

# Activity Report on the

# Dutch Caribbean Nature Alliance Sea Turtle Satellite Tracking Project 2006







Dr Emma Harrison Sea Turtle Programme Co-ordinator St Eustatius National Parks Foundation Gallows Bay St Eustatius, Netherlands Antilles

#### Introduction

In June 2005 funding was obtained via the Dutch Caribbean Nature Alliance (DCNA) to initiate the first phase of a satellite tracking project of sea turtles on St Eustatius and St Maarten, with collaboration from the St Eustatius National Parks Foundation (STENAPA) and the Nature Foundation St Maarten. The object of this study was to determine the migration pathways and feeding grounds of nesting green and hawksbill turtles from two of the Windward Islands of the Netherlands Antilles.

The first year of the project was relatively successful, with two turtles receiving transmitters; a green turtle on St Eustatius and a hawksbill on St Maarten. These two turtles were followed for several months, and provided the research team with some very interesting data (see Harrison, 2005). Unfortunately, insufficient turtles were encountered on nesting beaches in 2005 to deploy all of the transmitters purchased for the project. The three unused transmitters were stored until 2006, with the aim of attaching one on St Maarten, and the remaining two on St Eustatius.

The purpose of this report is to summarise the activities of the DCNA Sea Turtle Satellite Tracking Project that were conducted on St Eustatius in 2006.

## **Research Activities**

The following is a summary of the research activities that were conducted as part of this project, from July to September, 2006.

- Following some minor problems with the two transmitters that were deployed in 2005, with regard to battery life and data recording Dr Robert van Dam decided to re-programme the remaining transmitters. The intention was to alter some of the settings, to try and improve the longevity of the battery, and hence increase the amount of time that the transmitter was able to send signals. A reprogramming kit was received from Telonics and in July 2006 the Programme Co-ordinator, assisted by Dr Robert Van Dam successfully made the necessary adjustments to the transmitter programmes. Obviously it was still unclear until deployment of the transmitters whether these changes would actually solve the problems encountered in 2005.
- To ensure that the primary personnel that were going to be involved in the attachment process were knowledgeable of the protocol, a 'refresher training session' was held on St Eustatius in July; timed to coincide with the scheduled monthly visit of Dominique Vissenberg (Education Co-ordinator for the Windward Islands) to the island. The Programme Co-ordinator and Ms Vissenberg practised the entire attachment process using a model transmitter. To assist in the training of volunteers on St Maarten, Ms Vissenberg filmed the entire session. Overall this was a very beneficial activity, and provided valuable practise in the attachment methods for those involved. However, several problems were encountered during this session, primarily with the reactivity of the fibreglass resin; these issues were addressed with Dr van Dam and he made suggestions for slight alterations to the ratios of resin and hardener to be used.
- As a result of the difficulties associated with encountering sufficient turtles in 2005, it was decided to advance the start date of the project in 2006 by several weeks; thus a schedule was set for the beginning of September.

- To assist in the timing of patrols, daily track surveys were organised on both islands from July. These were used to collect data on nesting activity, with the hope of determining nesting patterns for individual turtles which could be used to predict dates when they might return to the beach. On St Eustatius the primary nesting beach, Zeelandia, daily morning and night-time patrol are conducted from mid-March to October, as part of the research protocol. However on St Maarten no regular monitoring of nesting beaches occurs, thus such data would be extremely important to try and determine the inter-nesting interval of specific females to focus night-time patrols on certain nights with a higher probability of encountering a turtle.
  - O Unfortunately, only one green turtle track was encountered on St Maarten during this observation period, and it was unclear as to whether or not she nested. Thus in August it was decided to deploy all three transmitters on St Eustatius, with the assistance of Ms Vissenberg if she was on the island.
- During August the equipment list was reviewed, and all necessary supplies were purchased on St Eustatius and St Maarten. A holding box was constructed; the dimensions were increased slightly from the original diagram since the green turtle encountered in 2005 barely fit in the box which caused considerable problems for the research team.
- In early September the Programme Co-ordinator gave a brief presentation to the group of Working Abroad volunteers about the Satellite Tracking Project 2006.
  - O Basic information about satellite telemetry was provided; how it works and why it is used for sea turtles. In addition, they were given a more detailed overview of the transmitter attachment process, including a review of all the equipment, as they were going to be assisting the Programme Co-ordinator during the procedure.
- Night patrols commenced in early September that were specifically focused on encountering either green or hawksbill turtles for transmitter attachment. Whenever possible Turtle Beach was also patrolled in addition to Zeelandia Beach, as it was frequently used by turtles during 2006.
- The first turtle was encountered on 7 September, 2006 at approximately 1.00am. It was a hawksbill female; the first turtle of this species to be observed on night patrols since 2004 (See Appendix 1).
  - Ohe was intercepted on her way back to the sea at the northern end of Zeelandia Beach, and she was checked for tags. She then crawled back up the beach and nested among large boulders close to the cliff. She laid 143 eggs; a small temperature was placed in the nest to monitor temperature during incubation. From these data it will be possible to determine the sex ratio of hatchlings from this nest, as temperature determines the gender of hatchlings. This is part of a larger study on factors affecting hatching success being conducted by a marine biologist in Florida.
  - o This turtle was named 'Lisa'; chosen by one of the competition winners from the 2005 craft and writing competition held for students of the island schools.
  - 'Lisa' was average size for a Caribbean hawksbill, measuring 85.5cm curved carapace length. However, she was incredibly strong and was able to move around in the large holding box, creating some problems during the transmitter attachment.
  - Despite the changes made to the resin mixture following the practice session in August, the fiberglass took a longer time than expected to set, and thus 'Lisa' was not released until daybreak on 8 September.
  - o Following her release, signals were received within days, indicating that the transmitter was secure, and was functioning correctly.
  - o 'Lisa' immediately left the waters of St Eustatius, swimming initially towards the vicinity of St Bart's. From there she travelled to Scrub Island, off Anguilla, and data

suggest that she may have nested on 24 September. She then moved westwards towards St Croix (US Virgin Islands). Here she remained for several days, causing researchers to believe that she had reached her feeding ground. However, signal data from the transmitter again indicated that she may have nested on 8 October. A few days later she was on the move again, heading back towards Anguilla and St Maarten. Since 18 October she has remained in one area, 20-35m deep waters at the western tip of Ile Fourche, located between St Bart's and St Maarten (Van Dam, 2006). Since her release she has swam over 700km, though her forgaing area is just 50km straight-line distance from her nesting beach on St Eustatius.

- Turtles were encountered on several night patrols between 9 16 September; unfortunately they did not nest and the decision was taken to not attach transmitters to these females prior to them laying eggs.
- On 17 September a green turtle was observed by the patrol team at 10.15pm, while digging the body pit (See Appendix 2).
  - She measured 106cm curved carapace length, average for a green turtle in this region. She laid 129 eggs, and had a temperature recorder placed in the centre of the nest to monitor changes during incubation.
  - Once nesting was completed she was placed in the holding box and a satellite transmitter was attached. Since she fit the dimensions of the box better than the hawksbill turtle she was properly restrained and did not move around too much, so the attachment process was much quicker than for the first turtle. In addition, further modifications were made to the fibreglass resin ratios to speed up the drying time.
  - o She was named 'Grace' by the final winner of the craft competition from 2005. She was released at 2.30am, just as a storm approached the nesting beach.
  - Signals were received from her transmitter the following day and she remained close to Zeelandia Beach until 29 September, when she returned to lay another clutch of eggs; she was spotted by the patrol team and the transmitter was observed to be in good condition.
  - O After this ultimate nest of the season she was tracked heading southeast towards St Kitts, and since 18 October has remained at the southeastern tip of the island, between St Kitts and Nevis. She is thought to be residing in shallow water, where presumably there are good quality sea grass beds for her to forage. Her location is approximately 60km straight-line distance from the nesting beach where she was released.
- Night patrols were continued until 20 October, but following the encounter with 'Grace' on 29 September, no further turtle activity was recorded on St Eustatius. The third transmitter was stored to be returned to Dr van Dam when possible; it might be feasible to re-fit the transmitter with a new battery and use it either on St Eustatius or another tracking project.

### **Public Awareness**

- The Programme Co-ordinator attended the 26<sup>th</sup> International Symposium on Sea Turtle Biology and Conservation held on Crete, Greece from 3 April, 2006 to 8 April, 2006.
  - There she presented a poster entitled "A Satellite Tracking Project in the Windward Islands of the Netherlands Antilles" (See Appendix 3). It detailed the activities of the DCNA Sea Turtle Satellite Tracking Project and discussed the interesting results from 2005.
- The Programme Co-ordinator gave a presentation about the research activities of the St Eustatius Turtle Programme at the first public meeting organised by STENAPA on 16

August. One of the topics presented was the Satellite Tracking Project; not only were the results from 2005 discussed but also the fact that this was an on-going project due to be continued later in the year.

## Media Coverage

- The DCNA Sea Turtle Satellite Tracking Project was featured in 7 articles that appeared in the Daily Herald newspaper between March 2006 and January 2007 (See Appendix 4).
  - O To advertise their attendance at the International Symposium of Sea Turtle Biology and Conservation in April 2006, an article appeared on 18 February which also mentioned the poster due to be presented by the Programme Co-ordinator discussing the interesting results of the Satellite Tracking Project obtained in 2005.
  - On 11 September the second article gave details about the successful deployment of the first transmitter on the hawksbill turtle 'Lisa'; it included a photo of her returning to the sea with her transmitter.
  - An article on 22 September gave information about the green turtle 'Grace' and also included a map showing the migration of 'Lisa'.
  - o Maps of both tracked turtles were published in articles on 9 and 24 October.
  - o An article published 18 November was featured in a weekend edition that gave a summary to date of both tracked turtles.
  - An article published on 6 January, 2007 provided an overview of the migration routes of 'Lisa' and 'Grace', including maps of their current locations.
- STENAPA's monthly broadcast on the local radio station featured an interview with the Programme Coordinator in November 2006; the topic was the DCNA Sea Turtle Satellite Tracking Project, with basic information about satellite tracking as well as an update of the location of both turtles tracked in 2006. An update was also given in December 2006 to the latest information of the tracked turtles.
- The December 2006 issue of the STENAPA newsletter featured an update article about the locations of the two turtles fitted with transmitters on St Eustatius in 2006. This quarterly newsletter is sent to a wide variety of interested parties, both locally, regionally and internationally (See Appendix 5).
- The STENAPA website (www.statiapark.org) provides information about the project; there is a brief introduction to satellite telemetry, followed by details of each turtle fitted with a transmitter in 2005 and 2006. It also includes a live link to maps of the migration tracks featured on the seaturtle.org website.

## **References**

Harrison, E. 2005

'Activity report on the Dutch Caribbean Nature Alliance Sea Turtle Satellite Tracking Project 2005'. Unpublished report presented to St Eustatius National Parks Foundation. 13 pages.

Van Dam, R. 2006

'Principal project results: DCNA Turtle Tracking Project 2006: St Maarten, St Eustatius, and Curação'. Unpublished report presented to St Eustatius National Parks Foundation, The Nature Foundation St Maarten and CARMABI, Curação. 5 pages.

# **APPENDICES**

#### Appendix 1

Photographs of the hawksbill turtle 'Lisa' during the satellite attachment process.



Measuring 'Lisa' before the transmitter was attached



Using fibreglass to hold the transmitter in place



'Lisa' returning to the sea with her transmitter

#### Appendix 1 Continued

Map showing the migratory track of 'Lisa' following her release on St Eustatius (Reproduced with permission of Dr Robert van Dam).



Map showing the migratory route of 'Lisa' from St Eustatius to Ile Fourchue, close to St Bart's. She travelled via Scrub Island (close to Anguilla) and St Croix before returning to St Bart's.

Photographs of 'Grace' during the attachment of a satellite transmitter. A map of her migration route from St Eustatius is also shown (Reproduced with permission of Dr Robert van Dam). Further information is available at the STENAPA website – www.statiapark.org.



'Grace' finishing the nesting process before the transmitter was attached



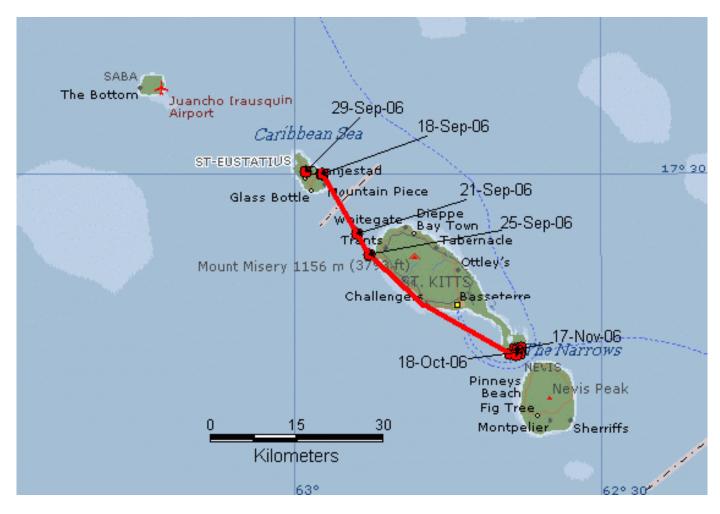
'Grace' in the holding box before her release



'Grace' reaching the sea as a rain storm hits the beach ( Photo by Duncan Kirkby)

#### Appendix 2 Continued

Map showing the migratory track of 'Grace' following her release on St Eustatius (Reproduced with permission of Dr Robert van Dam).



Map showing the migratory route of 'Grace' from St Eustatius to St Kitts

Copy of the poster presented at the 26<sup>th</sup> International Symposium on Sea Turtle Biology and Conservation in Greece, April, 2006.

### A Satellite Tracking Project in the Windward Islands of the Netherlands Antilles



Satellite telemetry has become a common tool for sea turtle conservation and monitoring projects; researchers can identify the geographical range and habitat utilisation of turtles, in addition to studying their migratory behaviour in more detail. Potential threats faced by turtles while ravelling between breeding and foraging areas can be identified, allowing conservation efforts to be focused on critical habitats. Tracking projects can also be used to great advantage in community wareness programmes; by highlighting turtles' migratory behaviour the public can be actively

With these two primary objectives the Sea Turtle Satellite Tracking Project 2005 was initiated by the Dutch Caribbean Nature Alliance (DCNA) on the islands of St Eustatius and St Maarten,

ounded in 2005, the DCNA represents a formal coalition of the nature conservation management organisations of the Netherlands Antilles and Aruba. Its objective is to safeguard the biodiversity and promote the sustainable management of the natural resource of the islands of the Dutch Caribbean through the establishment of





The project was an inter-island collaboration between the St Eustatius National Parks Foundation (STENAPA) and the Nature Foundation St Maarten. Both STENAPA and the Nature Foundation are non-governmental environmental organisations that manage the natural resources of each island.

Netherlands Antilles, which also include Bonaire,

Curação, and Saba (See Figure 1). The islands lie in the North-eastern Caribbean, with land areas of

Leatherback (Dermochelys coriacea), green

(Chelonia mydas) and hawksbill (Eretmochelys

imbricata) turtles nest on both islands; there was

also an unconfirmed report of a loggerhead

(Caretta caretta) nesting on St Eustatius in 2004.

just 21km2 and 52km2, respectively

STENAPA co-ordinates the St Eustatius Sea Turtle Conservation rogramme, which began in 2001; St Maarten has no established sea. urtle monitoring programme, but the Nature Foundation runs a clunteer turtle watch during the nesting season





Nethelands Antilles in the Caribbean sea.

#### Methods

following preliminary visits to both islands by Dr Robert van Dam in July 2005, five transmitter deployments were scheduled for September 2005, three for St Eustatius and two for St Maarten, on either green or hawksbill turtles. Practical training in the application methodology was provided and Telonics ST-20 A-1010 transmitters were to be attached using the "elastomer and fibreglass" chnique of Balazs, Miya & Beaver (1996)

Daily track surveys of the principal nesting beaches were conducted in August and September to etermine dates of potential nesting activity on the two islands; using these data night patrols were heduled when known females were predicted to emerge.

Emma Harrison<sup>1</sup>, Dominique Vissenberg<sup>2</sup> and Robert van Dam<sup>3</sup>

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3Chelonia Inc. PO Box 9020708, San Juan, Puerto Rico 00902

We successfully deployed transmitters on two female turtles; one hawkshill from St Maarten "Archy") (See Figures 2 and 3) and a green turtle from St Eustatius ("Miss Shellie") (See Figures 5 and 7)



Figure 2. Hawksbill "Archy"



Figure 3. Dominique Vissenberg,

Curved Carapace Length (CCLn-t) (See Figure 3). This turtle showed fairly typical migratory behaviour, she was released from Guana Bay on 10 October, 2005 and immediately left her nesting area. She passed around St Maarten and Anguilla, heading north-west towards Anegada, swimming up to 60km per day (See Figure 4). She then shifted her course to the south and proceeded towards the Virgin Islands. She travelled approximately 330km before reaching her foraging area close to Flanagan Island (British Virgin Islands), 175km straight-line distance from the release site on St Maarten. "Archy" took just 10 days to reach her destination and remained in the area until her final transmission on 15 December, 2005.

"Archy" was a medium-sized hawkshill: she measured 82cm

This region has extensive reefs, suggesting there is adequate food, but there are also algal plains and sea grass beds close by (R. Boulon, Pers. Comm.); her carapace had many bamacles. reef. More transmitters are due to be deployed in 2006: data from these will help reveal whether the migratory pathway of "Archy" is typical of turtles in the St Maarten population.



Figure 4. Migration pathway of hawksbill "Archy" from St Maarten to the Virgin Islands.

ge green furfle; measuring 113.5cm CCLn-t, she barely fit in the holding box (See Figure 5). Her migratory behaviour was a little more unusual than that of "Archy", and definitely unexpected

The transmitter was deployed on 20 September, 2005, the fourth occasion she had been encountered nesting in 2005. She nested again 11 days later, after which time she was expected to leave the waters of St Eustatius and begin her migration. However, all Linner, STENAPA Manager her subsequent transmissions, until 15 November, 2005, showed her remaining within five kilometres of the release site (See Harrison with "Miss Shellie"



Figure 6. Map of St Eustatius showing best location points received from "Miss Shellie" in October, 2005. Green circle indicates release site.

Whether "Miss Shellie" is just an exception to the general rule that turtles do not nest and forage in the same area, or if this behaviour is exhibited by other turtles in the St Eustatius population is not known. Additional satellite tracking studies are planned for 2006; they will hopefully provide data to answer this question. It will be interesting to see if "Miss Shellie" returns to nest in 2006; with no resources being expended on migration she may be able to reach reproductive condition quicker and so show a reduced interval between successive nesting seasons.



The data suggest that "Mi

Shellie" may reside close to S

Eustatius year round: if so, this

might be the first time such

behaviour has been recorded for

an adult green turtle female

Figure 6 shows that she remained almost exclusively

within the Statia Marine Parl

which surrounds the island to depth of 30m. In these shallo

waters she was presumably able

to find sufficient food to negat

the need to migrate to a distar

foraging ground. Sea grass beds

are believed to occur in front o

the nesting beach; a detaile

survey of the habitat and

vegetation in this area

proposed for the near future.

#### Community Outreach Activities

This project also incorporated an extensive education and outreach campaign, which focused on the local schools. Students were taught about basic satellite telemetry and how researchers can use it t assist in turtle conservation programmes.

Children were also invited to enter competitions that were organised on both islands; on St Eustatius the "Name the Turtle" Competition had students draw pictures of turtles, write essays or make models of turtles from recyclable materials. Over 100 entries were received from students in grades 1 - 12, and the winners of each calegory got the opportunity to name the transmittered turtles. A similar contest wa held on St Maarten, over 200 students from seven schools took part and the winners also got to choose the name for the transmittered turtles. A second contest, held on St Eustatius, asked students to gues where they thought the turtles would migrate to, and how far they would travel; 256 students, aged fiv

Other members of the community were informed about the project via exhibits at the public librarie and articles in the local media providing regular updates on the location of each turtle

ACKIOWINEQUEURINI
We would like to gradelidy acknowledge the following organisations and individuals who made this project possible:
"The Dark Cumbbean Nature alliance (ICNA) for initiating the satellite tracking project and securing funds for the research &
Mentlemaths Postockel Lettery.

\*Staff of St Eustains Madonal Parks Foundation (STENAPA) and the Nature Foundation St Maarten for Injectical and fi

support.
STENAPA interns and Working Abroad volunteers for assisting with beach patrols on St Eustains, and local residents for hel-with beach monitoring on St Maarten.

with beach mothering on 34 manners.

The Prince Bernhard Culture Fund, World Turtle Trust and Working Abroad for funding the St Eustains Sea Turtle Conse

• The International Sea Turtle Symposium Committee for receipt of a Travel Award for participation at the 2006 International S ium; financial assistance was provided by Disney Animal Kingdom, Western Pacific Regional Fisheries M ce. US Fish and Wildlife Services and the Bern Convention

We especially wish to thank Firgos Paper NV of Philipsburg, St Maarten, and Gay and Henk Soctekouw of St Fustatius for t

Copies of newspaper articles featuring the DCNA Sea Turtle Satellite Tracking Project 2006.

THE DAILY HERALD, Saturday, February 18, 2006

www.theda

# NEDSE



Dominique Vissenberg and Dr. Emma Harrison with "Help Out or Sea Turtles Miss Out" featuring Scout the

POINTE BLANCHE-The offer financial support can Satellite Tracking Project in 2884. the Windward Islands will April 3-8.

to attend.

Both researchers are still

"Help Out or Sea Turtles contact Nature Foundation Miss Out" conservation at 542-0267 or STENAPA programme and Turtle in St. Eustatius at 318-

Research on sea turtle be shared with sea turtle conservation in the Windbiologists and researchers ward Islands achieved in from around the world at 2004 and the pride the the 26th Annual Symposium islands have for sea turtles Dominique Vissenberg symposium is an opportu- addition to the biological Harrison of St. Eusta- Caribbean and worldwide, outreach campaign in the tius National Parks Stenapa and to further develop the local communities. were invited to the sympo- turtle conservation projects sium and are raising funds in St. Maarten and St. Eustatius.

Vissenberg will represent acquiring funds to finance the "Help Out" educatheir trip. People willing to tional outreach project that www.seaturtle.org .

features "Scout" the mascot. The Dutch Caribbean Nature Alliance (DCNA) implemented this project for Saba, St. Eustatius and St. Maarten with the aim of raising awareness about sea turtles

Although the focus was on the community in general, the primary focus was on the island schools: 143 classes in 24 different schools on the three islands were involved in this programme. There was considerable positive feedback from all three island communities and a great deal of encouragement to continue this successful sea turtle conservation and environmental education projects in general, Vissenberg said.

Harrison will give information on the Sea Turtle Satellite Tracking Project, initiated last year by DCNA. Two adult female turtles were fitted with satellite transmitters to allow researchers to observe their migratory behaviour.

This project was an interisland collaboration between Stenapa and Nature Foundation St. Maarten on Sea Turtle Biology and still living and nesting here and was the first tracking Conservation in Greece will be highlighted at the study to be carried out in gathering. Beside this, the the Windward Islands. In of Nature Foundation St. nity for them to learn from research, it incorporated Maarten and Dr. Emma other turtle projects in the an extensive education and

> More information on this symposium that is being held in the Mediterranean area for the first time can be found at

#### Appendix 4 Continued



Hawksbill turtle Lisa returning to the sea with her newly installed transmitter.

ST. EUSTATIUS--A small last school year. hawksbill turtle made a nest on Zeelandia Beach and was fitted with a satellite transmitter by staff and volunteers of the St. Eustatius National before being allowed to reon Friday.

tion and Monitoring Pro-

The turtle, a member of the critically endangered hawks- sample was taken from her from the Stenapa Website bill species, was only 85 centimetres in length, which is and data will be includ- information about the tracksmall for a mature female of this species.

She laid 143 eggs and her over the next two months to turtles were outfitted with make sure it is not disturbed before the hatchlings emerge.

Once she had finished nesting, she was restrained in a wooden box (to prevent injury to herself and the Stenapa crew) while the team carefully cleaned her carapace (shell) and then attached the transmitter using a fibreglass resin. This device will allow the team to track her movements over the next few months as she travels from Statia to her foraging grounds somewhere in the Caribbean.

The turtle has been named "Lisa" by Evan Hassell, a student in grade 4 at Governor de Graaff School. Evan was a winner in an arts-and-crafts competition held during the

The Stenapa team was tired but clated after spending most of the night working with Lisa. Probably Lisa felt the same way. During the Parks Foundation (Stenapa) time she was restrained - for about two and a half hours turn to the sea at daybreak - Lisa was closely monitored to make sure she was not The activity is part of uncomfortable as the resin the Sea Turtle Conserva- set. She was also tagged with turtles face while migrating. small metal identifying tags gramme, which is funded in her front flippers, so that begin sending information by the Dutch Caribbean she can be recognized when immediately and it will then Nature Alliance (DCNA). she returns to nest again.

neck. This will be analyzed ed in a genetic study of ing project and other turtle Caribbean hawksbills. research activities is available

nest will be carefully watched began in 2005, when two at Gallows Bay.

transmitters and tracked. A green turtle from Statia. Miss Shellie, remained in the vicinity of the island, while the hawksbill tagged in St. Maarten travelled to the Virgin Islands.

Data from the project are used to provide information about migration routes and to identify the threats

Lisa's transmitter should In addition, a small skin movements online via a link www.statiapark.org. Further The sea turtle project at the Stenapa headquarters

THE DAILY HERALD, Friday, September 22, 2006

# Second sea turtle receives tracking device on Statia

Marine Park staff and vol- about the migration of a unteers were out on the green sea turtle. beach at night again this week to attach a second sat- toring and Conservation ellite transmitter to a nest- Programme is ing turtle as part of the Sea by the Dutch Caribbean Turtle Satellite Tracking Nature Alliance. Coor-Project. This time, the re- dinator Dr. Emma Harcipient was an endangered rison has been following green turtle, which nested the movements of the two on Zeelandia Beach.

tle named Lisa also had lease, Lisa travelled dia transmitter fitted. The rectly towards St. Barths, green turtle female nested a distance of almost successfully, after which 50 kilometres. She has researchers fixed the small remained close to the untracking device to her cara- inhabited islands off the pace. She laid 129 ping- north-western coast of the pong-ball sized eggs.

than the hawksbill female, St. Maarten. measuring 106 centimetres in length. However, she was leased, Grace has only sent much calmer throughout a couple of location points, the two-hour long attach- which show her to be just ment procedure, making it off the nesting beach on St. easier for the team to get Eustatius. Both turtles can the transmitter fitted prop- be followed on-line via a erly. Fortunately, the team link from the Stenapa webwas able to release her back site to the sea just before a huge rainstorm began.

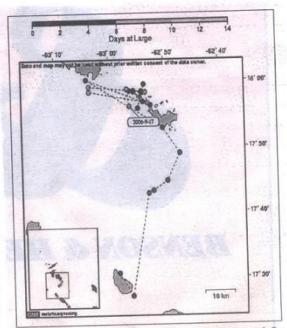
The turtle was given the each turtle. name Grace, chosen by Naomi Smith (11), who was contact the coordinator or one of the winners of the Parks Manager Nicole Esarts and craft competition teban at the Stenapa visi-

EUSTATIUS--Statia year. Naomi wrote a story

The Sea Turtle Monifunded turtles since they left the Earlier, a hawksbill tur- nesting beach. On her reisland for the last week, oc-This turtle was much larger casionally moving closer to

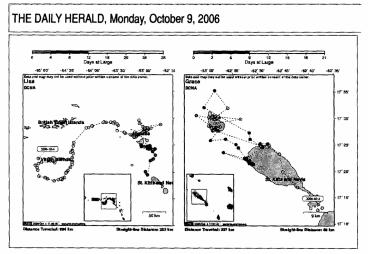
Having been recently rewww.statiapark.org. The website also includes further information about

Interested parties can organised by Stenapa last tors' centre at Gallows Bay.



The track of hawksbill turtle Lisa to St. Barths and St. Maarten after nesting on Statia.

Copy of the article announcing the second tracked turtle 'Grace' from 22 September



Tracks showing the travels of hawksbill turtle Lisa (left) and green turtle Grace (right).

## Two turtles tagged in Statia complete nesting for 2006

and Grace, which were fitters by STENAPA, the St. remains to be seen. Eustatius National Parks Foundation, in September, appear to have finished nesting for 2006.

Information from their transmitters indicates that they are heading in opposite directions on their migrations to foraging grounds.

The small hawksbill turtle, Lisa, has travelled the furthest. She first visited St. Barths, St. Maarten and Anguilla. She is currently close to St. Croix in the U.S. Virgin Islands on a journey that has taken her more

ST. EUSTATIUS--The two distance) from St. Eusta- trol on Zeelandia Beach sea turtles nicknamed Lisa tius. Whether this is her radioed around 10:15pm final destination or simply ted with satellite transmit- another stop along the way

> Grace, the green turtle, hasn't gone nearly so far. She has swum only about 50 km straight-line distance from the release site. Initially, she headed around the northern end of Statia channel between St. Kitts before spending several days close to St. Kitts. Last week, it looked as if she was heading back towards Statia and Turtle Project personnel wondered if she would return to the beach to make another nest.

Their assumptions were confirmed on Friday, Septhan 220 km (straight-line tember 29. The night pa-

that they had just seen Grace heading back to the sea! They had checked her transmitter and everything appeared to be in good condition. Since then, she has moved south again and as the map indicates, her latest signal places her in the and Nevis.

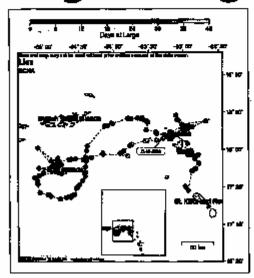
It is unlikely that she will remain in that location, but where she may go remains uncertain.

Both turtles can be followed on-line via a link from the STENAPA Website, www.statiapark.org.

Update article from 9 October, featuring both turtles

THE DAILY HERALD, Tuesday, October 24, 2006

# Statia turtles roam neighbouring islands



The 42-day track of hawkabill turtle Lina, from Statia to St. Barths, St. Maarten, Angellia, and St. Croix, and finally back to Anguilla.

this sea turtle nesting sea- bill turtle released from son, St. Eustatius National Zeelandia Beach on Sep-Parks Foundation (Stens- tember 8, while "Grace" is pa) Turtle Project fitted two a green turtle who made a bays. Such underwater turtles with transmitters, second nest on Statis on terrain would provide antwhich activate when the September 29. turtles surface in order to

ST. EUSTATEUS-During breathe. "Lisa" is a hewire-

As detailed in the previous update, Lisa travelled first to St. Barths and then kimetres in total, travelling spent time around Anguli- between St. Eustatius and la before swimming to St. St. Kitts, though at pres-Cross. She remained there out the is just 50 kilometres. for nine days, and the team, straight-line distance from headed by Turtle Coordi- her release site. nator Emma Hacrison, assomed that she had reached the green turde that was ber feeding ground - a coral tracked from St. Eustareef area where she could time in 2005, the two turtles find her fewourite food which had transmitters atitems: sponges. But they maked this year do not apwere wrong.

transmitter, which is still them and their species. sending signals each time ouilla.

Since her referen, she has travelled over 1,000 km on a journey that has taken her to several differout islands in the region. Tartle watchers don't know whether Anguilla is the end of her travels, or where she may go next. Harrison says, "All we know for sure is that she has us a little confund about where her final foreging area is, to say the least!"

In contrast, it seems that Grace has already found her foraging ground. Since her return to the nesting beach at the end September, which was presumably her but for the season, she has traveffect to the southern end of St. Kitts, and has remained there ever since.

Her latest location sigsal from October 15. was from the channel between St. Kitta and Nevis. This area appears to be one of relatively shallow able conditions for sea grasses, her main diet item. She has swam over 100 ki-

Just like "Miss Shellie". pear to be displaying typical On October 12, Lisa was migration behaviour. Howon the move again, heading ever, tracking these turties back towards Anguilla. The is providing added insight latest information from the into what is "typical" for

Both turtles can be fulshe surfaces, indicates that lowed online via a link from she is just to the west of An- the Stenapa website, www. stationark.om.

WWW.THEDAILYHERALD.COM WEEKENDER JANUARY 6, 2006

## Sea Turtle Update The adventures of two sea turtles from Statia

destinations in the Eastern Caribbean. The Two sea turtles that were tracked from St. Eustatius have made their way to holiday foraging grounds, and one may have been busier than originally thought. In Septem-ber, two sea turtles were outfitted with satellite tracking transmitters as part of a migration behaviour study.

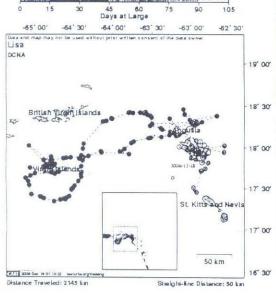
Hawksbill turtlenamed Lisa was fitted with a satellite transmitter on Zeelandia Beach on September 8 and a Green turtle, Grace, was given a transmitter on September 18. since the last update, Lisa has been busier than ner monitors at first thought.

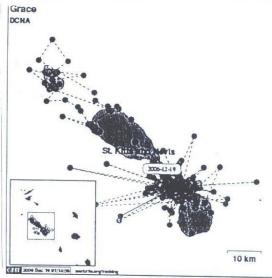
is a departed from St. Fustatius, going north

land for several days and, based on the signal strengths, may have nested on the ample sandy beach there on the night of 24-25 September,

16 days after nesting on St Eustatius.
This nesting behaviour, in which nests are built at different locations, is typical for Caribbean

LISA THEN MOVED WEST, through deeper waters, to St. Croix in the U.S. Virgin Islands. She stayed just off the north western tip of St Croix and may have nested again, perhaps on the night of October 8-9. After this possible nesting, Lisa swam eastward again, towards Anguilla and St. Maarten, eventually settling around He Fourchue, an uninhabited cay lo Lisa departed from St. Eustatius, going north cated between St. Barths and St Maarten, as a St. Barths and then to Scrub Island, east her destination for the holidays. As of mid-





December 2006, Lisa has been transmitting cember, Grace has travelled over 1,800 km. from this location. Although Lisa is currently only some 50 kilometres from St Eustatius, only some 50 kilometres from St Eustatius, she has swum over 2,150 kilometres fater possibly nesting on two different islands. Grace, the Green turtle, has taken quite a different route. She initially started moving towards St. Kitts, but reappeared on September 29 on Zeelandia Beach in Statia.

or 20 on Lecianoia Beach in Statia.

Grace was then checked to see if her transmitter was still in good working order. Soon after, Grace started moving to the southeast, toward the west coast of St. Kitts, moving around to the south-eastern point of that is-land, along the coast facing Nevis - roughly 50 kilometres from Zelandia.

50 kilometres from Zeelandia. She has since been transmitting from what icems to be her favourite foraging habitat. These are areas of shallow sea grass beds with some sediment flows from rivers on vevis.

Freen turtles are herbivores and often seem to requent such sea grass beds. As of late De-

THE TWO TURTLES are part of an interisland project funded by the Dutch Caribbean Nature Alliance (DCNA), involving St. Eustatius National Parks Foundation (STENAPA) and the Nature Foundation of St Maarten. The aim of this study is to develop a more comprehensive understanding of the habits and travels of the sea turtles which nest on Windward Island beaches. land beaches.

The migration habits of these species are not well known, and these types of studies are needed to help scientists recognize the hazards turtles may face in their travels, and thus to give these endangered creatures a better chance of survival.

1. Arturo Herrera is Statia's Turtle Coordi-

2. This article was submitted by Lynn Kennedy, our correspondent on St. Eustal

Article featured on 6 January, 2007 providing details of the migration routes of both tracked turtles

Copy of the article featured in the December 2006 STENAPA newsletter.

#### St Eustatius: National and Marine Parks and Botanical Gardens



National Parks Office Gallows Bay St. Eustatius, Netherlands Antilles

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www.statiapark.org

STENAPA is an environmental not-for-profit foundation on St Eustatius and was established in 1988. The objectives of STENAPA are to upkeep the natural environment, to preserve and protect endangered or endemic species (flora and fauna) and to educate the community about the importance of the protection of the natural environment.

Areas of responsibility include management of the marine park, the national parks and the Miriam C Schmidt Botanical Gardens. STENAPA is legally delegated by the Island Council to manage these protected areas.

President: Irving Brown Vice President: Ronnie Courtar Treasurer: Jana Mason Secretary: Jessica Berkel

#### Next edition of STENAPA Update available soon with articles on:

- Find out about our Objectives for 2007
- Visit by botanists to finish the Corallita pilot research project
- Snorkel Club graduation
- Outcome of our Willingness to Pay survey about park fees

Check our web site for previous editions of this quarterly newsletter!

#### Lisa' and 'Grace' reach their Holiday Destinations in the Eastern Caribbean

The two turtles that were tracked from St. Eustatius have made their way to holiday foraging grounds, and one may have been busier than originally thought.

In September, two sea turtles were outfitted with satellite tracking transmitters as part of a migration behaviour study. A hawksbill named Lisa was fitted with a satellite transmitter on Zeelandia beach on September 8<sup>th</sup> and Grace, the green turtle, on September 18<sup>th</sup>.

Since the last update, Lisa has been busier than first thought. Lisa departed from Statia, going north to St Barth's and to Scrub Island, east of Anguilla. Lisa remained around Scrub Island for several days and, based on the signal strengths, may have nested on the ample sandy beach on the night of 24-25 September, 16 days after nesting on Statia. This is normal of the typical inter-nesting behaviour shown by Caribbean hawksbills. The hawksbill moved west through deeper waters, onto St. Croix in the U.S. Virgin Islands. Lisa then stayed just off the north-western tip of St Croix and again may have nested, perhaps on the night of October 8-9. After this possible nesting, Lisa swam eastwards, towards Anguilla and St Maarten, eventually settling around Ile Fourchue as her destination,

an uninhabited cay located between St Barth's and St Maarten. As of mid-December 2006, Lisa has been transmitting from this location. Although Lisa ended up only some 50 km from Statia, she has swum over 2150 km after possibly nesting on two different islands to reach her "holiday" feasting grounds.



Grace, on the other hand, has taken quite a different approach to her holiday destinations! She initially started moving towards \$t Kitts, but reappeared on September 29<sup>th</sup> on Zeelandia. Grace started moving towards the southeast and west coast of \$t Kitts, moving around to the southeastern point of that island, along the coast facing Nevis island – roughly 50km from Zeelandia. She has since been

transmitting from what seems to be her foraging habitat. These are areas of shalow seagrass beds with some sediment flows from rivers on Nevis. Green turtles are herbivores and often associated with such seagrass beds. As of late December, Grace has traveled over 1800 km.

The two turtles are part of an inter-island project funded by the Dutch Caribbean Nature Alliance. The aim of this study is to have a more comprehensive understanding of where sea turtles travel to when they leave our waters. The migration habits of these species are not entirely known and these studies are needed to help recognize hazards turtles may face by providing more information about their migration routes between nesting and foraging habitats.

