

October 2013



▶ Newsletter 3/2013

STENAPA Extra

Bridled Quail-dove Study

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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!



REMINDER

**Lionfish are
venomous and
should only be
removed by Marine
Park Staff.**

**If you have any
questions or a
Lionfish sighting
please call us on
318 2884**

Our current National Park intern, Catherine McLaughlin, has embarked upon a population/habitat assessment of the Bridled Quail-dove (*Geotrygon mystacea*), a species of ground dove that is known only to inhabit certain areas of the Quill. For the past two months Catherine has been walking transects in the Quill in an effort to document the presence of this enigmatic, rather shy bird. Few studies have been done on this species to date, therefore the results will be of significant importance to other islands that are also home to the bird. According to the Birds of the West Indies book by Raffaele et al., **this dove is a 'generally uncommon to rare resident in the Lesser Antilles and larger, forested Virgin Islands; extremely rare and local in Puerto Rico'. The Bridled Quail-dove can be distinguished from other species of dove from the white streak below its eye and a green-blue patch at the back of its neck. It generally roams the north/north-western slopes of the Quill and can also be found inside the crater.**

nevo is no stranger to the birds of the island, and was excited when we announced Catherine's plan to study this bird. He spent three days with us recently where he walked some of the transects in our study area. He also set up a mist net in an attempt to catch one of these elusive birds, however this was unsuccessful.



(Above: National Park intern Catherine McLaughlin has a BSc in Zoology)

We have also installed cameras in an attempt to document the presence of this dove, and in fact our cameras have captured images of the bird. The cameras are triggered by a heat differential, however, **and given Statia's warm climate and the small size of the dove, they are only triggered when it is closer than a metre.** Nevertheless, we do have photographic documentation of the dove. A paper containing the results of this study will be submitted to the Journal of Caribbean Ornithology for peer review in the near future.



(Above: Bridled Quail-dove in the Quill)

Catherine is assisted in her project by National Park Ranger Hannah Madden and Dr. Adrian Delnevo, who has visited Statia numerous times to conduct bird trainings. Del-

Stenapa Staff at Sustainability Conference

Director Steve Piontek and National Park Ranger Hannah Madden were **guest speakers at this year's Sustainability Conference**, hosted by the St. Eustatius Tourism Development Foundation (STDF). **The theme, "Tourism and Water: Protecting our Common Future"**, was in line with that chosen by the World Trade Organization for Tourism Day. This is the second year STDF has organized its conference, which included local, regional and international speakers from a wide variety of sectors, including hotels, local utilities suppliers, the Caribbean Tourism Organization, NGOs and the Caribbean Community Climate Change Center.

Steve Piontek opened the first day with his presentation about coastal management. He highlighted the need for cooperation and communication in order to address the needs of the various stakeholders whose livelihoods depend upon the biodiversity present in the coastal zone of Statia.

He went on to describe some of the threats which face the coastal zone of Statia, the consequences of these threats and the management actions required to mitigate these threats.

Hannah Madden presented the results of **this year's Red-billed Tropicbird** breeding assessment study (detailed info on pages 4 and 5). Both presentations were well received and created some lively discussion and questions among the participants.



(Above: NP Ranger Hannah Madden talking about tropicbird breeding success)

On the final day of the conference, Madden took some of the delegates on a guided hike into the crater of the Quill where they saw tiny frogs, scorpion spiders, snakes, tarantulas and a variety of birds and insects.

STENAPA wishes to congratulate STDF for organizing another excellent conference around the issue of sustainability, which is so **pertinent in today's society, and for recognizing the importance of bringing this issue to the fore.** The

Caribbean in particular has contributed least in terms of greenhouse gas emissions, yet will be one of the regions that suffers the consequences of climate change most in the future.

We look forward to collaborating with STDF again

in 2014 for the third Statia Sustainability Conference.



(Above: Director Steve Piontek addressing the audience about coastal management)



(Above: Some of the delegates from St. Maarten enjoying the view at the crater rim)

Botanist celebrates his 10th visit to Statia

Dr. Frank Axelrod, botanist and herbarium manager at the University of Puerto Rico (UPR), has just celebrated his tenth visit to our tiny island. He has been coming to Statia since 2009 to collect and document **the island's plants, with the ultimate goal of publishing a flora checklist.** Statia is home to around 500 native plants, a large percentage of which can be found in the Quill and northern hills, although Axelrod has covered the entire island numerous times.



(Above: Dr. Axelrod in the crater next to an as-yet-unidentified palm species)

During his last visit in September, we spent two days in the Quill, two in the northern hills, and the final day of fieldwork traversing other areas such as town and coastal areas. We were surprised to find a species of palm in the crater of the Quill, and Dr. Axelrod confirms he added a number of species to his checklist. He will return for his final visit in November. It has been a pleasure welcoming Dr. Axelrod to Statia the past five years and Stenapa is grateful for his tireless dedication to **documenting the island's flora.**

Dr. Axelrod shows no signs of stopping, either. He has just been asked to document the flora of St. Maarten by Rueben Thompson of

Environmental Protection in the Caribbean (EPIC), who is working hard to protect an area of land called the Emilio Wilson Estate. We hope this result in the protection of one of the last remaining forests on St. Maarten.

Orchids

One of Statia's loveliest orchids is *Brassavola cucullata*, a species that grows on shaded boulders and tree trunks in the Quill and Boven. Each new shoot produces a single, nocturnally fragrant flower. Although geographically widespread, populations of these orchids may be suffering from habitat destruction, collecting, and invasive species. **In 2009, Axelrod's colleagues Dr. Jim Ackerman and Raymond Tremblay** (orchid specialists and professors), joined NP Ranger Hannah Madden to establish a monitoring program of *B. cucullata*. Every year since they have gathered demographic data, which will be used to assess population viability and make recommendations for management. Reproductive effort and success are critical for population longevity. Fruit production in *B. cucullata* is very low, but typical of those tropical orchids that have nectarless flowers and attract pollinators by deceit. The late Stewart Chipka reported two pollinators on Saba: hawkmoths *Manduca sexta* and *Protambulix strigilis*, both of which are widespread in the Neotropics and along with perhaps other sympatric species, may pollinate *B. cucullata*.

Preliminary analyses of the Statia demographic data suggest that the populations may be stable, but are largely dependent on a few very large plants for reproduction, making the populations seemingly vulnerable. Furthermore, it appears that goats are having detrimental effects. Plants that are within easy reach of goats are 1) more likely to be eaten, and 2) those that are eaten are more likely to suffer mortality. The free-range goat populations on Statia have been increasing and are a cause for concern for the native flora and fauna, to the extent that owners must tag their animals or expect them to be culled.

The monitoring program on Statia caught the attention of Saba nature enthusiasts, Michiel Boeken and Mike Bechtold. Consequently, a parallel monitoring program was set up in 2012, providing an opportunity to compare the health of populations across islands, with Saba perhaps having higher goat densities than Statia. A few more years of monitoring will be required to evaluate the demographic health status of *B. cucullata* on Saba. **If the islands' populations appear to be declining,** then it becomes critical to understand the causes. We have already identified one possible issue: goats. Another cause might be a decline in the abundance of pollinators. Adult moths feed on nectar and their larvae eat leaves. So if we are to protect these orchids we must also protect food plants of their pollinators, which requires us to also understand the life cycle of these insects.

Such plant-animal interactions are often not simple. For example, one possible scenario might be that goats actually facilitate orchid population growth, if their appetite for orchid leaves is compensated. The larval food plants of the two identified moth pollinators are from plant families that are loaded with toxic secondary compounds (e.g. Solanaceae and Anacardiaceae). If goats avoid them, but eat their potential competitors, larval food plant availability may actually increase, providing more naive moth pollinators to be duped by deceitful orchids! Only field observations and experimentation will tell.

(Orchid text: J. Ackerman/Photo: H. Madden)



Red-billed Tropicbird Monitoring



We visited each nesting site and each primary nest on average once per week. At each nest visited we noted the number of adults and whether each nest contained an egg or chick. We measured standard morphometrics for each bird (adult and chick). Each bird was also weighed using a

much data as possible. The cameras were set up to take one photo every 5 minutes 24 hours a day and also to take three photos, one second apart, every time a variance in temperature was detected. The main focus of the cameras was to capture photos of introduced predators, namely cats (*Felis catus*) and rats (*Rattus norvegicus*).

Although the cameras did capture images of cats and rats, the number was small compared with the total number of photographs taken (21 out of over 263,000 images!).

The iconic Red-billed Tropicbird is a large seabird that spends most of its life far out at sea foraging for food. Tropicbirds are plunge divers, hunting for prey such as squid and flying fish. These birds can live up to around 20 years and lay just one egg per season. There are estimated to be around 8,000 pairs of tropicbirds globally, 40% of which nest on Saba and Statia. Given the significance of this number, both conservation foundations recognize how important our small islands are to the global population.

In 2011 and 2012, we received shocking news that tropicbird chicks were falling prey to feral cats at one of the nesting colonies on Saba. Given that these birds lay one egg per season, this could have a dramatic negative impact on the long-term viability of the population. Following training from Dr. Adrian Delnevo on Saba in 2011 and a seabird workshop in the Bahamas in 2012, we decided to conduct a similar study on our own population.

(Below: Map of Statia showing study sites visited weekly)



spring scale and previously weighed bag.



(Above: a tropicbird chick)

All birds were banded using numbered aluminium bands, which were manufactured specifically for St Eustatius. These purple bands have the prefix EUX followed by four digits. Adults were only measured when first encountered to minimise disruption to their natural behaviour. Chicks were removed from the nest and measured on each visit to

record the growth and weight of each chick. Healthy chicks are so well fed by their parents that they often weigh more than the adults at the time of fledging.

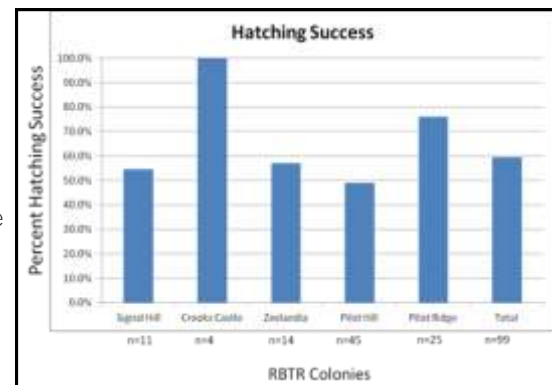
We also deployed ten cameras to monitor activity at the entrance/exit of nests. Where possible, cameras were deployed at nests with eggs or young chicks in order to collect as



(Above: photograph of a cat taken by one of the cameras)

Results

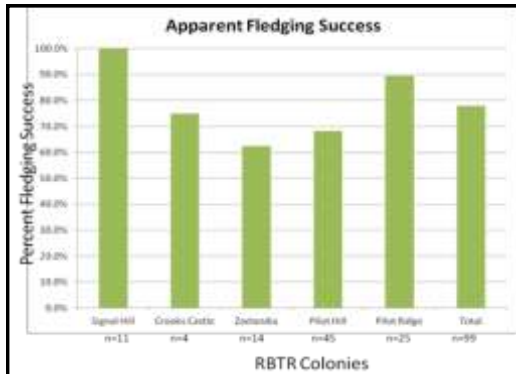
The results of our study showed that, across the nesting colonies studied, the tropicbird population had an average apparent hatching success (chicks hatched from eggs laid) of 60%, as shown in the table below.



(Above: Apparent hatching success across all nesting sites)

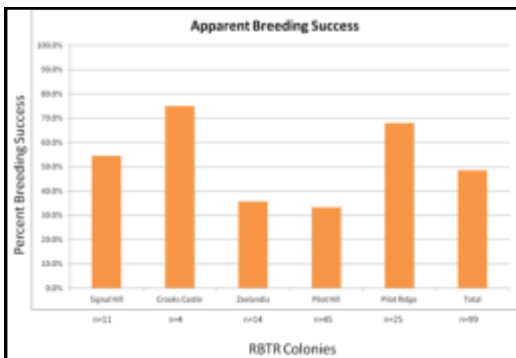
Tropicbirds (cont.)

Of the eggs that did hatch, average apparent fledging success across all sites was almost 80%.



(Above: Apparent fledging success across all nesting sites)

This gave us an average apparent breeding success of just under 50%.



(Above: Apparent breeding success across all sites)

Our results show that Statia's tropicbird population has a relatively low hatching success at three of the five colonies studied. In contrast, the overall apparent fledging success is relatively high. However, we are concerned about the relatively high levels of egg loss at three sites. In particular, Pilot Hill is a remote area along the north-western coast that is rarely, if ever, accessed by humans.

Based on the results of our 2012-2013 study, we plan to investigate the cause of egg loss at Pilot Hill, during the 2013-2014 nesting season. This will involve the deployment of cameras to document the progress of suitable nests. The data gathered from photographs will give us information about the frequency and timing of egg loss, cause of egg loss, as well as the ecology of the nest. In addition to cameras, we will

also install baited traps. We envisage the traps will catch rodents, as well as land-crabs, and possibly lizards. We will bait traps weekly and return the following day to check their contents.



(Above: rat caught in a baited trap on Pilot Ridge)



(Above: a nocturnal land crab seemingly being chased away by an aggravated tropicbird)



(Above: Although goats are not predators of tropicbird eggs or chicks, they may have an indirect effect on nests. This photograph shows two young goats found sleeping inside a nest with a large entrance. The nest was empty at the time, but it does highlight the need to keep roaming grazers penned in)



(Above: This tropicbird chick did not die from predation. It is possible that it received insufficient food from its parents, but the actual cause of death remains unknown)

Acknowledgements

We would like to thank former National Park intern Andrew Ellis for devoting much of his time and energy to this project during his six-month stay on Statia. We are also grateful to high school student Jose-Luis Balensuela, who assisted with fieldwork once a week, as well as the various Stenapa interns and volunteers that joined us in the field. Thank you!



(Above: Jose-Luis and Andrew on Zeezonika beach)

This project was funded by a small grant from the Society for the Conservation and Study of Caribbean Birds (SCSCB) and the US National Fish and Wildlife Foundation (NFWF), who received funds from BP in compensation for the 2010 Gulf oil spill which affected most of the seabird species that nest in the Caribbean.

If you would like a copy of the final report, please send an email to hannah.madden.stenapa@gmail.com

Photos by Hannah Madden

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 .

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Treasurer: Hilda Doek
Secretary: Gene Herbert

www.statiapark.org

Friends of STENAPA

STENAPA would like to thank the following businesses for supporting us. Their donations make it possible for us to continue our mandate of managing the protected areas of Saint Eustatius. Each of the following has made a contribution to the Friends of STENAPA. We would like to encourage all of you who receive this newsletter to support these businesses.

Individuals who join Friends of STENAPA will receive the following discounts from our supporting businesses.

Franky's Bar and Restaurant: 1 regular drink by lunch or dinner

Golden Era Hotel, Bar, Restaurant and Conference Centre:
10 % off dinner bill higher than \$60,-

Yummy Tummy Bar and Restaurant: 10 % off dinner bill

Fay Bar & Restaurant: 1 beer or soda with dinner more than \$ 10,-

I.F. Rivers Enterprises N.V.: 10 % discount on merchandise

Blue Bead Restaurant
Golden Era Hotel, Bar, Restaurant & Conference facility

The Old Gin House

Yummy Tummy Bar & Restaurant

Chamber of Commerce & Industry St. Eustatius & Saba.

Super Burger ice cream and shakes

Fay Bar & Restaurant (a.k.a. Sonny's place)

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