

St. Eustatius: Nature Awareness Project

By Hannah Madden

In October 2016, a two-year project to increase awareness and understanding of nature on St. Eustatius commenced, funded by the Ministry of Economic Affairs (MinEZ) and facilitated through the Caribbean Netherlands Science Institute (CNSI). Public awareness and community outreach is of critical importance in order to gain the support of the local community, and to promote efficiency among the various stakeholders pertaining to new nature and environmental plans. Public support for nature can be enhanced enormously, when people see the link between nature and their own interests like economic prosperity.

The project facilitates and develops information and awareness-raising campaigns on various topics like invasive species, key species, roaming animals, erosion, biodiversity, the economic value of nature, sustainability and the importance of nature in general as well as the opportunity to interact with the public. The campaigns and plans are aimed at the entire island community, and more specifically civil servants, managers, customs officers, students and teachers. Awareness of the importance of nature for mankind and the island itself should be island-wide. The overall objective of this project plan is the successful and efficient implementation of any nature plan/

policy. The project purpose is to create a mind shift in the community towards a sustainable relationship with nature.

1. Workshops Economic value of nature

To date, a number of activities have taken place, including an economic value of nature workshop in April 2017. The workshop was developed by Wolfs Company and Wageningen University, and consisted of a one-day workshop for private businesses and a three-day workshop for civil servants and relevant NGOs. Participants of the business sector workshop were presented an evaluation tool to assess their impact on ecosystem services, which exemplifies which risks are associated with the loss of ecosystem services for their business, and vice versa. Opportunities could be identified for their businesses, based on The Economics of Ecosystems and Biodiversity (TEEB) study. The objective of the three-day workshop was to build capacity through training by establishing an understanding of economic valuation of ecosystems services based on the TEEB study. The participants learned to identify different ecosystems on St. Eustatius and were trained in ecosystem valuation methods and techniques using specific local case studies.

The valuation of ecosystem goods and services studies was presented, as well as its influence on nature conservation, management, investments and policies in the Caribbean. Factors that enable the effectiveness of a valuation study were also discussed, and examples of socio-economic benefits resulting from influencing nature conservation, management investments and policies were presented. The effects of natural resource conflicts and their relation to ecosystem services were demonstrated.

Following the workshop, Wolfs Company designed a toolbox that contained a repository with relevant documentation regarding ecosystem services on St. Eustatius, a tool for the private sector based on the ecology scan tool used in the workshop, and a tool for the public sector to map out ecosystem services effects of a government intervention (e.g. goat management, erosion control).

Invasive species

Twenty-five participants attended an informative workshop on invasive species from 28 to 29 November. The workshop was hosted by the CNSI under the Nature Awareness project, funded by the MinEZ, and was facilitated by three

marine and terrestrial biologists from Naturalis Biodiversity Center in the Netherlands (Dr. Bert Hoeksema, Dr. André van Proosdij and Mr. Niels Schrieken).

Beginning with an overview of terminology, the differences between indigenous and exotic, introduced and invasive species were explained, with examples of vectors for introduction such as boats, planes, and the pet & ornamental plant trade. Islands are particularly vulnerable to invasive species because many of them are relatively small and isolated, together covering just five percent of the Earth's land mass. Yet, islands represent the greatest concentration of biodiversity and species extinctions (40% of fauna at risk of extinction; 80% known extinctions since 1500).

Once an invasive species arrives on an island, early detection is crucial in order to avoid excessive eradication costs and negative side-effects once it becomes established. Actions that can be implemented include: species alert lists, action plans, effective border controls, public awareness, invasive species management teams, government policy (and enforcement), and quarantine import documents.



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Two field sessions were organized, whereby the groups visited areas affected by non-native/invasive flora and compared differences between the sites, led by botanist Dr. André van Proosdij. They used skills developed in the workshop to determine to what extent an area is impacted by invasive flora at present, and predict how it could look in the future if no effort is made to control these. The field session on marine species focused on a settlement plate (SETL) project, whereby PVC plates are hung at a depth of one meter below the surface and checked quarterly to inspect the marine species that attach to them. In this globally applied method, introduced marine species can easily be detected, especially in the proximity of harbours.

Participants of the workshop included staff and students from STENAPA and CNSI, as well as relevant government sectors such as Public Health, Agriculture & Fisheries, and Harbor. The workshop contained interactive sessions and discussions, which resulted in extensive knowledge sharing and development at all levels. A follow-up session will be organized by CNSI to encourage further discussion and the formalization of specific action points between key island stakeholders.

Education

An inquiry-based workshop will be organized in 2018 for educational staff whereby training will be provided on using the educational materials produced by Naturalis. In addition, a multifunctional exhibition and learning space and a biodiversity exhibition is currently in the planning phase and will be constructed at CNSI next year. Both activities are a follow up to the outreach and education that Naturalis contributed to in September 2015 – 2016, as well as a visit by two museum experts who submitted a preliminary design for the exhibition space.

2. Increasing knowledge of the importance of nature by the local community

In order to build positive emotions and feelings about nature and its (economic) value by the local community, STENAPA contracted Winkelman & Van Hossen communications bureau to develop an outreach campaign, strategy and key messages for the organization. The key objectives for nature conservation and biodiversity were highlighted and selected through meetings with STENAPA staff and islanders. The question of how 'nature awareness' contributes to these objectives, and the definition of nature awareness among the local community was discussed.

Given that this project's aim is to increase awareness of nature among Stadians, it is important to understand what social, historical and/or cultural subjects appeal emotionally to the community. Following interviews with focus groups and opinion leaders, two very different creative concepts were developed: 1) Big Events in Nature, and 2) Very Personal Places. Big Events in Nature aims to highlight and dramatize a wide variety of smaller and bigger 'events' in St. Eustatius's nature that are worth a closer look by the general public. Very Personal Places focuses the emotional value of places in nature to individual Stadians; places that are dear to individuals you can relate to and that make you think. Each creative option aims to raise

awareness for St. Eustatius's nature, thus laying the foundation for stronger community support for conservation and preservation.

The two concepts will be tested to determine how groups of people from the local community respond to the campaign designs, and how potential local endorsers and sponsors/entrepreneurs react. Their feedback will be used to select a winning concept, improve the final concept and explore possible opportunities for participation.

3. Importance of nature by youth and educators

Hannah Fairley of STENAPA is fulfilling the role of Nature Education Officer, whereby she visits the various elementary schools and after-school clubs at least once a month. STENAPA's environmental education program has been redesigned. All lessons are now taught outside to allow for experiential learning in nature. The goal of the program is to develop a connection and understanding of nature within the next generation with the hope that they will become ecologically responsible citizens in the future.

STENAPA continues to carry out its Junior Ranger club in collaboration with Mega D Youth Foundation and Daughters of the King afterschool clubs. Every month the Junior Rangers are taken on a field trip into the national parks. Alongside

this, STENAPA has increased its relationship with the Gwendoline van Putten School by taking science classes up the Quill once a month in the academic year.

Many community outreach events have been organized by STENAPA throughout the year to raise awareness of different topics in nature. In July STENAPA takes part in the Caribbean Netherlands Kingdom-wide Shark Week, that is part of the Save Our Sharks project. This is a week-long event promoting the importance of sharks for our oceans. Recently, STENAPA celebrated twenty years of managing the St. Eustatius National Marine Park with an informational event. Several topics were highlighted, such as marine debris and coral reefs.

STENAPA is also actively working on recruiting interns and volunteers from the local community. The Nature Awareness project has allowed STENAPA to offer a stipend to encourage students to join the organization. Students join from the Gwendoline van Putten School, the only high school on St. Eustatius, and participate in activities within the national parks. This has allowed STENAPA to increase capacity whilst also engaging young people in national park activities and learning about the importance of nature conservation.



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Youth ambassadors

To date, two youth ambassadors have visited St. Eustatius in order to engage with and inspire the island's students. In April 2017, Mr. Gavin Palmer, an MSc student from Jamaica and member of the Caribbean Youth Environment Network (CYEN), visited St. Eustatius whose focus was renewable energy and agritourism. He developed interactive lessons and activities that encouraged all students to participate in a fun, engaging and educational way. In addition, a field trip to the solar park was facilitated by local energy provider, STUCO NV, who gave students of the Gwendoline van Putten (GVP) high school a tour of the facility. Gavin featured on local radio, met with local relevant stakeholders, participated in a local cycle-thon, took students on a hike into the Quill National Park, and met with CNSI's Youth Advisory Council. An advocate for sustainable development and inspirational motivational speaker, Gavin's enthusiasm throughout his stay was evident.

In October 2017, Ms. Sade Deane, national coordinator of the CYEN in Barbados, spent a week on St. Eustatius engaging with the youth about marine debris and recycling. She developed an interactive lesson about Finn the Fish that allowed elementary school students to understand how marine debris and microplastics enter marine environments and threaten wildlife. A field trip to the recycling facility allowed students of the GVP

school to understand how items are recycled on St. Eustatius and why it is important to do so. The week of activities culminated in an International Coastal Cleanup on Zeelandia beach, where volunteers collected man-made items and listed the type/amount of garbage found on the beach. Twenty-two local volunteers participated and over 190 pounds of trash was collected in under two hours. Deane also featured on local radio and met with various island stakeholders. Response from the schools was very positive, and CNSI looks forward to bringing more

4. Highlight key species

A number of key species were selected to be highlighted in this project due to their relevance on St. Eustatius. The endangered Lesser Antillean Iguana was an obvious choice due to its dwindling population size and ongoing threats such as road mortality, entrapment in fences, and the invasive Green Iguana. The construction of a headstarting sanctuary was to serve as a refuge for the endangered local iguanas as well as an educational center for the general public. Unfortunately, however, at the time the proposal was written it could not be predicted that there would be an invasion by the Green Iguana on St. Eustatius. Given the current situation and ongoing threat of hybrid iguanas, the headstarting sanctuary has been put on hold until all invasive iguanas have been removed from the island.

The endemic vine, St. Eustatius Morning Glory, is one of the rarest plants in the Dutch Kingdom and blooms spectacular pink, bell-shaped flowers from December to April. It grows naturally in the northern hills in a semi-arid, rocky substrate with plenty of sunlight. For many years Mr. Ishmael Berkel had successfully cultivated St. Eustatius Morning Glory at his property, Lynch Plantation. Sadly, however, the vine became engulfed in lice and was unable to overcome this and other challenges, including extensive drought. Information signs highlighting this unique species will be installed in accessible areas where the plant grows in order for residents and visitors to be able to spot the plant and learn more about its phenology.



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The Red-billed Tropicbird is a migratory seabird that nests on St. Eustatius from October to June, and is an iconic sight in the sky with its long, white tail feathers and red bill. Due to the importance of St. Eustatius for the species in terms of suitable nesting habitat, the species was selected for a live stream webcam project that is currently in progress. A camera will be placed inside a nesting cavity which contains an adult with an egg or chick, and viewers will be able to monitor the nest as it progresses. The concept is similar to that of BirdLife Netherlands' Beleef de Lente project (<https://www.vogelbescherming.nl/beleefdelente>). If funding, equipment and time permits, a second webcam will be installed at an underwater wreck such as Chien Tong in order for viewers to be able to appreciate St. Eustatius' marine life.

When the Nature Awareness project proposal was originally written, St. Eustatius's native Lesser Antillean Iguana (*Iguana delicatissima*) fell under the 'highlight key species' component. The original plan was to establish a small head starting facility with a zookeeper in order to boost the island's declining population. This would entail relocating eggs from the wild, placing them in an incubator and keeping the hatchlings in captivity for a period of 1-2 years until they were less vulnerable to predators. Thereafter they would be released into the wild; this is a tried and tested method of boosting iguana populations on other islands. However, some years passed until the Nature Awareness project finally commenced, and during that time - to the horror of biologists, residents and

conservation groups - an adult Green Iguana (*Iguana iguana*), two juvenile Greens and seven hybrids were discovered on St. Eustatius. Intensive efforts began immediately to search for Greens and hybrids, which continue to this day. There are fears that additional hybrid hatchlings will begin to emerge from nests in the future, which will disperse to other parts of the island and mate with native iguanas. If this worst-case scenario becomes a reality, once established the Green Iguana will have a stronghold on St. Eustatius and the species will be impossible to eradicate, as has been the case on many other islands.

Therefore the decision was reluctantly taken not to build a head starting facility until there is absolute certainty that no more invasive iguanas are present on St. Eustatius. This means continued search efforts, effective border control, and dissemination of information to the general public to be on the lookout for iguanas with bands on their tails. In the meantime, a temporary holding facility has been built at the Botanical Garden which could house any invasive iguanas, and regular meetings have been held with relevant local stakeholders to discuss the way forward.



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