

## Sea Turtle Conservation Bonaire Project Prospectus 2007 - 2009



*Sea Turtle Conservation Bonaire's mission is to ensure the protection and recovery of Bonaire's sea turtle populations throughout their range.*

### Introduction

According to the World Conservation Union (ICUN) 6 of the 7 species of sea turtles found world wide are either endangered or critical endangered. Four of these endangered sea turtles species can be found in the waters surrounding Bonaire: hawksbill, green, and loggerhead turtles nest on a seasonal basis; juvenile green and hawksbill turtles forage offshore; and the giant leatherback turtle is an occasional visitor. Bonaire, one of five islands that constitute the Netherlands Antilles in the Caribbean Sea, boasts beautiful coral reefs, sandy beaches, and sea grass beds. These areas provide endangered sea turtles with excellent foraging and breeding grounds.



*Map of Bonaire*



Sea turtles had been killed in Bonaire for many generations. Due to the intensive lobbying efforts of the Sea Turtle Conservation Bonaire (STCB) founders Albert de Soet and Larry Gerharts, the Island Council of Bonaire amended the Marine Environment Ordinance (A.B.1984, no 21) to provide full protection to all sea turtle species in 1991. That same year, STCB Netherlands, and a year later, STCB Bonaire were established to protect the remaining populations of sea turtles in Bonaire.

*A juvenile hawksbill turtle*

### STCB: Where we are

Starting with a modest research project conducted by students and volunteers, STCB has evolved into a well respected research and conservation organization that now utilizes the best scientific practices available. During its first 10-years, STCB provided invaluable information to local resource managers and policy-makers and answered many of the questions raised in the 1992 United Nations Environmental Program (UNEP) Sea Turtle Action Plan (STRAP). Back then funding was raised primarily by STCB Netherlands from WWF-Netherlands and various other environmental funds in the Netherlands.

In 2001, working closely with WIDECAST, the Wilder Caribbean Sea Turtle Conservation Network, STCB greatly sharpened and expanded the goals and objectives of its research, conservation and education activities. With the help of individual and corporate donors and a grant from the Dutch Government through the Department of the Interior (BZK), STCB was able to hire, for the first time, 2 full-time employees, employ the services of a biologist, establish an office, and replace a worn-out truck and boat.

### *Research at Sea:*

The scope of STCB's research has been unique. Rather than focus on nesting beach activity as the majority of the research efforts do, STCB devotes much of its resources to conducting in-water surveys and tagging. The principal goal of the in-water surveys is to periodically determine the species composition and size of the turtle population in their foraging areas. By using standardized methods, any

trend in population size will become detectable over a period of time. Further objectives are: to establish a base of marked animals; to begin measuring recruitment rates of small turtles to the area, growth rates and local movement range; and to collect other data on individual turtles. When possible turtles are captured either by free diving or with SCUBA. Captured turtles are tagged and data about size, weight, health, etc. recorded and digital photos taken. Now in its fourth year, the in-water surveys and tagging program are starting to provide insights to the health and composition of our sea turtle population and the health of their habitat. Thus far, 396 turtles have been tagged and 46 recaptured subsequent to their initial capture and tagging. Measured growth rates varied by individual, with carapace length increasing about 2-5 cm/year for hawksbills. Green turtles show even greater variation, with a significant difference between the very fast growing turtles of Lac Bai and those found along the reefs at the rest of Bonaire and Klein Bonaire. Lac Bai green turtles grew between 5-9 cm/year. The high growth rate of green turtles at Lac Bai indicates that the foraging conditions are exceptionally good there.

Given that sea turtles are highly migratory, STCB recognized the need to identify the “Range States” of our nesting population. A “Range State” is a nation that shares management responsibility for Bonaire’s turtles. Since 2003 we tracked 10 turtles from Bonaire back to their home foraging areas utilizing satellite transmitters and watched them travel to the waters off Nicaragua and Honduras to the west and Puerto Rico and the Navidad Banks to the north.

***Research on Land:***

Our land-based research focuses primarily on our index beach on Klein Bonaire but includes other nesting beaches as well. On a regular basis staff and volunteers are out looking for signs of nesting and hatching activity and monitoring the safety of the nests. Support by the local community and cooperation with Stichting Nationale Parken (STINAPA), the organization responsible for the Bonaire National Marine Park and Washington Slagbaai National Park, has grown and reports from residents and STINAPA have increased the effectiveness of STCB’s efforts. STCB follows-up to ensure that the hatchlings in each nest have the best chance of making to the ocean. In 2005, 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 28 hawksbill nests laid along No Name resulted in approximately 3000 live hawksbill hatchlings emerging, plus almost 1500 loggerhead hatchlings emerging from their 15 nests. The total of 4500 hatchlings produced in 2005 is substantially lower than the 7000 hatchlings reported for 2004 and reflects the lower 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. Only data collected longer-term (more than 10 years) will be truly indicative of population status.



*Female Loggerhead 'Extra'*

***Conservation:***

Conservation activities do not end with the monitoring and protection of nests from poachers and predators such as land crabs, but include when required, the relocation of nests that are threatened by their proximity to the water line, annual beach clean-ups at the major nesting sites to ensure sea turtles easier access to nesting sites and hatchlings easier access to the sea, the placement of barriers at nesting sites to prevent vehicles from driving over them, beach restorations after natural and manmade events such as hurricanes and sand-mining activity, and turtle rescues from treats such as entanglements.

### **Education and Outreach:**

Our most important and perhaps most enjoyable activities are the education and community outreach work we do on behalf of sea turtles and the marine environment. These efforts go on year-round. We work closely with the STINAPA Nature and Environmental Education Officer in the development of educational strategies and materials to maintain and enhance the effectiveness of our elementary school education program. We provide support for a wide range of activities such as the snorkel program, “Tortuganan di Boneiru”, turtle workshops, PowerPoint presentations and field trips for the children. In addition, we continually issue press releases and participate in radio broadcasts to inform the public when there are important conservation issues. Slide presentations are given on a regular basis to tourists and we share information about our program with the world via our website at [www.bonaireturtles.org](http://www.bonaireturtles.org).

In December 2005, the 14-month “Protehá nos Turtuganan” campaign was successfully concluded. This collaborative effort with the Dutch Caribbean Nature Alliance and STINAPA was designed to educate the public, especially school children, on sea turtle conservation. Posters in Papiamentu and English, buttons, and a sea turtle fact sheet done in Papiamentu, Dutch and English were distributed island-wide. Presentations were given to every classroom on the island and a newsletter was distributed to the elementary grade classes each month that school was in session. A popular island musician, contributed his time and talent to write and record a “sea turtle jingle” about sea turtle conservation that was played regularly on the radio.



*Satellite Tracking - Female Hawksbill 'Mariposita'*

Our satellite tracking program has generated a lot of interest and enthusiasm. Data received on our turtles' locations are plotted on a map and these maps along with information regarding speed, direction and pertinent “turtle facts” are emailed to the local press and radio, and supporters around the world. Feedback received from school teachers in the U.S. tell us our tracking maps and emails are not only being used in biology classes, but also used to in geography and social studies classes.

### **STCB: where we are going**

For the next three years, STCB proposes to continue with its existing regiment of “**Research at Sea**” and “**Research on Land**” activities. This will allow us to increase the body of data and analysis of Bonaire sea turtle population dynamics, nesting activity, migration activity (with satellite tracking), sea turtle health status, and the status of critical habitat (for foraging and nesting). Data collected will be useful in addressing critical knowledge deficiencies of marine turtle biology and be added to our existing database. Our continued research over time will expand the information necessary for determining patterns in areas such as population identification and size, population structure, growth rates, nest size, hatchling success, presence of disease and injuries, habitat utilization, changes in habitat, migration paths, and “Range State” location.

In addition we will expand our capabilities and efforts to include:

- Utilizing our data and analysis for use in the collaborative study of sea turtles in the wider Caribbean region, especially with “Range States.” Examples of this include participation in a regional wide genetic sampling survey and in long distance tag returns.
- Quantitative data for use in coordinated research with visiting scientists on Bonaire.
- Dissemination of data and analysis in various scientific and informational formats, including scientific reports and presentations, the STCB website, the annual report of STCB, and press releases.

***Conservation:***

STCB proposes to expand its current conservation efforts in the following ways:

- Expand the number of beach clean-ups to ensure sea turtles easier access to nesting sites and hatchlings easier access to the sea.
- Year round presence of staff and/or volunteers monitoring the status of sea and beach habitats.
- Increase cooperation with the community to identifying concerns that affect sea turtles, including turtle rescue services needed, beach damage, garbage dumping, pollution problems and sand removal.
- Annual identification and prioritizing of the threats to sea turtles of Bonaire will be conducted. Scientific data gathered, information from monitoring activities, concerns reported to STCB, and lobbying/advocacy efforts will be used to guide the organization’s conservation efforts.

***Education and Outreach:***

We will expand our education and outreach activities while continuing to promote sea turtle conservation education and promote community involvement. Specifically we will:

- Increase community appreciation of the value of sea turtles and the need to conserve them..
- Continue education programs at schools, youth centers and other groups of sea turtle population, life histories and conservation issues.
- Increase public awareness of STCB research, education programs, conservation activities, and of general information regarding Bonaire’s sea turtle population.
- Increase participation of school children, youth groups, community members, and tourists in education programs and conservation activities.
- Maintain and enhance the information available on our website.

**Bonaire and STCB as a Model**

Bonaire is an established model for other countries in the region due to its reputation for environmental protection, especially in the marine realm. STCB, in particular, receives much attention thanks to its public awareness initiatives successfully carried out in the past. STCB is a leader in sea turtle research and conservation not only for the Netherlands Antilles but also for the entire Caribbean Region. STCB’s association with WIDECAST ensures that our work serves as a model for others to follow, including providing training to WIDECAST partner organizations throughout the region.

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