Wild4Life
Detailed Programme Overview
The child in nature may well be the most important indicator species of future sustainability

Louv 2008
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Introduction

The goal of this project is to harmonize and enhance existing out-of-school nature education programmes throughout the Dutch Caribbean to produce a standardised, Wild4Life programme which children throughout the Dutch Caribbean will be able to participate in and benefit from. Shaped by desires articulated at the 2010 Education Workshop, informed by the report ‘Out-of-School Nature Education in the Dutch Caribbean: A report on current programmes, comparable initiatives and suggested way forward’, based on elements of the draft management framework for Wild4Life (Appendix 1) and taking into account feedback from the 2011 Education Workshop at Arikok National Park in Aruba, this current document provides a detailed programme overview for Wild4Life.

The intention of the programme overview is to describe the proposed format, structure and content of Wild4Life. This includes key elements such as the proposed sequence of levels of the programme, the target age group categories and the corresponding content or curriculum of the programme in terms of conservation themes, learning activities and related skills, plus proposed contributing partner organisations, and a description of the proposed Wild4Life web-based platform and approach to sharing and exchanges by participants in Wild4Life between islands and with The Netherlands. Recommended next steps are also included in this document.

Wild4Life Concept and Vision

Wild4Life is a model programme for out-of-school nature education for 8-18 year olds that can be adapted and implemented by conservation organisations in the Dutch Caribbean islands in support of their strategic missions. The intention of the proposed programme is to provide an overall structure for a modular approach to out-of-school nature education, with model activity plans, knowledge guides and supporting materials that can be selected and implemented locally according to local demand, participants’ ages and skill levels, as well as reflecting local keystone species, conservation issues and PA threats. Via this programme we particularly seek to meet the need expressed by protected area (PA) nature education staff for assistance from DCNA to help increase the efficiency and effectiveness of nature education by bringing benefits of working together, and sharing information and resources, and to so help reduce demands on scarce staffing.

The conservation organisations of the Dutch Caribbean share a number of common goals for nature education: to help raise public awareness of biodiversity conservation and PAs, to increase knowledge and understanding so as to build support for conservation, to encourage positive attitudes towards biodiversity and PAs, to enhance skills that will help participants place value on biodiversity and PAs, to solve environmental problems/promote responsible use of biodiversity and PAs, and to build future stakeholder participation in support of biodiversity conservation and the role of PAs. In some cases, the conservation organisations and PAs run structured in-school nature education programmes (eg. STINAPA) or their staff act as regular guest speakers in schools (eg. STENAPA, STCB) as part of their strategy to achieve their nature education goals. It is important to stress that Wild4Life is a dedicated out-of-school nature education programme and it seeks to complement other school-based education efforts.

Traditionally, nature education has focused on conveying knowledge through a one-way flow of information designed to build understanding of basic concepts and systems. However, since nature education in the Dutch Caribbean seeks to do more than convey knowledge, but to also build skills that enhance or change attitudes and behavior, a more dynamic two-way exchange of information and experiences is called for. In order to achieve meaningful learning for the participants, plus high rates of participation and retention in the programme, Wild4Life adopts modern educational models, innovative approaches and the latest trends in nature communications, such as:
Wild4Life offers real personal experiences that will help shape positive environmental values and attitudes and influence responsible behavior; 
In Wild4Life, class settings are integrated with field-based activities and e-learning; 
Wild4Life provides positive learning experiences, nurtures kids’ wonder in nature and builds positive relationships with peers as well as with youth mentors, PA and other conservation staff and experts as role models; 
Wild4Life takes advantage of kids’ willingness to try new things, and accordingly it offers new experiences and opportunities for skills enhancement; 
Wild4Life provides pathways of opportunity to sports and recreation, art, technology, leadership, work experience and vocational training; 
Wild4Life acknowledges that time spent in nature is an important investment in both nature education and child health, and the programme potentially provides benefits for participating kids’ health, self-confidence and outlook; 
Wild4Life embraces opportunities for e-learning, m-learning, social media, gaming platforms and use of hypermedia, and the development of web-based supporting applications for Wild4Life is proposed; 
Wild4Life takes an interdisciplinary approach rather than a single subject approach; 
Catching kids while they’re young is an effective way to build participation in Wild4Life, but retaining older youth and truly engendering a sense of care in them about biodiversity conservation is a challenge. With this in mind, Wild4Life has levels that feel progressively older, that incorporate older youth as mentors and leaders for younger groups, and that seek to create a sense of belonging. To retain older kids, the programme seeks to be cool, to be optimistic, to stress the big picture, and to provide heroes or icons to emulate; 
Wild4Life provides experiences to kids in their home territory that give them an opportunity to interpret these experiences through critical thinking and problem solving; 
Learning about local nature and local conservation issues in Wild4Life provides the basis for nature education to move out into larger systems and broader issues; 
Partnerships at local, regional and international level with allied and expert conservation organisations are essential for the successful implementation of Wild4Life.

The basic principles of Wild4Life are meaningful participation and learning, scientific and educational credibility in approach and content, optimism that biodiversity protection is achievable, the celebration of natural and cultural heritage of the Dutch Caribbean, and creating a sense of belonging to Wild4Life, to their island, and to the Dutch Caribbean. Additionally, access to Wild4Life is offered to local children independent of location or socio-economic status and on a non-discriminatory basis. Individual conservation organisations can tailor the learning and activity plans provided by Wild4Life, and adapt the supporting materials as they see fit for their purposes, but in doing so they agree to strive towards harmony between their efforts and the regional Wild4Life education programme.

The vision for Wild4Life can be summarised as follows:

A programme of out-of-school nature education in the Dutch Caribbean to help kids to develop knowledge and understanding of nature, as well as to develop the passion and skills to equip them to actively participate in nature conservation and ultimately in the sustainable management of natural resources.
Design Principles

Wild4Life is based on a number of important design principles related to childhood developmental stages and to the optimal corresponding nature education strategies. These are drawn in large part from the work of Sobel (2008). The programme also builds on international best practices in nature education and it incorporates pertinent recommendations from the movement to reconnect children and nature (from guidelines offered by the Children and Nature Network www.childrenandnature.org), and to counteract the nature-deficit disorder (based on the writings of Louv, 2008). Starting principles include the following:

- The earliest development stage is that of kids having an affinity with animals during early childhood. The corresponding nature education design principle is termed ‘Animal Allies’ by Sobel, and refers to the goal of fostering close allegiances or kinship relationships between kids and animals that can develop into a strong sense of caring about animals, especially among kids in the 9-10 years age group. Creating animal heroes can be a constructive approach for this age group. The appeal of animals to young kids underlies other successful education programmes such as Rare Pride’s mascot programme and recent successful pilot efforts by IFAW in using large marine mammal mascots in Dominica;
- The next development stage is kids’ interest in exploration during middle childhood. Sobel describes 9 years as the start of the prime age for kids to get to know their local neighbourhood. Middle childhood ranges up to about 12 years of age, and in this age group Sobel describes how harnessing kids’ fascination with maps, pathways and shortcuts can guide nature education activities. Especially between about 8 and 12 years, kids have an impulse to find special places in which to hide or retreat, and giving kids a parcel of land to regenerate and/or plant native species takes advantage of this natural impulse. Building forts from driftwood and marine debris also links with this principle, at the same time providing an introduction to coastal environments and exposure to human impacts of litter;
- In adolescence, development is defined by kids’ evolving personal definition of themselves and by their growing sense of social responsibility. However, educators note that children should not be bombarded with negative messages of environmental destruction, which can lead to distancing rather connecting them with nature by causing ecophobia and disassociation. Whilst environmentally sensitive behaviour is encouraged from early ages, Sobel and others recommend that environmental tragedies should not be introduced before 4th grade (10 years of age). In Wild4Life, conservation issues, human impacts and threats to PAs are reserved for the adolescent age group;
- Research by TNC (among 602 kids in the US between 13 and 18 years) about their involvement in nature showed that kids with personal, positive experiences with nature were twice as likely to view themselves as strong environmentalists and were significantly more likely to express concern about the condition of the environment. The survey showed that 66 percent of youth say they “have had a personal experience in nature” which made them appreciate it more. Those kids were twice as likely to say they prefer spending time outdoors and more than twice as likely to strongly agree that protecting the environment is cool – which is a key aspect of ensuring retention of older youth in Wild4Life. Interestingly, 91 percent said that if a friend encouraged them to spend more time outdoors they would listen, indicating an important role for peers in nature education (http://www.nature.org/newsfeatures/kids-in-nature/kids-in-nature-poll.xml?src=gp);
- A principle that can be variously applied to different age groups is kids’ thirst for adventure. We leverage this in Wild4Life by first introducing kids to their local PAs. We gradually open their eyes to the plants, animals and ecosystems of their island, and then help them to discover Dutch islands further afield. Meanwhile, Wild4Life progressively offers new, skills-based activities for them to discover and learn as they mature;
- Kids’ hunting and gathering instinct provides an opportunity to include activities such as orienteering and geocaching in Wild4Life. Treasure hunts also draw on this instinct, with the search for an elusive treasure and the thrill of the quest helping to give kids a memorable experience in nature;
- Kids have strong imaginations, and story-telling should be an important aspect of nature education. In Wild4Life, story-telling by local people, be they elders or conservation staff, is used for learning about both natural and cultural heritage;
Kids often have a fascination with small worlds, traditionally seen in play with dolls houses and train sets, and now seen in kids’ preoccupation with the realm of video games. As small samples of larger ecosystems, PAs can tap into this fascination. Activities that involve making models of plant communities or local ecosystems, or mapping animal distribution in PAs, for example, also draw on this principle.

The following general recommendations also apply to the design and implementation of Wild4Life:

- Stewardship depends on how kids attach to nature. When thinking about how to most effectively shape stewardship behavior in kids, research among adult environmentalists indicates that they attribute their awareness and commitment to the environment to two key factors: (i) time spent outdoors in memorable places, coupled with (ii) the presence of a mentor in their lives who taught them respect for nature by sharing their appreciation of plants and animals;
- If they lack direct experience with nature, kids may associate it with fear rather than wonder. Leaders of Wild4Life should be aware of the need to address any pre-conceived fears associated with perceived discomfort or danger in nature, or potential barriers to participation such as from obesity or body image. This is a possible precursor to getting them to successfully participate in nature-based activities;
- The best nature mentors need to have both credible knowledge and infectious enthusiasm;
- Whilst building kids’ knowledge about nature is vital, it is a passion for nature that fuels conservation. Passion is personal and comes from having meaningful experiences in nature – one experience is worth a thousand facts. Thus, learning should not be based on ingesting a sequence of facts and concepts but on providing personal experiences. Kids need to touch, explore, build and do, and mentors can help make kids not just attentive to nature but hyperaware of their local setting;
- There is a fine line between presenting nature to kids and forcing it onto them. The movement to reconnect children with nature argues that free play in nature is more effective than structured, adult-organised activities in nature, and that nature experiences need to be as unorganized as possible whilst still being meaningful. Acknowledging this argument, Wild4Life encourages responsiveness to kids’ desires and interests in implementing the programme. However, Wild4Life leaders must still play a prominent role in shaping what happens during programme activities, and stresses that leaders must assume responsibility and authority, and use their knowledge and experience to facilitate kids’ entry into nature;
- It takes time to experience nature in a meaningful way, and in Wild4Life we encourage leaders to take an unhurried approach. Rather than race to cover an obligatory curriculum, modules can be implemented as they are completed, and at a participant-driven pace. Leaders should feel free to dwell on topics or to repeat activities according to participant interest.

**Wild4Life Format**

A mix of the following three modalities is proposed for Wild4Life:

- Once-a-week after-school activities timed to coincide with school semesters;
- Weekend activities where a larger block of time is required, for example, for a field activity;
- Multi-day programmes held during school holidays about special topics (eg. sea turtle camp), for special projects (eg. participation in biodiversity monitoring), or for exchange visits to other islands (eg. in conjunction with future Education Workshops).

Within each of the modalities of Wild4Life, there are sessions that can be held in a classroom-setting, such as an indoor classroom or outdoor meeting point (depending on facilities and weather). This format will particularly be used to provide introductory information on each course and briefings prior to field activities, as well as providing a location for back-up activities in the case of bad weather.

Fun, participatory activities and nature exploration in a field-setting are essential elements
of Wild4Life. These include games used for learning, activities such as art and crafts, and the opportunity to take part in recreational pursuits in nature. Further, hands-on learning through field visits to PAs and to the field sites of conservation organisations is at the foundation of Wild4Life. Through this element we seek to provide exposure to real management and monitoring of conservation and PAs. This might involve participants undertaking activities in the water (eg. snorkel and SCUBA), on the water (eg. boat or kayak tours) or land-based activities (eg. hiking, caving, biking). Use of technology for photography, audio recording and participatory video is encouraged throughout the Wild4Life programme.

In all cases, organizers should be mindful that good nature classes are small in size. Field activities in particular require a small, manageable group size. In field activities such as snorkeling with kids, a small number of participants per activity leader is advised by model environmental education programmes (eg. 1:5 leader to student ratio is advised for snorkel activities by Discovery Club, The Bahamas) and by professional snorkel tour guiding organisations (eg. 1:8 leader to participant ratio for snorkel tours by members of the San Pedro Tour Guide Association, Belize). The preference for small groups is backed up by experience from existing snorkel clubs in the Dutch Caribbean.

**Levels of Wild4Life**

The Wild4Life programme is structured around a sequence of levels through which participants progress. This concept of progression is vital for nature education to be effective in reaching its intended target groups, and is important in helping to motivate continued participation in the programme. Based on similarities between the age groups they address and the topics and activities they cover, the existing out-of-school nature education programmes in the Dutch Caribbean islands can be seen to comprise four broad levels as shown in Figure 1.

![Figure 1: Levels of the existing out-of-school nature education programmes](image-url)

In Wild4Life we propose building on this structure, and defining agreed levels and accompanying content and approaches for the programme according to the key design principles for nature education. The proposed first level is a compulsory entry level that all new Wild4Life participants must complete. It is targeted mainly at the younger ages, but could also be adapted to older recruits to Wild4Life. The last level is a leadership stage in which the participants learn about PA management and personal responsibility, whilst contributing as mentors to younger kids in the earlier levels of the programme. There are three levels in between these, targeted at progressively older age groups. The first level focuses on understanding of local threatened and endemic plants and animals, the second level focuses on local ecosystems and critical habitats, and the third level addresses human impacts on nature and the mitigation of issues and threats.

As recommended by various environmental education and awareness raising toolkits (eg. Hesselink, 2007), formulating a good message is vital for the success of any communications
exercise and, accordingly, a key message is articulated for each level. The messages express what we want the participants in that level to know, feel or do, expressed in the language of the target audience. It describes the essence of what each level is about, it reflects what we want the kids to come away with, and it provides a key phrase for conservation organizations and programme leaders to refer to when talking about the level.

In summary, the levels of Wild4Life, their objectives, key message and relevant design principles are shown below in Figure 2, along with the names of the existing nature education programmes and their fit under the umbrella of the Wild4Life framework.

### WILD4LIFE ENTRY LEVEL ‘MY PARK PASS’

**Age Group**
8-12 year olds (new entries to Wild4Life)

**Objectives**
To raise awareness about PAs and their role in conservation;
To build familiarity with local PAs

**Design Principles**
Call on sense of adventure to encourage kids to know their island and PAs;
Nurture wonder in nature by mentors sharing their passion for nature and encouraging kids to use their senses;
Build on kids’ imaginations through story-telling about local places;
Introduce opportunities for environmentally-sensitive behaviour

**Key Message**
Protected areas are special and important places

### WILD4LIFE LEVEL 1 ‘NATURE EXPLORERS’

**Bonaire Starting Level – Tortugan Di Boneiru**

**Saba Starting Level – Snorkel Club**

**Statia Starting Level – Snorkel Club**

**St Maarten Starting Level – Snorkel Club**

**Age Group**
8-9-10 year olds

**Objectives**
To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands;
To encourage ecologically sensitive practices for exploring and enjoying nature

**Design Principles**
Affinity for animals (connect to animal heroes);
Leverage sense of adventure to encourage search for wildlife and related skills development for identification and observation;
Use fascination with small worlds to model PAs and plant and/or animal distribution

**Key Message**
We love and need our local nature
**WILD4LIFE LEVEL 2 ‘NATURE NAVIGATORS’**

**BONAIRE SECOND LEVEL – SHARKS OF BONAIRE**

**SABA SECOND LEVEL – JUNIOR SEA SCOUTS**

**STATIA SECOND LEVEL – ADVANCED SNORKEL CLUB**

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**Age Group**
10-12 year olds

**Objectives**
To link threatened and endemic plants and animals with their ecosystems and critical habitat in the Dutch Caribbean islands;
To build skills and good practices for exploring these habitats

**Design Principles**
Use sense of adventure and interest in exploration to navigate local ecosystems;
Harness kids’ fascination with maps and pathways to encourage discovery and related skills development

**Key Message** *We love and need our local nature*

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**WILD4LIFE LEVEL 3 ‘NATURE DETECTIVES’**

**BONAIRE THIRD LEVEL – JUNIOR RANGERS (IN COURSE)**

**STATIA THIRD LEVEL – JUNIOR RANGERS I**

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**Age Group**
12-14 year olds*

**Objectives**
To develop an understanding of human impacts on threatened and endemic plants, animals and their habitats, and threats to PAs;
To build a sense of responsibility for conservation and a sense of making a meaningful contribution to conservation

**Design Principles**
Call on peer pressure to encourage youth to spend time outdoors (the programme needs to be cool and not feel academic – it is not school);
Progressively older feel to the programme via gradually more significant activities and more advanced skills (use technology to explore nature, link with popular culture for delivery of programme);
Build on growing sense of social responsibility to introduce concept of taking action and encourage sense of stewardship for nature

**Key Message** *We’re making a difference*

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*We note from feedback from educators at the 2011 Education Workshop that the 12-14 years age group is the most challenging to retain in their nature education programmes.*
WILD4LIFE LEADERS ‘NATURE GUARDIANS’

BONAIRE ADVANCED LEVEL - JUNIOR RANGERS (PADI)

SABA ADVANCED LEVEL - JUNIOR RANGERS

STATIA ADVANCED LEVEL - JUNIOR RANGERS II

<table>
<thead>
<tr>
<th>Age Group</th>
<th>14-16 year olds, 16-18 year olds</th>
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<table>
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<tr>
<th>Objectives</th>
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<tbody>
<tr>
<td>To develop an understanding of how conservation is managed,</td>
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<tr>
<td>to provide exposure to the professions working in PAs and to</td>
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<tr>
<td>generate an understanding of everyone’s responsibility for nature;</td>
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<tr>
<td>To develop field skills and opportunity for participation</td>
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<td>in conservation and monitoring activities;</td>
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<tr>
<td>To develop leadership and mentoring skills so that participants can take a leading</td>
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<td>role in content creation for the programme and implementation of activities</td>
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<th>Design Principles</th>
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<tbody>
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<td>Use sense of adventure and interest in exploration to navigate local ecosystems;</td>
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<table>
<thead>
<tr>
<th>Key Message</th>
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<tr>
<td>We’re taking responsibility</td>
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Figure 2: Levels of Wild4Life

Wild4Life Content

The existing out-of-school nature education programmes in the Dutch Caribbean variously address local marine life, coral reefs and wetlands in the starting level, with key activities being snorkeling, bird watching and hiking. In their second levels, the existing programmes continue to teach about local marine life, in some cases focusing in depth on particular species (such as sharks in the case of STINAPA); they also teach about first aid and topics such as knot tying, and activities continue to focus on snorkeling and hiking with rescue courses and beach cleanup work. The curriculum of the third level of nature education includes local plants, ecology, geology, computer skills and some work-related skills, with activities related to PAs, such as trail making, species-specific surveys, mooring maintenance, beach cleanups, boat handling and basic mechanics. In the highest levels of the existing Junior Ranger programmes, the kids learn more about the work of a park ranger, first aid, photography and videography, and research and monitoring. They take part in activities including diving, kayaking, bird and fish surveys (and lionfish), camping, survival training, public speaking and mooring maintenance.

In proposing the content of the Wild4Life programme we seek to build on these existing topics and activities, and provide an overall framework and meaningful sequence to them. In order to ensure high levels of participation in the programme we are guided by the need to offer content that kids want to learn, while still ensuring that the programme supports the goals of out-of-school nature education. A compulsory, introductory course is recommended for each level, which can then supplemented by one or more skills courses to support the field activities for that level, plus a number of specialized, elective modules which can be offered depending on student interest, levels of staffing and input from collaborating partners. Through the elective modules and the relevant skills courses, individual conservation organisations can provide strategic focus to education in support of their own particular mission, and in response to local demand.
Wild4Life offers breadth of content based on localised learning about a wide range of nature-related topics, but with basic learning at each level that is common to the Wild4Life programme on every island.

It is first useful to consider an outline of the proposed content of Wild4Life and then to consider the appropriate allocation of content to the different levels of the programme. The following list of topics and activities is intended to serve as the conceptual basis for learning in the Wild4Life programme.

I. Protected Areas

**Goal:** To raise awareness about protected areas and their role in conservation

A. Protected areas are special areas that are set aside for native plants and animals and the places where they live
B. There are different types of protected areas that are important for nature, including both terrestrial and marine protected areas
C. Protected areas can also protect places of natural beauty and show how people lived in the past
D. Our protected areas have a logo that reflects important elements of our biodiversity and habitats

**Goal:** To build familiarity with local protected areas

E. Protected areas are managed by dedicated, professional conservation organisations with specially trained staff
F. The staff working in our protected areas have a uniform and use important equipment
G. Everyone has a special place and a favourite creature in their local protected area, and we encourage staff, elders and kids to share about their experiences and for kids to share what they learn with their friends and with their counterparts on other islands
H. Everyone has a role to play in helping to care for protected areas. There are particular laws and regulations that help to protect these special places and we have to act responsibly when visiting natural areas and protected areas

II. Biodiversity

**Goal:** To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands

A. Biodiversity can refer to a variety of natural systems and to species
B. Plants and animals can be classified according to where they are found and how many of them we know exist
C. Some plants and animals are not native to the Dutch Caribbean islands but have been introduced by humans, and we know the difference between them
D. There are some plants and animals that can be dangerous, but knowledge about them stops us from fearing them
E. Some native plants have traditionally been used for food and medicine
F. Some of the special plants and animals of the Dutch Caribbean islands that we will learn about include:
   1. Sea turtles (STINAPA, STCB, Saba)
   2. Marine mammals (STINAPA - whales)
   3. Reef fish (STINAPA)
   4. Conch (STINAPA)
   5. Sharks (existing activity - STINAPA)
   6. Rays
   7. Parrots (STINAPA)
   8. Migratory birds (STINAPA)
   9. Burrowing owls
   10. Bats (STINAPA)
   11. Lizards and iguanas
   12. Cactus (STINAPA)
   13. Endemic tree or medicinal plant (STINAPA)
Goal: To build skills and good practices for observing, identifying and appreciating nature

G. Discovering and watching wildlife is fun
H. Incorporating nature into art, music and cultural activities helps build appreciation for our natural heritage
I. Observing and identifying wildlife can potentially contribute to scientific knowledge and help conservation efforts
J. Effective use of equipment is helpful for observing and identifying wildlife, and this requires some basic skills (eg. using binoculars, digital cameras, videos) and special techniques (eg. spotlighting at night, collecting insects at night, tracking wildlife)
K. Correctly identifying local plants and animals is an important skill that takes time to learn and requires the help of an enthusiastic mentor. Guidebooks and ID cards are useful in this (plant ID, bird ID cards STINAPA, fish, coral and sponge ID cards/presentations Saba)

III. Habitat

Goal: To link endangered, legally protected, endemic and keystone species of plants and animals with their ecosystems and critical habitat in the Dutch Caribbean islands

A. The meaning and importance of habitat
B. Habitat is the key to survival for wildlife, and for a wildlife population to sustain itself there must be sufficient suitable habitat to support a viable breeding population, not just a few individuals
C. Ecosystems undergo changes that are usually gradual, and species that are not able to adapt may become extinct
D. Habitats are homes and provide food for wildlife, and different habitats on our islands support our endangered, legally protected, endemic and keystone species of plants and animals. Some important habitats that we will learn about include:
   1. Coral reefs
   2. Mangroves and wetlands
   3. Seagrass beds
   4. Oceans
   5. Dry forest/xerophytic
   6. Evergreen seasonal forest/tropical rainforest

IV. Human Impacts

Goal: To develop an understanding of human impacts on threatened and endemic plants, animals and their habitats, and threats to PAs

A. Human effects on nature and the environment are a driving force affecting environmental quality on our island and globally
B. Human development encroaches on natural habitat, decreasing the amount and quality of available habitat. Loss and degradation of habitat are the greatest problems facing wildlife today
C. Pollutants negatively affect environmental quality and degrade habitats eg. nutrients, run-off and sedimentation affect reef quality (existing activity), solid waste and plastic pollution are threats to the world's oceans and its biodiversity
D. Consumptive use of wildlife (hunting, over-fishing and poaching for illegal trade in wildlife) has been excessive in some places and continues to be a problem
E. The introduction of exotic and invasive species can change the functioning of ecosystems
F. Climate change (including coral bleaching) and ocean acidification are major threats to the environment
G. Our protected areas face particular threats from human impacts at the local and global level
V. Conservation and Action

**Goal:** To encourage ecologically sensitive practices for exploring and enjoying nature

A. Personal responsibility includes being sensitive to the environment and to individual species whilst enjoying nature.

B. There are environmentally responsible ways to enjoy nature whilst taking part in activities such as:
   1. Swimming
   2. Snorkeling
   3. Diving
   4. Boating
   5. Kayaking
   6. Hiking
   7. Abseiling/rappel
   8. Geocaching
   9. Caving
   10. Mountain biking
   11. Adventure races
   12. Spotlighting nocturnal species at night

C. Safety is important when taking part in activities in nature, and being safe can also help us to be environmentally responsible eg. water safety, life-saving and life jackets, boat rules, survival at sea/rescue, first aid (Saba)

**Goal:** To build a sense of responsibility for conservation and a sense of making a meaningful contribution to conservation

D. Acting at a personal level, we can be eco-champions and help conservation on our island when at home, at school and at play

E. We will learn about ways that we can help nature, for example:
   1. Taking part in biodiversity and habitat monitoring activities
   2. Maintaining, planting or regenerating habitat
   3. Adopting sustainable building practices
   4. Helping to rehabilitate sick, injured or illegally poached wildlife
   5. Understanding sustainable development
   6. Sharing with others about nature and their role in conservation

**Goal:** To develop advanced field skills and participate in conservation and monitoring activities

F. To make a real contribution to conservation there are some important and specialist skills to learn, such as:
   1. Using identification cards, books and other reference materials
   2. Keeping a logbook
   3. Talking on two-way radios
   4. Map reading
   5. Using GPS
   6. Mapping, geographic information systems and bathymetry
   7. Shark research techniques and findings
   8. Sea turtle research techniques and findings
   9. Habitat monitoring methodologies eg. Reef Check

G. Helping protected areas staff and environmental conservation experts with their work is a valuable way to get experience in applying new skills for nature conservation and monitoring

**Goal:** To develop an understanding of how conservation is managed and to provide exposure to the professions working in PAs

H. There are many career paths in conservation, and these can involve working outside in the
field, in the office and/or working with people
I. Special skills are required for working in the field in conservation eg. the work of a ranger involves training in specific skills
J. Special skills are required for the office-based jobs in conservation eg. understanding management plans, computer skills, finances
K. Special skills are required for people-focused jobs in conservation eg. communications, conflict resolution, public relations
L. Work experience placement, shadowing and internships are good ways to get experience of being a conservation professional

**Goal:** To develop leadership and mentoring skills so that participants can take a leading role in content creation for the programme and implementation of activities

M. As participants successfully progress through the levels of the Wild4Life programme, build their knowledge and demonstrate their maturity, they can learn to be mentors and to guide their younger and newer counterparts who are participating in other levels of Wild4Life

N. Technology is a tool that we can use to understand, appreciate and share our enjoyment of nature, and as they progress through the programme, participants can contribute to the Wild4Life web platform, communications efforts and the development of materials

Based on feedback from participants in the 2011 Education Workshop, we propose that this content be allocated to the different levels of Wild4Life as shown in Figure below.

**Figure 3:** Nature Education Topics and Activities by Level in Wild4Life Programme

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<thead>
<tr>
<th><strong>Level:</strong></th>
<th><strong>Age:</strong> 8-12 year olds</th>
<th><strong>Message:</strong> Protected areas are special and important places</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature Education Topics</strong></td>
<td><strong>Field Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Goal: To raise awareness about PAs and their role in conservation</td>
<td>Goal: To build familiarity with local PAs</td>
<td></td>
</tr>
<tr>
<td>Topics: Protected Areas 1. A-D</td>
<td>Activities: Protected Areas 1. E-H, V. A, C</td>
<td></td>
</tr>
<tr>
<td>Meaning and importance of protected areas</td>
<td>Getting to know the location, management staff and regulations of local protected areas</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Level:</strong></th>
<th><strong>Age:</strong> 8-10 year olds</th>
<th><strong>Message:</strong> We love and need our local nature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature Education Topics</strong></td>
<td><strong>Field Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Goal: To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands</td>
<td>Goal: To encourage ecologically sensitive practices for exploring and enjoying nature</td>
<td></td>
</tr>
<tr>
<td>Topics: Biodiversity II. A-F 1-11</td>
<td>Activities: Biodiversity II.G-K; Conservation and Action V. A, B 1, 11, C, F 1, 2, 7, 8</td>
<td></td>
</tr>
<tr>
<td>Introduction to biodiversity</td>
<td>Art and craft activities</td>
<td></td>
</tr>
<tr>
<td>Sea turtles</td>
<td>Introduction to wildlife observation</td>
<td></td>
</tr>
<tr>
<td>Marine mammals</td>
<td>Swimming</td>
<td></td>
</tr>
<tr>
<td>Reef fish</td>
<td>Treasure hunt</td>
<td></td>
</tr>
<tr>
<td>Conch</td>
<td>Water safety</td>
<td></td>
</tr>
<tr>
<td>Sharks</td>
<td>Hiking safety</td>
<td></td>
</tr>
<tr>
<td>Rays</td>
<td>Using species identification cards</td>
<td></td>
</tr>
<tr>
<td>Parrots</td>
<td>Keeping a logbook</td>
<td></td>
</tr>
<tr>
<td>Migratory birds</td>
<td>Introduction to sea turtle research</td>
<td></td>
</tr>
<tr>
<td>Burrowing owls</td>
<td>Introduction to shark research</td>
<td></td>
</tr>
<tr>
<td>Bats</td>
<td>Lizards and iguanas</td>
<td></td>
</tr>
</tbody>
</table>
**Level: Nature Navigators**  
**Age:** 10-12 year olds  
**Message:** Our islands’ unique habitats are cool

<table>
<thead>
<tr>
<th>Nature Education Topics</th>
<th>Field Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: To link threatened and endemic plants and animals with their ecosystems and critical habitat</td>
<td>Goal: To build skills and good practices for exploring these habitats</td>
</tr>
<tr>
<td>Topics: Habitat III. A-D 1-6; Biodiversity II. F 12-13</td>
<td>Activities: Conservation and Action V. B 2, 4-7, F 9, H, P; Biodiversity II. J, K</td>
</tr>
<tr>
<td>Introduction to habitat</td>
<td>Snorkeling</td>
</tr>
<tr>
<td>Coral reefs</td>
<td>Boating</td>
</tr>
<tr>
<td>Mangroves and wetlands</td>
<td>Kayaking</td>
</tr>
<tr>
<td>Seagrass beds</td>
<td>Hiking</td>
</tr>
<tr>
<td>Oceans</td>
<td>Abseiling/rappel</td>
</tr>
<tr>
<td>Dry forest/xerophytic/cactus</td>
<td>Spotlighting nocturnal species at night</td>
</tr>
<tr>
<td>Evergreen seasonal forest/tropical rainforest</td>
<td>Habitat monitoring methodologies</td>
</tr>
<tr>
<td>Medicinal plants</td>
<td>Using species identification cards</td>
</tr>
<tr>
<td></td>
<td>Photography and video</td>
</tr>
</tbody>
</table>

**Level: Nature Detectives**  
**Age:** 12-14 year olds  
**Message:** We’re making a difference

<table>
<thead>
<tr>
<th>Nature Education Topics</th>
<th>Field Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: To develop an understanding of human impacts on threatened and endemic plants, animals and their habitats, and threats to PAs</td>
<td>Goal: To build a sense of responsibility for conservation and a sense of making a meaningful contribution to conservation</td>
</tr>
<tr>
<td>Topics: Human Impacts IV. A-G</td>
<td>Activities: Conservation and Action V. C-E 1, 2, 4; Biodiversity II. H, J</td>
</tr>
<tr>
<td>Introduction to human impacts</td>
<td>Advanced water safety</td>
</tr>
<tr>
<td>Development and loss of habitat</td>
<td>Boat handling</td>
</tr>
<tr>
<td>Pollution</td>
<td>Survival skills</td>
</tr>
<tr>
<td>Threats to wildlife</td>
<td>Taking part in biodiversity and habitat monitoring activities</td>
</tr>
<tr>
<td>Invasive species</td>
<td>Maintaining, planting or regenerating habitat</td>
</tr>
<tr>
<td>Climate change</td>
<td>Helping to rehabilitate sick, injured or illegally poached wildlife</td>
</tr>
<tr>
<td>Threats to protected areas</td>
<td>Nature in art, music and culture</td>
</tr>
<tr>
<td></td>
<td>Photography and video</td>
</tr>
</tbody>
</table>

**Level: Nature Guardians**  
**Age:** 14-16 and 16-18 year olds  
**Message:** We’re taking responsibility

<table>
<thead>
<tr>
<th>Nature Education Topics</th>
<th>Field Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: To develop an understanding of how conservation is managed, provide exposure to the professions working in PAs and to generate an understanding of everyone’s responsibility for nature</td>
<td>Goal: To encourage ecologically sensitive practices for exploring and enjoying nature</td>
</tr>
<tr>
<td>Topics: Conservation and Action V. D, E 3, 5, H-K</td>
<td>Activities: Conservation and Action V. B 3, 8-10; E 1, 6, F 3-8, L-N; Biodiversity II. I-K</td>
</tr>
<tr>
<td>Adopting sustainable building practices</td>
<td>Diving</td>
</tr>
<tr>
<td>Understanding sustainable development</td>
<td>Geocaching</td>
</tr>
<tr>
<td>Career paths in conservation</td>
<td>Caving</td>
</tr>
<tr>
<td>Field-based jobs in conservation</td>
<td>Mountain biking</td>
</tr>
<tr>
<td>Office jobs in conservation</td>
<td>Taking part in biodiversity and habitat monitoring activities</td>
</tr>
<tr>
<td>Environmental communications, public relations and conflict resolution</td>
<td>Talking on two-way radios</td>
</tr>
<tr>
<td>Youth leadership and mentoring skills</td>
<td>Map reading</td>
</tr>
<tr>
<td>Webmaster and content creation</td>
<td>Using GPS</td>
</tr>
<tr>
<td></td>
<td>Mapping, geographic information systems and bathymetry</td>
</tr>
<tr>
<td></td>
<td>Shark research techniques and findings</td>
</tr>
<tr>
<td></td>
<td>Sea turtle research techniques and findings</td>
</tr>
<tr>
<td></td>
<td>Habitat monitoring methodologies eg. Reef Check</td>
</tr>
<tr>
<td></td>
<td>Internships</td>
</tr>
<tr>
<td></td>
<td>Sharing with others about nature and their role in conservation</td>
</tr>
<tr>
<td></td>
<td>Advanced species identification</td>
</tr>
<tr>
<td></td>
<td>Leadership roles in Wild4Life</td>
</tr>
<tr>
<td></td>
<td>Advanced photography and video including editing</td>
</tr>
<tr>
<td></td>
<td>Assist with website and social media for Wild4Life</td>
</tr>
</tbody>
</table>

DCNA Wild4Life  
**Detailed Programme Overview**
Each level of Wild4Life also presents an opportunity for kids to get to know conservation experts and PA staff, and these meetings are incorporated as activities in the activity plans for each level. For example, a part of My Park Pass is learning about the work of a park ranger. Nature Explorers offers an opportunity for kids to meet and receive presentations from passionate and dedicated conservation specialists about their particular species of interest. Nature Navigators and Nature Detectives offer the opportunity for kids to interact with conservation and PA staff in the field. At leadership level in Nature Guardians, there is a chance for higher level conservation staff to meet and present about their organisations to potential future staff, and for PA Board Members and their future stakeholders to meet and interact in a positive setting.

**Sample Programme Delivery**

The following examples detail how the different levels and content could be delivered. In the case of the first example, this focuses on the entry level My Park Pass and provides a suggested learning plan, an outline of introductory and briefing topics, related activities, the field visit approach and follow-up work, as well as providing supporting materials such as educator notes, activity descriptions, participant worksheets and links to existing materials online. Four of these activities and the supporting materials were demonstrated at the 2011 Education Workshop with the participating Aruban kids and the visiting Bonaire Junior Rangers (see Appendix II for details of these activities and materials). Further activities from the Nature Explorers and Nature Navigators levels were also demonstrated in Aruba and these are detailed in Appendix III.
EXAMPLE 1:

WILD4LIFE ENTRY LEVEL
‘MY PARK PASS’

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Objectives</th>
<th>Key Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-12 year olds and all new participants entering Wild4Life</td>
<td>To raise awareness about PAs and their role in conservation</td>
<td>Protected areas are special and important places</td>
</tr>
</tbody>
</table>

**Preparation time**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Setting</th>
<th>Materials Needed</th>
</tr>
</thead>
</table>

**What is a protected area**

Provide an introduction in the classroom or park meeting point about the following topics, referring to materials in the handbook:

- What is a protected area?
- Explain what biodiversity means and what habitat means
- What are protected areas for?
- Who looks after protected areas?
- Who works in protected areas?
- How do we care for protected areas?
- Game: True or False activity

**Preparation for the First Field Visit**

Provide a briefing to the kids about the first field visit to their local protected area, using the materials in the handbook:

- Where are our local protected areas? (map)
- Recognising the staff uniform and park logo (photo)
- Park etiquette (NPF and NPWS ‘Care for National Parks’ worksheets)
- 10 Essentials for visiting a park (Webranger game)
- I take the park pledge (NPF worksheet)
- Water safety (as appropriate)
- Logistics and permission forms
- Demonstrate how to set up their Nature Web profile and log their visit to the park
- Craft activity: make field journals for note-taking (from WIDECAST)

**Field Visit**

Make the field visit to a local protected area, using worksheets in the handbook:

- Have the kids interview a park staff member (‘Looking After the Park’ worksheet)
- Show the kids patrol equipment like cars, trucks and boats and explain the names and logos on them
- Search for and talk about the important biodiversity and habitat of the protected area while going for a hike/on a boat trip in the protected area
- Identify key local species of plants and animals using ID cards
- Take photos and record video of the kids in the field for later use
- Help the kids to complete the ‘Field Guide’ worksheet about their favourite creature
**Bad weather Option**

Invite a park staff member to visit the group, have them introduce themselves, where they work and the park logo (using STENAPA October sheet, and logo drawing exercise), have the staff member describe the local protected areas and explain why the areas are special to them.

- Indoor games to play (from WIDECAST manual and mangroves materials)
- Art activities (colouring-in worksheets)
- Computer games (see links at www.electronicfieldtrip.org)

**After the Field Visit**

Follow-up to visit:

- Log the visit to the park/visit from the staff member on the map and in the kids’ profiles
- Have the kids list their favourite species on their profile
- Upload photos and video
- Make park postcards with photos/video shorts from the trip and explain the Nature Friends/Park Pals concept to the kids
- Have the kids send a postcard and message to their new Nature Friends/Park Pals about the field trip (or about the visit from park staff) and their favourite creature (use Hawaii written exchange guidelines)

**Upon Completion**

If the kids participated in both the briefing and the field visit, and they adequately completed the follow-up activities:

They receive a ‘Wild4Life Pass’ (with their name, name of first park visited, logo/photo, date of visit and pledge re. understanding of importance of parks –see handbook)

Update the kids’ profiles to show they have successfully obtained *My Park Pass*

---

**EXAMPLE 2:**

**WILD4LIFE LEVEL 1**

*NATURE EXPLORERS INTRODUCTION*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>8-10 year olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>To build knowledge and understanding of a variety of key threatened and/or endemic species in the Dutch Caribbean islands. To build skills and good practices for observing and appreciating wildlife.</td>
</tr>
<tr>
<td><strong>Key Message</strong></td>
<td><em>We love and need our local nature</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration</th>
<th>Setting(s)</th>
<th>Preparation Needed</th>
<th>Materials Needed</th>
</tr>
</thead>
</table>

**Nature Club Introduction**

Provide an introduction in the classroom or meeting point to the key threatened and endemic species of our island, referring to materials in the handbook:

- Activity: Attitudes to animals
- CBD introduction to biodiversity
• Explain the difference between native and introduced animals and weeds (factsheet)
• Threatened species introduction (base on NPWS)
• Identify key local plants and animals, explain basic characteristics and distribution (PPTs and ID cards)
• Game: Pick the wrong one out (from CBD)
• Game: Animal Mail Order exercise (from CBD)

Activities in the Field

Arrange for a park staff member to talk to the group, have the kids interview the staff member and ask him/her to tell them about the characteristics, occurrence and distribution of plants and animals of the protected area.

• Activity: Food chains and web exercise
• Game: Blindfold plant identification exercise in pairs
• Activity: Invertebrate survey

Bad weather Option

• Biodiversity comparison using photos of school or urban area and the local protected area
• Computer game: play the Super Animal Creator game at http://kids.cbd.int/index.htm
• Computer game: see game links at www.electronicfieldtrip.org
• Art activity: colouring-in of local bird drawings

After the Activities

While still in the field or back in the classroom/meeting point:

• Explain that the kids can next get to know the plants and animals of their island in more detail, maybe get up close with them in the field and that they will tell their Nature Friends about them through the web

• Give them a choice between a limited number of the following plants and animals to start with as their first specialised elective module:

<table>
<thead>
<tr>
<th>Marine</th>
<th>Terrestrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea turtles</td>
<td>Parrots</td>
</tr>
<tr>
<td>Marine mammals</td>
<td>Migratory birds or burrowing owl</td>
</tr>
<tr>
<td>Fish (eg. parrot fish, grouper, tuna, wahoo)</td>
<td>Bats</td>
</tr>
<tr>
<td>Conch</td>
<td>Lizards and iguanas</td>
</tr>
<tr>
<td>Sharks</td>
<td>Cactus</td>
</tr>
<tr>
<td>Rays</td>
<td>Endemic tree or medicinal plant</td>
</tr>
</tbody>
</table>

Upon Completion

If the kids participated adequately:

• Update the kids’ profiles to show that they have now joined the Nature Club
• Have the kids list on their profile the plant/animal that they most want to get to know in detail
**Scheduling**

Given the reality of limited human resources among conservation organisations, there is a potential scheduling issue should we try to run concurrent levels and modalities of the Wild4Life programme at the same time. We therefore propose that the after-school Wild4Life programme be implemented through a system of compulsory entry-level and introductory courses on scheduled dates each year, followed by elective modules that are offered on a rolling basis. Each conservation organisation can target particular times of the year to schedule specific levels of Wild4Life on their island, such that they seek to achieve the greatest participation from the kids of the target age group at different points in the year, to avoid conflicts with other local events, and to also ensure the greatest support from any partners on the ground. Thus, Wild4Life can be adapted to the yearly calendar of each conservation organization (for example, taking into account possible field activities, monitoring tasks etc) and to the school year and major holiday dates of each island.

**Awards and Incentives**

Progression through the levels of Wild4Life depends upon participation and demonstrated learning as perceived by the educator or coordinator based on their first-hand knowledge of the participating kids and their records of participation and responsiveness. Although quizzes, knowledge factsheets and worksheet exercises are incorporated into the content of Wild4Life, and some skills will involve formal certification, as an out-of-school activity in which we seek to encourage high levels of participation and retention, and consistent with the concept of a fun, cool, feel-good programme, we purposely do not include knowledge testing as a requirement for progression through Wild4Life.

Incentives for completion and progression through education programmes often include the award of certificates and scout-style badges, or the provision of goods such as t-shirts, caps or water bottles. The reality is that conservation organisations have limited resources to provide these on an ongoing basis, and there is a need to consider alternatives to such an incentive system. Taking into account the popularity of social media (MySpace, Facebook) and computer games among our target audience, it is appropriate to consider virtual forms of recognition for achievement via personal profiles in a web-based platform.

Upon completion of the entry level of Wild4Life, a virtual and/or physical *My Park Pass* is awarded to successful participants. After that, the progressively more mature feel of the programme levels, the design of varied content, motivating activities and skills-based opportunities, plus the virtual recognition in the proposed web-based platform, are all intended to provide the necessary incentive for kids to participate in and complete the successive levels. Recognition of successful completion of modules and levels accrues on the kids’ profiles on the Wild4Life web platform, for example via the accumulation of emblems representing different modules on their virtual desk or new virtual badges on their virtual cap. A leaderboard can also be shown for each island and for the region as a whole to help build motivation for continued participation.
Wild4Life Web Based Platform

Wild4Life presents an opportunity to integrate traditional classroom teaching and field-based activities with e-learning. The use of web-based platforms, social media applications, gaming platforms and mobile technology can help capture and retain interest in Wild4Life. Interactive, web-based platforms are already used in both formal, in-school education and in out-of-school education, and there are a number of examples that Wild4Life can build on:

- Websites such as www.scharrelkids.nl provide a wealth of information, suggested activities, nature tips and links for kids, their parents and educators;
- The youth programme Naturdetektive (www.naturdetektive.de) is a multi-media approach kids to discover nature online;
- The UK site www.naturenet.net features an ‘Ask the Ranger’ section and has a regularly updated ‘Ranger’s Blog’;
- An individually customizable platform is demonstrated by www.webbrangers.com, which could form a basis for the Wild4Life platform, allowing kids to customize their own profiles (or park ranger offices), accrue recognition for completion of modules and levels (the modern technology-based equivalent of Scouts badges), and upload and share their status, materials and send virtual park postcards to their peers and their Wild4Life Friends in other locations;
- Wild4Life educators and Conservation HQ leaders can help create and upload hypermedia content, such as photos, videos, audio and text, together with GPS technology and mapping via GoogleEarth. This could evolve into an interactive nature explorer function such as the Reef Explorer at www.reefed.edu.au;
- Online libraries of images and videos can later be accessed as desired by educators and coordinators for supporting materials to use in Wild4Life activities;
- The trend towards participatory video is particularly relevant to Wild4Life, and the website www.schooltube.com provides an example of how Wild4Life participants can potentially share short videos with their Nature Friends about their experiences and nature on their island;
- Web-based platforms are not only for participating kids. The portal www.wikiwijs.nl provides a web-based teaching resource that helps teachers to find, prepare and share materials with other teachers on a host of subjects. Specifically on nature and environmental education, the portals www.nmepodium.nl and www.kennisvooromme.nl are collaborative efforts through which educators and programme developers and administrators can access technical information, teaching materials and news, and network with other nature education professionals;
- The National Park Teachers’ website http://parkteachers.ning.com provides an easily replicable example of a web-based forum for sharing by the network of conservation educators in the Dutch islands.

A mock-up of the possible Wild4Life web platform is shown in Figures 3-4 (with the original working title of Kids4Nature). This was presented at the 2011 Education Workshop to demonstrate how technology could be employed in support of out-of-school nature education and as an innovative approach to help motivate participation in nature education by kids. On some of the Dutch Caribbean islands Facebook is being used by the educators to share photos and messages with programme participants (e.g. STINAPA, STENAPA). The respective educators commented that this is proving valuable but time-consuming, and they agreed that it makes sense to gradually increase the involvement of youth in such aspects of managing Wild4Life.
Figure 4: Proposed Kids’ Profile Page
Figure 5: Proposed Educators’ Resource and Networking Page
Opportunities for Exchanges Between Participants

Both virtual and physical exchanges are part of Wild4Life. These provide an opportunity for kids to learn about the nature that is special to the Dutch Caribbean but not necessarily found on their island. Exchanges also present an opportunity for kids to build relationships with Nature Friends on other islands and ultimately in The Netherlands.

An existing model called ‘Ecosystem Penpals’ provides a possible starting point for exchanges, whereby participants in Wild4Life share messages, photos, drawings and field notes about their experiences, their favourite species, their PAs and their island to their counterparts in other locations. This could be adapted to a social media platform and even a mobile application which is bound to increase appeal among our target group.

The site www.electronicfieldtrip.org demonstrates a model for virtual inter-island exchanges using live streaming or previously recorded video. Face-to-face exchanges, whilst more costly and logistically challenging, are also part of Wild4Life, providing real personal experience of different ecosystems, plants and animals, and helping build the desired sense of belonging. As demonstrated by the visit of the Bonaire Junior Rangers to Aruba for the 2011 Education Workshop, face-to-face exchanges for participants in Wild4Life are a valuable tool for motivating kids’ participation in nature education and for enabling them to learn and experience the unique environments on other islands. Such exchanges are envisioned as part of Wild4Life, for example held on an annual basis, in conjunction with other Education Workshops, and with selected (or winning) representatives of the Nature Guardians level attending. In preparation for their exchange, the Nature Guardians on each island could take part in a common programme of learning and share with each other about their nature conservation experience and interests before meeting. As occurred in Aruba for the demonstration education activities, the Nature Guardians could act as mentors and assist younger local kids with special nature education activities.

Educator Training

Recognising that conservation and PA staff do not necessarily have formal training as educators, the content of Wild4Life is described as clearly as possible in the handbook and only the most relevant and highest quality supporting materials are used. Wild4Life collaborates with specialist organisations that can provide training to educators about their specific subject matter and existing support materials (such as WIDECAST for training in running sea turtle camps using their educator manuals). Wild4Life will also seek to collaborate with specialists that can provide educational training to conservation staff about working with kids, the need for objectivity and balance, techniques for handling disruptive behaviour etc. On a related topic, there will be a Wild4Life code of conduct for education staff, common standards for parental permission forms and liability waivers, and norms for programme organisation, routine and discipline.

Feedback from educators at the 2011 Education Workshop highlighted that the 12-14 years age group is the most challenging to retain in their nature education programmes, and that assistance is particularly required to better address the delivery of education activities for this age group. A follow-up activity could be to seek specialist training for educators in dealing with this age group, or to develop guidelines for programme delivery and design appropriate nature-related activities for the educators to implement.

Wild4Life Fees and Costs

There is a need to develop a long-term funding strategy for the program, including alternatives such as fees for services, charging for materials, donor funding, and corporate sponsorship. From the existing nature education programs we know that offering Wild4Life at a low cost to participants is a priority, and that this contributes to ensuring equal participation across socio-economic groups. Currently, each conservation organisation is responsible for costs related to implementation of Nature Education and some charge fees to participants. Further consideration of the fee structure is required.
Programme Evaluation

Education programmes typically have targets and gather data about key indicators to measure performance. These can be related to program goals and objectives, or they can be based on programme inputs, outputs, processes and/or effectiveness. Yet it is important to recognize that the acquisition of experience is gradual and difficult to measure, and that change in attitudes and behavior occurs over a long rather than short time frame. In order not to over-complicate the evaluation of Wild4Life, a small number of key performance indicators are proposed, some of which related to existing PA management success:

- Number of staff and volunteers contributing to Wild4Life;
- Number of hours worked by staff and separately hours worked by volunteers on Wild4Life;
- Funds directly spent on Wild4Life;
- Number of participants in the different levels, modules and specific activities of Wild4Life;
- Qualitative feedback from the kids about their reaction to the experience of participating in Wild4Life.

Next Steps

1. Implementing Wild4Life: There is an opportunity for educators in the conservation organisations and protected areas of each island to structure their out-of-school nature education efforts according to the levels recommended in this programme overview. In particular, there is an opportunity to implement the different levels of Wild4Life as highlighted in Figure 6.

Figure 6: Opportunities to Implement Wild4Life Levels

<table>
<thead>
<tr>
<th></th>
<th>My Park Pass (8-12 years)</th>
<th>Nature Explorers (8-10 years)</th>
<th>Nature Navigators (10-12 years)</th>
<th>Nature Detectives (12-14 years)</th>
<th>Nature Guardians (14-16, 16-18 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aruba</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
</tr>
<tr>
<td>Curaçao</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
</tr>
<tr>
<td>Bonaire</td>
<td>✓ Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saba</td>
<td>✓ Opportunity</td>
<td></td>
<td>✓ Opportunity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statia</td>
<td>✓ Opportunity</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>St Maarten</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
<td>✓ Opportunity</td>
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</tr>
</tbody>
</table>

Where there are existing nature education programmes, for example on Bonaire, Saba, Statia and St Maarten, these could now strive to incorporate the Wild4Life recommendations on age structure, and content, and take advantage of shared materials and build on current activities as suggested in this overview.

2. Name Testing: Having developed programme names in consultation with participants at the 2011 Education Workshop, it would be appropriate to now test the names suggested for the overall nature education programme ‘Wild4Life’ and for the various levels of the programme with kids from the target audience. To be most effective, the name testing could be done among small groups of similarly aged kids between 12-18 years old. Likewise, the opinions of the Wild4Life target audience could be sought on the proposed messages and on the appeal of the topics and activities suggested for each level of the programme. A qualitative, small focus group approach is recommended for this name testing.

3. Addressing Priority Education Needs: At the 2011 Education Workshop, some particularly pressing needs were identified by the participating educators. One of these is the need to motivate participation in out-of-school nature education programmes by
12-14 year olds, which were identified as the critical age group for retention in Wild4Life. This underlines the importance of conducting name testing and researching the opinions with this age group. It also indicates a role for new approaches to the delivery of nature education activities to this age group. It is especially important that kids in this age group recognize that the Wild4Life concept is fun and cool, and that it is not a school experience. The opportunity for STENAPA’s nature education activities to partner with the Mega D Youth Foundation is a promising step in better reaching this age group, and one which STENAPA could embrace as a pilot experience.

At the next Education Workshop a special focus could be given to the sharing of best practices for working with this 12-14 years age group. Relevant expert presentations could be incorporated into the workshop, any new approaches could be shared and demonstration activities could focus on this age group. If an exchange for kids is to be held in conjunction with the next Education Workshop, then participants in the exchange could specifically be drawn from this age group and their input could be incorporated into the workshop.

Another issue identified at the workshop was a desire for teaching materials for kids younger than 8 years. This need can be directly filled by the existing manual of the Growing Up WILD programme, as coordinated by the Council for Environmental Education.

An obstacle to the future implementation of swimming, snorkeling and water-based activities as part of Saba’s Wild4Life programme was identified due to the increasingly limited access to learn-to-swim locations on the island. A focus on the more feasible terrestrial field activities is thus likely, but it is noted that further assistance with addressing this obstacle is desired.

4. Access to Educational Materials: In order facilitate access to teaching materials, lesson plans and activity guides for use by the educators, DCNA could now formalize agreements with relevant partner organisations and seek training opportunities via them for educators. In particular, to access materials already available from the Council for Environmental Education under their Flying WILD and Growing Up WILD programmes (Geoffrey Castro, geoffreyc@councilforee.org), to obtain copies of WDECAST’s educator manuals for each island (Dr Karen Eckert, keckert@widecast.org), and to share materials for parrot conservation developed by Provita on Margarita Island (José Manuel Briceño, josemanuel.bricenolinares@gmail.com).

5. Developing Tailored Educational Materials: Other educational materials are publicly available for download or viewing. The sources suggested in Figure 3 provide excellent guidance for DCNA and the educators on each island to develop specific materials tailored to their protected areas and the species, habitats and nature activities that are relevant to each island. DCNA could consider facilitating graphic design expertise to tailor such locally-relevant supporting materials, as was demonstrated with the My Park Pass materials developed for Arikok National Park.

Further supporting materials that could be developed by DCNA include a set of maps of the protected areas of the Dutch Caribbean islands developed specifically for teaching purposes. These could be made available in poster size and in handout format. The logos of the protected areas and the conservation organisations of the Dutch Caribbean islands could also be collated by DCNA and used as a handout and (if in black and white outline format) this could provide a colouring-in exercise for participating kids.

6. Sharing Educational Materials: Any educational materials identified for Wild4Life could be shared with the educators on each island by saving them in DCNA’s DropBox education folder, noting that they should be saved in the folder that corresponds to the relevant level of Wild4Life.

7. Data Gathering: The nature education programmes currently being implemented should start to gather the recommended data on the key performance indicators as outlined in the Programme Evaluation section above. This could be shared with DCNA for collation at the regional level.
References


## Appendix I  Wild4Life Draft Management Framework

<table>
<thead>
<tr>
<th>PROGRAMME DEVELOPMENT STEPS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Objective</td>
<td>1.1 Harmonize and enhance the existing out-of-school nature education programmes in the Dutch Caribbean to produce a Wild4Life Programme that can be adapted and implemented by protected areas (PAs) and conservation organisations (cons orgs) in support of their strategic missions</td>
</tr>
</tbody>
</table>
| 2. Needs Assessment         | 2.1 Build on strengths of existing nature education programmes, take opportunities for sharing among PAs and cons orgs  
  2.2 Complement existing in-school activities by PAs and cons orgs with out-of-school nature education  
  2.3 Assist education officers to increase efficiency and effectiveness of implementation of nature education programmes  
  2.4 Address the common goals of PAs and cons orgs across the Dutch Islands to raise public awareness of PAs and conservation, increase knowledge and understanding so as to build support for PA regulations and staff, encourage positive attitudes towards PAs and biodiversity, and encourage environmentally responsible behaviour  
  2.5 Seek an understanding of the target audience for nature education (8-18 year olds) in order to best serve their interests and ensure their meaningful and sustained participation |
| 3. Organizational Roles and Capacities | Provide a conceptual framework for existing programmes, help link educators in PAs and cons orgs with quality materials, training, links with experts, common standards of quality, evaluation, and sustainability planning for nature education  
  3.2 Enable PAs and cons orgs to tailor activities and adapt materials as they see fit for their purposes  
  3.3 Encourage partnerships at local, regional and international level with allied organizations for successful implementation of nature education |
| 4. Programme Concept        | 4.1 Understand guiding design principles for nature education  
  4.2 Examine trends in nature education and relevant innovation  
  4.3 Determine goals of programme  
  4.4 Describe concept or vision for programme |
5. Programme Strategies

5.1 Provide access to programme independent of location or socio-economic status and in a non-discriminatory way
5.2 Celebrate natural and cultural heritage of their island and rest of Dutch Caribbean
5.3 Ensure positive learning experiences, build positive relationships with peers as well as with youth mentors, PA staff, interns and experts as role models
5.4 Offer content that participants want to learn, respond to participants’ interest
5.5 Provide opportunities for hands-on learning and hands-on contribution to PAs/conservation
5.6 Provide pathways of opportunity to sports and recreation, hobbies, leadership, work experience and vocational training
5.7 Take advantage of kids’ willingness to try new things and offer new experiences and opportunities for skills enhancement
5.8 Embrace opportunities for e-learning, m-learning, social media, gaming platforms and use of hypermedia
5.9 Ensure that for sustained participation (retention), programme must progressively ‘feel older’
5.10 Provide leadership opportunities for youth (increasing responsibility, mentorship)
5.11 Engage kids with community (eg. as speakers for tourist dive orientations and PA presentations to tourists)
5.12 Work together with local partners and use the strengths of other organizations
5.13 Provide opportunities for cultural exposure and enrichment

6. Programme Format

6.1 PAs and cons orgs can adapt programme format depending on their resources and preferences, for example offering:
   - Once-a-week after-school activities timed to coincide with school semesters
   - Weekend activities where a larger block of time is required
   - Week-long summer camps on special topics (eg. WIDECAST’s sea turtle summer programme)

7. Programme Structure

7.1 Split target audience (8-18 year olds) into groups according to age and level of achievement, with the programme structured around the concept of progression through successive programme levels
7.2 Use classroom sessions for some activities (indoors or outdoor classroom penciling facilities and weather)
7.3 Focus on field activities (in-water, on-water, land-based) for hands-on learning and to directly support PAs
7.4 Incorporate sports, arts, e-learning, m-learning, media
7.5 Work with PA staff, experts and researchers, partners in-community (dive shops, tourism industry, corporate contacts), civic engagement (public speaking, wildlife rescue)
7.6 Incorporate roles for youth mentors and leaders in the programme
<table>
<thead>
<tr>
<th>8. Programme Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Based on goals of programme, determine content in terms of topics and issues</td>
</tr>
<tr>
<td>8.2 Design real, personal field experiences and nature-based activities for kids</td>
</tr>
<tr>
<td>8.3 Determine specializations and elective modules (offer breadth of content, enable participant selection of modules)</td>
</tr>
<tr>
<td>8.4 Based on design principles, allocate content and field activities to the appropriate levels of the programme</td>
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<tr>
<th>9. Programme Delivery Resources (Staff, Materials, Tools)</th>
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<tbody>
<tr>
<td>9.1 Determine optimum group size for programme and desired staff/participant ratio</td>
</tr>
<tr>
<td>9.2 Estimate required level of staffing, match with staff availability and as necessary seek additional staff input from partners and youth leaders who have come through the programme</td>
</tr>
<tr>
<td>9.3 Determine required competencies of PA staff involved in nature education and identify opportunities for training in target themes and educational techniques in general</td>
</tr>
<tr>
<td>9.4 Identify existing supporting materials, identify sources of additional materials and identify content creation needs</td>
</tr>
<tr>
<td>9.5 Propose programming of content – duration of levels, duration of modules, length of individual sessions and activities, supporting materials</td>
</tr>
<tr>
<td>9.6 Propose lesson plans/activity guides</td>
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<tr>
<td>9.7 Develop supporting web-based platform</td>
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<tr>
<td>9.8 Identify the programme’s logistical needs</td>
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<tr>
<td>9.9 Propose system for recognition of achievement by kids</td>
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<tr>
<th>10. Programme Management</th>
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<tbody>
<tr>
<td>10.1 Develop estimates for the necessary programme budget</td>
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<tr>
<td>10.2 Establish appropriate fee structure to charge for the programme</td>
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<tr>
<td>10.3 Establish MOUs with potential partners per island and per theme</td>
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<tr>
<td>10.4 Determine approaches to recruitment and/or selection of participants</td>
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<tr>
<td>10.5 Create, host and administer the web-based platform</td>
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<tr>
<td>10.6 Set standards for parental permission, liability waivers</td>
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<tr>
<td>10.7 Develop code of conduct for education staff, investigate professional training and possible accreditation, design training/professional development programme for staff, volunteers and mentors</td>
</tr>
<tr>
<td>10.8 Establish norms for programme organization, routine, discipline</td>
</tr>
<tr>
<td>10.9 Set targets and gather data on key indicators to measure performance of programme (based on programme inputs, outputs, processes and/or effectiveness, but recognizing that change in some indicators will come about over the long term)</td>
</tr>
<tr>
<td>10.10 Connect education staff with one another and with partners via email list or web-based network</td>
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<tr>
<td>10.11 Facilitate digital sharing of materials</td>
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<tr>
<td>10.12 Establish programme team for ongoing management</td>
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</tbody>
</table>
### 11. Evaluation and Sustainability

<p>| | |</p>
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<tr>
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<tbody>
<tr>
<td>11.1 Develop a long-term funding strategy for the program, including alternatives such as fees for services, charging for materials, donor funding, corporate sponsorship</td>
<td>11.1 Develop a long-term funding strategy for the program, including alternatives such as fees for services, charging for materials, donor funding, corporate sponsorship</td>
</tr>
<tr>
<td>11.2 Identify and help PAs and cons orgs to access programme funding and volunteer assistance</td>
<td>11.2 Identify and help PAs and cons orgs to access programme funding and volunteer assistance</td>
</tr>
<tr>
<td>11.3 Provide ongoing technical assistance with nature education</td>
<td>11.3 Provide ongoing technical assistance with nature education</td>
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<tr>
<td>11.4 Develop a promotion and communications plan, including lobbying as appropriate for increased support</td>
<td>11.4 Develop a promotion and communications plan, including lobbying as appropriate for increased support</td>
</tr>
<tr>
<td>11.5 Implement pilot version of part of the programme, evaluate success and adapt accordingly</td>
<td>11.5 Implement pilot version of part of the programme, evaluate success and adapt accordingly</td>
</tr>
<tr>
<td>11.6 Formal ongoing monitoring and evaluation of programme, technical assistance from DCNA</td>
<td>11.6 Formal ongoing monitoring and evaluation of programme, technical assistance from DCNA</td>
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<tr>
<td>11.7 Feedback system to inform programme partners and adaptively manage programme</td>
<td>11.7 Feedback system to inform programme partners and adaptively manage programme</td>
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</tbody>
</table>
### Appendix II

**Content and Recommended Supporting Materials by Level in Wild4Life Programme**

<table>
<thead>
<tr>
<th>Level: My Park Pass</th>
<th>Age: 8-12 year olds</th>
<th>Message: Protected areas are special and important places</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature Education</strong></td>
<td><strong>Field Activities and Materials</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Information and Materials</strong></td>
<td><strong>Goal:</strong> To build familiarity with local PAs</td>
<td></td>
</tr>
<tr>
<td><strong>Protected Areas I. A-D</strong></td>
<td><strong>Protected Areas I. E-H; Conservation and Action V. A, C</strong></td>
<td></td>
</tr>
<tr>
<td>I. A. Maps of protected areas; Why do we have national parks? (base on NSW NPWS Factsheet 2)</td>
<td>I. E. ‘Meet the Park Ranger’ exercise; ‘What is STENAPA?’ in STENAPA Teachers Workbook 1; Multi-lingual online storybook ‘My Dad the Ranger’ at <a href="http://www.rainforest-alliance.org/kids/stories">http://www.rainforest-alliance.org/kids/stories</a></td>
<td></td>
</tr>
<tr>
<td>I. B. Maps of marine and terrestrial protected areas; information on MPAs p.10-11 of BNT ‘Treasures in the Sea’ Educators Guide; introductory presentations on other islands</td>
<td>I. F. ‘Tools of the Trade’ exercise</td>
<td></td>
</tr>
<tr>
<td>I. C. Maps of scenic, recreational and historical sites; Saba PPT on historical site</td>
<td>I. G. Story-telling and/or exploratory hike, see Outing to the Botanical Gardens in STENAPA Teachers Workbook 1</td>
<td></td>
</tr>
<tr>
<td>I. D. Handout with park logo(s)</td>
<td>I. H. 10 Essentials for visiting a park (see US Webranger game at <a href="http://www.nps.gov/webrangers/">www.nps.gov/webrangers/</a>); True/False exercise (base on Lesson 10 NSW NPWS); My Park Pass Pledge</td>
<td></td>
</tr>
</tbody>
</table>

V. A. First mentions of sensitivity to environment |

V. C. Safety awareness
**Level:** Nature Explorers  **Age:** 8-10 year olds

**Goal:** To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands

**Biodiversity II. A-F 1-11**
- II. A. CBD Biological Diversity for Kids educators package online at [http://kids.biodiv.org](http://kids.biodiv.org)
- II. B. Introduction to threatened species (base on NSW NPWS Fact Sheet 3)
- II. C. Feral animals and weeds (base on NSW NPWS Factsheet 4)
- II. D. ID cards for dangerous species; Attitudes to Animals’ exercise
- II. E. Fruit and Trees in STENAPA Teachers Workbook 1
- II. F. 1. Sea Turtles in STENAPA Teachers Workbook 1; STCB, WIDECAST Educator’s Handbook (Harold and Eckert, 2005)
- II. F. 2. Whales and Dolphins in STENAPA Teachers Workbook 1; STINAPA Whales information; Aware Kids Teachers’ Guide [http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/aware_g.pdf](http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/aware_g.pdf); IFAW (pending sharing of materials from Dominica pilot programme)
- II. F. 4. STINAPA, ConchBonaire.org; RARE Pride poster and materials; Queen Conch Fact Sheet in BNT ‘Treasures in the Sea’ Educators Guide
- II. F. 5. STINAPA Sharks of Bonaire 8 week programme (including Sharkwater movie); Sharks in STENAPA Teachers Workbook 2; Aware Kids Teachers’ Guide [http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/aware_g.pdf](http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/aware_g.pdf)
- II. F. 7. STINAPA, Echo Bonaire; Provita on Isla Margarita (seek permission to copy parts of bird book)
- II. F. 8. STINAPA; Migratory bird factsheets at [http://nationalzoo.si.edu/scbi/migratorybirds/Fact_Sheets/default.cfm](http://nationalzoo.si.edu/scbi/migratorybirds/Fact_Sheets/default.cfm); Flying WILD manual (seek agreement with CEE); posters from Society for the Conservation and Study of Caribbean Birds [www.scscb.org](http://www.scscb.org); Environment for the Americas [www.birdday.org](http://www.birdday.org); Smithsonian [http://nationalzoo.si.edu/SCBI/MigratoryBirds/Education/](http://nationalzoo.si.edu/SCBI/MigratoryBirds/Education/); NOAA CRCP [http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/menta_myst_sa.pdf](http://coralreef.noaa.gov/education/educators/resourcedd/guides/resources/menta_myst_sa.pdf)
- II. K. STINAPA, Saba ID cards

**Goal:** To encourage ecologically sensitive practices for exploring and enjoying nature

**Biodiversity II. G-K**
- II. H. Craft activity: make field journals for note-taking (see Day 1 of WIDECAST manual ‘Sun, Sand and Sea Turtles’ by Marin, 2010); Various craft activities according to the species:
- II. F. 1. Various turtle activities and crafts in WIDECAST manual ‘Sun, Sand and Sea Turtles’ (Marin, 2010)

**Additional Activities**

- V. Conservation and Action A, B 1, 11, C, F 1,2,7,8
- V. A. Review My Park Pass Pledge
- V. B. 1. STENAPA swimming test
- V. C. Saba, STENAPA presentations on water safety
- V. F. 1. Using species identification cards
- V. F. 2. Making and using a logbook from Activity 1 in WIDECAST manual ‘Sun, Sand and Sea Turtles’ (Marin, 2010)
- V. F. 7. With STCB
- V. F. 8. Sharks of Bonaire materials
### Level: Nature Navigators  Age: 10-12 year olds  Message: Our islands' unique habitats are cool

#### Nature Education  Information and Materials

- **Goal:** To link threatened and endemic plants and animals with their ecosystems and critical habitat in the Dutch Caribbean islands

**Habitat III. A-D 1-6; Bioversity II. F 12,13**

- III. A. STINAPA; adapt Habitat factsheets from NSW Biodiversity for Kids; Make it a Habitat’ lesson at http://school.discoveryeducation.com/lessonplans/activities/makeitahabitat/
- III. B. Threatened species game (base on NSW NPWS Lesson 4)
- III. C. ‘Pick the wrong one out’ and ‘Animal Mail Order’ games at http://kids.biodiversity.org
- III. D. 2. STINAPA; Mangrove Centre Bonaire; Mangrove Action Project materials, especially mangrove ID pages; wetlands information at http://www.reefed.edu.au/home/students/web_quest/exploring_wetlands
- II. F. 12. STINAPA
- II. F. 13. STINAPA; Medicinal Plants on Statia in STENAPA Teachers Workbook 2

#### Field Activities and Materials

- **Goal:** To build skills and good practices for exploring these habitats

**Conservation and Action V. B 2, 4-7; F 9, H, P; Biodiversity II. F 2, J, K**

- V. B. 2. STENAPA, STINAPA
- V. B. 4. Saba
- V. B. 5. STINAPA
- V. B. 6. Saba
- V. B. 7. nb. not desired/appropriate for Statia, with expert/volunteer local partners as available
- V. G. Use ID cards
- V. P. Photography/video experience with expert/volunteer local partners as available
- II. F. 2. Keeping a logbook
- II. J. Practice in using field equipment
- II. K. Practice in using species identification cards
<table>
<thead>
<tr>
<th>Level: Nature Detectives</th>
<th>Age: 12-14 year olds</th>
<th>Message: We're making a difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature Education</strong></td>
<td><strong>Field Activities and Materials</strong></td>
<td></td>
</tr>
<tr>
<td>Information and Materials</td>
<td>Goal: To develop an understanding of human impacts on threatened and endemic plants, animals and their habitats, and threats to PAs</td>
<td></td>
</tr>
<tr>
<td><strong>Human Impacts IV. A-H</strong></td>
<td>Conservation and Action V. C-E 1,2,4; Biodiversity II. H, J</td>
<td></td>
</tr>
<tr>
<td>IV. A. US FWS 'Endangered means there's still time' slide show at <a href="http://training.fws.gov/deo/endang/index.html">http://training.fws.gov/deo/endang/index.html</a></td>
<td>V. C. Saba - Advanced water safety, boat handling and survival skills</td>
<td></td>
</tr>
<tr>
<td>IV. C. Keeping Statia Clean in STENAPA Teachers Workbook 2; STINAPA; Ocean pollution presentation <a href="http://oceancrisis.org/pollution/ocean_pollution.html">http://oceancrisis.org/pollution/ocean_pollution.html</a>; UNEP-CEP pollution videos; Bacalar Chico Marine Reserve video and brochure on marine debris; Bahamas National Trust marine debris games</td>
<td>V. E. 1. Seek copies of Reef Check Adventures for Kids materials <a href="http://reefcheck.org/involved/rc_kids.php">http://reefcheck.org/involved/rc_kids.php</a></td>
<td></td>
</tr>
<tr>
<td>IV. D. STINAPA</td>
<td>V. E. 2. STINAPA clean-up; Saba regeneration; Kids Clean Up in Aware Kids Teachers' Guide <a href="http://coralreef.noaa.gov/education/educators/resourcecd/guides/resources/aware_g.pdf">http://coralreef.noaa.gov/education/educators/resourcecd/guides/resources/aware_g.pdf</a></td>
<td></td>
</tr>
<tr>
<td>IV. E. Smithsonian Ocean Portal <a href="http://ocean.si.edu/ocean-news/5-invasive-species-you-should-know">http://ocean.si.edu/ocean-news/5-invasive-species-you-should-know</a>; Invasive species origin-impacts-control model to adapt <a href="http://oceancrisis.org/education/lessons/alien_invasion.html">http://oceancrisis.org/education/lessons/alien_invasion.html</a>; 'End of the Line' movie</td>
<td>V. E. 4. Echo Bonaire, other local partners as appropriate</td>
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<tr>
<td>IV. G. Interpret for kids the DCNA protected areas threat analyses</td>
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<tr>
<td><strong>Level: Nature Guardians</strong></td>
<td><strong>Age: 14-16 and 16-18 year olds</strong></td>
<td><strong>Message: We're taking responsibility</strong></td>
</tr>
<tr>
<td><strong>Nature Education</strong></td>
<td><strong>Field Activities and Materials</strong></td>
<td></td>
</tr>
<tr>
<td>Information and Materials</td>
<td>Goal: To develop an understanding of how conservation is managed, to provide exposure to the professions working in PAs and to generate an understanding of everyone’s responsibility for nature</td>
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</tr>
<tr>
<td><strong>Conservation and Action V. D, E 3,5, H-K</strong></td>
<td>Conservation and Action V. B 3, 8-10, E 1,6, F 3-8, L-N; Biodiversity II. I-K</td>
<td></td>
</tr>
<tr>
<td>V. E. 3. STINAPA building practices document</td>
<td>V. B. 3. STINAPA</td>
<td></td>
</tr>
<tr>
<td>V. H. Ocean Careers Exploration <a href="http://www.pbs.org/keeps/ocean-adventures/">http://www.pbs.org/keeps/ocean-adventures/</a>; Flying WILD programme</td>
<td>V. B. 10. Jong Bonaire; other expert/volunteer local partners as available</td>
<td></td>
</tr>
<tr>
<td>V. I. Existing Junior Ranger Programmes – Bonaire, Saba, Statia</td>
<td>V. F. 2. STINAPA</td>
<td></td>
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<tr>
<td></td>
<td>V. F. 5. GPS activities <a href="http://www.gis2gpx.com/GPS/lessonplans/gpsplans.htm">www.gis2gpx.com/GPS/lessonplans/gpsplans.htm</a></td>
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<td>V. F. 7. STINAPA</td>
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<td></td>
<td>V. F. 8. STCB, WIDECAST manuals</td>
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<tr>
<td></td>
<td>V. F. 9. Reef Check methodology (share training with MPAs)</td>
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<td>V. L. Intern programmes</td>
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<td></td>
<td>V. M. Partner organisations with experience in youth leadership training</td>
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<tr>
<td></td>
<td>V. N. Technical guidance from with expert/volunteer local partners as available</td>
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</tbody>
</table>
Appendix III
Nature Education Demonstration Materials

MY PARK PASS

Parke Nacional Arikok

Island: Aruba
Park name: Parke Nacional Arikok
Park size: 32km²

Key Species
Shoco  Cascabel  Prikichi
Joykil  Kini Kini  Divi Divi

This pass belongs to:

Photos from: Diego Marquez, Christian König, Kirkby's

Wild Life

Parke Nacional Arikok

Boca Prins
Quadirkiri cave
Park entrance
Masiduri
Sero Jamanota
Conchi

Paved road
Gravel road
Hiking trail
4x4 trail
Looking after National Parks

Who am I?

What do I work?

What are some of my duties at work?

The national park I look after is important because

What do I like about my job?

Attitudes towards Animals

Which words do you think match each animal. For each animal use up to four words.

Use the words from the list or try to think of your own. Use each word as often as you like.

Bruto Violento Salvaje Tristo Spantoso Sushi Kontento
Malbado Vulgar Dushi Sljimerig Sahi Hole Stinkt
Rabia Loco Lie Floa Laaf Irrante Poco Poco
Paysao Alerto Floho Suave Lief Amysabel
Peligrosos Ro’t Man Inteligente

EDUCATION PROGRAM

What are some of my duties at work?

Wild Lif

Attitudes towards Animals

Which words do you think match each animal. For each animal use up to four words.

Use the words from the list or try to think of your own. Use each word as often as you like.

EDUCATION PROGRAM

My Park Pass Pledge

When I visit a natural area, I will remember that I am a guest.

I will move silently and speak quietly.

If I turn over rocks or logs to look at what lives beneath them, I will carefully put them back where I found them.

I will have fun and take home memories, and leave behind only footprints in the mud or sand.

I will not chase or scare birds away from their nests.

I will take action in my daily life to reduce my impact on the environment and to protect plants, animals and the nature where they live.

Kompromiso

Ora mi bishita un area di naturalesa.

Mi tin ku korda ku ami ta un bishitante.

Lo mi kana den silensio i no papia dura.

Si mi bolbu un baranka of un pida pal upa wak Kiko tin bou din dje, mi tin ku perkura pa pone nan bek manara mi a haanje ku hopi kuidou.

Lo mi pasa dushe i bai kas ku yen di memoria komo rekuwerio i lo mi laga tras solamente marka di pia den lode of sanu.

Lo mi no loke tras of spanta e paranan for di nan neshi.

Lo mi perkura di ta konsiente den mi bida diario pa no tira sushi abou of den laman, asina proteha e komunidat di mata i bestia kuta biba aki.
My Park Pass Demonstration

Station 1 Discovery Rides
Goal: To build familiarity with local protected areas

1. Discovering and watching wildlife in four: Effective use of equipment is helpful for observing and identifying wildlife;
2. Currently identifying local plants and animals is an important skill that takes time to learn and requires the help of an enthusiastic mentor;

Station 2 Interview the Park Ranger
Goal: To build familiarity with local protected areas

1.自然保护区是野生动植物的家园，所以我们有责任保护它们。
2. 我们的自然保护区住着我们爱和需要的植物和动物，包括濒危、受法律保护、特有种和关键物种。
3. 需要确保我们不会打扰到动植物，特别是特别的动植物。

Station 3 Tools of the Trade
Goal: To build familiarity with local protected areas

1. 站长会进行双路无线电演示，并解释语言；
2. 展示用于公园巡逻的设备——无线电、GPS、工具并解释这些设备在公园巡逻中的作用；
3. 保护公园标志和公园标识；
4. 培训参加者如何在公园中使用无线电。

Station 4 Attitudes towards Animals
Goal: To raise awareness about protected areas and their role in conservation

1. 保护公园的人员穿着制服，有特殊徽章和员工；
2. 保护公园的人员在公园内巡逻时使用特殊徽章和员工；
3. 保护公园的人员在公园内使用无线电。

Bonaire Mentors

- Bonaire demos
- Two-way radio demos
- Photographer
- Video person

Read pledge and award of Kids’ Park Passes
**Nature Navigators Demonstration**

**Key Message** We love and need our local nature

**Goal:** To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands

Some of the special plants and animals of the Dutch Caribbean islands that we will learn about include:
1. Sea turtles
2. Birds

**Key Message** Our islands' unique habitats are cool

**Goal:** To link endangered, legally protected, endemic and keystone species of plants and animals with their ecosystems and critical habitat in the Dutch Caribbean islands

Habitats are homes and provide food for wildlife, and different habitats on our islands support our endangered, legally protected, endemic and keystone species of plants and animals.

Some important habitats that we will learn about include:
1. Mangroves
2. Reefs

**Large Group Activity Ready Set Nest!**

**Goal:** To build knowledge and understanding of sea turtles as one of the endangered, legally protected, endemic or keystone species in the Dutch Caribbean islands

1. Briefing about the sea turtles of Aruba
2. Formation of kids’ teams
3. Aruba’s first sea turtle relay race - Ready Set Nest!
4. Split adults and kids into groups
5. Ask quiz questions - the group with the correct answer proceeds to next station

- What is the largest sea turtle in the Caribbean Sea?
  a) Green turtle; b) Leatherback; or c) Hawksbill?
- True or false? A sea turtle can pull its head into its shell for protection?
- Do sea turtles have gills (like fish) or lungs (like us)?

**Station 1: Seabirds of Aruba**

**Goal:** To build knowledge and understanding of endangered, legally protected, endemic and keystone species in the Dutch Caribbean islands

1. Briefing about seabirds, distances traveled, how they feed
2. Using common local names, describe common birds found at sea, by the beach or in the mangroves in Aruba
3. Show bird ID cards and ask the kids to work on identifying the birds in the photos, help them notice that differences between the little means they are different types of birds with different names

4. Discuss seabirds’ vulnerability to plastic pollution and abandoned fishing line as it’s important to dispose of litter properly (if you see fishing and a bird gets caught on the hook, you can ease the bird at the end of the fishing line. Do not cut him free and allow the bird to fly back to the mangrove trailing line that will entrap him. Unable to free himself, he will stand in the water and can starve to death as well. Instead, bring him in and remove the hook or seek help from an expert, like a park ranger, to do this)

**Station 2: Mangroves and Reefs**

**Goal:** To link endangered, legally protected, endemic and keystone species of plants and animals with their ecosystems and critical habitat in the Dutch Caribbean islands

1. Briefing about mangrove habitats
2. Role of mangroves in protecting shorelines from storms
3. Importance of mangroves as nursery areas for marine species
4. Describe the protected area status of Aruba’s Spaans Lagoen mangroves
5. Links between mangroves and reefs
6. Using photos, describe some of the species that are found on Aruba’s reefs (coral, grey nurse shark, reef fish)

**Station 3: Mangrove Exploration**

**Goal:** To encourage ecologically sensitive practices for exploring and enjoying nature

1. Introduction to snorkeling and gear
2. Briefing about environmentally sensitive snorkeling practices
3. Group entry to water and swim to educator
4. Snorkel exploration of marine life among mangrove roots

**Closing**

Ask the kids about their favourite sea creature

**Bonaire Mentors**

Marking of start line and approval of nest depth for Ready Set Nest!

Assistance with snorkeling

Photographer

Video person

**Nature Navigators Demonstration**

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### Nature parks of the Dutch Caribbean

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<thead>
<tr>
<th>Island</th>
<th>Nature Park</th>
<th>Address</th>
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<tbody>
<tr>
<td>Aruba</td>
<td>Fundacion Parke Nacional Arikok</td>
<td>San Fuego 71, Santa Cruz, Aruba</td>
<td>+297-992-9376</td>
<td><a href="http://www.arubanationalpark.org">www.arubanationalpark.org</a></td>
</tr>
<tr>
<td>Bonaire</td>
<td>STINAPA Bonaire</td>
<td>Barcadera, Bonaire</td>
<td>+599-717-8444</td>
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<tr>
<td>Curaçao</td>
<td>CARMABI</td>
<td>Piscadera Baai, Curaçao</td>
<td>+599-9-462-4242</td>
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</tr>
<tr>
<td>Saba</td>
<td>Saba Conservation Foundation</td>
<td>Fort Bay, Saba</td>
<td>+599-416-3295</td>
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<tr>
<td>Statia</td>
<td>STENAPA</td>
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