlands, to improve ecological resilience and reduce costs and risks to society. Such a policy should form part of the new Nature Policy Plan. If measures are not taken, sooner or later the islands will pay a high environmental and economic price. In this respect, Saba and St. Eustatius are better prepared, as these islands have more practice in coping with and recovering from hurricanes, which are much more frequent in the Windward than in the Leeward Dutch Caribbean. An overview of issues as it relates to the Dutch Caribbean has been produced and can serve as a starting point for policy development in this area (Debrot and Bugter 2010).

3.5 Shipping and oil spills

Pressures on natural resources related to shipping are for example pollution, risks of collision with other ships and whales, and risk of environmental calamities (oil spills). The oil industry is an important sector in the Caribbean Netherlands. Oil transshipment facilities are found on Bonaire and St. Eustatius and represent economically important industries. At the same time these industries entail a major risk to the environment as well as the tourist industries on which the islands also heavily depend. Cleanups may be expensive or impossible. Oil spills are frequent, and pollute beaches with highly persistent oil and tar contamination.

Shipping routes, seasonal currents and winds, in combination with ecosystem with high nature values, contributes to an unknown risk with potential high impact. A map of sensitive habitats within or near to the EEZ, in combination with shipping activities can result in a map to identify risk-prone shipping issues and habitat areas. This mapping should be developed in order to prepare for proper disaster plans. This can then be used as input to develop a disaster preparedness plan to deal with the most probable scenarios, all building upon the regionally available capacity and cooperation. Another main priority is to clarify or designate the shipping channels that should be used near the Saba Bank.

The maritime management ordinance for the Caribbean Netherlands “Wet Maritiem Beheer BES” requires the Ministry of Infrastructure and Environment to have an oil and calamities contingency plan for the Caribbean Netherlands. Such a plan is not yet in place. Sensitivity maps are also not yet available. In these matters, which fall outside the responsibility of the Ministry of EL&I, the nature policy plan should allow for contributions from the nature sector to the development of contingency plans, baseline pollution monitoring studies and sensitivity maps.

3.6 Other pollution

More and more global environmental contaminants are proving to have far-reaching, pervasive and often profound impacts on nature and ecosystem services. Yet studies on environmental contaminants and their effects, as well as policies to address the issue have lagged far behind. A recent review of the ecosystem impacts of pollution in the Caribbean attests to the paucity of base-line data for the region (Gil-Agudelo and Wells 2011), a situation which also applies to the Caribbean Netherlands .

Several scattered and largely exploratory draft studies exist which point to serious problems of contamination in nature in the BES. The magnitude of the problem is not appreciated or understood and as a consequence the urgency to actually do something about it is also low. Key need is to conduct baseline studies of environmental contamination. Only the actual presence and effects of contaminants in biological tissues of fish or lobsters, or marine mammals, and perhaps in sediments is an issue for EL&I and can (should) be included.

3.7 Marine invasive species

In the Netherlands Antilles, invasive species have received sporadic attention but no formal publication exists reviewing the species concerned and documenting their occurrence and distribution (Fig. 2). In contrast the invasive alien species of all French OR and OTC’s have recently been inventoried and plans have been drafted documenting population status and distribution, pathways and methods of control. Particularly little is known or documented on the status of marine invasive species in the Caribbean

beyond a few instances (e.g. green mussel). Indeed, a 2003 compilation listed 552 invasive species in the insular Caribbean, only 18 of which were marine (Kairo et al. 2003). However, a more recent survey identified a total of 118 marine invasive species in the Caribbean that included 39 fish and 31 arthropod species (UNEP 2006).

Figure 2. The invasive lionfish has spread through the Caribbean like wildfire. (Photo: D. Slijkerman)

3.8 CEPA Strategy

Policy-makers and biodiversity managers must deal with a vast array of external audiences and stakeholders, many of whom are not concerned with conservation. To at best reverse and at least mitigate detrimental human impacts on ecosystems, policy-makers and managers of natural resources must manage change in perceptions and actions. Without Communication, Education and Public Awareness (CEPA), biodiversity experts, policy makers and managers risk continuous conflicts over biodiversity management, ongoing degradation and loss of ecosystems, their functions and services. CEPA provides the link from science and ecology to people's social and economic reality (Hesselink et al. 2007). Therefore, CEPA goes well beyond the traditional "PR" or Public Information functions in that it ties its output (that which is delivered) closely to the biodiversity and conservation goals that need to be achieved.

It must be kept in mind that environmental issues in the Dutch Caribbean receive a great deal of media attention in the course of normal operations of the many NGO's. There may already be overkill in this area. The material produced is readily published and televised. Access to and cooperation with the media is excellent. In addition, the public is relatively well educated and well informed. The added value of more "environmental noise" is doubtful. Therefore CEPA efforts should be directed through the islands in order to strengthen them and enable them to be as effective as possible.

On the other hand, in the new situation of the Caribbean Netherlands there is a clear need for a CEPA program from the National Office focused on the Netherlands. A communication plan directed at the general public and at members of parliament is needed. Because this is a common goal for the National

Office EL&I unit, the island policy offices, park managers and the DCNA, a common strategy with coordinated actions should be developed.

3.9 Biological monitoring

Aside from national responsibilities that the Kingdom of the Netherlands holds for monitoring nature and biodiversity in the Caribbean Netherlands, the Netherlands also has international obligations stemming from its participation and membership in global and regional environmental treaties, as well as those responsibilities for Caribbean regional treaties that were entered into by the Netherlands Antilles (EL&I 2010; Jongman et al. 2010). In this, monitoring figures importantly.

Monitoring is a complex and expensive science, with many potential pitfalls (Stout 1993). Many questions need to be addressed such as the purpose of monitoring, what to monitor, how frequent, sample size, precision and accuracy, test power to detect trends and differences, the distinction between cause and effect, and long-term continuity of the project in face of funding shortages and personnel changes. In practice, many monitoring efforts fail because of faulty experimental design and lack of continuity and can form costly time-traps in which much time and effort is wasted collecting data that are never analyzed or which provide no conclusions or solutions, because of one or more shortcomings.

An advanced network of monitoring, data storage and data sharing like in the Netherlands is lacking for the Caribbean Netherlands. To date many environmental and biological data have been collected, but no central data coordinating unit has been set up to guarantee the availability of these data to stakeholders and interested parties. Very often these data and studies are widely scattered and hard to access by the manager or policy decision maker. Most of the collected data are presently stored in the Netherlands.

The need for ecological monitoring has been recognized by all parties and at present is a topic being worked out by EL&I in consultation with the island governments, DCNA and the park organizations (Fig. 3).

IMARES is project leader in a multi-departmental Wageningen University project to develop a functioning biodiversity information system that would include monitoring data and would provide access to data and studies urgently needed for basic policy needs and in the context of adaptive management so as to be able to assess the effectiveness of management actions.

For the Antillean islands there is an urgent need for much baseline information that for most developed nations seems common place. The fact is that many of the most elementary biological inventories have not been done, or at best superficially. Data are necessary on the distribution, abundance and dependencies of commercial fish species, coral reefs, seagrass stands, birds, sea turtles, marine mammals, terrestrial habitats etc., but just as important are data on human use of the marine and terrestrial environment, water quality and the presence of potential indicator species. Where these data are available they must be stored and maintained in relational databases and be available to all stakeholders. The use of remote sensing needs to be explored to reduce costs and support monitoring. The data need to be linked to Geographic Information Systems (GIS) and combined with predictive research to allow for evaluation of potential effects of human activities on the marine ecosystem and assist and anticipate management issues.

Knowledge institutes (both in the Caribbean Netherlands and continental Netherlands) in collaboration with park management stakeholders, need to identify (base-line) monitoring and research needs and design a research program, monitoring system, and data sharing structure based on key biotic (e.g.

keystone, target and indicator species) and abiotic indicators of ecosystem health. Where possible this should be analogous or linked to the Dutch framework on monitoring, research and data sharing.

The ministry of EL&I will need to define Statutory Research Tasks or so-called WOT-tasks for the Caribbean Netherlands. This will regard obligations in relation to national and international rules and legislation like the national tasks regarding monitoring and evaluation of nature policy (Natuurbalans) and international tasks concerning the obligations for the different conventions.

Several essential biological inventories need to be completed or conducted in the Caribbean Netherlands. These include completion of the botanical inventory of Saba and St. Eustatius, which has partly been carried out by the New York Botanical Garden, a deep see faunal survey, an inventory of invasive species, further biological surveys of the Saba Bank, including marine mollusks, surveys of insects, scorpions and other invertebrate groups to complete the work that has already been started on Saba and St. Eustatius.

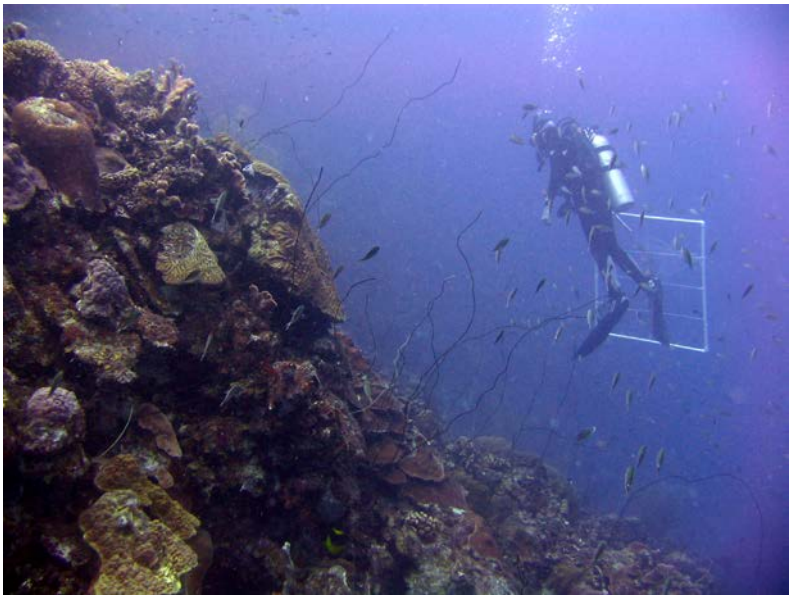

Figure 3. Assessing coral cover using quadrats. (Photo: S. Lema)

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Appendix

Reactie Dienst Ruimtelijke Ontwikkeling en Beheer, Bonaire

Evaluatie Natuurbeleidsplan Bonaire

In juni 1999 heeft de Eilandsraad van het Eilandgebied Bonaire unaniem het Natuurbeleidsplan Bonaire 1999 – 2004 goedgekeurd.

Bescherming gebieden
In oktober 2008 is de Eilandsverordening natuurbeheer Bonaire in werking getreden. Met deze integrale wet kunnen zowel gebieden als soorten worden beschermd, zowel op land als in zee. In september 2010 zijn de bijbehorende uitvoeringsbesluiten van kracht geworden. Dit betekent dat gedurende de periode daarvoor het beleidsinstrument bij uitstek heeft ontbroken om natuurgebieden wettelijke bescherming te kunnen bieden. In oktober 2010 is het Ruimtelijk ontwikkelingsplan Bonaire (bestemmingsplan) van kracht geworden. Hiermee kunnen gebieden planologisch worden bestemd.
Het enige gebied met een eilandelijk wettelijk beschermde status is het Bonaire National Marien Park, inclusief Klein Bonaire. Daarnaast is er een zekere bescherming van gebieden op basis van verdragen.
In 1999 heeft de Minister van Volksgezondheid en Milieuhygiëne het Bonaire Marine Park de status van Nationaal Park verleend.
Vlak voor de eeuwwisseling is Klein Bonaire in het bezit gekomen van het eilandgebied. De wettelijke bescherming als natuurgebied is gerealiseerd door het eiland toe te voegen aan het Bonaire National Marine Park en door een ruimtelijk ontwikkelingsplan vast te stellen.
Over de jaren 2002 tot en met 2004 heeft het Eilandgebied Bonaire subsidie verstrekt aan STINAPA Bonaire met het doel deze organisatie verder te professionaliseren en financiële zelfstandigheid te ontwikkelen. Deze impulsen hebben tot het gewenste resultaat geleid.
Zorgwekkend is de toenemende overbevissing van de koraalriffen. Ook de gestage achteruitgang in kwaliteit van de riffen baart zorgen. Belangrijke oorzaken hiervan zijn bebouwing en andere ontwikkelingen in de kuststrook alsmede belasting door sedimenten en nutriënten als gevolg van de afvalwaterproblematiek en de erosieproblematiek.
Het Project Riolering Kralendijk is van groot belang voor de instandhouding van deze ecosystemen. Op basis van de zogenaamde nutriëntenstudie is een derde behandelingstrap in de plannen opgenomen. De stikstofconcentraties in zeewater blijken hoger te zijn dan verwacht. Daarom heeft het bestuurscollege ingestemd met het Actieplan Afvalwater als overbrugging van de periode totdat de rioolwaterzuiveringsinstallatie in bedrijf komt. De afvalwaterzuiveringsinstallatie op basis van het actieplan is in 2011 gereed gekomen en in bedrijf genomen.
Lac stond jarenlang onder grote druk van nieuwe ontwikkelingen die op gespannen voet stonden met het bijzondere karakter van het gebied. In 2007 heeft de gouverneur op basis van het Ramsar-verdrag een project in het gebied verhinderd.
Per januari 2008 heeft het eilandgebied twee visreservaten in het onderwaterpark ingesteld.
In de afgelopen jaren zijn concept-beheersplannen voor Lac, het Bonaire National Marine Park en Nationaal Park Washington-Slagbaai opgesteld.
Sinds 2003 zijn zes convenanten afgesloten met bedrijven die excursies in grotten aanbieden. In 2005 heeft het eilandgebied de beheersovereenkomst voor het natuurgebied met grotten te Barkadera eenzijdig opgezegd.

Soortbescherming
Met de Eilandsverordening natuurbeheer Bonaire kan op eilandelijk niveau wettelijke bescherming worden gegeven aan plant- en diersoorten.
Door overbevissing is de populatie karkó's vrijwel uitgeroeid. De voorlichting over deze soort en de handhaving van de beschermende wetgeving krijgt de laatste jaren meer aandacht.
Ook de populaties rifvissen hebben in toenemende mate te lijden onder overbevissing.
Op professioneel niveau wordt onderzoek uitgevoerd naar de populatie van zeeschildpadden.
In 2002 zijn op basis van de CITES-regelgeving de inheemse papegaaien (lora's) die als huisdier worden gehouden, geregistreerd en geringd. Sindsdien wordt jaarlijks een voorlichtingscampagne gevoerd om de beschermde status van de soort aan de bevolking duidelijk te maken. Dit maakt het handhaven van de wettelijke bescherming eenvoudiger. Afgelopen jaren is wetenschappelijk onderzoek verricht om tot een beheersplan voor de lora te komen.
Er zijn enkele vleermuizentellingen gedaan. In 2007 heeft Carmabi een derde census uitgevoerd, waarvan de conclusies alarmerend zijn. De populaties van drie van de vier grottenbewonende vleermuizen van Bonaire zijn klein en kwetsbaar. De oprukkende bebouwing vormt een ernstige bedreiging.
Carmabi heeft een landschap-vegetatiekaart voor Bonaire gepresenteerd. De vegetatie op vulkanische grond is eenvormiger dan op kalkgrond. De meeste vegetatie behoort tot de secundaire vegetatie. Dit is het gevolg van de ontbossing in het verleden en de begrazing door geiten en ezels tot op de dag van vandaag. De vegetatie in het zuiden verslechtert, terwijl de vegetatie in het noordelijke deel van Washington-Slagbaai Park verbetert.
De afgelopen decennia heeft de overheid de winning van zand en koraalstenen langs de kusten van Bonaire gedoogd. Dit heeft ernstige gevolgen voor natuur en landschap. Het winnen van zand en koraalstenen duurt nog steeds voort.
Met het oog op meer begrip voor natuur en milieu is de totstandkoming van een bezoekerscentrum voor de natuur van Bonaire zeer wenselijk. Een haalbaarheidsstudie heeft uitgewezen dat de mogelijkheden aanwezig zijn.

Conclusies
Het ontbreken van de Eilandsverordening natuurbeheer Bonaire over een periode van negen jaar en de structurele ondercapaciteit bij de Afdeling Milieu- en Natuurbeleid hebben een negatieve invloed op de beleidsontwikkeling en –uitvoering.
Andere zwakke schakels zijn het ontbreken van vastgestelde beheersplannen voor natuurgebieden, het gebrek aan overheidsvoorlichting en communicatie, het ontbreken van een goed ontwikkeld handhavingsapparaat, de moeizame dataverzameling en het gebrek aan stelselmatige monitoring. Ook zijn onvoldoende financiële middelen beschikbaar gesteld voor de uitvoering van de beleidsvoornemens.
De oprichting van de Dutch Caribbean Nature Aliance (DCNA) is een ontwikkeling waardoor de samenwerking tussen de eilanden en met Nederland wordt verbeterd.
De veranderingen als gevolg van de nieuwe staatkundige structuur kan mogelijkheden scheppen voor het versterken en versnellen van het natuurbeleid en de uitvoering daarvan.

Justification

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The scientific quality of this report has been peer reviewed by a colleague scientist and the head of the department of IMARES.

Approved: Chris Klok
Researcher

Signature:

Date: September 26th 2011

Approved: Floris Groenendijk
Head Department Ecosystems

Signature:

Date: September 26th 2011