Research and Monitoring of Bonaire's Sea Turtles: 2017 Technical Report

Photo credit: Steve Mussman

Report prepared by
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Executive Summary

Sea Turtle Conservation Bonaire (STCB) has been protecting sea turtles on Bonaire since 1991, so this year represents the 26th Anniversary of our organization. In 2002, we standardized our research and monitoring efforts, following the appointment of a Scientific Officer. Annually we monitor our nesting beaches around Bonaire, conduct intensive in-water netting and snorkel surveys, and we regularly track sub-adult and post-breeding migrations using satellite telemetry. These techniques provide us with a better understanding of Bonaire sea turtles' breeding success, abundance, health, growth rates, migratory paths and distant feeding grounds, residency duration, habitat quality, and threats. In 2017, Scientific Advisor Dr. Frank Rivera-Milán analyzed in-water transect counts, net captures, and nesting data that STCB has collected over the years. In cooperation with STCB, Rivera-Milán will produce scientific publications in the coming years, as well as review STCB's methodology for netting (net captures), in-water surveys (transect counts) and nesting.

During the 2017 season, we recorded 78 nests at our index beach on Klein Bonaire. A total of 61 hawksbill and 17 loggerhead nests and suspected nests were documented on "No Name Beach". On the beaches on Bonaire and Klein Bonaire combined, we observed three sea turtle species (hawksbills, loggerheads and green turtles) crawling 228 times, which included a total of 128 confirmed or suspected nests. 21 green turtle nests were recorded in northeastern Bonaire. Hawksbills and loggerheads mainly nested on Klein Bonaire and the beaches of southern Bonaire. That said, three loggerhead and three hawksbill nests were recorded in northeastern Bonaire. The nesting period on Bonaire in 2017 ran from April to December with the highest number of nests laid between mid-June and mid-September.

Estimates of clutch size and hatch success suggest that around 12,155 turtles hatched from nests on Klein Bonaire and Bonaire in 2017, including approximately 7,988 hawksbills, 2,033 loggerheads, and 2,134 green turtles. Sea turtle nesting activities across Klein Bonaire and Bonaire have been increasing since monitoring began in 2002.

During in-water snorkel surveys, we counted and, when possible, captured green turtles and hawksbills in all regions sampled, including Klein Bonaire, along the west coast of Bonaire, and near the reef bordering Lac. Netting in Lac was conducted in three weekly sessions across the year. The aggregation of green turtles near Lac remains much larger than sites along the west coast, and greens captured there were bigger than conspecifics elsewhere, perhaps a result of the composition and high densities of sea grasses in Lac.

The total occurrence of fibropapillomatosis (FP) among green turtles captured in nets at Lac declined considerably in 2017, continuing the downwards trend observed in 2015. This year only 5.5% of green turtles captured in and around Lac had visible FP tumors.

STCB co-authored an important research paper in 2017: "Ecological regime shift drives declining growth rates of sea turtles throughout the West Atlantic" together with researchers led by Karen A. Bjorndal.

During 2017, there were 35 sea turtle hotline incidents reported, 32 of which were directly related to turtles in trouble; one involved the general public harassing sea turtles; and one call was related to poaching. The fishing industry and associated by-catch, one of the biggest threats Caribbean-wide, was implicated in approximately 23% of the turtles in trouble. A total of nine incidents were related to a large mass of seaweed sargassum that drifted inside the Lagoen and Sorobon area at the end of December. In the open ocean, these floating mats are extremely diverse, providing important habitat for over 250 species of fish and invertebrates, many of which are not found anywhere else. Young sea turtles often spend their tender years finding refuge and a plentiful food supply in these floating seaweed mats. However, when it enters coastal areas and starts rotting, it can cause mortality. Unfortunately, climate change has brought warmer temperatures, which increases algal growth rates, and possibly stronger currents/shifting currents, which combined with more and more land-based nutrients flowing into our oceans, are thought to be the reason why we are seeing more and more massive 'strandings' of these floating seaweed mats.

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Background

Founded in 1991, this year sees the 26th Anniversary of STCB, and it was twenty-six years ago when STCB began to monitor the status of and threats to Bonaire's sea turtles, using the resulting knowledge to protect them. Comprehensive local laws, as well as international treaties, now protect sea turtles, their nests and eggs from harvest and harassment. The community and tourism industry generally understand the importance of sea turtles to a healthy ecosystem and their value to an economy centered on dive tourism. It is a rare resident or guest who is not captivated by encounters with these beautiful and endangered species. The most serious challenges facing Bonaire's sea turtles are not direct threats like poaching or lack of support for sea turtle protection. The main threats now are indirect, related to a rapidly increasing human population and the development that goes along with it. These indirect threats to sea turtles are also the major threats to Bonaire's rich ecosystems, biodiversity, and our own quality of life.

In this landscape, we no longer look at sea turtle conservation as something apart from society. To ensure a secure future for Bonaire's sea turtles, we must address the issues that threaten sea turtles, biodiversity and social well-being, because they are inter-related. Sea turtles can thrive only when their ecosystems are healthy and the human community thrives. Following our mission, conservation and applied research remain the core work of STCB. Our work spans research, conservation, education, outreach, advocacy, and policy. This technical report summarizes STCB's scientific outcomes from the 2017 season. STCB's research and monitoring activities are designed to better understand Bonaire's nesting population and foraging aggregations, to contribute to the body of scientific knowledge in the greater Caribbean region, and to inform sound management policies on national and regional scales. Our work includes regular foot patrols of nesting beaches to assess the volume of nesting activities, post-hatch nest excavations to estimate how many hatchlings are released from Bonaire's beaches each year, and extensive snorkel and netting surveys of key sea turtle foraging grounds.

Nesting Beach Surveys

A fundamental component of our research program is the monitoring of Bonaire's nesting beaches. "No Name Beach" (NNB) on Klein Bonaire continues to serve as our index beach for assessing abundance and species composition. We patrolled this beach three mornings per week, beginning in late April and continuing until early February. We documented all crawls, identified species, and recorded the outcome as a false crawl (unsuccessful nesting attempt; no eggs were laid), confirmed nest (eggs were sighted), or suspected nest (eggs were not observed, but site disturbance suggested that a nest was laid). Furthermore, we excavated each nest post-hatching to calculate nest hatch success.

We recorded 61 hawksbill nests (i.e., confirmed and suspected), 17 loggerhead nests, and no green turtle nests on "No Name Beach" in 2017. The year 2017 marked a significant upturn in the number of hawksbill nests at No Name beach, with 61 nests. As Bonaire's nesting populations are relatively small, fluctuations in nesting numbers are not unexpected. The long-term trends in nesting for both hawksbills and loggerheads continue to suggest that the populations are fluctuating around an average of 18 nests for loggerheads and 41 nests for hawksbills on our index beach (Figure 1).

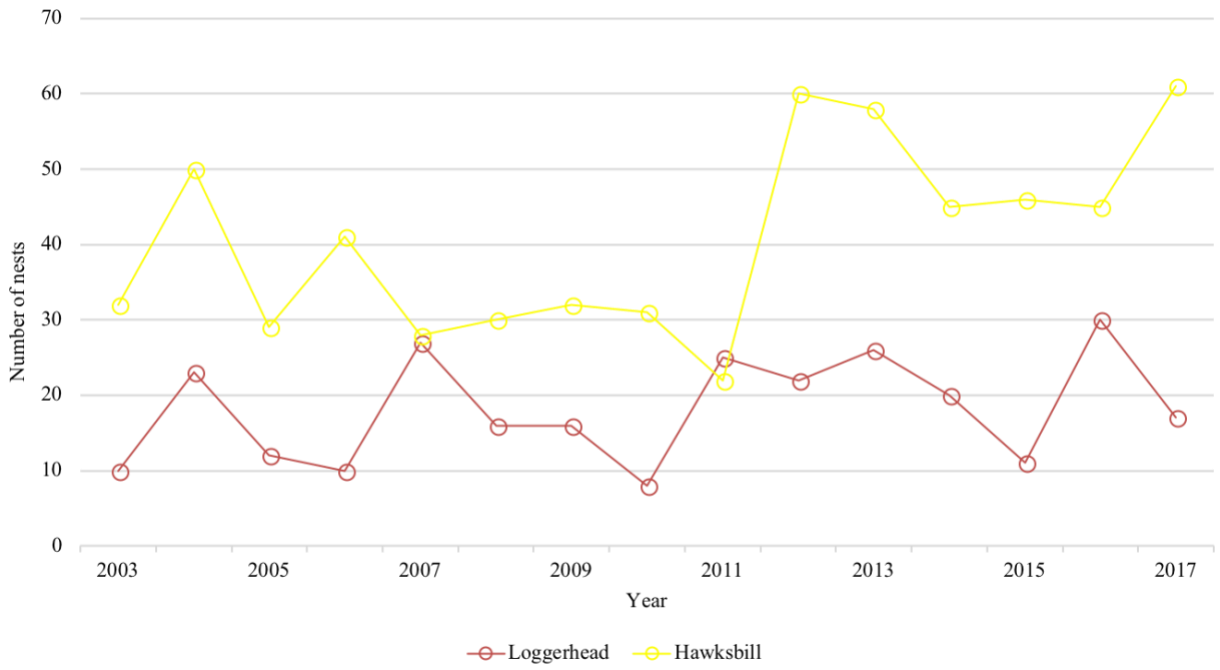

Figure 1. Historical nesting of loggerheads and hawksbills at "No Name Beach" on Klein Bonaire (2003-2017), which serves as the index site for nesting activities. Number of nests includes confirmed and suspected nests.

Hawksbill and loggerhead nests at No Name were laid fairly continuously along the nearly 2km long beach (Figure 2).

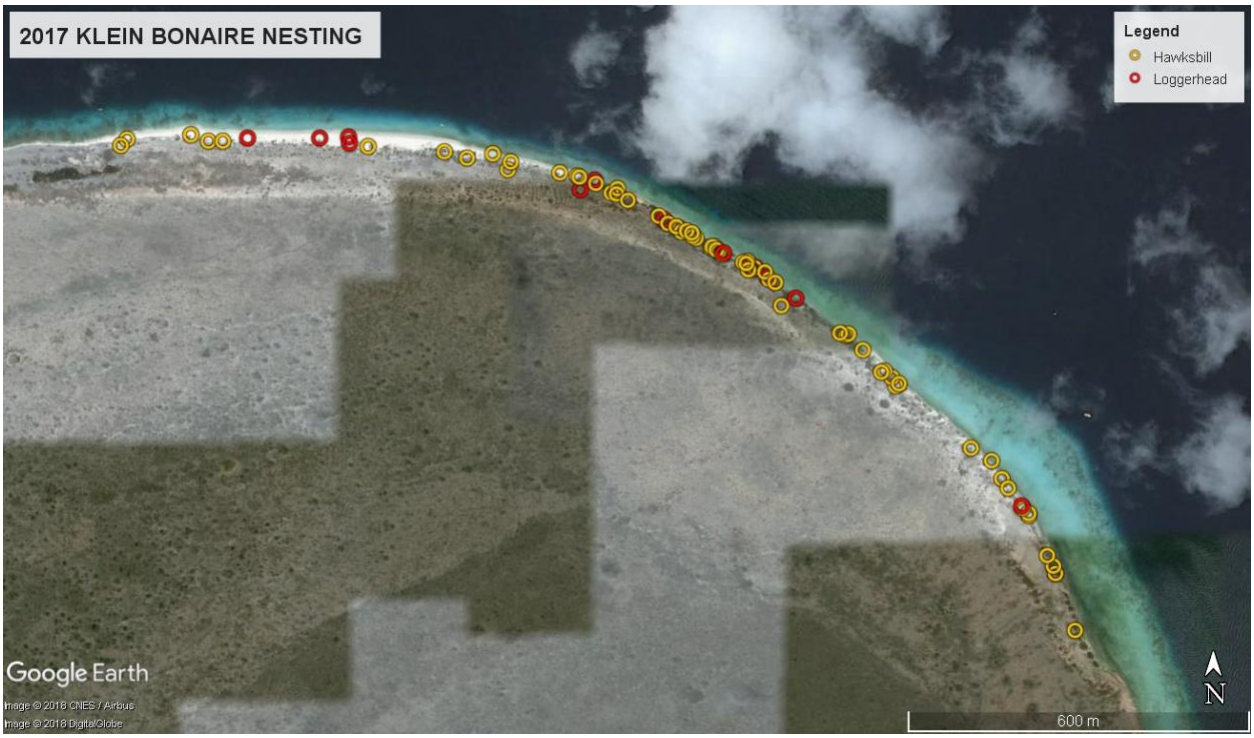

Figure 2. Distribution of hawksbill and loggerhead nests encountered in 2017 along "No Name Beach", Klein Bonaire.

Sea turtles are late maturing and typically do not reproduce until at least 15-20 years of age. As such, hatchlings that crawled from Bonaire's beaches when monitoring began in 2002 will probably only return to nest here in the next several years. Thus, although 2017 marked STCB's 15th year of standardized monitoring on Klein Bonaire, this is still a relatively short time from which to assess trends in our nesting populations. We are just beginning to develop an understanding of Bonaire's nesting turtles and continued monitoring will provide a better understanding of long-term trends and allow us to realize the impacts of conservation efforts. The indication from researchers at the Dutch Caribbean Biodiversity Database (http://www.dcbd.nl/monitoring/sea-turtles) is that there is an increase in total sea turtle nests across Bonaire and Klein Bonaire since monitoring began in 2002. Our nesting data suggests that this has continued in 2017.

On Bonaire, we recorded 22 hawksbill nests, 7 loggerhead nests, and 21 green turtle nests. Species composition was consistent between Klein Bonaire (KB) and the beaches of southern Bonaire (South): hawksbills were the predominant species recorded, and loggerhead nesting was less common (Figure 3). In 2017, green turtles laid 17 nests on Playa Chikitu in the Washington Slagbaai National Park (North) and four nests at Washikemba.

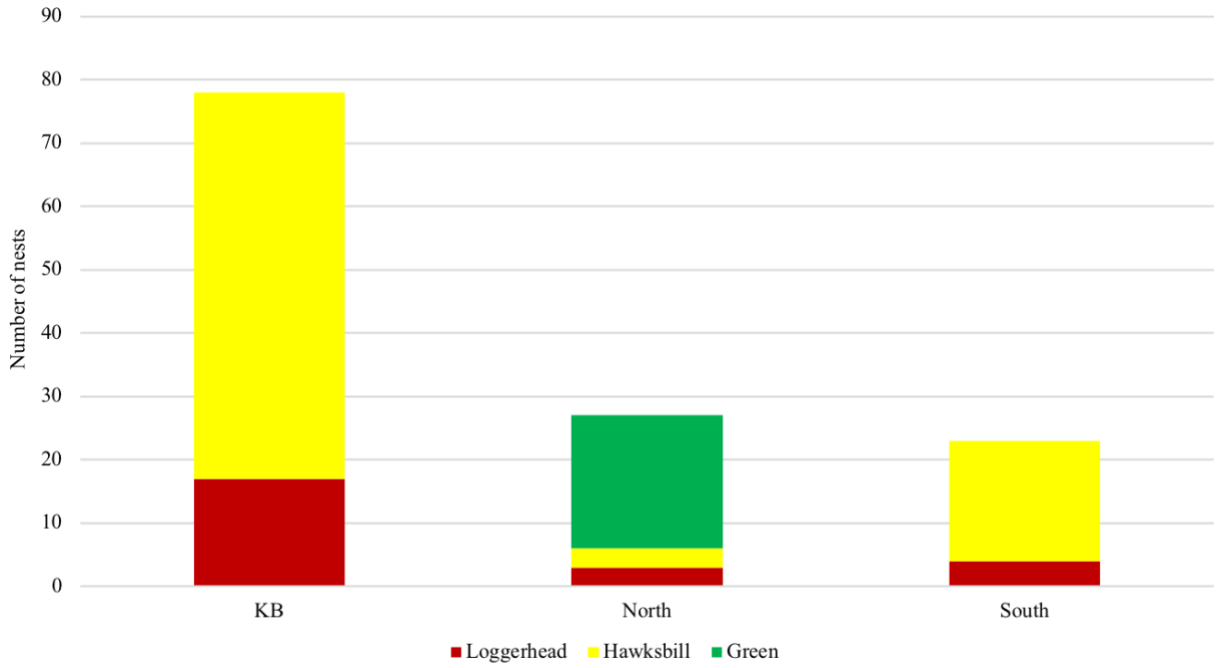

Figure 3. Total nests, categorized by geographic region, recorded during the 2017 research season (Apr 2017-Feb 2018), with Klein Bonaire (KB) providing the main nesting habitat. "South" and "North" denote general regions of mainland Bonaire.

On Klein Bonaire, hawksbill and loggerhead nesting was spread across most of "No Name Beach" (Figure 4). Once again, nesting attempts on the western areas (i.e., low beach marker numbers) were often unsuccessful and resulted primarily in false crawls. We observed one loggerhead and two hawksbill crawls, and recorded four hawksbill nests on the far eastern end of the site.

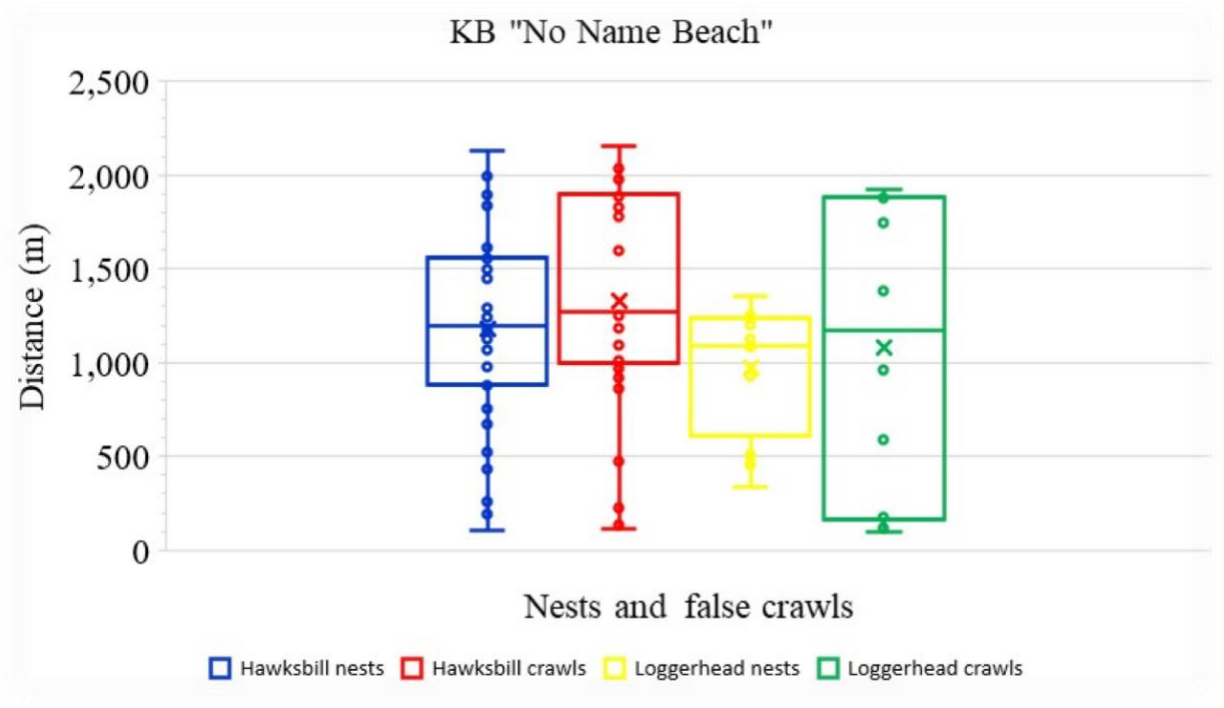

Figure 4. Box plots showing the distribution of nesting activity, including successful nests and false crawls, at "No Name Beach" on Klein Bonaire during the 2017 season. The middle line within the rectangles is for the mean and the "x" is for the median. The rectangles cover the mean, median (50% percentile), and the 25% and 75% percentiles. The whiskers cover down to the limit of the 2.5% percentile and up to the limit of the 97.5% percentile.

"No Name Beach" on Klein Bonaire is systemically monitored by trained STCB staff and volunteers, therefore these data provide the most reliable indicators of nesting activity seasonality. We first observed nesting on Klein Bonaire at the beginning of May, and we documented hawksbill nests until mid-December (Figure 5). The loggerhead nesting season spanned from May to September, and the hawksbill nesting ran from May to December with peaks in July and August.

Sea turtles may false crawl several times before laying a nest and individuals vary with respect to nesting efficiency. Hence, confirmed and suspected nests provide a more accurate picture of seasonal nesting activity. False crawls can also be informative about nesting activity. High numbers of false crawls may result from changes to nesting habitat, other challenges with beach management or from climatic factors (notably temperature and rainfall).

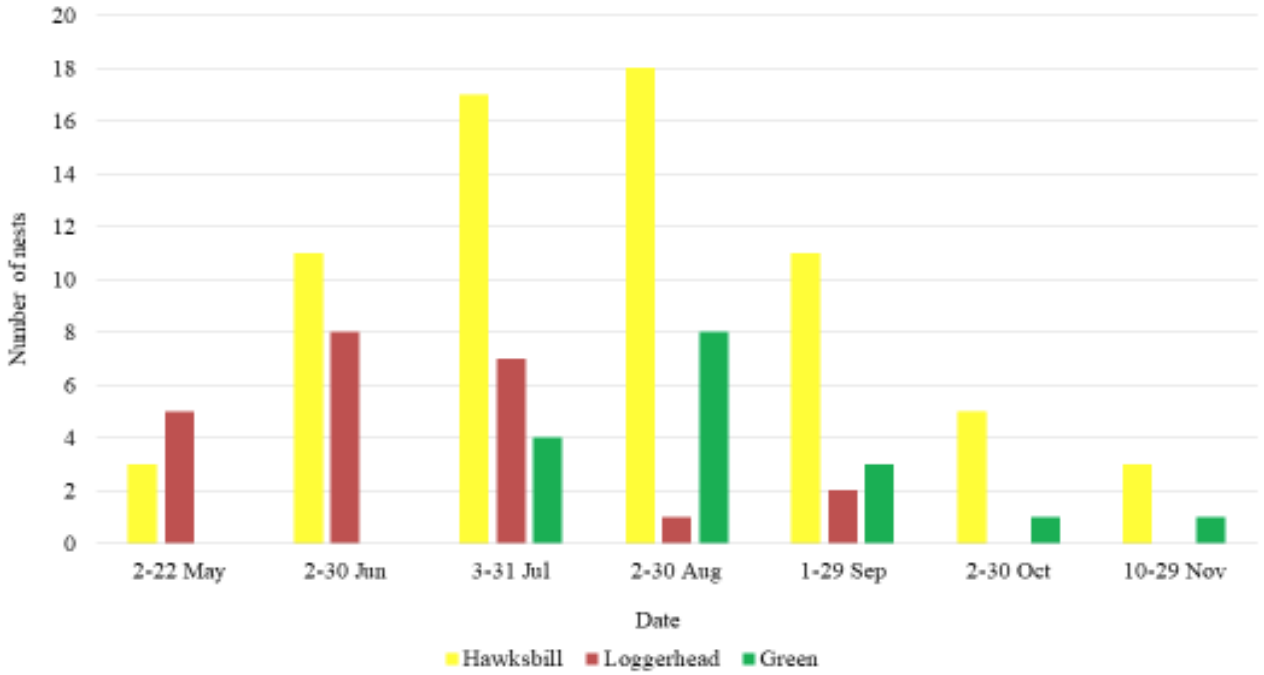

Figure 5. Seasonality of total nests (confirmed and suspected) recorded on Bonaire and Klein Bonaire during the 2017 research season.

Evaluating reproductive success continues to be a core component of STCB's research program. Estimated clutch sizes (number of eggs / nest) varied by species [loggerhead (mean: 108.7; Standard Deviation: 22.7); hawksbill (mean: 142.6; SD: 30.7); green (mean: 133.8; SD: 24.7); Figure 6]. Hatch success for nests defined as the percentage of eggs per clutch that successfully hatch, was highest for loggerheads (mean: 79.9%; SD: 21.3%), followed by hawksbills (mean: 78.1%; SD: 22.7%), with green turtles having a lower hatch success rate (mean: 66.2%; SD: 30.3%) (Figure 7).

Based on the clutch size and hatch success data, we estimate that a total of around 12,155 turtles hatched from nests on Klein Bonaire and Bonaire in 2017, including approximately 7,988 hawksbills, 2,033 loggerheads, and 2,134 green turtles.

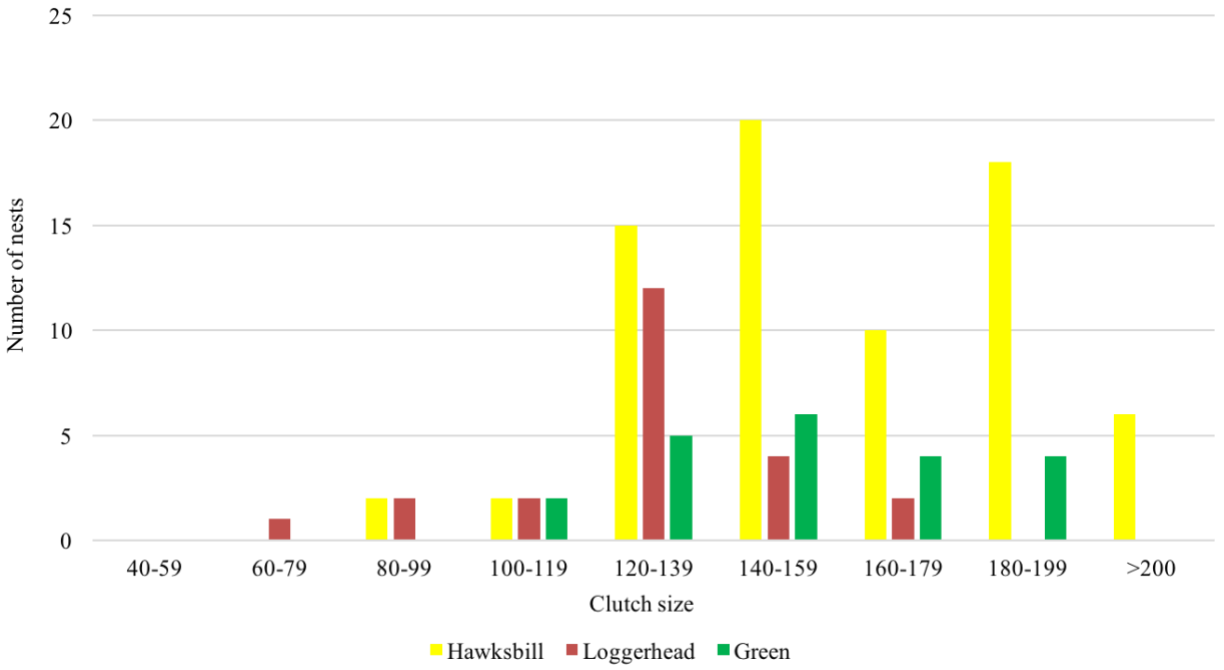

Figure 6. Clutch sizes of loggerhead, hawksbill, and green turtle nests recorded on Bonaire and Klein Bonaire during the 2017 research season.

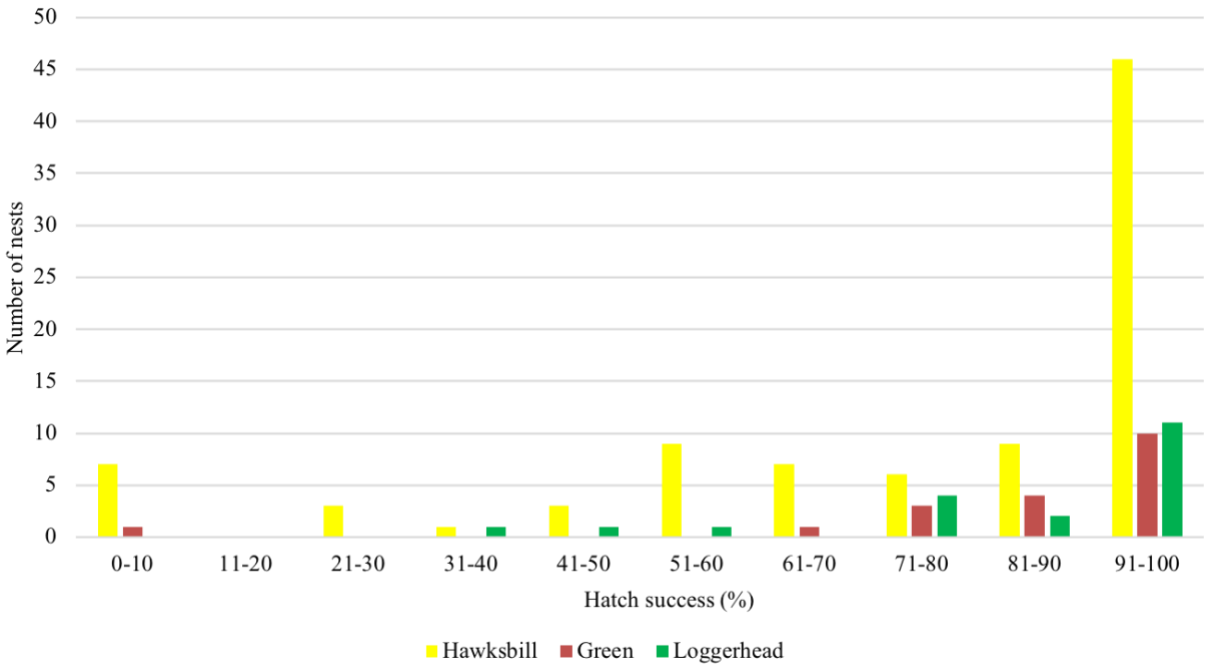

Figure 7. Estimated hatch success of loggerhead, hawksbill and green nests recorded on Bonaire and Klein Bonaire during the 2017 monitoring season. Nests that were relocated due to proximity to the high-water mark or other threats are excluded.

Foraging Ground Surveys

A rigorous in-water research program constitutes the other primary element of the work of STCB. This program, which seeks to better understand the sea turtle aggregations foraging in Bonaire's waters, collects both capture and count data and is implemented with two techniques. First, we conduct snorkel surveys along the entire west coast, around Klein Bonaire, and on the reef outside Lac (Figure 8). During these surveys, turtle sightings are recorded and, when possible, turtles are captured for measuring and tagging by the research team. In 2017, sampling around Klein Bonaire and along the west coast was completed between mid-January and May. Eight transects were also conducted along the reef adjacent to Lac in March 2017. Although we observed hawksbills and green turtles island-wide, counts of greens were much higher than hawksbills at all sites (Figures 9 & 10). Similar to previous years, we recorded the highest concentrations of green turtles outside Lac: a maximum of 150 individuals were counted during sampling there.

Figure 8. Sectors of coastal areas of Bonaire and Klein Bonaire covered during the 2017 in-water snorkel surveys.

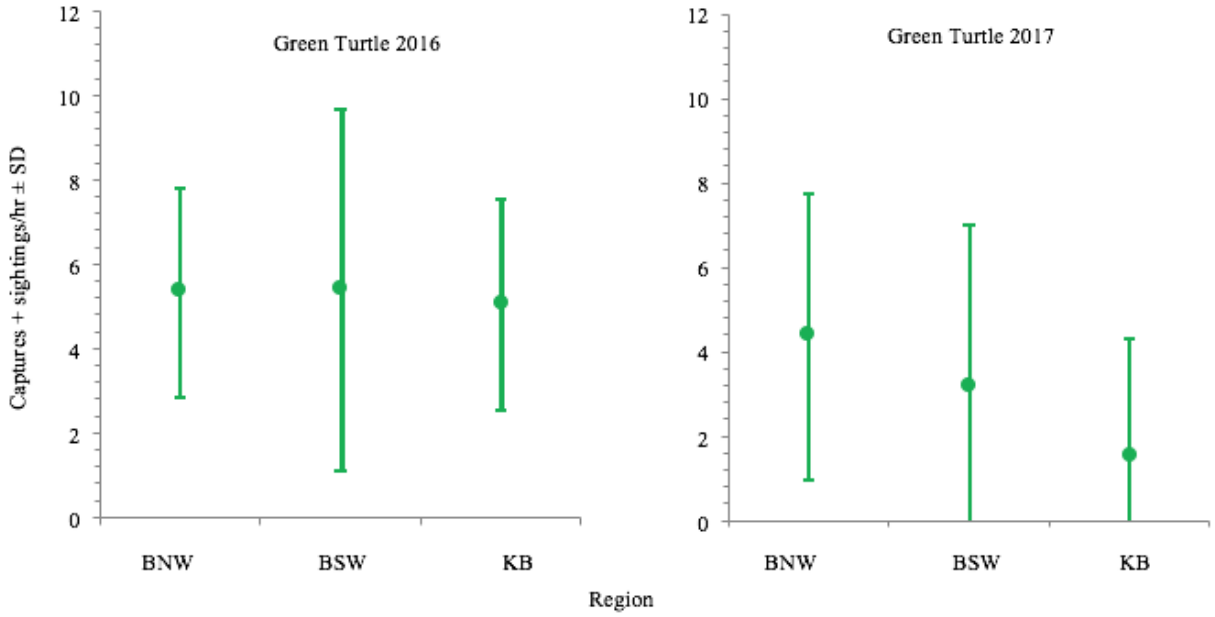

Figure 9. An index based on count data showing captures per unit effort (total sightings and captures ± standard deviation) recorded during snorkel surveys for green turtles in 2016 (left) and 2017 (right), categorized by geographic region. KB: Klein Bonaire; BNW: Bonaire northwest; BSW: Bonaire southwest.

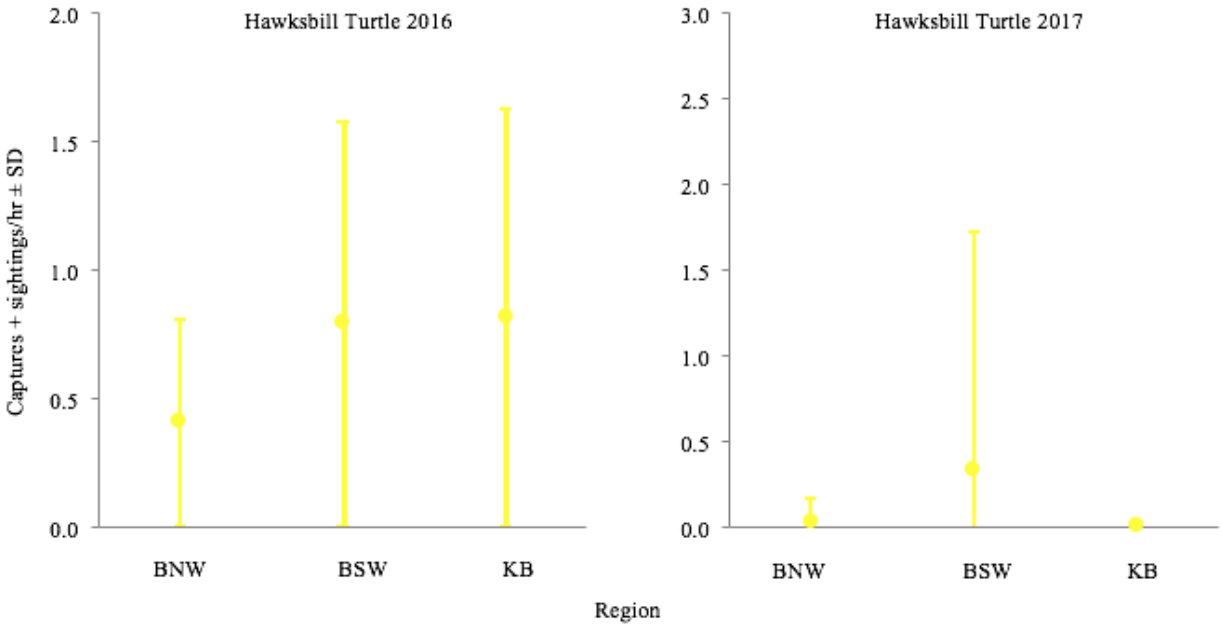

Figure 10. An index based on count data showing captures per unit effort (total sightings and captures ± standard deviation) recorded during west coast snorkel surveys for hawksbill turtles in 2016 (left) and 2017 (right), categorized by geographic region. KB: Klein Bonaire; BNW: Bonaire northwest; BSW: Bonaire southwest.

We conducted net captures, the second in-water method used to gather information about Bonaire's sea turtle aggregations, in the bays on the southeast coast of Bonaire, namely in Lac. During 2017, we conducted 22 netting sessions at Lac over three one week periods. We continued to more widely distribute net sets across the north-central portion of Lac to ensure that our sampling reflected the entire region. Sampling near Sorobon (to the south of Lac Bay) also allowed us to capture hawksbills.

In 2017, a total of 258 sea turtles were captured, with the two survey methods combined. We continued to document much higher captures for green (n=237) than for hawksbill turtles (n=21). An index showing captures per unit effort (CPUE or captures per hour) for green and hawksbill turtles in the net is presented in Figure 11.

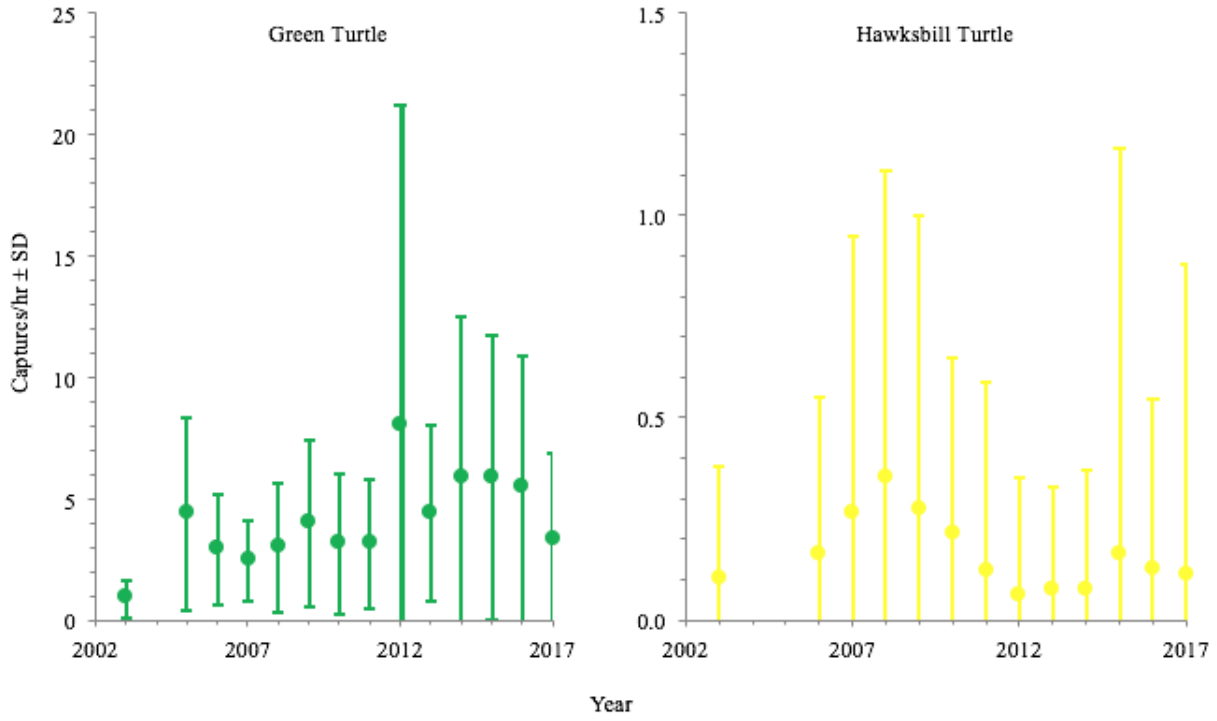

Figure 11. Captures per unit effort (total sightings and captures ± standard deviation) recorded during net surveys for green (green dots) and hawksbill turtles (yellow dots) conducted at Lac in southeastern Bonaire, 2003-2017.

Green turtles captured in and near Lac were larger than those captured elsewhere during 2017 (Figure 12; Lac straight-line carapace length (SCL) mean: 50.3, SD: 10.1cm; Other locations SCL mean: 35.7, SD: 10.8cm). We suspect that foraging conditions in Lac provide an environment that better promotes rapid growth. Consistent with this pattern, capture data indicate that green turtles travel to Lac from elsewhere around Bonaire, but generally do not emigrate from Lac to other sites in Bonaire. There was only one hawksbill captured in Lac in 2017 (SCL: 53.2cm) and 19 hawksbills captured elsewhere (mean SCL: 37.1, SD: 6.7cm).

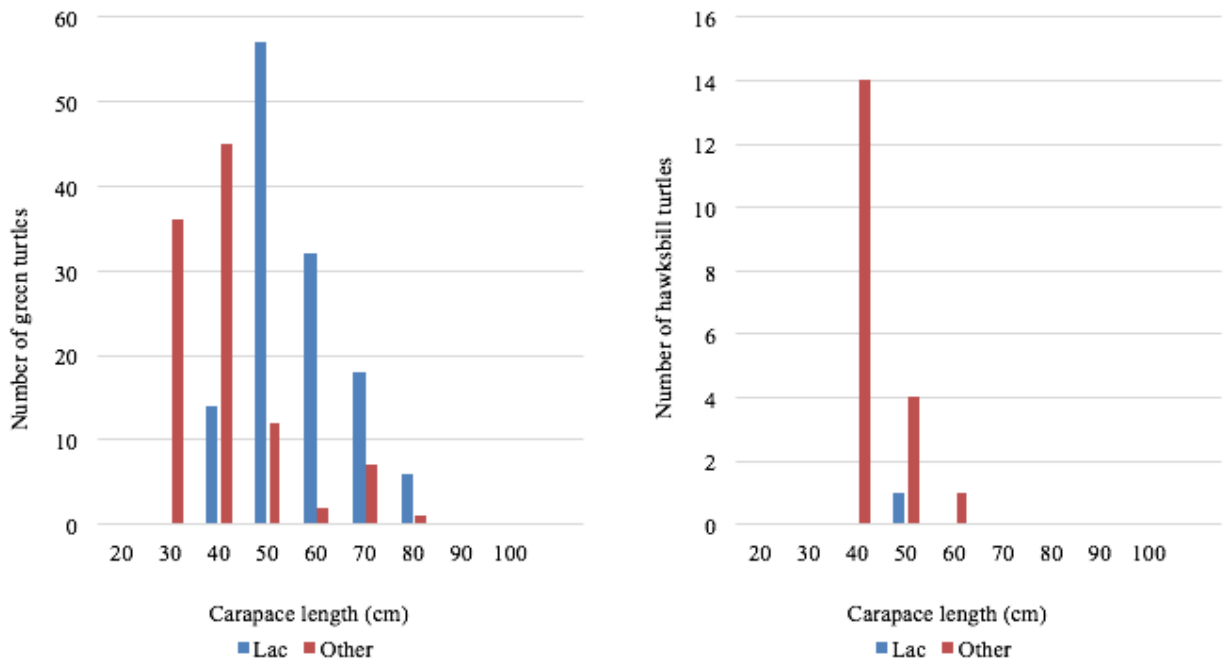

Figure 12. Size classes of green and hawksbill turtles captured in and around Lac in comparison to other locations around Bonaire and Klein Bonaire during the 2017 research season.

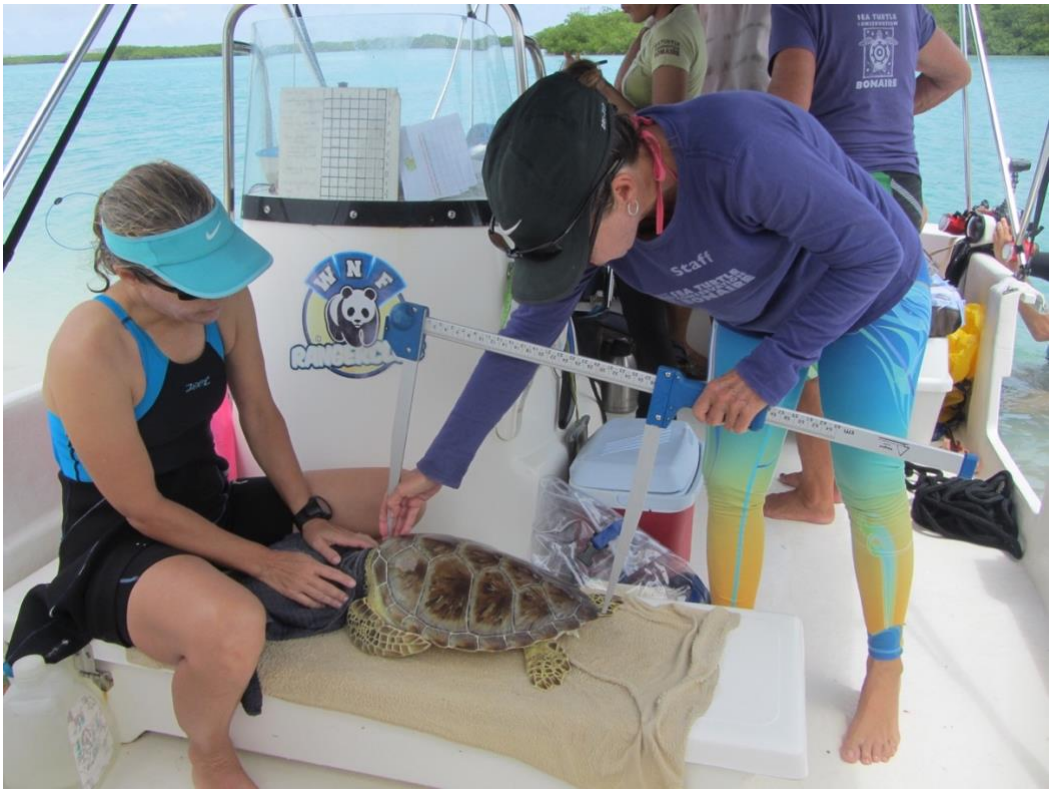

Figure 13. STCB staff and volunteers collecting data during net captures in Lac Cai.

Occurrence of Disease

Fibropapillomatosis (FP) is a disease characterized by tumors concentrated around soft skin tissues, the eyes, and the base of flippers. FP tumors, which primarily afflict green turtles, interfere with daily functions and ultimately may result in death. Causes of the disease are not fully understood, but factors such as environmental pollutants and urbanization may be associated with FP's occurrence (e.g., Aguirre, A. A., & Lutz, P. L. 2004, Marine turtles as sentinels of ecosystem health: is fibropapillomatosis an indicator? *EcoHealth*, *1*, 275-283).

Since 2011, there has been an increase in the number of green turtles with FP captured in and adjacent to Lac, with over a third of them showing signs of FP in 2012. During 2015-2017, there was a decline in the number of green turtles with FP. Of 135 green turtles captured in and adjacent to Lac, only 5.5% (n=7) were infected with the disease in 2017 (Figure 14).

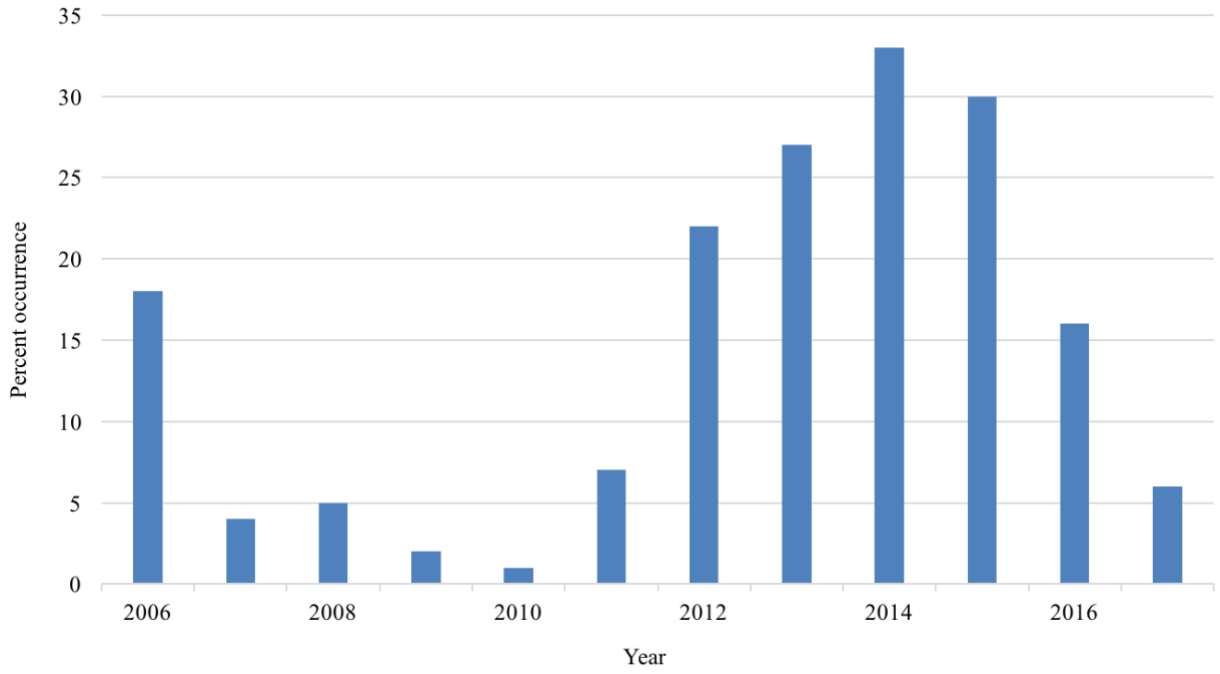

Figure 14. Occurrence of visible fibropapilloma tumors on green turtles captured in and around Lac, Bonaire during the 2017 research season.

New Research Initiatives

In 2017, STCB contracted Population Ecologist Dr. Frank Rivera-Milán to design and analyze in-water transect counts, net captures and nesting data that STCB has collected since 2003. In addition, WILDCONSCIENCE – an organization specialized in the design and implementation of baseline research and monitoring programs for terrestrial and marine flora and fauna – has been contracted to help improve survey design and field methodology. Our goal is to collect more accurate data to estimate sea turtle abundance on Bonaire and Klein Bonaire, and to guide STCB decision making.

Enhanced methods will also help increase STCB's outreach through publications in well-recognized scientific journals. In cooperation with STCB, Rivera-Milán will produce scientific publications in the coming years. This will also feed the regional pool of information to further enhance the quality of sea turtle research in the Caribbean.

With the work conducted in 2017, we will undertake the following actions: correct our nest searches for detection probability and estimate nest abundance; correct nest survival probability for exposure time and estimate nest success rate; prepare a GIS map of Bonaire's sea turtle foraging grounds; and publish scientific articles about methodology and population trends.

STCB co-authored one important research article in 2017, a collaborative paper "Ecological regime shift drives declining growth rates of sea turtles throughout the West Atlantic" together with researchers led by Karen Bjorndal. This article is available online at bonaireturtles.org/wp/explore/publications/.

Figure 15. Dr. Frank Rivera-Milán and STCB's Manager Mabel Nava during a capture and release survey in Lac Cai.

Turtle Strandings

Stranded turtles are animals found dead, injured, or sick, or sometimes apparently healthy but in an unsuitable circumstance, such as entangled in debris along the shoreline. Strandings are reported to STCB directly via the Sea Turtle Hotline (+599-780-0433).

In summary, during 2017, there were 35 sea turtle hotline incidents reported, 33 of which were directly related to turtles in trouble. One of these 35 incidents involved the general public harassing sea turtles, and one related to the poaching of four green sea turtles.

One of the biggest threats Caribbean-wide to sea turtles is the fishing industry and associated by-catch, and this also proved to be the case on Bonaire in 2017. Of the remaining 33 turtles in trouble, eight (23%) were incidents directly related to local fisheries. This included one turtle that was found dead, with two fish hooks stuck in its beak. Five of the remaining seven turtles were captured by STCB and the fish hooks were successfully removed; two more turtles were not captured, despite organised searches.

There were three sick turtles assessed by STCB in 2017: one juvenile green turtle, one olive ridley and one loggerhead. The juvenile green turtle that had been found at Lagoen was under STCB's care for six weeks. The turtle responded well to treatment and made a full recovery. The olive ridley, which was stranded on a beach close to the Willemstoren, was taken for assessment and placed in a tank, as per STCB protocol. The turtle died suddenly in the tank overnight. Necropsy showed numerous internal changes, including a collapsed heart chamber. The turtle was clearly sick and a possible cardiac event led to its death. The loggerhead, which was also found at Lagoen, did not respond well to treatment and died only a few days after it was found.

Figure 16. The carapaces of four juvenile green turtles were found at Lac Cai in October 2017.

Of the remaining 22 turtles in trouble, nine incidents involved hawksbill hatchlings found stranded at Lagoen and Sorobon in December. Five of the hatchlings were found dead; four hatchlings were alive and were released after assessment. Around that same period, two juvenile green turtles were also found dead at Lagoen. These incidents were all related to an event in December during which large seaweed sargassum mats drifted in Lagoen and Sorobon, causing mortality amongst marine life.

In 2017, six turtles were found dead. Two juvenile greens stranded at Karel's Pier and the Willemstoren; a hawksbill stranded at Baby Beach; one loggerhead and one hawksbill hatchling were found at Pink Beach and Lagoen, respectively; and the final turtle was found dead in front of a local dive shop. The species of this turtle remains unknown as it was not found again by STCB staff after it had been reported by the dive shop.

One incident involved a hawksbill that was spotted with a mesh bag wrapped tightly around its neck. STCB attempted to find the turtle in trouble, but did not succeed. Staff was later informed that divers had found the turtle and had removed the bag.

The four turtles in trouble that remain included a juvenile green turtle that had been seen swimming at Karpata, with a hole in its carapace; a stranded hawksbill hatchling that was found by windsurfers at Sorobon, and was later released at Klein Bonaire by STCB; and two disoriented adult female sea turtles that became stranded after laying a nest. An adult female green turtle was found at Playa Chikitu by a STINAPA ranger; she was exhausted and unable to return to the sea by herself. She had laid a nest on Playa Chikitu, but then turned the wrong way, along the cliff, and became stranded, 800m from the beach. The female hawksbill was found stranded at Sweet Dreams, where she had laid a nest on the coral rubble, and could not find her way back to the ocean. Both adult female turtles were assessed by STCB and released.

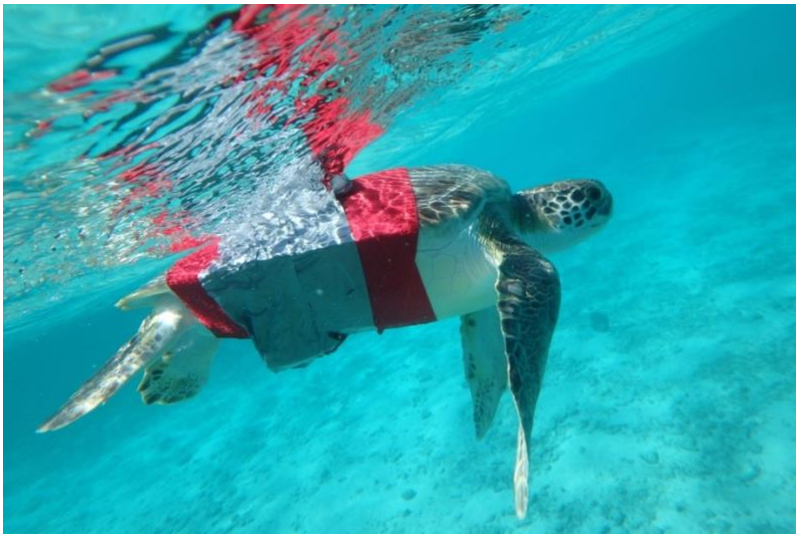

Figure 17. Rehabilitation of 'Rosita', a juvenile green turtle that stranded at Lagoen in May 2017.

Once again, STCB is very grateful to Craig Dewey, Kathy Pound and Harbour Village Beach Resort for housing the STCB rehabilitation pool when required, to volunteers Hans & Jannie Koning, Rob Hulsbergen and Catrien van Manen who regularly assist STCB staff with turtle in trouble calls, and to everyone who has reported turtles in trouble including local tourist and dive operations.

Appendix I. 2017 Funders and Donors

STCB is a non-profit, non-governmental organization. We raise funds through conservation and research grants and contracts, merchandise sales and from individual and business donors.

Flagship Funder 2008 – 2019

Since 2008, WWF - Netherlands has been the flagship funder for STCB's sea turtle conservation work on Bonaire.

Major Funders

Dutch Ministry of Economic Affairs, Agriculture and Innovation (EZ)
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Sue Willis, Project Coordinator
Gielmon "Funchi" Egbreghts, Contractor Field Technician

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Lianne Spoor
Karen de Wit
Stephanie Braig

Consultants
Frank Rivera-Milán
Fernando Simal, WILDCONSCIENCE
Eric van de Keuken, Administratiekantoor Brandaris B.V.

STCB – Bonaire, Board of Directors 2017
Ger Bakker, *President*
Christine Ball, *Treasurer*
Rosa Hoes
Viktor Wijnand
Allerd Stikker, *Advisory Member*
Albert de Soet, *Honorary Member*

Appendix III. 2017 STCB Partners, Supporters and Volunteers

International Partners
Wider Caribbean Sea Turtle Conservation Network (WIDECAST)
World Wildlife Fund Netherlands (WWF-NL)

Regional/Research Partners
CARMABI (Curaçao)
Dutch Caribbean Nature Alliance (DCNA)
Groningen University
Loggerhead Marinelife Center
Nature Foundation St. Maarten
Parke Nacional Arikok (Aruba)
Saba Conservation Foundation
Sea Turtle Conservation Curacao
St. Eustatius National Parks Foundation
Turtugaruba
Wageningen University

Local Partners
Bonaire Department of Environment and Natural Resources (DRO)
CIEE Research Station Bonaire
Echo Bonaire
EZ Ministry of Economic Affairs
Jong Bonaire
NGO Platform
Openbaar Lichaam Bonaire (OLB)
STINAPA Bonaire - Bonaire National Marine Park; Washington-Slagbaai National Park & STINAPA Junior Rangers
WILDCONSCIENCE

Local Business Partners and Supporters
These businesses provide ongoing support to STCB programs and activities through the donation of in-kind materials and/or services:
Administratiekantoor Brandaris
Adventure Makers Bonaire
Bonaire Marine Center BV
Bonaire East Coast Diving
Bonaire Rent-A-Car
Cactus Blue
Carib Inn (Bruce Bowker)
Caribe Car Rental
Cargill Salt Bonaire
Coral Paradise
Dive Friends Bonaire
Div'Ocean
Elements
Harbour Village Beach Resort
Harbour Village Marina

Mangrove Info Center
Nos Consuelo
SELIBON
VIP Diving
Wil's Grill

Supporters Fundraising Auction
These businesses supported STCB's Fundraising Auction through the donation of materials, items and/or services:
Antillean Wine Company, Bay West, Between 2 Buns, Bistro de Paris, BonAeroClub, Bonaire from the Sea, Bonaire Marine Center, BonNed Contractors BV, Bon Tuk, Coffee Company, Dushi Baki Sateh, Dymphie Bux, Enjoy 2 Stay, Eden Beach Resort, Elements, Fait du Maison, Flamingo Diving Bonaire, Flaming Flamingo, Gerard van Erp, Gooodive, Harbour Village Bonaire, Interiyours, Jane & Allen, Jeynaba Touré, Landhuis Wanapa, Latitude 12, Littman's, Mangrove Info Center, Marjolein Verhoef, Memories of Bonaire, Michelle Mautino, Monique's Kitchen, Panfelize Catering Services, Plaza Beach Resort Bonaire, Red Palm Village, Saxomania, Sea Donkey Diving, Smartdesign, Spice Beach Club, SunRentals Bonaire, Surcabo, Synergi Sailing, Va.Da, VIP Diving, Vista Blue, Yhanni's Arepas.

2017 Volunteers
AUCTION VOLUNTEERS
Aja Radl, Camille Naylor, Hans & Jannie Koning, Nicole, Martin & Noa Roomer, Viktor Wijnand.

BEACHKEEPER PROGRAM VOLUNTEERS
Aja Radl & Scott Gilchrist, Annabelle Feuerstein, Astrid Roedoe, Bauke Blok, Bill & Suzie Mulvey, Bonnie Watson, Bruce and Karen Zavon, Camille Naylor, Carine Van Riel-Murijn, Catrien van Manen, Chantal van Balen, Ger Bakker, Gini Briggs , Hans & Jannie Koning, Iban Spijkers, Jasmin Divine, Jessica Johnson, Joyce van de Mark, Laura Beskers, Linda, Jan & Damien Doppenberg van Asperen, Linda Maas, Loek & Vera Maartens, Lothar A Schwarte, Lydia Smit, Marian Sonneveldt, Martijn van Cadsand, Nicole Rijsemus, Nicole & Noa Roomer, Paula Clarke, Rafa, Rob Hulsbergen, Sandy Uyega, Su & Chris, Sue O'Brien, Viktor Wijnand, Wendy en Bas Brull Franssen, Wouter van Rossum.

FISHING LINE PROJECT CORE VOLUNTEERS
Hans & Jannie Koning

IN-WATER SURVEY/NETTING VOLUNTEERS
Aja Radl, Astrid Naber, Bonnie Watson, Brenda Free & John Magruder, Catrien van Manen, Dani, Emma Doyle, Fadilah Ali, Fernando Simal, Ger Bakker, Hans & Jannie Koning, Hilde de Boer, Kristi Malsam, Mirjam, Patti Dougherty, Peter & Germaine van den Biggelaar, Richard Willis, Rinske Bakker, Rob Hulsbergen, Sandy Uyega, Scott Gilchrist, Scott Johnson, Sue O'Brien, Susan Latham Ferreti.

Appendix IV. Ways to donate

You can help protect Bonaire's sea turtles by donating to STCB. We welcome – and depend on – the financial support of people like you. Whether it's $10, $100, or $10,000, it will make a difference. Please note that, as of January 1st 2015, the Dutch Tax Service (Belastingdienst) granted Sea Turtle Conservation Bonaire with ANBI status. ANBI status favors STCB's Donors in countries that grant tax concessions to foreign registered charities, as well as those based in the Netherlands. STCB Donors may be able to deduct the amount from taxable income.

Online

Go to our website at http://www.bonaireturtles.org/wp/act/donate/. You can now make a donation via **PayPal** at this page.

Donate by mail

Make check payable to '*Sea Turtle Conservation Bonaire*' then mail to:

Sea Turtle Conservation Bonaire
PO Box 492
Kralendijk, Bonaire
Dutch Caribbean (Netherlands Antilles)

Donate by bank transfer

To make a donation locally on Bonaire:
Maduro & Curiel's Bank (Bonaire) N.V.
Account name: Sea Turtle Conservation Bonaire
Account number: 101.169.209

To make a donation from the USA:
Beneficiary: '*Sea Turtle Conservation Bonaire'*
Account number: 101.169.209
Beneficiary Bank: Maduro & Curiel's Bank (Bonaire) N.V.
Swift code: MCBKBQBN
Correspondent Bank: Standard Chartered Bank
ABA # 026002561
Swift Code: SCBLUS33

To make a donation from the Netherlands
Beneficiary: *'Sea Turtle Conservation Bonaire'*
Account number: NL71 RABO 0313 2425 26
Beneficiary Bank: Rabobank

To make a donation from Europe:
Beneficiary: *'Sea Turtle Conservation Bonaire'*
Account number: 101.169.209
Beneficiary Bank: Maduro & Curiel's Bank (Bonaire) N.V.
Swift code: MCBKBQBN
Correspondent Bank for Euro: Rabo Bank Nederland
Swift Code: BBRUBEBB

To discuss other ideas for giving, please call STCB Manager, Mabel Nava, on +599-717-2225, or email us at stcb@bonaireturtles.org