SEA TURTLE CONSERVATION BONAIRE

PROGRESS REPORT FOR 2006

Prepared by Mabel Nava and Andy Uhr

April 2007

Sea Turtle Conservation is a member of

WIDECAST

Wider Caribbean Sea Turtle Conservation Network

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Letter from the President

Dear sponsors and members,

I am please to share with you the Sea Turtle Conservation Bonaire Progress Report for 2006. Last year, Sea Turtle Conservation Bonaire (STCB) continued to build on the success of prior years and made some notable advances in many of our research, conservation, strategic partnerships/networks, and outreach and educational objectives.

2006 was also a year of change for us. Our primary source of funding, a grant from the Dutch government, expired in October. In August, in anticipation of the end of the grant, we developed a new proposal and were confident that we would secure a new grant through the government. Unfortunately changes in the way the fund was defined and administered eliminated us from further consideration. In the final quarter of the year, we increased our focus on fund raising. I am glad to report our efforts were rewarded with a measure of success, but there is much work before us if we are to continue working past 2007.

At the very end of the year, Imre Esser, the president of the organization since 1999, resigned and announced his intention to return with his family to the Netherlands. Imre's energy, hard work and vision will be missed and replacing him will be difficult. Our best wishes to Imre and his family and our many thanks for all his good works.

Sea Turtle Conservation Bonaire's mission is to ensure the protection and recovery of Bonaire's sea turtle populations throughout their range. Should you have any questions, please do not hesitate to contact us.

Sincerely,
Andy Uhr – interim President

Thanks to all the people and organizations that supported our work this past year. Each of you helped us take one step forward towards the achievement of our goals.
We are a small organization doing a big job, because we have you on board!
In the name of STCB staff and Board of Directors…
Many, many thanks!

Figure 1. STCB's staff members

Donors, resident volunteers and ongoing support & services

Major Funding:

- **The Netherlands Antilles' Department of Environment & Nature Conservation through a major grant from the Kingdom of the Netherlands**

Corporate Friends:

- **Amphibico Inc.**
- **BOPEC**
- **CIEE**
- **De Freewieler NV**
- **Foundation Preservation Klein Bonaire**
- **Maduro & Curiel's Bank Bonaire**
- **Prins Bernard Cultuurfonds**
- **Rotterdam Zoo**
- **World Wildlife Fund**
- **Department of Public Health and Environment of the Netherlands Antilles (VOMIL)**

Friends:

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- **Kim Anway-Anastasia**
- **P.W.J. de Rijcke**
- **Floor Esser**
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- **Gerald & Barbara Hand Clow**
- **E.A.M. Heitkoning**
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- **Patrick Holian**
- **Kim & Ken Miller**
- **Nahomi Himel**
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- **Susan Urban**
- **Eric van de Keuken**
- **Mereille & Bas Verheyen**
- **Cynthia Callahan**
- **Roger & Anita Howard**
- **M. Labouchere**
- **Robbie Revel**
- **Michael and Jenni Stanfield**
- **Michael Carey**

Figure 2. Two of our many resident volunteers

Ongoing resident volunteers, support & services:

- **Harbor Village Marina**
- **NetTech N.V. (Jake Richter & Susan Davis)**
- **BITS (Hanny Kalk & Gijs Hoogerkamp)**
- **STINAPA**
- **SELIBON NV**

- **CARGILL Salt Bonaire NV**
- **Wanna Dive**
- **Support Bonaire Inc.**
- **Bruce Bowker's Carib inn**
- **Wider Caribbean Sea Turtle Network (WIDECAST)**
- **Gaia Productions**
- **Tina Lindeken**
- **Tony Kool**
- **Chile Ridley**
- **Bruce Brabec**
- **Marlene Robinson**
- **Victor Brower**
- **Serena Black**
- **Lisa Kimmac**
- **Claire Martin**
- **Doi Boekhoudt**

Consulting Services and Support:

- **Dr. Robert van Dam**
- **Ximena Velez**
- **Eric van der Keuken**

Summary

Building upon prior years' accomplishments, 2006 was another successful year for Sea Turtle Conservation Bonaire. With an ever increasing core of dedicated volunteers, STCB's small staff continued moving us forward in all project areas

In the area of research, we observed sea turtle nesting in 2006 at lower levels than during 2005, with a total of 74 nests recorded for all the beaches of Bonaire and Klein Bonaire. The in-water surveys on the turtle foraging grounds yielded a total of 181 turtles handled, of which 22 were recaptures from previous years. Satellite tracking of breeding turtles was not as successful as in prior years. Plans called for us to track two turtles, but we eventually only tracked one. Tracking maps and information regarding the tracked turtle were regularly generated and sent out via our news e-letter to the public, creating awareness about the situation of the sea turtles around the globe. The turtle ended up at the Los Roques archipelagos and provided STCB with our first chance to collaborate with our conservation counterparts in Los Roques, Venezuela.

In the area of education and public awareness, STCB continued working with the STINAPA NME (Nature and Education Coordinator) developing and delivering the elementary school nature program as well as working with the high school and other NGO's on the island on the education front. News releases of important events continued to be generated in our effort to bring attention to sea turtle conservation and alert the public to vital issues.

Volunteer support and assistance continued to grow and was a significant reason why we were able to cover more territory than ever before in our in-water survey and tagging project.

Our website and electronic newsletters continued to be important and effective tools for us to share information about the endangered sea turtles and inform about our continuing efforts to protect these animals. They also proved to be effective in our fund raising effort.

Research

Nesting Beach Monitoring

All beaches of Bonaire were periodically surveyed for sea turtle nesting activity, with emphasis on the most actively used turtle-nesting beach, "No Name" on Klein Bonaire. No Name beach was monitored with greatest frequency and is Bonaire's index beach for measuring annual fluctuations in nesting activity.

Turtle nesting activity was first registered on May 26, when a loggerhead nest was found on No Name beach, Klein Bonaire. The first hawksbill nest on the same beach was laid on May 30. The last nest of 2006 was found on December 16 and was laid by a hawksbill. For 2006, a total of 42 hawksbill and 8 loggerhead nests were recorded on No Name beach, with the months of June and July showing the greatest nesting activity for loggerheads, whereas hawksbills were most active in August and September (Figure 2). Hawksbill nests were fairly uniformly spread out along No Name beach, whereas loggerheads came ashore to lay only in areas with substantial amounts of beach sand.

Nesting size and productivity were measured through nest revisions after hatching. At No Name beach revision of 32 nests yielded an average hawksbill nest size of 135.5 eggs (range 95 – 200) and average hawksbill hatching success was 69.2 % . Revision of 5 loggerhead nests yielded an average nest size of 146.2 eggs (range 132 – 162) and hatching success of 59.7%. Both hawksbill and loggerhead hatching success rates were lower in 2006 than in 2005 for reasons that remain unclear.

In 2006, the estimated number of hatchlings produced at Klein Bonaire can be calculated from the total number of nests, average nest size and average hatching rate. The 41 hawksbill nests laid along No Name resulted in approximately 3800 live hawksbill hatchlings emerging, plus more than 500 loggerhead hatchlings emerged from their 8 nests. The total of 4300 hatchlings reported for 2006 is somewhat lower than the 4500 hatchlings reported for 2005 and reflects a lower total number of nests deposited by fewer reproducing turtles. Whereas this apparent decline may be of concern, it should be realized that substantial annual variation in nesting activity is common in marine turtles, especially where populations are relatively small. Only nesting trend information collected longer-term (more than 10 years) will be truly indicative of population status. Nesting activity was atypical during 2006 on the rest of the island. Playa Chikitu within the Washington Park showed a decline, from 12 nests on 2005 to 2 nests on 2006. No nests were found on other beaches in the Park, but nesting activity was recorded in other Bonaire beaches that had shown no nesting activity in past years. These beaches were Playa Frans (North) with 4 nests from green turtles, Playa Pali-mangel (Donkey Beach) with 7 nests from hawksbills turtles, Boka Onima had one nesting green turtle that was poached after laying her first nest (see report), and therefore only one nest was laid by her. No other nests were recorded on this beach. The other nesting beaches were "pocket beaches" located on the southern side of the island, where two loggerheads laid 6 nests and one green turtle laid one. Washikemba (east coast) was the other active beach this year with 3 hawksbill turtle nests. (See appendix IV)

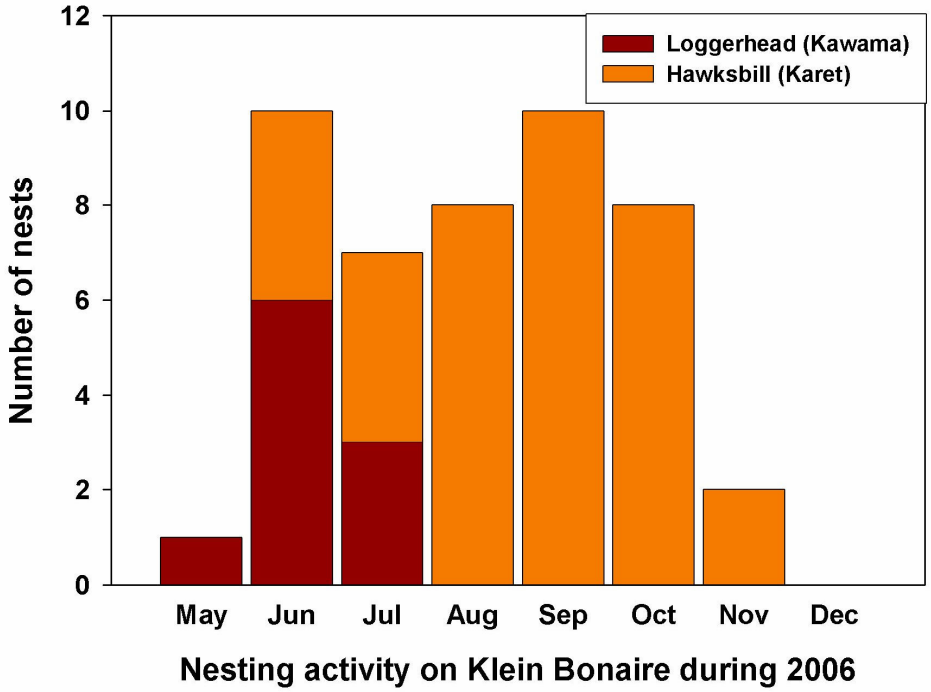

Figure 3. Number of nests recorded by month laid by loggerheads and hawksbills on No Name Beach, Klein Bonaire.

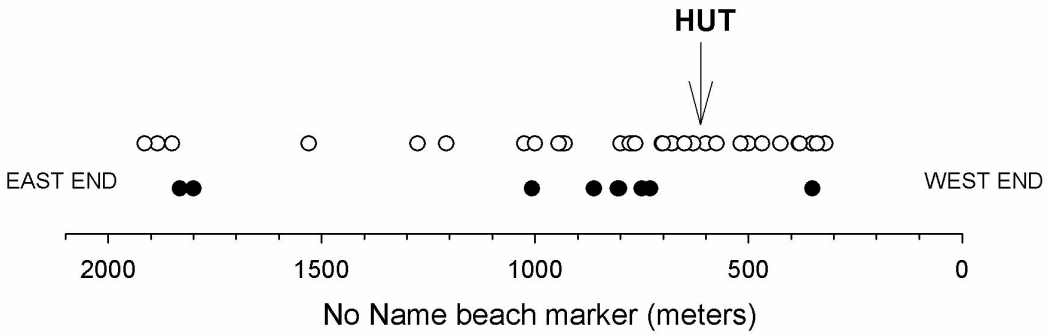

Figure 4. Locations of individual hawksbill nests (open circles) and loggerhead nests (dots) along No Name Beach, Klein Bonaire.

Foraging Ground Surveys

Foraging ground surveys were conducted by snorkeling along the entire west coast of Bonaire and all around Klein Bonaire. In addition, turtle surveys using the netting technique were done at Lac Bay. For the first time the area outside of Lac was also surveyed, revealing a very high aggregation density of green turtles, plus the presence of juvenile and sub-adult hawksbills in the area.

The purpose of these surveys is to tag, sample and measure individual turtles, and to establish catch-per-unit-effort measures of turtle abundance. Combined, the surveys yielded a total of 63 hawksbills and 118 green turtles, of which 11 green turtles and 11 hawksbill turtles were recaptures (Figure 5). Three of the captured hawksbills

were adult-size animals. Only one male loggerhead was captured and tagged during the surveys last year. (Appendix II)

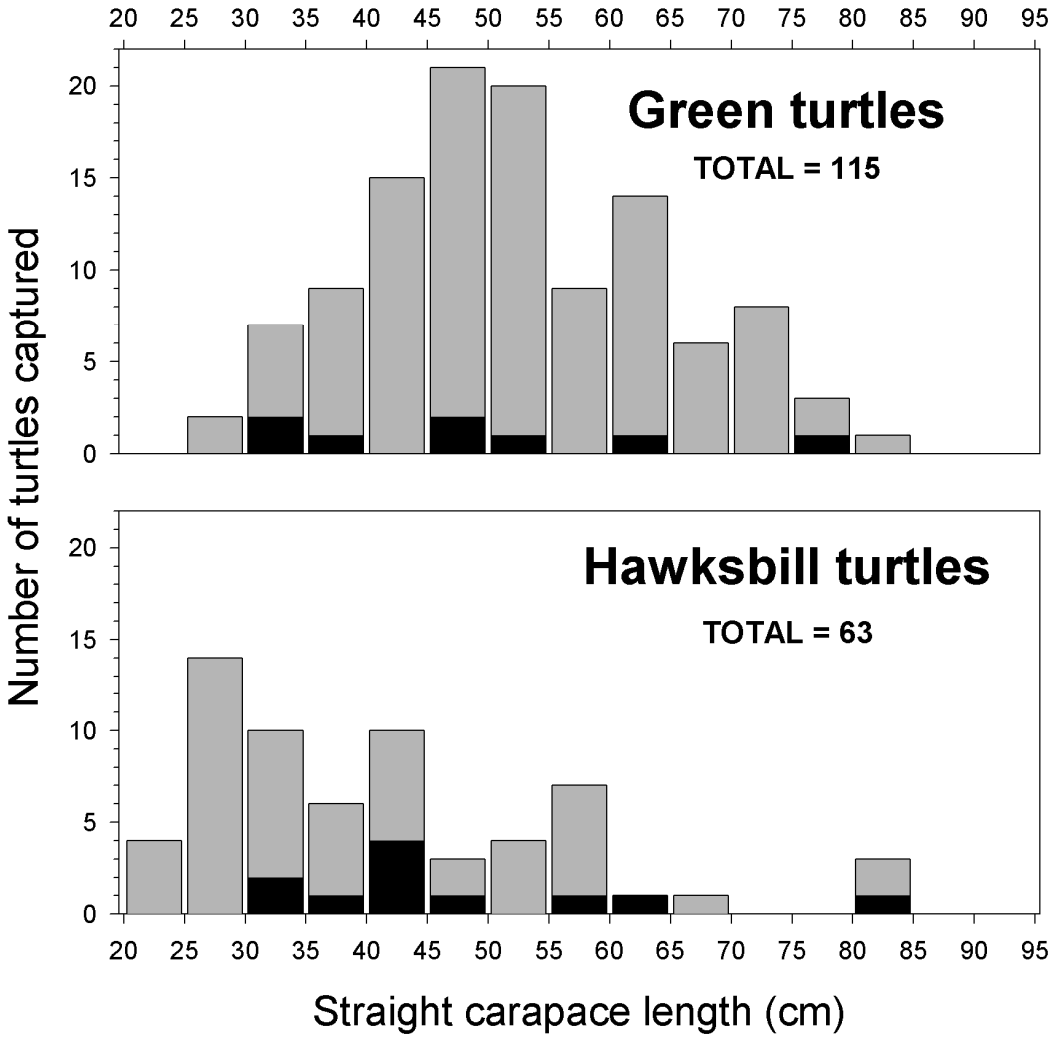

Figure 5. Size distribution of hawksbill and green turtles captured, tagged and measured at Bonaire. Black bars indicate recapture of turtles tagged in previous years.

As of last year we were able to implement a more systematic and structured survey effort to gather comparable data between years. Until 2005 Klein Bonaire was the most consistently surveyed area, thus providing a basis for detecting trends in turtle abundance on these foraging grounds. Last year however, we developed the capacity for consistently surveying the North-west and South coasts of Bonaire, so that the effort dedicated to Klein Bonaire was reduced. Therefore we decided to separate the surveyed areas for comparison as follows: Klein Bonaire, North-west and South of Bonaire.

Catch-per-unit-effort is defined as the number of turtles sighted and/or captured by trained observers in one hour of survey time. Observations of adult turtles were treated separately, as these are most likely seasonal visitors and not foraging ground residents.

Most significantly, Klein Bonaire continued to see a drop in green turtle abundance: from an average of 4.85 turtles sighted or captured per hour in 2003 to 1.73 per hour. No apparent cause can be indicated for this change. The greatest concentration of green turtles at Klein Bonaire continues to be along the east coast of the island, where they forage in the shallow fringing lagoon. Hawksbill abundance remained fairly constant from 2003 through 2006 (see Table 1).

	Green turtles			Hawksbill turtles			Total survey hours		
	2003	2005	2006	2003	2005	2006	2003	2005	2006
	Average ± standard deviation								
Klein Bonaire	4.85 ± 3.95	2.64 ± 2.19	1.73 ± 1.82	1.29 ± 1.17	1.16 ± 1.34	1.76 ± 1.83	25.88	24.54	17.45
Bonaire Northwest			2.12 ± 2.44			1.45 ± 1.53			38.68
Bonaire Southwest			1.01 ± 1.52			1.04 ± 2.06			23.85
Bonaire Southeast			33.10 ± 25.06			4.17 ± 3.94			14.25

Table 1. Comparison of 2003, 2005 & 2006 catch-per-unit-effort survey results around Bonaire & Klein Bonaire

Gathering information on movement and somatic growth rates is possible by recapturing previously tagged turtles. Two turtles had moved significant distances from their area of capture: juvenile hawksbill turtle 06-011 was first tagged at Andrea II (North-west coast of Bonaire) on 3 February 2006 and then recaptured on 21 June 2006 on Klein Bonaire. Green turtle 03-035 was originally captured 4 February 2003 on Klein Bonaire and recaptured three years later 22 November 2006 at Lac.

Measured somatic growth rates varied by individual, with carapace length increasing about 2-6 cm/year for hawksbills, with the exception of two recaptured animals from Lac Bay, which grew at the exceptional rates of 7.6 and 10.2 cm/year (see Figure 6). Green turtles recaptured at Lac Bay were larger and tended to grow faster than green turtles elsewhere around Bonaire and may have the highest growth rates of wild green turtles reported for anywhere else in the Caribbean.

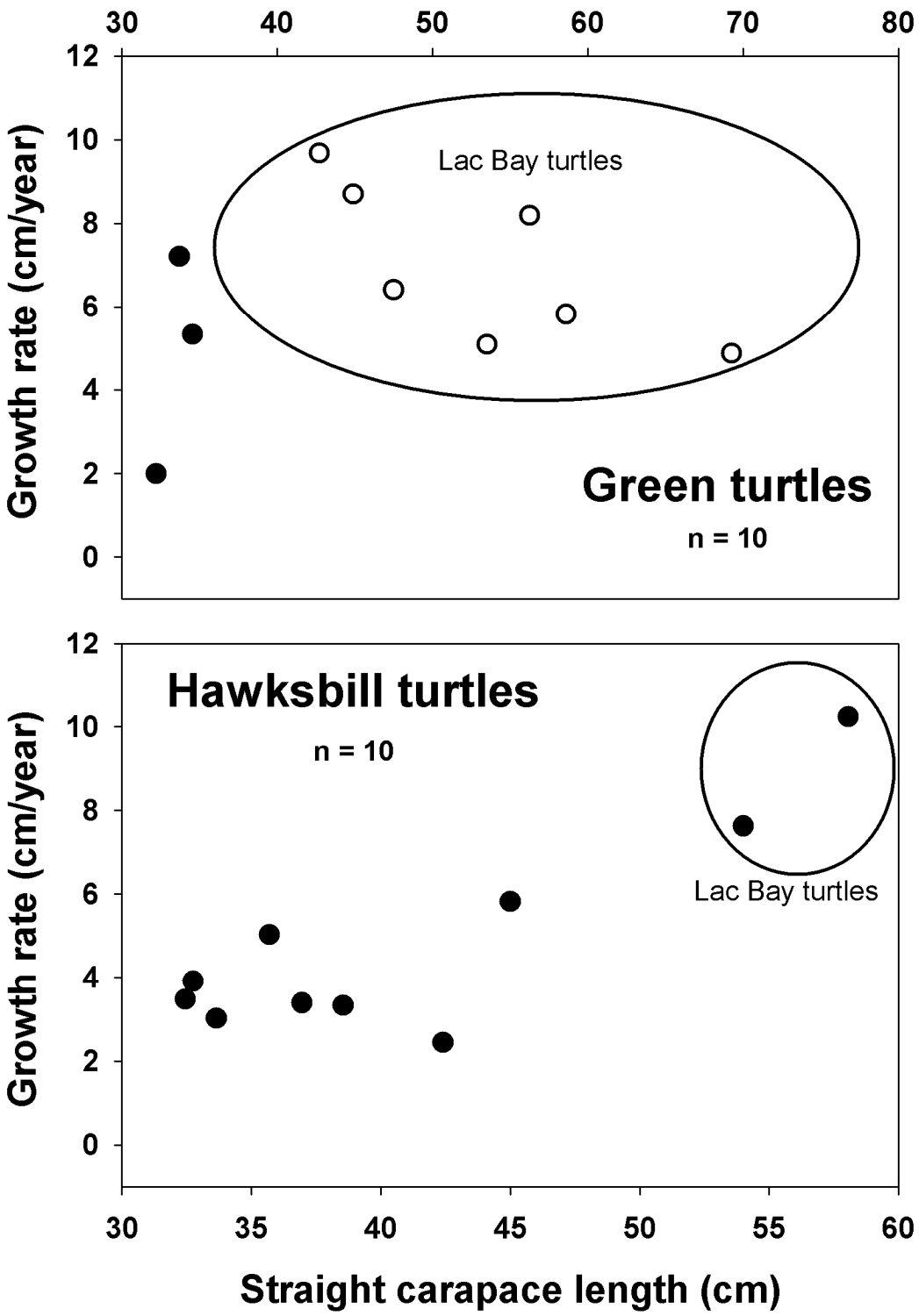

Figure 6. Somatic growth of hawksbill and green turtles recaptured at Bonaire.

Presence of Disease

During our netting surveys in the area of Lac we have found the presence of turtles with tumors. These tumors indicate that some green turtles from Lac are infected with the virus fibropapillomatosis, a disease that manifests in sea turtles as benign, contagious tumors on the turtles' soft and hard tissues, including flippers, neck, plastron and carapace, eye lids and cornea. The tumors, which often have a "cauliflower" look to them, can weight up to three pounds. They cause turtles to become weak and anemic and to loose maneuverability; at times, they even result in blindness and starvation. The growths are also found on turtles' internal organs such as lungs, kidneys and liver. External tumors can be removed but grow back. While fibropapillomas can kill many turtles, observations suggest that some turtles may spontaneously recover (called tumor regression)." (SWOT REPORT volume II, by Sue Schaf)

An increased amount of turtles with tumors (FP) in Lac Bay were found: out of 56 green turtles caught with the netting technique in March 2006, 13 had tumors, (23.2%); this shows an increased number of green turtles with tumors each year since 2003.

However numbers were lower for the second session of netting in November 2006.

Year	Month	Greens	w/FP	%
2003	March	14	0	0
2004	March	20	0	0
2005	March	46	8	17.4
2006	March	56	13	23.2
2006	November	37	7	18.9

Table 2. Number of green turtles captured in Lac with tumors

Because fibropapillomatosis is becoming an increasing threat, the need for research is becoming more urgent. STCB is seeking ways to increase our resources in order to tackle this issue, which affects green turtles world-wide.

Genetic Studies

In November 2006 we started collecting tissue samples, from green and hawksbill turtles during our in-water surveys, for genetic studies. This project is being funded by the KNAP fund that was created by the Department of Public Health and Environment of the Netherlands Antilles (VOMIL). The project title is: Origins & Somatic Growth of Bonaire's Foraging Hawksbill and Green Turtles. The aim of the project is to determine the breeding ground origins of our hawksbill and green turtle aggregations.

Ximena Velez, who holds a Master's degree in biology from the University of Rio Piedras (Puerto Rico) and is working at the University of Puerto Rico, is in charge of the DNA testing. As part of the project, Ximena came to Bonaire last November to train STCB's staff in the sampling techniques. At the end of this project results will be documented and available via WIDECAST and other media.

Turtle Tracking Study

To adequately protect sea turtles in all their habitats, we must learn more about their migratory patterns, their behavior at sea, and where their marine habitats are located. This is where the technology of satellite telemetry becomes useful and important in

protecting sea turtles. Sea Turtle Conservation Bonaire had plans to place two transmitters on turtles in 2006. There were a number of reasons why we elected to track only two adult turtles rather than the four we tracked in each of the prior two years. Locating suitable candidates and attaching the transmitters are very labor intensive and time-consuming activities. The transmitter and satellite time are extremely expensive. Lastly, we felt that we had a very good idea of where our breeding population was coming from and there was no longer a need to outfit four turtles per year. Due to a technical problem with one of the transmitters, some bad luck and some mistakes on our part, we only tracked one turtle for 2006.

On July 13, a transmitter was attached on a large adult female hawksbill turtle named 'Heit'. She was found resting on the reef in the area of Ebo's Special close to the nesting beach at Klein Bonaire, caught by STCB staff and lifted on board the research boat "Nancy Too" for transmitter attachment. Assisting the STCB staff and other volunteers was Ramon de Leon, Manager of the Bonaire National Marine Park.

'Heit' did not leave Bonaire until August 6 and traveled in a southeasterly direction. Instead of migrating to Nicaragua, Puerto Rico or the Dominican Republic, where Bonaire's other tracked turtles have gone, 'Heit' left her nesting ground on Klein Bonaire and swam steadily east to the waters of Los Roques. Her final destination was the Los Roques Archipelago. She first entered the archipelago around August 13. In that time she swam approximately 230 km and about 180 km away from Klein Bonaire.

Figure 7. Heit's journey to Los Roques

'Heit's journey was the catalyst for STCB to undertake its first exciting collaboration with conservation counterparts in the archipelago of Los Roques, Venezuela.

The trip was significant in that 'Heit's entire 180 kilometer migration occurred within the boundaries of a very special area which is under consideration to become a UNESCO World Heritage site. Such a designation would be the first time a World Heritage site is shared by several countries, encompassing the waters surrounding the Venezuelan islands of Las Aves and Los Roques as well as marine reserves of Bonaire and Curacao, for a total area of 2.5 million hectares (25,500 km square). A World Heritage Site designation would lend important support to sea turtle conservation on Bonaire. STCB's mission is to ensure the protection and recovery of Bonaire's sea turtle populations, not just on Bonaire, but throughout their range. Because sea

turtles migrate extensively during their lives, no one government/state can fully protect "its" sea turtle resource; cooperation and collaboration are vital if we are to achieve an increase in sea turtle populations.

'Heit's migration provided us at STCB with an excellent opportunity to initiate just such a collaboration. Mabel Nava, the STCB Project Director, contacted Bladimir Rodriguez, the Director of La Fundacion Cientifica Los Roques (FCLR). He was excited about our two organizations joining in collaboration and provided great support.

On October 16, Mabel traveled to Los Roques with Gielmon (Funchi) Egbreghts, STCB's Project Assistant, for a one-week work session with their counterparts in the turtle project of FCLR. The trip was funded by the World Wildlife Foundation (WWF). After all the planning for the trip, the excitement of finally meeting one another led to an immediate rapport, based on shared interests, passions and experience. Following a tour of the project's facility, the new team immediately sat down to make plans for the week.

One of the week's goals was to try to locate 'Heit' and retrieve the transmitter that STCB had deployed to her carapace two months before. In addition, the team worked together on the FCLR staff's ongoing work schedule, which included daily beach patrols, in-water surveys and daily maintenance of the "sala de cria," a care center where sea turtles are rehabilitated and hatchlings from endangered nests are reared until they are ready for release after reaching six months of age.

Using coordinates from the daily data received from 'Heit's satellite tracking device in the previous weeks, the team determined the best locations to look for her. Even with the help of the data, looking for 'Heit' was like looking for a needle in a haystack and she was never located. However many sub-adult and adult turtles were spotted on every search.

Figure 8. FCLR staff along with STCB's Mabel Nava doing work planning

At the conclusion of a week of demanding field work, any fatigue the team felt was over-shadowed by a renewed enthusiasm for turtle conservation. Sharing that week of work was an incredible experience. It gave STCB staff the chance to compare field techniques used by both projects and for the team members to learn from each other, thereby reaching perhaps the most important goal of this trip: establishing a relationship and cooperation between projects in order to improve the protection of our sea turtles

Transmitters currently used in our studies are model ST-20 made by Telonics (Mesa Arizona, U.S.A.), with a saltwater on-off switch so that the transmitter turns on only when the turtle is at the surface, and duty-cycled to extend battery life. Attachment to the carapace is with fiberglass tape covered with resin. Turtle tracking works through signals sent out by the transmitter, which is switched on whenever the turtle comes to the surface to breathe. These transmissions are then collected by Argos system receivers onboard weather satellites that circle the globe, yielding location data for

each turtle that are e-mailed daily to us. Turtle location data are then plotted on digital maps and sent out whenever deemed newsworthy.

The turtle tracking study continued to attract lots of public attention to our turtles, with lots of press coverage both on Bonaire and elsewhere. Whenever turtles were moving, tracking updates were produced and sent via our new E-Newsletter to the press and whoever else expressed interest. As a result, several sponsors have already been identified for our 2007 tracking project.

Conservation Actions

STCB's conservation program continues to emphasize action and advocacy. Conservation actions are varied and demanding, and STCB's work is enhanced by strong partnerships with the local community. We monitor and protect nests from poachers and predators, relocate nests that are in danger of erosion, conduct annual beach clean-ups, place barriers at nesting sites to prevent vehicles from driving over them, lead beach restorations after natural and manmade events such as hurricanes and sand-mining activity, and rescue turtles from threats such as entanglements.

Bonaire residents, increasingly aware of the issues involved in sea turtle conservation, notify STCB when they recognize signs of turtle activity or see evidence of threats to turtles, and participate in beach clean-ups and snorkel surveys. STINAPA, the managing organization of the Bonaire National Marine Park and Washington Slagbaai National Park, plays a complementary role by patrolling additional habitats and enforcing conservation law.

STCB is an important advocate for conservation policy, legislation and enforcement. The island's government relies on STCB to provide science-based analysis and recommendations when issues arise that have an impact on sea turtles. Our active participation in ALIANSA, the Bonaire Nature Alliance, helps strengthen conservation advocacy on Bonaire

<u>Of special note in 2006:</u>

Earth Day Clean-up at Lagoen: The clean-up was conducted over a two-day period. On the first day, Friday, April 21, SELIBON, along with STCB staff, worked with a front-end loader to remove numerous large and heavy logs that had accumulated and were covering the entire beach. On the second day, staff from STCB and STINAPA, along with a contingent of volunteers spent the day cleaning the beach by hand.

Figure 9. Lagoen: Before and after the clean-up

No Name Beach clean-up: On Sunday, September 25, a beach clean-up was conducted at No Name Beach on Klein Bonaire. The clean-up was organized by STCB and STINAPA as part of the annual International Coastal Clean-up effort sponsored by the Ocean Conservancy. As in prior years, the cruise ship "Freewinds" supported this effort, providing food and drink and bringing extra volunteers. Thirty two people participated in the clean-up and 37 bags of trash were collected. The trash was categorized by STCB staff and volunteers and recorded in data forms that were sent to the Ocean Conservancy which releases an annual report with the results of clean-ups all over the world. This data is used to help formulate strategies for reducing marine debris.

Boka Onima clean-up: - As part of the Sea Turtle Conservation Bonaire programs with the high school (SGB), STINAPA/Jong Bonaire(Junior Ranger course) and Stichting Project, a beach clean-up was conducted in July at Boka Onima by teenagers from these groups and STCB's staff.

Figure 10. Hatchling from nest at Washikemba

On November 20, oil accumulations along the east coast were reported to the Bonaire National Marine Park. An emergency clean-up was conducted on Friday, November 23 by the Marine Park, Sea Turtle Conservation Bonaire, SELIBON and the corps of volunteers of the Marine Park. The largest oil-contaminated rocks and debris were removed by SELIBON using a loader and truck. Volunteers also combed the beach by hand, clearing oil-laden debris.

Rescued turtles

- One hawksbill turtle at Salt Pier in March, reported by a dive master from the island. This turtle was missing the right front flipper and was released immediately after checking her condition.
- One green turtle at Playa Chikitu in July (see story below)
- One hatchling at Sorobon in July

Conservation set-backs

- One green turtle dead in a net that washed ashore at Playa Chikitu (see story below).
- One dead hawksbill turtle, washed ashore at Sorobon in November.
- One poached green turtle at Boka Onima (see story below).

Green turtles trapped in net

On Tuesday, July 11, tourists visiting Washington Slagbaai National Park found a large fishing net on the shore at Playa Chikitu. Upon closer examination they discovered that two sea turtles were entangled in it. Unfortunately, one of the turtles was dead but they managed to release the other unharmed. An earlier visitor to Playa Chikitu had informed the park management about the net and park rangers were already en route to the site. The dead animal was turned over to them and they in turn contacted Sea Turtle Conservation Bonaire.

"Incidental catch in fisheries is widely recognized as a major mortality for sea turtles. Perhaps the greatest threats to juvenile and adult sea turtles worldwide is their incidental capture during fishing activities; with trawling, longline fishing, driftnets, lobsters and fish trap lines, and gillnets causing the most damage. The result is often death by drowning due to forced submergence following entanglement within the gear. Discarded or lost fishing gear also contributes to this problem." (David Gulko & Karen Eckerd, 2003)

Good and Bad News at Boka Onima

Figure 11. Boka Onima restored

In 2006 there was both good and bad news to report concerning Boka Onima. In June, restoration of the beach was completed after it had been mined of all of its sand in August 2005. The restoration was performed by the Department of Environment and Natural Resources in cooperation with STCB. This is the first time in the history of STCB that a nesting beach has been restored. On August 9, 2006, exactly one year to the day from when Bonaire National Marine Park (BNMP) Rangers stopped the sand removal activities at Onima, turtle crawl tracks were reported at the beach.

STCB's Mabel Nava and Gielmon 'Funchi' Egbreghts went to check the activity and to confirm the nest, but discovered that the female green turtle had never made it back to the sea. Clues, both turtle and vehicle tracks, indicated that it had been poached. A search of the beach did not reveal a nest location, and it was feared that the eggs had also been taken. The incident was reported to BNMP and in spite of their strenuous efforts the culprit(s) was never apprehended.

On Tuesday, September 27, STCB staff came upon a nest hatching at Onima. A subsequent check of the nest confirmed that 96 hatchlings had emerged and made their way to the sea.

Figure 12. Hatchling from the Onima nest heads to the sea

This is a very happy and sad event. The restoration of Boka Onima has been proven to be a success and it is once again a viable nesting site. But the poaching of the breeding female is very troubling. Had she not been slaughtered, the female green would have probably returned to Onima three to five more times to lay nests before departing for her home foraging grounds. Now, not only were those nests lost, but all the other nests she would have laid when she returned to Bonaire in the future are lost as well.

Education and Public Awareness

It is no secret that people protect what they understand and love. Accordingly, STCB devotes substantial effort to education and public awareness. In 2006, we continued working closely with STINAPA to provide a successful elementary school education program, which includes a snorkel program, in-class presentations and field trips. High school students learned about turtle biology and conservation, and turned their knowledge into community service by giving presentations and participating in surveys, monitoring and beach clean-ups.

We shared information about our exciting satellite tracking program with the world via our website at www.bonaireturtles.org and emails to people, local press and radio. Feedback from school teachers in other countries tells us that our tracking maps and information about our turtles' movements are being used in biology, geography and social studies classes.

Regularly scheduled PowerPoint presentations on the "Sea Turtles of Bonaire" continued to be a popular feature for visiting tourists. We regularly got the word out locally through informative articles and releases picked up by the local press and we regularly used radio to publicize important conservation issues.

Other highlights of 2006 were:

A promotional DVD about Sea Turtle Conservation Bonaires work was produced to help inform the public and potential sponsors about STCB. This video, which was sponsored in part by Prins Bernard Cultuurfonds, is available at our headquarters.

In cooperation with STINAPA, and sponsored by the Rotterdam Zoo, we replaced the huts on No Name Beach at Klein Bonaire (our main nesting beach) with two well-constructed huts for tourist to use. Along with the huts two barbeque grills were built so that visitors won't light fires and cook on the sand. Informational and educational signs about sea turtles and the Marine Park were produced and set up as part of the project.

We provided a turtle conservation and biology program to the youngsters of the Stichting Project's Junior Ranger program

Figure 13. Her Majesty Queen Beatrix releasing a green turtle, accompanied by Funchi

As part of her visit to the Netherlands Antilles, Queen Beatrix of the Netherlands visited Klein Bonaire on the afternoon of November 8. On Klein, Imre Esser, President of Sea Turtle Conservation Bonaire, had an opportunity to meet and greet her Majesty. Imre was also representing the Foundation for the Preservation of Klein Bonaire and thanked the Queen for the Royal family's support and assistance in returning the island to the people of Bonaire. The highlight of her afternoon, and arguably the highlight of her

entire trip, was checking out a turtle nest with STCB Project Director Mabel Nava and assisting Gielmon "Funchi" Egbrechts in the tagging of a green turtle. The Queen named the turtle Zaria, after her youngest grandchild, before releasing it back into the water. The Queen also agreed to sponsor a satellite transmitter that will be fitted on an adult female sea turtle in 2007. The turtle to be tracked will be named for Queen Beatrix's eldest grandchild.

Fundraising

With our primary funding source, a multi-year grant from USONA (an agency of the Dutch government that supports the development of the Netherlands Antilles), set to expire in October, 2006, we developed a new proposal. This proposal outlined targeted growth in the program to increase our ability to achieve our primary strategic goals in research, conservation, public awareness/education, and building regional partnerships. The proposed budget of Naf 665,000 (Naf 222,000 per year) reflected an increase of one field-staff position and general increases to bolster our targeted programs. We were optimistic about our prospects for having our funding renewed since we had contact with ministers of the Dutch government and received a considerable amount of encouragement from them.

Our proposal was submitted to the Bonaire Island Council in early August and received the Council's approval. Subsequently we learned that the funding program to which we had attempted to apply had been terminated in early August and that a newly-defined program would be opening in April, 2007. Unfortunately, due to the new definition of the program, sea turtle conservation would not be considered for any future grants.

In response to this abrupt end to major funding, STCB scaled back the 2007 proposed budget to Naf 169,339. The amount of the budget reduction was based on programmatic and fiscal considerations. The aim was to retain current staff and to craft a program that would not lose ground (especially, to protect the continuity and validity of our ongoing research and provide day-to-day protection of local turtle populations). This aim was conditioned by our fiscal reserves and an estimate of what we felt we could raise in the short-term. To provide stability, the revised budget reflects a reserve allocation and fundraising goal that we believe we can sustain for a two-year period (2007 and 2008).

The board and staff of STCB have committed to a fundraising goal of Naf 50,000 (for each of 2007 and 2008), which presents a serious capacity challenge for our small organization. Though it is the minimum goal we must achieve if we are to maintain our current level of work protecting Bonaire's sea turtles, we also are committed to a long-term goal to increase and stabilize income so that STCB will be able to fulfill its promise as a leader in sea turtle conservation in the wider Caribbean region.

Strategic Partnerships and Organizational Development

As mentioned earlier in the report, STCB has been very successful in the recent past with the recruitment of volunteers. With a small but stable staff of two, volunteers from outside Bonaire and from the local population have allowed us to accomplish more each year. We have focused on maintaining a core crew of volunteers for the in-water survey work while providing a chance for short-term walk-ins an opportunity to participate in our work.

We estimate that a total of 5240 hours of direct effort (number of hours in the water) was contributed by our volunteers for the in-water capture surveys including the surveys at Lac Bay using the netting techniques. The time contributed by these people is far, far greater when travel time and surface time, which includes application of our research protocols (measurement, tagging, etc.), are considered.

Other areas in which we depend on volunteers are grant writing and the satellite tracking program. Marlene Robinson and Bruce Brabec, new additions to the Board of Directors, have a taken the lead in our latest efforts. Satellite tracking depends on volunteers for the deployment of the transmitter and the long-term tracking effort that follows. Last year, Andy Uhr, now interim STCB president, trained Tony Kool, a new volunteer in the "art" of mapping and developing the Satellite Tracking Update Reports for regular release to the public.

Figure 14. Our two UK volunteers

Two volunteers from the United Kingdom, Lisa Kimmac and Claire Martin, came to Bonaire specifically to help us during the first quarter of the year. They contacted us via our website and arrived late in December 2005. They spent New Year's Eve on Bonaire and worked for us three times per week for almost four months. Originally they came with the intent of assisting only in our in-water surveys, but they became involved in many other activities as well.

During the last year we kept a focus on our partnership with STINAPA and other local organizations: DROB, Cargill, SELIBON, DCNA, Jong Bonaire, the Stichting Project , and the cruise ship Freewinds. Our participation in ALIANSA Naturalesa (an NGO formed by all the environmental organizations from Bonaire) is part of our commitment to the value of strategic partnerships, to make our work more effective and broaden the spectrum of our mission: to protect and ensure the protection and recovery of Bonaire's sea turtle populations throughout their range.

Last year, for the first time and in keeping with one of the primary objectives our Strategic Plan, we were able to expand the scope of our efforts and collaboration beyond the boundaries of Bonaire. STCB staff flew to Los Roques (Venezuela) and worked for a week with our colleagues there. See the section on Satellite Tracking for details of the collaboration.

Appendix I. List of turtles captured in the water and tagged during 2006
Green Turtles

Tag left	Tag right	Turtle ID	Location	Measured by	Date capture	SCL	Weight
WH1011	BX1358	06-001	Red Slave	G.E	16-Jan-06	38.6	6.8
WE4263	WH1012	05-047	South	G.E	18-Jan-06	33.5	4.3
WH1020	BX1361	06-009	Petres Pillars	G.E	3-Feb-06	44.2	11
WH1022	BX1365	06-010	Andrea II	GE	3-Feb-06	48.3	14.7
WH1056	BX1366	06-017	Bopec	GE	10-Feb-06	39.8	8.0
WH1061	BX1367	06-018	Salina di Tamp	GE	13-Feb-06	41.1	8.2
WH1058	WE4297	05-087	Enrique's choice	GE	17-Feb-06	32.5	4.3
WH1062	BX1369	06-022	Wayaka	GE	17-Feb-06	41.0	8.2
WH1065	BX1371	06-026	N.Fisherman huts	GE	1-Mar-06	40.2	8.5
WH1068	BX1372	06-030	Punt Vierkant	GE	6-Mar-06	36.5	6
WH1070	BX1334	05-052	Pieter's Pillars	GE	13-Mar-06	36.6	6
WH1071	BX1374	06-034	Andrea I	GE	13-Mar-06	36.1	6
WH1027	BX1377	06-036	Lac	GE	22-Mar-06	43.6	11.6
WH1028	BX1378	06-037	Lac	GE	22-Mar-06	44.4	12
WH1026	BX1376	06-038	Lac	GE	22-Mar-06	48.2	13.6
WH1033	BX1382	06-040	Lac	GE	22-Mar-06	46.2	12.7
WH1029	BX1379	06-041	Lac	GE	22-Mar-06	45.3	13.5
WH1030	BX1375	06-042	Lac	GE	22-Mar-06	46.4	12.8
WH1032	BX1381	06-043	Lac	GE	22-Mar-06	45.8	11.6
WH1035	BX1384	06-044	Lac	GE	23-Mar-06	56.1	24
WH1034	BX1383	06-045	Lac	GE	23-Mar-06	58.5	30
WH1039	BX1388	06-046	Lac	GE	23-Mar-06	48.0	13.2
WH1038	BX1387	06-047	Lac	GE	23-Mar-06	63.5	33
WH1037	BX1386	06-048	Lac	GE	23-Mar-06	61.0	30
WH1036	BX1385	06-049	Lac	GE	23-Mar-06	48.9	13.9
WH1040	BX1389	06-050	Lac	GE	23-Mar-06	70.3	48
WH1047	BX1396	06-054	Lac	GE	24-Mar-06	38.6	7.6
WH1046	BX1395	06-055	Lac	GE	24-Mar-06	54.3	23
WH1045	BX1394	06-056	Lac	GE	24-Mar-06	48.4	13.1
WH1044	BX1393	06-057	Lac	GE	24-Mar-06	48.0	12.5
WH1048	BX1397	06-058	Lac	GE	24-Mar-06	59.4	28
WH1072	BX1400	06-059	Lac	GE	24-Mar-06	63.2	35
WH1050	BX1399	06-060	Lac	GE	24-Mar-06	59.1	27
WH1074	WH1075	06-062	Lac	GE	24-Mar-06	51.6	21
WH1077	BX1152	06-063	Lac	GE	25-Mar-06	58.2	27
WH1076	BX1151	06-064	Lac	GE	25-Mar-06	52.0	21
WH1080	BX1155	06-065	Lac	GE	25-Mar-06	60.8	31
WH1079	BX1154	06-066	Lac	GE	25-Mar-06	69.2	46
WH1078	BX1153	06-067	Lac	GE	25-Mar-06	40.9	9
WH1081	BX1156	06-068	Lac	GE	25-Mar-06	70.9	50
WH1082	BX1157	06-069	Lac	GE	26-Mar-06	47.6	15

Green turtles (continued)

Tag left	Tag right	Turtle ID	Location	Measured by	Date capture	SCL	Weight
WE4224	BX1303	05-008	Out of Lac	GE	26-Mar-06	47.3	14
WH1087	BX1162	06-072	Lac	GE	26-Mar-06	64.2	36
WH1086	BX1161	06-073	Lac	GE	26-Mar-06	69.9	50
WH1085	BX1160	06-074	Lac	GE	26-Mar-06	52.7	18
WH1084	BX1159	06-075	Lac	GE	26-Mar-06	71.5	50
WH1088	BX1163	06-076	Lac	GE	26-Mar-06	47.7	15
WH1090	BX1165	06-077	Lac	GE	27-Mar-06	38.5	8
WH1091	BX1166	06-079	Lac	GE	27-Mar-06	51.1	16
WH1092	BX1331	05-044	Lac	GE	27-Mar-06	49.1	15
WH1093	BX1167	06-081	Lac	GE	28-Mar-06	70.4	52
WH1094	BX1168	06-082	Lac	GE	28-Mar-06	47.4	14
WH1096	BX1170	06-083	Lac	GE	28-Mar-06	54.7	26
WH1095	BX1169	06-084	Lac	GE	28-Mar-06	62.2	33
WH1098	BX1172	06-085	Lac	GE	28-Mar-06	52.9	22
WH1097	BX1171	06-086	Lac	GE	28-Mar-06	40.6	9
WH1101	BX1175	06-087	Lac	GE	30-Mar-06	51.0	18
WH1100	BX1174	06-088	Lac	GE	30-Mar-06	48.8	16
WH1099	BX1173	06-089	Lac	GE	30-Mar-06	38.3	8
BX1084	WE4154	04-029	Lac	GE	30-Mar-06	64.1	38
WH1105	BX1179	06-091	Lac	GE	3-Apr-06	73.2	55
WH1104	BX1178	06-092	Lac	GE	3-Apr-06	51.8	18.7
WH1103	BX1177	06-093	Lac	GE	3-Apr-06	44.7	12
WH1102	BX1176	06-094	Lac	GE	3-Apr-06	57.7	26
WH1106	BX1180	06-095	Lac	GE	3-Apr-06	76.3	65
WH1108	BX1182	06-097	Lac	GE	4-Apr-06	51.7	17.1
WH1109	BX1183	06-098	Lac	GE	4-Apr-06	66.7	42
WH1111	WH1110	06-099	Lac	GE	6-Apr-06	32.7	4.8
WH1112	BX1184	06-100	Lac	GE	6-Apr-06	61.7	30
WH1117	WH1118	06-107	Reserve	GE	26-Apr-06	29.8	3.5
WH1120	WH1119	06-109	Playa Frans	MN	8-May-06	28.5	3
WH1122	WH1121	06-110	Slagbaai	GE	8-May-06	31.0	4.3
WE4295	BX1352	06-116	Knife (KB)	MN	2-Jun-06	37.6	6.9
WH1130	WH1133	06-121	Ebo's reef	GE	14-Jun-06	32.2	4.5
WH1137	WH1136	06-126	KB	GE	21-Jun-06	42.9	9.8
WH1141	BX1191	06-128	Plaza Hotel Marina	GE	18-Aug-06	38.9	6.2
WH1146	WH1143	06-130	No Name	MN	7-Nov-06	54.8	3.8
Wh1148	BX1194	06-131	Pakuna	GE	13-Nov-06	51.6	27
WH1145	BX1195	06-133	Blue Hole	GE	14-Nov-06	49.2	39
WE4237	BX1311	05-021	Lac	GE	20-Nov-06	70.9	19.8
WH1144	BX1201	06-135	Lac	GE	20-Nov-06	47.8	37
WH1147	BX1196	06-136	Lac	GE	20-Nov-06	55.3	53
WH1149	BX1197	06-137	Lac	GE	20-Nov-06	62.7	34
WH1152	BX1200	06-138	Lac	GE	21-Nov-06	53.6	32
WH1150	BX1198	06-139	Lac	GE	21-Nov-06	40.7	19
WH1151	Bx1199	06-140	Lac	GE	21-Nov-06	51.6	9.8

Green turtles (continued)

Tag left	Tag right	Turtle ID	Location	Measured by	Date cap-ture	SCL	Weight
WH1153	BX1202	06-142	Lac	GE	21-Nov-06	49.5	22
WH1159	BX1209	06-144	Lac	GE	22-Nov-06	38.6	43
WH1158	BX1208	06-145	Lac	GE	22-Nov-06	64.6	50
WE4043	BX1207	03-035	Lac	GE	22-Nov-06	74.0	72
WH1160	BX1210	06-147	Lac	GE	22-Nov-06	52.2	17
WH1161	BX1211	06-148	Lac	GE	22-Nov-06	44.9	16
WH1154	BX1203	06-149	Lac	GE	22-Nov-06	58.1	54
WH1075	WH1074	06-062	Lac	GE	23-Nov-06	77.0	25
WH1162	BX1212	06-151	Lac	GE	23-Nov-06	43.8	19.8
WH1163	BX1213	06-152	Lac	GE	23-Nov-06	52.1	32
WH1164	Bx1214	06-153	Lac	GE	23-Nov-06	66.9	15.9
WH1165	BX1215	06-154	Lac	GE	23-Nov-06	32.8	9.8
WH1166	BX1216	06-155	Lac	GE	23-Nov-06	62.3	20
WH1167	BX1217	06-156	Lac	GE	23-Nov-06	35.4	28
WH1177	BX1226	06-165	Lac	GE	29-Nov-06	28.9	10.2
WH1176	X1225	06-166	Lac	GE	29-Nov-06	25.8	9.4
WH1175	BX1224	06-167	Lac	GE	29-Nov-06	27.5	13.6
WH1179	BX1228	06-168	Lac	GE	29-Nov-06	26.0	17.4
WH1178	BX1227	06-169	Lac	GE	29-Nov-06	25.3	17.9
WH1181	BX1230	06-170	Lac	GE	29-Nov-06	30.0	12
WH1180	Bx1229	06-171	Lac	GE	29-Nov-06	29.3	27
WH1046	BX1395	06-051	Lac	GE	30-Nov-06	28.6	32
WH1182	BX1231	06-173	Lac	GE	30-Nov-06	31.1	33
WH1184	BX1233	06-174	Lac	GE	30-Nov-06	34.9	13,5
WH1183	BX1232	06-175	Lac	GE	30-Nov-06	40.8	23
WH1185	BX1234	06-176	Lac	GE	30-Nov-06	36.5	37
WH1043	BX1392	06-051	Lac	GE	30-Nov-06	27.3	26
WH1186	BX1235	06-178	Lac	GE	01-dec-06	82.2	74
WH1187	BX1236	06-179	Lac	GE	01-dec-07	37.7	17
WH118	BX1238	06-180	Lac	GE	01-dec-07	35.1	21
WH1189	BX1239	06-181	Flamingo Beach Hotel	GE	14-dec-06	42.3	

Hawksbill turtles

Tag left	Tag right	PIT tag	Turtle ID	Location	Meas-ured by	Date cap-ture	SCL max	Weight
WH1014	WH1013		06-003	N. Fisherman Huts	G.E	18-Jan-06	30.8	2.8
WH1016	BX1359		06-004	N. Fisherman huts	G.E	18-Jan-06	38.0	6.3
WE4028	WE4029	134422091A	03-020	White Slave	G.E	20-Jan-06	44.4	9.6
WE4058	WE4059	133954511A	03-043	Playa pa'bou	G.E	1-Feb-06	43.2	8.5
WH1018	WH1015		06-007	Playa pa'bou	G.E	1-Feb-06	33.4	4.0
WH1019	BX1360		06-008	Cliff	G.E	1-Feb-06	45.0	9.7
WH1021	BX1362		06-011	Andrea II	GE	3-Feb-06	43.9	9.3
WH1025	WH1024		06-012	Witches hut	GE	6-Feb-06	34.6	4.3
WE4275	BX1338		05-056	Thousand steps	GE	6-Feb-06	43.3	8.8
		134436726A	06-014	Reserve 1	GE	8-Feb-06	25.0	1.8
WH1053	WH1023		06-015	Reserve1	GE	10-Feb-06	33.4	4.2
WH1055	WH1054		06-016	Reserve1	GE	10-Feb-06	34.5	4.3
WH1059	WH1060	133922530A	06-021	Slagbaai	GE	17-Feb-06	30.2	3.2
WH1063	BX1370		06-023	S. Fisherman Huts	MN	22-Feb-06	42.5	9.0
		134538274A	06-024	N.Fishermans Huts	GE	22-Feb-06	26.1	1.8
		134428772A	06-025	N.Fisherman huts	GE	1-Mar-06	25.4	1.8
WH1066	WH1067	134576174A	06-027	S.White Slave	GE	1-Mar-06	30.8	3.1
		133734597A	06-028	White Slave	GE	1-Mar-06	25.3	1.8
		133935767A	06-029	Pink beach	GE	3-Mar-06	25.0	1.9
WH1069	BX1373		06-031	kas di gezagheb-ber	GE	8-Mar-06	70.4	22
			06-032	Salt Pier	GE	10-Mar-06	23.6	1.8
WE4130	WE4129	135116522A	04-010	South west corner	GE	15-Mar-06		5
WH1031	BX1380		06-039	Lac	GE	22-Mar-06	49.7	14.5
WH1043	BX1392		06-051	Out of Lac	GE	24-Mar-06	56.6	23
WH1041	BX1390		06-052	Out of Lac	GE	24-Mar-06	56.4	19.4
WH1042	BX1391		06-053	Out of Lac	GE	24-Mar-06	51.4	15.3
WH1049	BX1398		06-061	Lac	GE	24-Mar-06	59.9	28
WH1083	BX1158		06-070	Out of Lac	GE	26-Mar-06	58.5	27
WH1089	BX1164		06-078	Lac	GE	27-Mar-06	54.8	20
WH1107	BX1181		06-096	Lac	GE	4-Apr-06	43.8	10.7
WH1114	WH1113		06-101	pass piedra pretu	MN	7-Apr-06	35.4	5
WH1116	WH1115	133923453A	06-102	Willemstore L.H.	GE	7-Apr-06	28.9	3
		133951151A	06-103	Jeff Davis	GE	24-Apr-06	25.8	1.9
		134735513A	06-104	Country Garden	GE	24-Apr-06	27.5	2.1
		133964097A	06-105	Reserve	GE	26-Apr-06	26.0	2
		134934670A	06-106	Reserve	GE	26-Apr-06	25.3	1.8
		135134614A	06-108	Bopec	GE	28-Apr-06	29.3	3
WH1123	Bx1186		06-111	Bartol/Benge	GE	10-May-06	34.9	4.8
WH1131	BX1185		06-112	Bartol/Benge	GE	10-May-06	40.8	7.6
WH4203	WH4202	134552663A	04-076	No Name	GE	31-May-06	36.5	5.2
		134451445A	06-114	No Name	GE	31-May-06	27.3	2.1
WH1125	BX1190		06-115	No Name	GE	31-May-06	82.2	65
WE4215	WH1125		04-085	Nearest point	MN	7-Jun-06	35.1	5.3
WE4147	WE4148	134533512A	04-025	Ebo's special	GE	12-Jun-06	42.3	9.8
BX1120	WE4194		04-068	Ebo's special	GE	12-Jun-06	83.8	72

Hawksbill turtles (continued)

Tag left	Tag right	PIT tag	Turtle ID	Location	Meas-ured by	Date cap-ture	SCL max	Weight
WH1126	WH1127	134976345A	06-120	Nearest point	GE	14-Jun-06	29.2	2.8
BX1191	WH1132		06-122	Ebo's reef	GE	14-Jun-06	84.3	
		134673374A	06-123	Ebo's special	GE	19-Jun-06	23.6	1.4
WH1139	WH1138	134622751A	06-124	KB	GE	21-Jun-06	27.5	2.5
WH1021	BX1362		06-011	KB	GE	21-Jun-06	46.1	11.1
WH1135	WH1134	133865617A	06-127	KB	GE	21-Jun-06	27.2	2.3
WH1142	BX1193		06-129	Ebo's Reef	GE	7-Nov-06	50.2	13.2
WH1089	BX1164		06-078	Blue Hole	GE	14-Nov-06	61.3	29
WH1155	BX1204		06-141	Lac	GE	21-Nov-06	55.6	22
WH1156	BX1205		06-143	Lac	GE	21-Nov-06	40.0	6.2
WH1157	BX1218		06-157	Out of Lac	GE	28-Nov-06	35.9	5.3
WH1172	BX1221		06-158	Out of Lac	GE	28-Nov-06	52.4	17.3
WH1170	WH1171		06-159	Out of Lac	GE	28-Nov-06	33.0	4.1
WH1158	BX1219		06-160	Out of Lac	GE	28-Nov-06	48.3	12.5
WH1169	BX1220		06-161	Out of Lac	GE	28-Nov-06	39.7	6.6
WH1174	BX1223		06-162	Out of Lac	GE	28-Nov-06	58.9	24
WH1173	BX1222		06-163	Out of Lac	GE	28-Nov-06	44.8	9.8
WH1042	BX1391		06-053	Out of Lac	GE	28-Nov-06	56.6	22

Appendix II. List of breeding-size turtles tagged during 2006

Tag left	Tag right	PIT tag	Turtle ID	Location	Measured by	Date cap-ture	SCL max	Weight
Hawksbill turtles								
BX1191	WH1132		06-122	Ebo's reef	GE	14-Jun-06	84.3	
BX1120	WE4194		04-068	Ebo's special	GE	12-Jun-06	83.8	72
WH1125	BX1190		06-115	No Name	GE	31-May-06	82.2	65
Loggerhead turtles								
WH1057	BX1368		06-019	pl. Frans/reserve	GE	15-Feb-06	110.0	

Appendix III. Somatic growth rates recorded during 2006

Green turtles

turtle id	species	date	Location	measured by	Recap	SCL	Weight	Interval	Growth rate
03-035	Cm	4-Feb-03	KB	GE	N	60.0	30.0		
03-035	Cm	22-Nov-06	Lac	GE	R	78.5	72.0	**3.8**	**4.87**
04-029	Cm	15-Mar-04	Lac	GE	N	47.9	14.5		
04-029	Cm	30-Mar-06	Lac	GE	R	64.6	38.0	**2.0**	**8.19**
05-008	Cm	21-Mar-05	Lac	GE	N	37.8	6.5		
05-008	Cm	26-Mar-06	Out of Lac	GE	R	47.6	14.0	**1.0**	**9.67**
05-021	Cm	26-Mar-05	Lac	EG	N	42.2	9.8		
05-021	Cm	20-Nov-06	Lac	GE	R	52.8	19.8	**1.7**	**6.41**
05-044	Cm	31-Mar-05	Lac	GE	N	40.6	7.8		
05-044	Cm	27-Mar-06	Lac	GE	R	49.2	15.0	**1.0**	**8.70**
05-047	Cm	12-Apr-05	Vista Blue	GE	N	32.5	3.3		
05-047	Cm	18-Jan-06	South	GE	R	36.6	4.3	**0.8**	**5.33**
05-052	Cm	3-May-05	Andrea 1	GE	N	30.6	4.0		
05-052	Cm	13-Mar-06	Pieter's Pillars	GE	R	36.8	6.0	**0.9**	**7.21**
05-087	Cm	18-Aug-05	Enrique's choice	GE	N	31.7	3.7		
05-087	Cm	17-Feb-06	Enrique's choice	GE	R	32.7	4.3	**0.5**	**2.00**
06-051	Cm	24-Mar-06	Out of Lac	GE	N	56.6	23.0		
06-051	Cm	30-Nov-06	Lac	GE	R	60.6	32.0	**0.7**	**5.82**
06-062	Cm	24-Mar-06	Lac	GE	N	51.8	21.0		
06-062	Cm	23-Nov-06	Lac	GE	R	55.2	55.2	**0.7**	**5.09**

Hawksbill turtles

turtle id	species	date	Location	measured by	Recap	SCL	Weight	Interval	Growth rate
03-020	Ei	27-Jan-03	South	G.E	N	31.0	3.4		
03-020	Ei	20-Jan-06	White Slave	G.E	R	44.4	9.6	**3.0**	**4.49**
03-043	Ei	7-Feb-03	Andrea	G.E	N	28.2	2.5		
03-043	Ei	1-Feb-06	Playa pa'bou	G.E	R	43.2	8.5	**3.0**	**5.03**
04-010	Ei	12-Feb-04	KB	GE	N	30.5	2.8		
04-010	Ei	15-Mar-06	South west corner	GE	R	36.8	5.0	**2.1**	**3.02**
04-025	Ei	10-Mar-04	KB beach	GE	N	34.8	5.0		
04-025	Ei	17-Jun-05	Sampler	MN	R	39.1	7.5	**1.3**	**3.38**
04-025	Ei	12-Jun-06	Ebo's special	GE	R	42.3	9.8	**1.0**	**3.25**
04-076	Ei	29-Jun-04		GE	N	29.0	2.8		
04-076	Ei	31-May-06	No Name	GE	R	36.5	5.2	**1.9**	**3.91**
04-085	Ei	26-Nov-04	KB Ebo's	GE	N	29.8	3.3		
04-085	Ei	6-Jun-05	Bonaventura	GE	R	31.2	4.0	**0.5**	**2.66**
04-085	Ei	7-Jun-06	Nearest point	MN	R	35.1	5.3	**1.0**	**3.89**
05-056	Ei	13-May-05	Jeff Davis	GE	N	41.5	7.5		
05-056	Ei	6-Feb-06	Thousand steps	GE	R	43.3	8.8	**0.7**	**2.44**
06-011	Ei	3-Feb-06	Andrea II	GE	N	43.9	9.3		
06-011	Ei	21-Jun-06	KB	GE	R	46.1	11.1	**0.4**	**5.82**
06-053	Ei	24-Mar-06	Out of Lac	GE	N	51.4	15.3		
06-053	Ei	28-Nov-06	Out of Lac	GE	R	56.6	22.0	**0.7**	**7.63**
06-078	Ei	27-Mar-06	Lac	GE	N	54.8	20.0		
06-078	Ei	14-Nov-06	Blue Hole	GE	R	61.3	29.0	**0.6**	**10.23**

Appendix IV. List of nests recorded during 2006

List of nests on Klein Bonaire

2006	NESTING DATA					
Activity number	**Location stake**	**Observation date dd-MMM**	**Probable species**	**Nest confirmed?**	**Observations**	**Revision date dd-MMM**
1	1800	26-May	Loggerhead	Y	Open beach	21-Jul
2	800	30-May	Hawksbill	N	Olive tree	
3	730	3-Jun	Loggerhead	N	Open beach	8-Aug
4	1007	10-Jun	Loggerhead	Y	Dune	14-Aug
5	600	12-Jun	Hawksbill	Y	Olive	2-Aug
6	750	15-Jun	Loggerhead	Y	Open beach	4-Aug
7	700	20-Jun	Hawksbill	Y	Dunes	19-Aug
8	630	24-Jun	Hawksbill	Y	Olive	11-Aug
9	806	24-Jun	Loggerhead	Y	Open beach	11-Aug
10	933	26-Jun	Hawksbill	N	Olive	10-Aug
11	350	30-Jun	Loggerhead	Y	Open beach	
12	803	5-Jul	Loggerhead	Y	Olive	1-Sep
13	339	10-Jul	Hawksbill	Y	Dunes	4-Sep
14	1530	14-Jul	Hawksbill	Y	Olive	6-Sep
15	862	17-Jul	Loggerhead	Y	Dunes	8-Sep
16	1832	17-Jul	Loggerhead	Y	Relocated	13-Sep
17	678	26-Jul	Hawksbill	Y	Dunes	6-Oct
18	703	28-Jul	Hawksbill	Y	Dunes, Kuku	4-Oct
19	1884	4-Aug	Hawksbill	Y	Dunes	18-Oct
20	364	10-Aug	Hawksbill	N	Olive	
21	800	10-Aug	Hawksbill	Y	Olive	18-Oct
22	15-Dec	18-Aug	Hawksbill	Y	Open	16-Oct
23	1850	18-Aug	Hawksbill	Y	Dunes	16-Oct
24	425	25-Aug	Hawksbill	Y	Olive	20-Oct
25	1208	28-Aug	Hawksbill	Y	Olive	23-Oct
26	940	30-Aug	Hawksbill	Y	Tabaco	
27	575	1-Sep	Hawksbill	Y	Open	27-Oct
28	1914	6-Sep	Hawksbill	Y	Open	3-Nov
29	679	8-Sep	Hawksbill	Y	Dune	3-Nov
30	1025	14-Sep	Hawksbill	N		7-Nov
31	700	17-Sep	Hawksbill	Y	Dunes	14-Nov
32	1275	20-Sep	Hawksbill	Y	Olive	4-Nov
33	770	22-Sep	Hawksbill	Y	Tabaco	27-Nov
34	320	25-Sep	Hawksbill	N		13-Nov
35	930	27-Sep	Hawksbill	Y	Olive	27-Nov
36	778	2-Oct	Hawksbill	Y	Tabacco	13-Dec
37	500	4-Oct	Hawksbill	Y	Olive	22-Dec
38	382	6-Oct	Hawksbill	Y	Olive- eggs are brown.	13-Dec
39	945	9-Oct	Hawksbill	Y	Olive	22-Dec

List of nests on Klein Bonaire (continued)

40	518	18-Oct	Hawksbill	Y	Olive	13-Dec
41	350	20-Oct	Hawksbill	Y	Olive	27-Dec
42	650	18-Oct	Hawksbill		Olive, found hatched	18-Oct
43	765	31-Oct	Hawksbill	Y	Olive	29-Nov
44	960	2-Nov	Hawksbill	N	Tabaco	02-Jan
45	468	14-Nov	Hawksbill	Y	Tabaco	13-Jan
46	1000	21-Nov	Hawksbill	Y		
47	765	4-Dec	Hawksbill	Y	Dunes	18-Jan
48	340	11-Dec	Hawksbill		Olive Found hatched	11-Dec
49	1150	30-Nov	Hawksbill	N	Olive	30-Jan
50	1530	23-Nov	Hawksbill	Y	Tabaco	20-Jan
51	1310	16-Dec	Hawksbill	Y	Olive	

List of nests on other Bonaire beaches during 2006

Observation date dd-MMM	Probable species	Location	Nest con-Firmed ?	Observations	Nest revision Date dd-MMM
SOUTH					
27-May-06	Loggerhead	Fishermand Huts	N		7-Jul
27-May-06	Loggerhead	Fisherman's huts	N	Open	17-Jul
8-Jun-06	Loggerhead	Fisherman's huts	Y	Open	5-Aug
20-Jun-06	Loggerhead	Fisherman's huts	Y	Open	9-Aug
29-Jun-06	Loggerhead	Fisherman's huts	Y	Open	23-Aug
12-Jul-06	Loggerhead	Fisherman's huts	Y	Open	8-Sep
19-Sep-06	Green	Fisherman's huts	Y	Open	20-Nov
WASHINGTON PARK					
13-Aug-06	Green	Playa Chikitu	Y	Open	8-Oct
24-Aug-06	Green	Playa Chikitu	Y	Open, dunes	16-Oct
WASHIKEMBA					
8-Oct-06	Ei	Playa Washikemba	N		24-Nov
22-Oct-06	Ei	Playa Washikemba	Y		Dec
5-Nov-06	Ei	Playa Washikemba	Y		28-Dec
BOKA ONIMA					
9-Aug-06	Green	Boka Onima	N	Turtle was poached after nest-ing	26-Sep
PLAYA FRANS					
25-Jul-06	Green	South of playa Frans	Y		26-Sep
15-Aug-06	Green	South of playa Frans	Y		19-Oct
29-Aug-06	Green	South of playa Frans	Y	Destroyed by the turtle/next nest	29-Aug
29-Aug-06	Green	South of playa Frans	Y		30-Oct
DONKEY BEACH					
22-Aug	Hawksbill	Port Bonaire/pali mangel	N	found hatched	22-Aug
22-Aug	Hawksbill	Port Bonaire/pali mangel	N	found hatched	22-Aug
9-Sep	Hawksbill	Port Bonaire/pali mangel	N	found hatched	9-Sep
16-Sep	Hawksbill	Port Bonaire/pali mangel	N	found hatched	16-Sep
19-Sep	Hawksbill	Port Bonaire/pali mangel	N	found hatched	19-Sep
19-Sep-06	Hawksbill	Port Bonaire/pali mangel	Y		26-Sep
19-Sep-06	Hawksbill	Port Bonaire/pali mangel	Y		29-Oct