

March 2014



▶ Newsletter 2/2014

STENAPA Extra

First Leatherback Nest 2014

On Wednesday, March 5th, the first leatherback of the season deposited her nest at Zeelandia Beach. She is a few weeks early but the program is happy to see the return of the leatherbacks no matter when they arrive. Leatherbacks are critically endangered. The past years have seen a decline in the numbers of this species coming to nest but at the same time an increase in the Green and Hawksbill numbers.



(Above: Leatherback track, Zeelandia)

During the last months many persons have been illegally removing sand from the beach. The National Parks Foundation would like to remind the general public that removing sand from Zeelandia is a punishable offense. Sand can be purchased at the local company at a price very much below the fine that is applicable if caught.

The sand is being removed from the area where the Leatherbacks traditionally nest and if this illegal activity continues it could destroy nests.

Nests are also at risk from vehicles driving on the sand which could crush the nest. Driving on the sand is a punishable offence on the protected beach.

Night patrols and daily morning track surveys have commenced. Persons who would like to accompany the patrols and those who would like to be called to the beach when a turtle is encountered are very welcome to sign up at the National Parks Visitors Centre in Gallows Bay.

Leatherbacks are the largest species of sea turtle. Adults can reach sizes of 2.4m length by 3.6m width and can weigh over 700kg. They are also the deepest diving species, descending to depths of around 1,000m. Leatherback turtles have experienced a worldwide decline due to several factors. The breeding grounds of these turtles have suffered greatly from industrial development, especially in South America and Central America.

Beach erosion through severe storms has affected their nesting sites. Poachers have been known to raid the turtle's nests for the meat and eggs. Artificial light from beach front hotels and restaurants attracts hatchlings away from the ocean, making them especially vulnerable. At sea, many leatherbacks drown after becoming entangled in fishing gear. These turtles also eat ocean debris, to their misfortune: plastic bags are fatally mistaken for jellyfish, which is their favourite food.

Leatherbacks are currently on the international list of endangered species, making it unlawful to harm or kill them.

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Don't forget...

Guided Hikes: Are available

Botanical Garden: Check out the view from the Lookout Garden Open from sunrise to sunset. Great for picnics.

Find us on Facebook:

Keep up to date with all the latest happenings—Like our 'Stenapa St. Eustatius' and 'Stenapa Youth Nature' pages!



HIKING

Our new guide, Celford Gibbs, is happy to take you on any of our hiking trails. He is getting rave reviews from hikers! Sign up for this unique adventure (+599) 318 2884

Staff Exchange to Saba, Presentation in DR

In the first week of March, Dr. Adrian Delnevo and National Park Ranger Hannah Madden travelled to Saba to conduct research with the Saba Conservation Foundation. Dr. Delnevo is a regular visitor to Saba and St. Eustatius and has been an active conservation ecologist for over 40 years. This visit was all about discovery. They investigated a new area for nesting Tropicbirds on the south side of Saba, and found direct evidence of nesting birds and a strong likelihood for nesting **Wedrego** (Audubon's Shearwater).



(Above: Delnevo surveying the area beyond Great Level for Tropicbirds)

In addition to seabird work, Delnevo and Madden began a pilot study of biodiversity and ecosystem monitoring to assess the relationships between species and their habitat. This effort is normally very labour-intensive, but was made easier by the use of various automatic recording devices that were deployed over several days and nights. The study started in the dry forest and included 24-hour infra-red cameras, sound-recording equipment for birds, amphibians, bats (using ultra-sonic micro-phones), and some insects, as well as other non-lethal trapping techniques. Multiple, and simultaneous and weather data was recorded, to be combined into a large database for subsequent analysis.

The analysis will include the use of **“statistical artificial intelligence”** software. Having found patterns, trends and relationships, this **software can then be “trained”** to recognize species, and in some cases can even recognize individual animals. This type of information may then be used to estimate population sizes, how often the site is used, and many other biological and ecological data. Overall this information may form the basis for further monitoring, and whether species and their habitats are changing over time.

Previous studies within habitats or ecosystems, have tended to look at individual species. However this may be one of the first studies to incorporate a broad range of information and analyze it using **‘artificial neural networks’**. Consequently, this pilot study may lead to a more comprehensive and statistically validated assessment of ecosystem relationships. Thus the knowledge gained on Saba may subsequently be applied on Statia and elsewhere. This study and exchange were made possible with support of the Dutch Caribbean Nature Alliance and local support of **Juliana’s Hotel, AES Inc., and the Saba Conservation Foundation.**

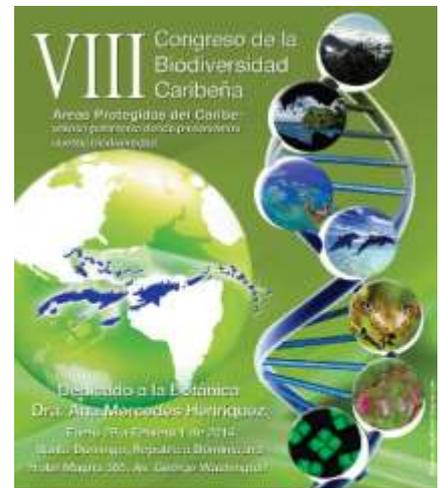
Caribbean Biodiversity Congress, Dominican Republic

From 28 January to 1 February, the 8th Caribbean Biodiversity Congress was organized by The Autonomous University of Santo Domingo’s Science Faculty and School of Biology. With funding provided by the Dutch WWF (Wereld Natuur Fonds), Hannah Madden was one of the few delegates representing the Lesser Antilles.

The three-day congress, held in Santo Domingo, was attended by around 200 people, including local, regional and international delegates representing a variety of institutions such as Harvard University, The University of the West Indies, The Nature Conservancy, and Santo Domingo’s own **natural history**

museum and botanical garden. The congress covered a variety of topics, spanning from marine protected areas, environmental education, nature conservation and managing exotic invasive **species to the “Barcode of Life”** project, sustainable development, inventory and quantification of biodiversity, experiences in the management of ecosystem services in Central America and the Caribbean, biopiracy and the flora of Hispaniola.

On the last day, STENAPA’s biodiversity monitoring was profiled in a presentation about some of the monitoring programmes that have been in place since 2008, complete with a few preliminary results. This included terrestrial birds, butterflies, orchids, Red-billed Tropicbirds and a Lesser Antillean Iguana population assessment. While the preliminary findings suggest that overall biodiversity currently appears to be stable, due to the **island’s limited area and small species population** it could be vulnerable due to continuing habitat loss, fragmentation and degradation.



Outings in and Visits to Statia

Education

Over the last month, STENAPA's education program has taken all the primary school classes of St. Eustatius for a nature hike to the Northern Hills of the island. A couple of themes were combined in this outing: the children were able to see many typical Statian plants and trees and also learned about geology. They discovered that the Northern Hills are actually the remains of an extinct volcano that is thought to have first erupted around 1.5 million years ago (much older than the Quill's 1,600 years!).

Following the original road that was likely built in the 17th century the children learned about Statia's history while passing a number of stone walls. These walls were made to prevent the erosion of topsoil from cliff edges and to indicate property lines. The children enjoyed great views across their island. One student of the Golden Rock School Group 3 asked "Teacher, is this still Statia?" A student of Group 5 Lynch Plantation School reacted after seeing 'Bergje' or 'Little Mountain' and 'Venus Bay' for the first time: "Now I know why we sing from Quill to Little Mountain and from Venus to White Wall!" The teachers were also excited to see Statia Morning Glory and the Pinguin bromeliad, both of which are found only in the Northern Hills.

(Below: Bethel Methodist School, Groups 1 and 2)



Nature Conservationists Meet on St. Eustatius

The Dutch Caribbean Nature Alliance (DCNA), a network of nature conservation organizations spanning the Dutch Caribbean, recently held its 20th board meeting on Statia.

Local conservation interests from Aruba, Bonaire, Curaçao, St. Eustatius and St. Maarten along with experts from as far afield as the Netherlands and USA gathered to discuss critical issues including building capacity for fundraising on the islands and the development of a sustainable funding solutions for parks and other nature conservation organizations.



(Above: Tropicbird demonstration on Zeelandia—photo by Nat Miller)

Joining the Board meeting were the Honorable Governor Holiday of St. Maarten and General Secretary to Her Royal Highness Princess Beatrix, Jaap Leeuwenburg, alongside local dignitaries the Honourable Governor Berkel and Commissioner Tearr.

In his welcoming address, Governor Berkel stressed the need for nature and development to work together to provide sustainable

solutions for the island and voiced the need for increased awareness on issues related to nature and sustainable development.

Funding for nature conservation has been an issue for decades. In 2005 STENAPA ran out of money and was forced suddenly to close its doors. This galvanized conservationists across the six islands to overcome their differences and resulted in the parks creating DCNA.

The meeting also discussed the future role for the Dutch Caribbean Nature Alliance in light of the constitutional changes.

A field trip to Zeelandia beach on the second day of the Board meeting highlighted STENAPA's excellent conservation work of Red-billed Tropicbird monitoring, and protecting and monitoring Zeelandia as an important

nesting beach for Leatherback and Hawksbill turtles. It also demonstrated issues related to solid waste management and sand mining both of which need to be addressed urgently.

"The Board meeting gave us the chance to discuss one of the most important threats to nature conservation – lack of sustainable structural funding for the parks and other conservation organizations. We are confident that the work which has been begun at this meeting – including the launching of a sustainable funding study to be run by conservation finance expert and lawyer, Dr Barry Spergel - will provide us with the vision and solutions we need to safeguard nature on our islands."

Botanical Studies

The World's Worst Plant Invader

Leucaena leucocephala, locally known as Tan Tan, is a small, fast-growing mimosoid tree native to southern Mexico and northern Central America which is now naturalized throughout the tropics. During the 1970s and 1980s, it was promoted as a "miracle tree" for its multiple uses. It has also been described as a "conflict tree" in that it is both promoted for forage production and spreads like a weed in some places.

L. leucocephala is highly invasive in The Bahamas, parts of Taiwan, the Hawaiian Islands, Fiji, Hong Kong and northern Australia, as well as in South American and Europe. It grows quickly and forms dense thickets which crowd out any native vegetation. *L. leucocephala* is considered one of the 100 worst invasive species by the Invasive Species Specialist Group of the IUCN Species Survival Commission. The plant is also found in California, Arizona, Texas and Florida, and is considered weedy or invasive by some authorities. Nevertheless, *Leucaena leucocephala* has been considered for biomass production, as its reported yield of foliage corresponds to a dried mass of 2,000–20,000 kg/ha/year, and that of wood 30–40 m³/ha/year, with up to twice those amounts in favourable climates. It is also efficient in nitrogen fixation, at more than 500 kg/ha/year. It has a very fast growth rate, with young trees reaching a height of more than six metres in two to three years.



(Above: Invasive *L. leucocephala*)

On Statia, it grows abundantly in the Northern Hills and Cultuurvlakte (the middle of the island) but, as with Corallita, is unable to establish

itself in the Quill since this area has remained undisturbed for hundreds of years.

The seeds and green seedpods are eaten in other countries, but they contain toxic mimosine and should be cooked and prepared to remove most of the toxin, and only eaten occasionally in limited amounts. Mimosine can cause hair loss, reduced thyroid function, goiter, infertility and other health problems if regularly ingested. Some ruminants like sheep, cattle, and goats can safely eat this plant if they are accustomed to doing so and have the necessary rumen bacteria for it. Humans and non-ruminant animals, however, can suffer hair loss and other health problems if they make this plant a major part of their diet.

Sheila de Leeuw, a tropical forestry student from Van Hall Larenstein university in the Netherlands, is currently on Statia to gain field experience that will contribute towards her degree. She will be studying possible suppression/eradication methods of *L. leucocephala*, including removal of the plants to the roots, suffocation using plastic, and the use of glyphosate-based herbicide.

Statia Morning Glory

A second component of Sheila's project will be to study our endemic Statia Morning Glory (*Ipomoea sphenophylla*), which is currently in full bloom in its natural habitat, the Northern Hills. Sheila will attempt to map all the known plants—currently there are stable populations growing on Signal Hill, Bergje, Gilboa Hill, the road to Venus Bay and Boven. NuStar has generously allowed us access through their facility to conduct a more in-depth study of a large population that is growing just outside their perimeter fence. This study involves collecting data on the habitat in which it grows, including soil analysis, assessing leaf litter and tree/shrub/herb density, tree species and height at which the vines grow, and whether the plants are flowering or have pro-

duced seeds.



(Above: Tropical forestry student Sheila de Leeuw in the field)

Statia Morning Glory is a member of the morning glory family (Convolvulaceae), of which there are some 60 genera and 1,650 species of mostly herbaceous vines. Most morning glory flowers unravel into full bloom in the early morning. The flowers usually start to fade a few hours before the petals start showing visible curling. They prefer full solar exposure throughout the day, and mesic soils, a type of habitat with a moderate or well-balanced supply of moisture. The results of Sheila's studies will be available upon completion of her internship later this year.



(Above: SMG flowers)

Humpback Whales

For the past few weeks and more frequently these last days, there have been sightings of Humpback whales around the island. The dive shops have reported even hearing humpbacks whilst diving on the reefs.

STENAPA is requesting everyone that sees humpbacks or dolphins to report the sighting to the office. Pictures and video are welcome, especially of the flukes of whales and the dorsal fins of dolphins, because these are useful in the identification of a particular animal. The Marine Park keeps a database on sightings and incidents related to Marine Mammals and it is very important to have as accurate as possible figures on the numbers of whales and dolphins that use or pass through our waters.

STENAPA is part of several Caribbean wide marine mammal networks. Information and sightings are shared via the databases of the Dutch Caribbean Cetacean Network (DCCN) and the Southern Caribbean Cetacean Network (SCCN).

The Statia National Marine Park has also been working closely with the French Caribbean Marine Mammal Sanctuary, AGOA, based in Guadeloupe. The sanctuary comprises all the French islands in the Caribbean and covers 138,000 km².

Twice a year STENAPA staff take part in a week-long boat-based AGOA-sponsored marine mammal survey around the Northern islands. In a few weeks, there will be a survey to attach satellite tags on several humpbacks in the area, in collaboration with AGOA and other agencies. St Eustatius as well as Saba have each acquired their own tag and it will be interesting to track where the humpbacks go that migrate past these islands.

STENAPA has received a hydrophone from the Institute for Marine Research (IMARES) in Wageningen, Holland, and is now capable of performing its own data collecting. Staff go out to a dive site, lower the hydrophone into the sea and can **listen to and record the whale's songs and dolphins' sonar clicks up**

to several miles away. That way even if no whales or dolphins are spotted, their presence in our waters can be recorded.

Persons in the WhiteWall area have a fantastic view of the sea and are especially asked to report any sightings to the National Park Visitor Center on 318 2884 or research@statiapark.org.



(Above: *Humpback whales in Statia's waters*)

The humpback whale (*Megaptera novaeangliae*) is a species of baleen whale. Adults can range in length from 12–16 m and weigh approximately 36 tons. The humpback has a distinctive body shape, with unusually long pectoral fins and a knobby head. An acrobatic animal known for breaching and slapping the water with its tail and pectorals, males produce a complex song lasting 10 to 20 minutes, which they repeat for hours at a time. Its purpose is not clear, though it may have a role in mating.

Found in oceans and seas around the world, humpback whales typically migrate up to 25,000 km each year. Humpbacks feed only in summer, in polar waters, and migrate to tropical or subtropical waters to breed and give birth in the winter. During the winter, humpbacks fast and live off their fat reserves. Their diet consists mostly of krill and small fish. Humpbacks have a diverse rep-

ertoire of feeding methods, including the bubble net feeding technique.

Like other large whales, the humpback was and is a target for the whaling industry. Once hunted to the brink of extinction, its population fell by an estimated 90% before a moratorium was introduced in

1966. While stocks have since partially recovered, entanglement in fishing gear, collisions with ships, and noise pollution continue to impact the 80,000 humpbacks worldwide.

A humpback whale can easily be identified by its stocky body with an obvious hump and black dorsal colouring. The head and lower jaw are covered in hair follicles, and are characteristic of the species. The fluked tail, which it lifts above the surface in some dive sequences, has wavy trailing edges. The long tail fin, which can be up to a third of body length, and the pectoral fins have unique patterns, which make individual whales identifiable. Several hypotheses attempt to explain the humpback's pectoral fins. The two most enduring mention the higher maneuverability afforded by long fins, and the usefulness of the increased surface area for temperature control when migrating between warm and cold climates.

St Eustatius National Parks



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STENAPA is an environmental not-for-profit foundation on St Eustatius and was established in 1988. The purpose of the Foundation is the acquisition, preservation, protection and administration of parcels of land/water on Sint Eustatius, worthy of preservation, due to: a. its scenic beauty and/or presence of flora and fauna important in scientific and cultural respect or valuable from a geological or historical point of view; b. its purpose to serve for the well being, the education, and the recreation of the Sint Eustatius population as well as that of visitors, all this with due observance of the primary requirement of preservation.

STENAPA is legally mandated by the Island Council to manage the St Eustatius National Marine Park, The Quill / Boven National Park and the Miriam Schmidt Botanical Gardens .

President:	Irving Brown
Vice President:	
Treasurer:	Hilda Doek
Secretary:	Gene Herbert

www.statiapark.org

Heritage Garden

We have started work on a new heritage garden at the Botanical Garden. The Phase 3 areas include pre- and post-Columbian gardens that will be housed in a new area called the heritage garden. It is designed to be a walk through time, starting in the pre-Columbian era with native species and plants that would have been useful and significant to the Saladoid Indians known to have had settlements on the island between 300 and 900AD. Pathways will then lead visitors through a section that will be dedicated to plantation species such as sugar cane and coffee that would have been traded through **Statia's 'golden rock' in the 1700's**. The final section will be an educational installation designed to show visitors how enslaved Africans lived on Statia hundreds of years ago.

The garden is located on the site of an old plantation and will showcase features and artifacts that have been found in the garden over the years. Moving into Phase 3 is an exciting time for the garden and this new area will be an interesting **attraction. It reflects STENAPA's** mission of preservation of cultural heritage and plant species, conservation of energy and education for all. Special thanks goes out to our helper extraordinaire, Cerdarion Courtar and his brother Eric, who have been assisting at the Botanical Garden as part of a job training program through the Gwendoline van Putten High School. Cerdarion has been helping out moving rocks and clearing vegetation at the Garden. He seems to enjoy working with us as he keeps returning to do his job placement with STENAPA!

