

BONAIRE TURTLES LEAVING THE NEST

STCB YEAR REPORT 2022



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BONAIRE TURTLES STCB YEAR REPORT 2022



STAFF

Kaj Schut - Manager
Daan Zeegers - Field Coordinator
Mabel Nava - Consultant
Gielmon "Funchi" Egbreghts - Field Technician

INTERNS/RESEARCH ASSISTANTS

Isabelle Verdam
Isabelle Nagtzaam
Sophie & Julia Wardin
Tessa Volbeda

CONSULTANTS

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

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Editorial design: **bonsai**

Text: Kaj Schut & Floor van Schalkwijk

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CALL OUR DEDICATED

HOTLINE: +599 780-0433

SAVE A SEA TURTLE!



WHATSAPP AVAILABLE TOO

PLEASE REPORT TURTLES IN TROUBLE TO OUR HOTLINE.

WE'RE ON A MISSION!

Sea Turtle Conservation Bonaire's mission is to ensure that Bonaire's sea turtles have a secure future, and to connect people to sea turtle conservation in ways that inspire caring for nature.

Together with dedicated staff and volunteers, we focus on research and monitoring, education, advocacy and collaboration to protect sea turtles on Bonaire and in our region.

WIDECAST

The Wider Caribbean Sea Turtle Conservation Network (WIDECAST) is a network of sea turtle experts residing in 40 nations and territories in the Wider Caribbean Region. The network is committed to the protection of sea turtles in the Caribbean region, and focuses on research, monitoring, education, training and advocacy.

WIDECAST members meet annually to share knowledge, evaluate existing programs and to set priorities for the coming year. In 2022, WIDECAST met virtually and STCB presented 30 years of sea turtle conservation on Bonaire.

Sea turtles are a migratory species and their survival therefore depends on successful management and conservation by dozens of Range states.



MERCHANDISE

You can support our work by purchasing our unique merchandise. You can find our merchandise at our office and at various vendors around the island. We try to support communities in the region as much as possible, to provide them with a stable income and prevent the poaching of sea turtles. Our necklaces, for example, are handmade by craftsmen in Costa Rica. The white and black beads are made from cow bones and horns that are left over and would otherwise become waste. The brown beads are made from beach nuts.

Did you know that we have new research hats? Every hat has a metal tag with a number that correlates to the tag-number of a turtle that has been captured in our capture-mark-recapture program. You can learn more about 'your' turtle on our website.

And there is more! We now have t-shirts in sizes 4T and YS for our younger turtle fans, and 'Blue Bottle' water bottles so you can refill your bottle and help us reduce plastic waste.



PHOTO: DUNCAN VERSTEEGH



THE JOB

Transect-count surveys are one of the scientific methodologies that we use to collect data on resident populations of green and hawksbill sea turtles. This data allows us to estimate yearly sea turtle abundance and long-term population trends.

In 2022, 108 surveys were conducted on the west coast of Bonaire and around Klein Bonaire by STCB staff and volunteers. For each sea turtle detected, observers recorded species, size, time, location and behavior. Sampling around Klein Bonaire and along the west coast was completed between January and the start of April. Although both green and hawksbill turtles were observed island-wide, counts of greens were much higher than hawksbills at all sites. In total, observers recorded 325 green, 23 hawksbill and 2 loggerhead turtles during the 2022 surveys.



756
KM SWAM

7 OBSERVERS X 108 X 1-KM TRANSECTS

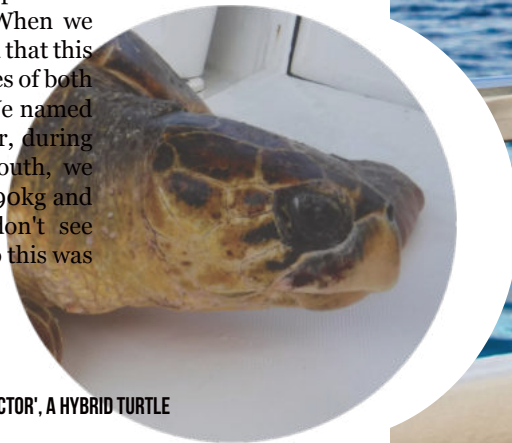


FREEDIVING

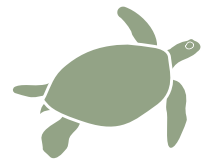
After completing the transect-count surveys, STCB staff and trained volunteers return to the west coast for a minimum of nine capture sessions. During these sessions, we capture sea turtles that forage along the west coast by hand. As with our capture-mark-recapture program in Lac Bay, all turtles are measured, weighed and tagged. When we capture smaller turtles, they receive a PIT tag instead of a metal tag. These PIT tags are deployed under the skin, in the right front flipper of the turtle. Since these tags are not visible on the outside, we use a scanner to check for PIT tags.

'HECTOR': A HYBRID TURTLE

Most of the turtles that are captured on the west coast are juvenile greens, weighing between 3 and 20kg. However, sometimes we do find larger turtles. In April of 2020, we captured a large male in the south of Bonaire. When we brought him on to our boat, we realized that this was a hybrid turtle, a turtle with features of both a loggerhead and a hawksbill turtle. We named this male 'Hector'. In April of this year, during one of the capture sessions in the south, we recaptured 'Hector'. 'Hector' weighed 90kg and his carapace measured 88cm. We don't see hybrid turtles on Bonaire very often, so this was an amazing experience for all of us!



'HECTOR', A HYBRID TURTLE





NETTING AT LAC BAY I



259
 SEA TURTLES CAPTURED

>4,000
 TAGGED TURTLES AS OF 2022

72
 SURVEYS CONDUCTED IN 2022

CAPTURE-MARK-RECAPTURE

Recapture(s) of individually marked sea turtles provide us with valuable information for their conservation. This includes growth rate, approximate age, presence/absence of disease, human and/or natural induced injuries and overall health of the resident population. Additionally, by taking DNA samples of captured turtles, we get a better insight in the distribution and composition of Caribbean sea turtle populations. Statistical modeling, based on 16 years of net-capture surveys in Lac Bay (2003-2018), shows that green turtle numbers are slightly increasing in this area.

NETTING IN 2022

During 2022, staff and trained volunteers conducted 72 netting sessions at Lac Bay over six one-week periods between June and December. Although several netting days had to be postponed due to bad weather, we were able to complete all surveys. A total of 209 juvenile and sub-adult green and one hawksbill turtle were captured, weighed, measured and tagged. This included 50 recaptures, turtles that had already been captured during previous capture-tag-recapture efforts. Data from these turtles can tell us more about the growth rates of our resident sea turtles.





SEAGRASS



WHAT IS SEAGRASS?

Seagrass is a marine flowering plant that grows entirely underwater. It consists of leaves, flowers and roots. Seagrass can be found in near-shore waters, for example in shallow, sheltered areas such as Lac Bay. There are approximately 60 seagrass species. Lac Bay is home to four native species of seagrass as well as one invasive species.

WHY IS SEAGRASS IMPORTANT?

Seagrass meadows are important feeding and nursery grounds for different species, including sea turtles. One of the native species of seagrass, *Thalassia testudinum*, is, for example, a favourite food item for grazing green turtles. Seagrass beds also help protect coastlines by dissipating wave energy and minimizing erosion, and seagrass filters chemical and nutrient inputs.

However, seagrass beds are disappearing worldwide due to multiple stressors, including decreased water quality, overfishing and anchoring. Protecting and restoring seagrass meadows will directly benefit endangered sea turtle populations.

DID YOU KNOW...

- ... seagrass is the least protected marine habitat.
- ... sea turtle grazing can increase the growth rate, carbon storage and nutrient cycling of seagrass.
- ... 40 times more animals occur in a seagrass meadow than in bare sand.



RESOURCES

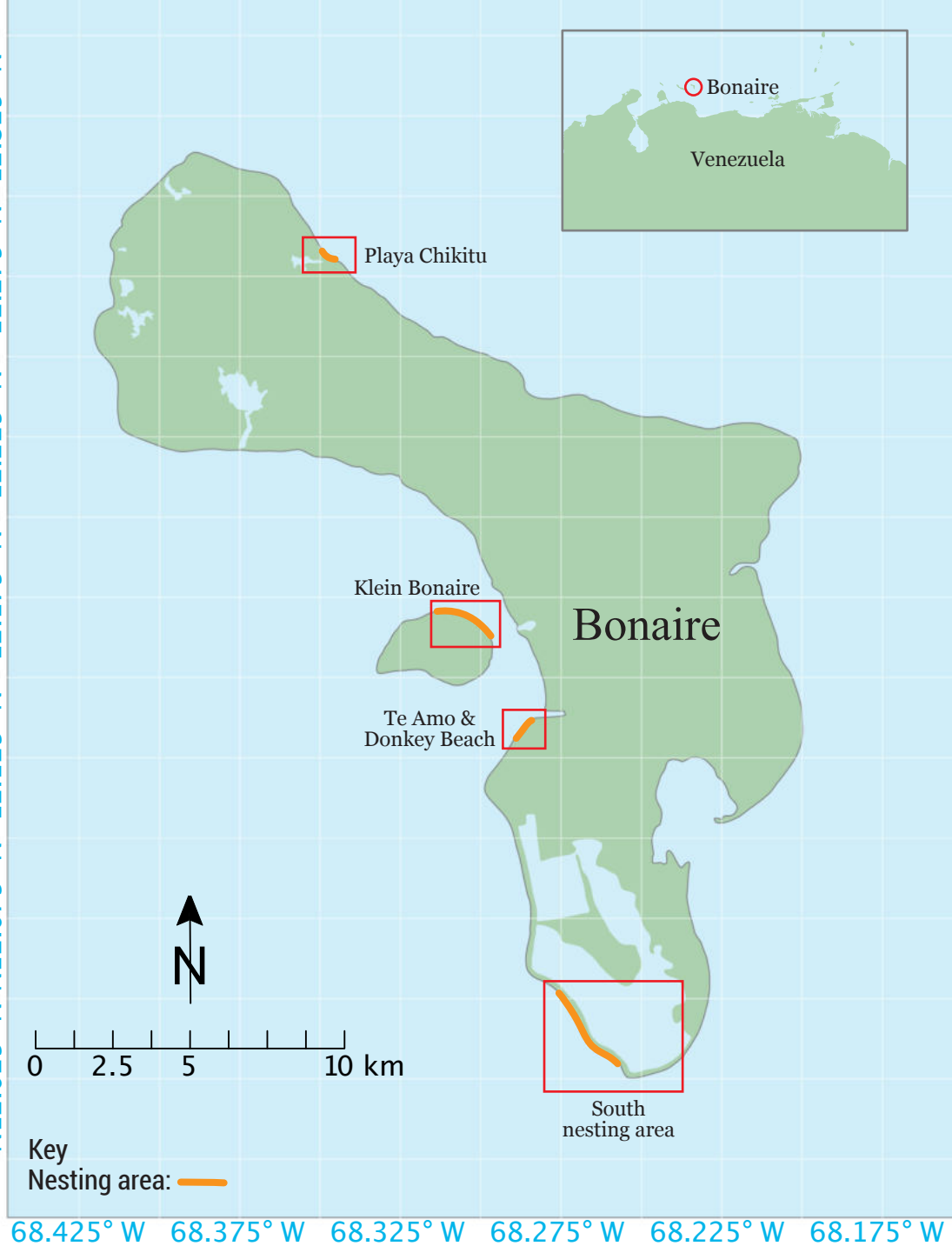
On our website, www.bonaireturtles.org, you can find more information about seagrass and the importance of seagrass for sea turtles. Some of the papers we recommend reading include Christianen et al, 2018; Christianen et al, 2022; and Johnson et al, 2019.

THE JOB

Between May and December, every morning staff and volunteers patrol the beaches most used by nesting turtles to record activities, including false crawls (unsuccessful nesting attempt, no eggs laid), confirmed nests (eggs were located) and suspected nests (eggs could not be observed, but site disturbance suggests that a nest was laid). Finally, after each hatching event, the nest is excavated and an inventory of the contents is made to calculate hatching success.



N12.025° N N12.075° N 12.125° N 12.175° N 12.225° N 12.275° N 12.325° N



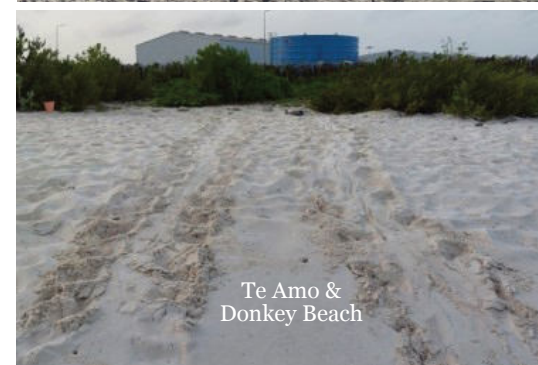
Playa Chikitu



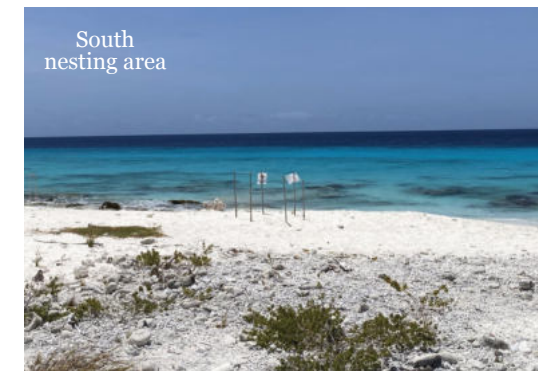
Klein Bonaire



Te Amo & Donkey Beach

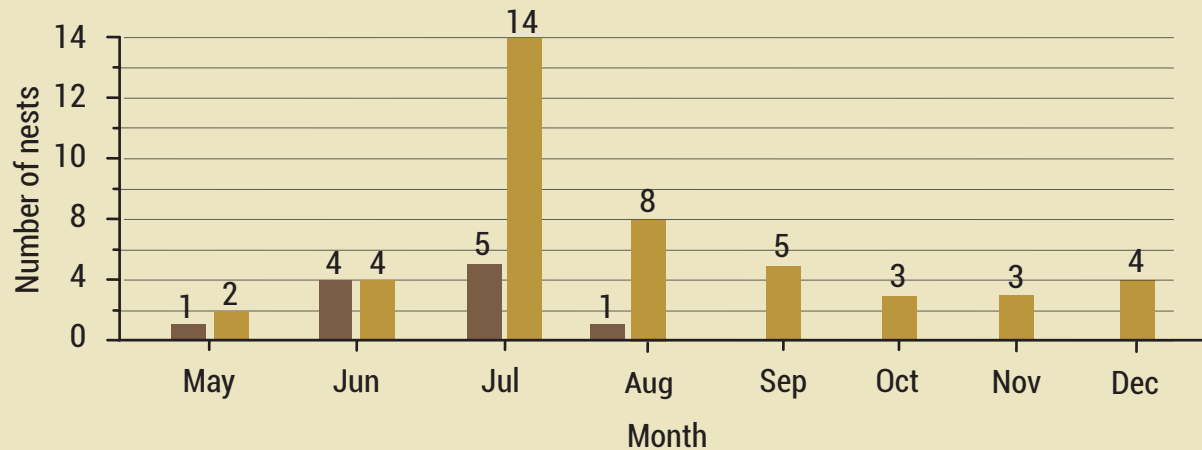
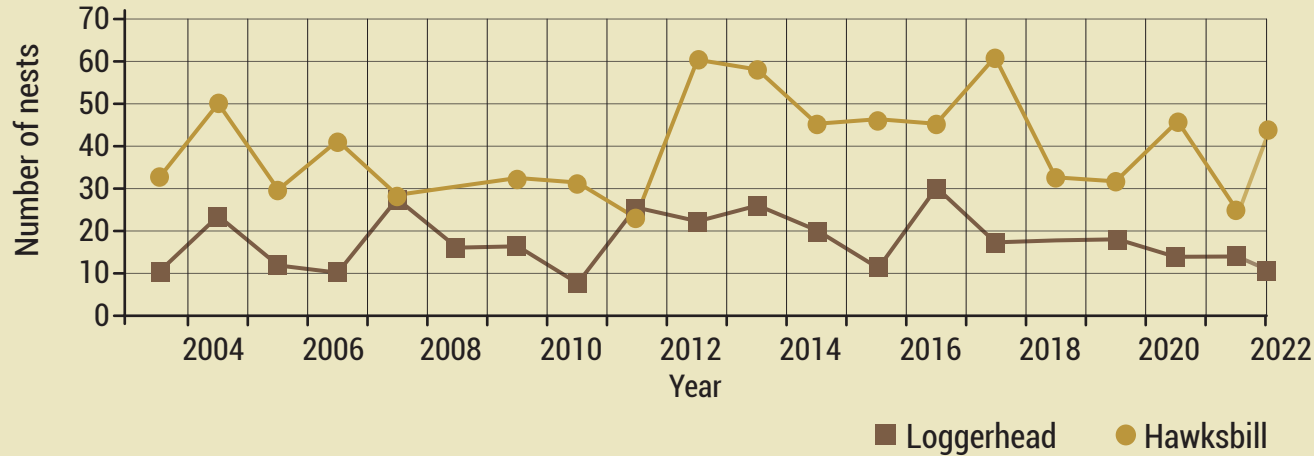


South nesting area



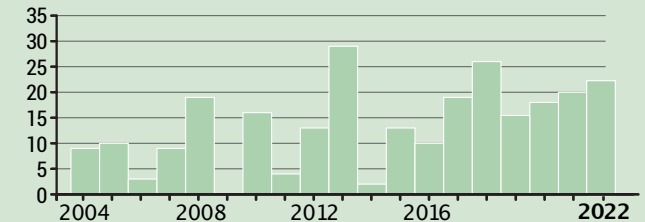
TRENDS

The long-term trend in nesting for both hawksbills and loggerheads remain stable and continue to suggest that the populations are fluctuating around an average of 18 nests for loggerheads and 40 nests for hawksbills on our index beach.

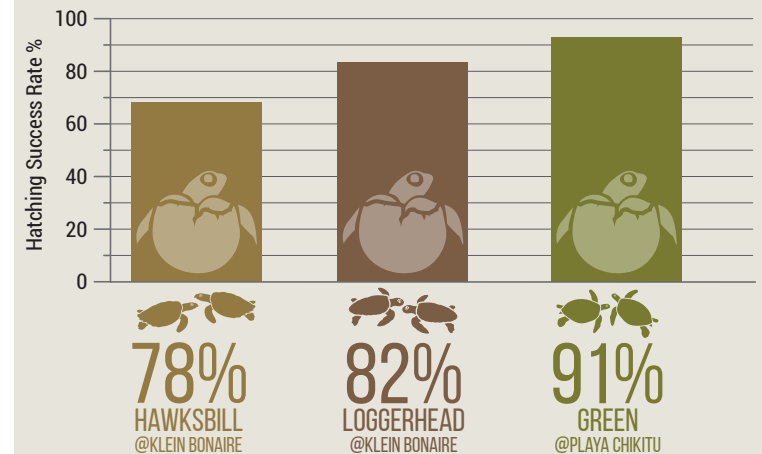


Bar plot of standardized searches in Klein Bonaire's No Name Beach resulted in 43 hawksbill turtle nests and 11 loggerhead turtle nests found between May and December 2022.

■ Loggerhead ■ Hawksbill



Number of green turtle nests recorded on Bonaire & Klein Bonaire, 2004-2022



Average hatching success rate of hatched nests



Average number of eggs per nest

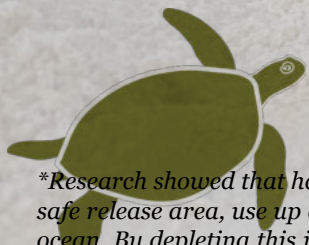
LEAVING THE NEST

After approximately 60 days of incubation, baby turtles are ready to hatch. They open their egg shell, push down all of the empty egg shells and sand and start making their way to the surface. Once they emerge from their nest, they look for the brightest point to orientate themselves: they follow the reflection of the moon on the waves.

On most nesting beaches around Bonaire, sea turtle hatchlings have no problem finding the ocean using this 'light compass'. However, there are a couple of locations where they have a little bit of trouble figuring out which way to go.

Hatchlings that are born on Donkey and Te Amo Beach have difficulty locating the ocean due to the bright lights coming from the airport, just across the road. In addition, these beaches are very popular amongst tourists and the local community and therefore quite busy. To prevent hatchlings from walking the wrong way and going to the airport instead of the ocean, STCB placed cages on top of nests that were close to hatching. The hatchlings were collected as soon as they hatched and brought to a safer location for release.

In 2022, based on research findings*, we decided to relocate nests that were laid on Te Amo and Donkey right after the female turtle deposited her eggs. It is important to take extreme caution when relocating eggs and to do this when the eggs are freshly laid, to ensure good hatching success. Nests were relocated to the pocket beaches in the south as well as Klein Bonaire, where the embryos could develop safely and make their way to the ocean without disorientation caused by artificial lights. This pilot study was very successful: the relocated nests had good hatching success!



**Research showed that hatchlings, when left in a cage and on route to a safe release area, use up energy that is needed for their first days in the ocean. By depleting this important energy source on land, before being released in the water, it is thought that these hatchlings will have a lower survival rate. By relocating the nests after they are laid, hatchlings can make their way to the ocean when they are ready to start their journey.*



GLOBAL THREATS



The International Union for the Conservation of Nature (IUCN) has identified five major hazards to sea turtles: fisheries bycatch, direct take, coastal development, pollution in the form of plastics /discarded fishing gear and, of course, climate change.

LOCAL THREATS

The most serious challenges facing Bonaire's sea turtles are not direct threats like fisheries. Instead, they are indirect and mostly related to a rapidly increasing human population and, consequently development. These indirect threats to sea turtles are also the major hazards to Bonaire's rich ecosystems, biodiversity, and our quality of life.

TURTLE RESCUES IN 2022

In 2022, STCB staff and volunteers rescued nine Turtles in Trouble. This included six juvenile turtles with fishing line or fishing hooks in or around their flippers, two 'washback' hatchlings, baby turtles that washed back from the open ocean, and one turtle saved from a crack at Playa Chikitu who had fallen of the cliff. All turtles were checked to see if they were healthy and then released again.



9

RESCUED

7

DEATHS

TOO MANY "NOT-SO-LUCKY" TURTLES

Seven turtles weren't so lucky... We recorded four 'washback' turtles, post-hatchlings washed back to shore by storms, waves and winds. We also found two stranded turtles on Bonaire's east coast, one of which was stranded in the sargassum. One additional juvenile green turtle was found in Harbour Village Marina. The turtle was really weak and after examination by a local vet, who found that fibropapilloma tumors were blocking the intestines making it impossible for this turtle to process food, it was decided to euthanize the turtle.



2022 STCB PARTNERS, SUPPORTERS AND VOLUNTEERS

BONAIRE TURTLES
LEAVING THE NEST



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

Bonberde
Coastal Dynamics
Echo Bonaire
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NGO Platform
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Stichting Internos
STINAPA Bonaire
Tera Barra
WILDCONSCIENCE B.V.

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
Apoyo Communications & Education
Beyond the Corals
Blue Bottle
Boat Yard Bonaire
Bonaire Marine Center B.V.
Bonaire East Coast Diving
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VSC Bonaire

2022 VOLUNTEERS

Volunteers are at the heart of our organization. Without their support, we could not do the work that we do. A very big thank you goes to all of you - masha danki!!

BEACHKEEPER PROGRAM VOLUNTEERS

Aja Radl & Scott Gilchrist, Alie & Peter Karman, Andrea Merino & family Angela Diters, Anneke van den Breemer, Bill & Bunny Horton, Chandra Westfall, Christel Damen, Duncan & Gwen Versteegh, Evelien Janssen, Guy Kalron, Hannah Taylor, Jim Cooke, Jolanda vd Toorn, Loek & Vera Maartens, Loes Hak, Maggie Booi, Marianne Scholtz, Miranda & Owen Roberts, Omie Tramper, Ronaldo & Sandra, Scott Johnson, Sijbrand van 't Oever, Sophie Zeegers, Sue O'Brien, Theo & Titia Jongepier.

IN-WATER SURVEY/NETTING VOLUNTEERS

Alex Westner, Aja Radl, Alie Karman, Awan, Benjamin, Boris, Carien Noorman, Coco, Carol Solbach, Daniela Simal, Duncan & Gwen Versteegh, Elena Baker, Emma Pratt, Esmee, Evelien Janssen, Floor van Schalkwijk, Florine Botman, Fred Tanis, Geert Nielen, Ger Bakker, Guy Kalron, Hannah Taylor, Hilde Bakker, Jack Shannon, Jenna Fletcher, Jim Cooke, Jolanda vd Toorn, Josien Hendericksen, Julia, Lara Kleijwegt, Laura & Vince, Lise Strachan, Loes, Martijn Whien, Mathijs Hage, Merrick, Miranda & Owen Roberts, Monique Grol, Patti Dougherty, Peter, Rob Hulsbergen, Roel, Ronaldo de Moree, Sabine, Sara, Scott Gilchrist, Stacey Mac Donald, Sue O'Brien, Titia & Theo Jongepier, Thomas, Tommy, Veerle, Yasmine Braeckmans.

PRESENTATION VOLUNTEERS

Gwen Versteegh, Loek Maartens

24

PRESENTATION
HOURS

1728

IN WATER SURVEYS HOURS

1436

NEST MONITORING HOURS

1536

NETTING HOURS

656

CLEANUP HOURS

= 5,380

TOTAL VOLUNTEER HOURS



2022 FUNDERS & 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 – 2022

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



MAJOR FUNDERS

Major funders include the Dutch Ministry of Agriculture, Nature & Food Quality, Stichting DierenLot and Blue Jay bv.



Ministry of Agriculture,
Nature and Food Quality



Blue Jay bv

PLATINUM FUNDERS/DONORS [\$1000+]

Alex Bakhuizen & Anna Vasylieva
Barbara Chu
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IGC Graphics
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Kimberly Roberts
Nora D Martens
Paul vd Wal
Robin Westerling
Roos Nollen
Scott O'Brien
Simone Penders



And anonymous donors. Thank you!

DONATE

STCB SHOP

Available only on Bonaire, STCB clothing is made from soft, earth-friendly, 100% recycled materials. STCB pendant necklaces are made from bone, beach seed & horn. They are the product of artisans in Costa Rica & Bonaire.



TEES - HATS - NECKLACES

You can buy original STCB T-shirts, research hats and jewelry at VIP Diving, Dive Friends Bonaire, Harbour Village Beach Club, Bonaire Landsailing, Scuba Do and at our office. Because these businesses donate their retail services, 100% of the profits from every STCB item you buy go directly to sea turtle conservation.

Our office is open on weekdays between 9:00 a.m. and 5:00 p.m.
We are located at Kaya Korona 53, Kralendijk, Bonaire,
Caribbean Netherlands.

You can help protect Bonaire's sea turtles by donating to STCB. We welcome – and depend on – the financial support of people like you.

YOU CAN MAKE A DIFFERENCE!

Whether it's \$5, \$100, or \$5,000, whatever you give makes an important difference. 100% of funds received online will go directly to the protection of Bonaire's endangered sea turtles.

Your donation will help fund the following programs: nest monitoring, in-water surveys, clean-up events, turtle rescues, education and awareness programs, training, advocacy and satellite tracking.

DUTCH CHARITABLE STATUS

As of January 1st 2015, the Dutch Tax Service (Belastingdienst) has granted to Sea Turtle Conservation Bonaire ANBI status. ANBI status also favors STCB's Donors in countries that grant tax concessions to foreign registered charities, as well as those based in the Netherlands. Donors who have made a donation to STCB may be able to deduct the amount from taxable income.

[More information regarding STCB's ANBI status here.](#)

WAYS TO DONATE

DONATE ONLINE THROUGH PAYPAL

Please be advised that donations to STCB are processed via PayPal by Dutch Caribbean Nature Alliance (DCNA) of which STCB is a member.

DONATE BY BANK TRANSFER

BANK TRANSFER ON BONAIRE

Maduro & Curiel's Bank Bonaire
Account name: Sea Turtle
Conservation Bonaire
Account number: 101169209

BANK TRANSFER IN USD OUTSIDE BONAIRE

Beneficiary: Sea Turtle
Conservation Bonaire
Account number: 101169209
Beneficiary Bank: Maduro &
Curiel's Bank Bonaire
Swift code: MCBKBQBN
Correspondent Bank: Standard
Chartered Bank
Aba # 026002561
Swift Code: SCBLUS33

BANK TRANSFER IN EUR FROM THE NETHERLANDS

Beneficiary: Sea Turtle
Conservation Bonaire
Account number: NL71 RABO
0313 2425 26
Beneficiary Bank: Rabobank

BANK TRANSFER FROM EUROPE

Beneficiary: Sea Turtle
Conservation Bonaire
Account number: 101.169.209
Beneficiary Bank: Maduro &
Curiel's Bank (Bonaire) N.V.
Address: Kaya L.D. Gerharts #81
City: Kralendijk
Country: Bonaire, Caribbean
Netherlands
Telephone number: +599-715-
5520
Fax number: +599-717-7249
Swift code: MCBKBQBN
Correspondent Bank for Euro:
Ing Belgium SA NV
City: 24 Avenue Marnix, B-1000,
Brussels
Country: Belgium
Swift Code: BBRUBEBB

Please mention your email when making a direct transfer as we'd like to send you a thank you note!



HOW CAN YOU HELP?

Would you like to be involved in the conservation of sea turtles? Join us!

- Are you a diver? Participate in one of our Fishing Line Clean-ups!
- Do you want to learn more about sea turtle nesting? Join a nest monitoring patrol on Klein Bonaire!
- Curious about sea turtles? Visit our office or come to our bi-monthly presentation.

WHEN?

- Fishing Line Clean-up dates are published on our social media and in our FLP newsletter.
- Nest monitoring patrols on Klein Bonaire are conducted between May and October. You can join us on Monday, Wednesday and Friday mornings.
- Presentations are organized every 2nd and 4th Wednesday of the month at 8:00pm at the Yellow Submarine.

BECOME A TRAINED VOLUNTEER!

Do you live on Bonaire or are you visiting for a couple of months? You can become a trained volunteer and help us with our transect-count surveys, net-capture surveys, nest monitoring patrols or education events! For more details, please contact us.

We look forward to meeting you!

