

Project Update: September 2019

Sea Turtle Nesting Monitoring (March 1, 2018 -August 31, 2019)
High North National Park, Carriacou, Grenada, West Indies

1. INTRODUCTION

Hawksbill and leatherback turtles' nest on Carriacou beaches. Chronic anthropogenic impacts affecting sea turtles include loss of suitable nesting beaches due to development and sand mining (a very destructive and ongoing illegal activity in Carriacou), accidental by-catch and targeted capture of turtles, land poaching of nesting turtles and eggs.

2. SITE DESCRIPTION

The proposed High North National Park and Protected Seascape (Carriacou north - N 12°30.45, W 61°26.45) contains the majority of critically threatened bio-diverse habitats on the island: a 200-hectares contiguous upland forest with the island's highest peak (High North – 956 ft); forested coastal mangrove habitats; several littoral coral sand beaches; seagrass beds and near-coastal coral reef systems.

Three distinct sea turtle nesting beaches were monitored during the period from March 2018 through August 2019: Petit Carenage (North East-1.2 km), Anse La Roche (North West-0.35 km) – both within the Park area - and Sparrow Bay (including Bogles and Craigston beaches, West-0.60 km), bordering the High North Park area. Big Field (North West), placed in between Anse La Roche and Petit Carenage, was monitored occasionally and weather permitting by kayak, as there is no footpath access.

3. METHODS

A minimum of two-three persons team composed of local guides, volunteer/s and research assistant monitored Petit Carenage beach, conducting extensive early morning and nightly (between 8pm and 9am) hourly beach patrols to detect nesting activity for endangered leatherback (*Dc*) and critically endangered hawksbill (*Ei*). Sea turtle nesting activity data are recorded as either:

- confirmed nests (eggs deposition observed, eggs found, emergence of hatchlings recorded),
- unconfirmed nests (when egg deposition is not observed but mound with emergence and dispersal crawls to and from the mound is recorded)
- attempted nests (evidence of body pits)
- dry runs (no evidence of nesting activity other than tracks).

Sea turtles encountered during monitoring are tagged *after* nesting is completed using Monel (for *Dc*) and Inconel (for *Ei*) flipper tags and standard morphometric data are recorded.

When night-time observer coverage is not available due to logistical or weather constraints, early morning patrol sites are reached by motor vehicle, by sea kayaks or on foot. KIDO Foundation team follows WIDECAST (Wider Caribbean Sea Turtle

Conservation Network) protocol procedures regarding monitoring operations, tagging and data collection.

4. RESULTS

663 nesting activities (including 9 nests not recorded, later identified with hatchling)

184 confirmed nests:

- 33 Leatherback
- 151 Hawksbill

289 unconfirmed nests:

- 56 Leatherback
- 233 Hawksbill

131 attempted nests:

- 24 Leatherback
- 107 Hawksbill

59 dry runs:

- 4 Leatherback
- 55 Hawksbill

3 Leatherback nests were relocated

8 new Leatherbacks and 28 new Hawksbills were tagged

6 Leatherbacks and 18 Hawksbills were pre-tagged

During the March 1, 2018- August 31, 2019 nesting season a conservative estimate of **80,000 eggs** were laid and saved from poaching and we confirmed the success of **61 hatched nests** (25 leatherbacks and 36 hawksbills), through the recording of hatchling tracks and the observation of emergence of hatchlings from nest

Trained guides Hansel Patrice, Rickie Alexander, Antonia Peters, Mataio Guadaloupe, Donte McGillivray with Kate McDonald, a volunteer from UK and Research Assistant Marine Biologist Piero Becker patrolled the beaches of Petit Carenage, Sparrow Bay, Anse La Roche & Big Field during the night and/or early mornings. Dario Sandrini, KIDO Foundation director, performed early morning patrol duties when needed.

KIDO senior turtle guide Hansel Patrice continues to carry out early morning patrols to monitor hawksbill nesting activities and hawksbill & leatherback hatching activities, in the above beaches, until November 30, 2019.

The teams protected the two endangered species of turtles (hawksbill is critically endangered, and the Atlantic Leatherback is endangered – see IUCN Red List) nesting in the above beaches, located within and adjacent to High North National Park in Carriacou.

Petit Carenage (North East) was the most active beach with 396 nesting activities, followed by Sparrow bay beach (North West) with 157 and Anse La Roche (North West) with 94.

The remaining nesting activities were recorded in different locations around the island (Big Field, Lauriston, Sandy Island and Dover) by KIDO team, local residents & tourists

Nest Activities

109 in 2005 – 53 in 2006 – 140 in 2007 – 201 in 2008 - 237 in 2009 - 186 in 2010 – 273 in 2011 - 266 in 2012 – 293 in 2013 – 354 in 2014 – 346 in 2015 -301 in 2016 – 500 in 2017

| March 1,2018 - August 31,2019 | Nests | Petit Carenage | Anse La Roche | Sparrow bay | Big Field | Sandy island | Lauriston | Dover | TOTAL |
|-------------------------------|-------------|----------------|---------------|-------------|-----------|--------------|-----------|----------|------------|
| LBK | Confirmed | 29 | 3 | | | | | | 32 |
| | Unconfirmed | 28 | 27 | 1 | 1 | | | | 57 |
| | Attempt | 23 | 1 | | | | | | 24 |
| | Dry Run | 2 | 2 | | | | | | 4 |
| HWK | Confirmed | 131 | 5 | 12 | | 1 | 2 | 1 | 152 |
| | Unconfirmed | 73 | 43 | 106 | 9 | | 1 | | 232 |
| | Attempt | 88 | 4 | 15 | | | | | 107 |
| | Dry Run | 22 | 9 | 23 | 1 | | | | 55 |
| TOTAL | | 396 | 94 | 157 | 11 | 1 | 3 | 1 | 663 |

Nest Disturbance and Poaching

Prior to the beginning of KIDO Foundation monitoring activities, we recorded as many as thirty-five (35) disturbed sea turtle nests in Petit Carenage and Anse LaRoche during one nesting season (2001). The majority of the disturbances were clearly the result of human poaching, evidenced by a tell-tale ‘probing stick’ left protruding from some excavated nest and human tracks on the site. Sea turtle eggs remain a traditional delicacy for men on the island who believe turtle eggs are aphrodisiac. Eggs are sold at 6 EC\$ each on the local black market. In contrast, following the start of the KIDO nest monitoring activities (2002), we noted a great reduction of poaching activities.

The presence and conservation work by KIDO turtle monitoring teams (camouflaging turtle nests and tracks as anti-poaching strategy) have deterred egg-poaching activities. Poachers do not come to the beaches when a KIDO patrol team is present. The same strategy was applied during our early morning patrols of nesting beaches that could not be monitored all night long. Yet, during this period on Sparrow Bay beach our early morning patrol team found two nests poached and one track only of a nesting hawksbill, a clear sign that the turtle was poached as well, probably during the night by opportunistic poachers.

Conclusions

As the nesting habitats of sea turtles become increasingly threatened and reduced by land development, sand mining, erosion, rising high water levels and other anthropogenic impacts, small & secluded beaches on islands such as Carriacou offer important patches of alternative nesting habitat for sea turtles in the region.

Our ongoing night and morning nesting monitoring program has demonstrated that effective protection of nesting beaches enables a general increase in recorded nesting activities and relevant reduction of nest poaching; additionally, the ongoing project offers training, subsistence salaries for local nature guides and volunteer positions to local and foreign students and research assistants.



Left: Newly tagged post-nesting hawksbill turtle emerges from the coastal brush in Petit Carenage mangroves. © Piero Becker. Right: Turtle Guide Antonia Peters assisted by her sister measures a post-nesting hawksbill in Petit Carenage. © D. Sandrini.



Left: Turtle Guide Donte McGillevary measures the straight carapace width of a post-nesting hawksbill. © D. Sandrini. Right: Releasing rescued hawksbill turtle hatchlings at night in Anse LaRoche. Photo by yachting parents of the kids in the release.



Left: Rescued hawksbill straggler is about to reach the Caribbean waters in Anse Laroche. © Davon Baker. Right: Two leatherback hatchlings emerging from their coarse sandy nest in Petit Carenage. © Piero Becker.



Left: Guide Hansel and students have discovered struggling turtle hatchlings still alive trapped in overgrown roots. © M. Fastigi. Right: Turtle Guides Hansel Patrice and Donte McGillevary disguising leatherback nesting tracks in Petite Carenage, High North National Park beach. © M. Fastigi.



Left: KIDO No Plastic team of the day are about to get into action on Petit Carenage beaches and mangrove wetlands. © M. Fastigi. Right: Junior puppeteer and inventor Noah and senior Guide Hansel Patrice collected loads of plastic waste blown onto the coast from the Atlantic Ocean. © M. Fastigi.



Left: Smaller bits of disintegrating plastics were harder to collect, especially among the dried spiny pickerbush. © M. Fastigi. Right: 15 bags of plastic waste collected in this nesting area of Petit Carenage. © M. Fastigi.



Left: SIOB-MPA youth summer camp. 'Be a Turtle for a Day' KIDO educational beach game. © M. Fastigi. Right: SIOB-MPA youth summer camp. A lively KIDO Turtle Conservation presentation. © M. Fastigi.



Left: Veterinary graduate student Joseph Frame, who also has a Master's in Education, leads a sea turtle conservation session at KIDO. © M. Fastigi. Right: L'Estre Primary School. Heated Q&A after the projection of 'Tale of Two Islands', KIDO latest puppet movie about Global Warming. © M. Fastigi.



Left: Bird Identification at Bird Watching site in Petit Carenage. © M. Fastigi. Right: Bird Watching from the disguise platform in Petit Carenage. © M. Fastigi.



Left: Keen junior Birdwatchers at the tidal feeding pond in Petit Carenage. © M. Fastigi. Right: Rescued iguana during Anse LaRoche field trip survived and was later safely released. © Piero Becker.



Left: The smaller of 2 Morocoy tortoises encountered along the High North nature trail by our inquisitive youths. © M. Fastigi. Right: This highly unusual Banyan tree grew in the shape of a giraffe, along High North nature trail. © M. Fastigi.



Left: Experimental bamboo segment as an added organic protection against crabs' predatory attacks seems to be working well. © D. Sandrini. Right: Red Mangle sapling spreads several buttress roots; a new coastal forest grows. © D. Sandrini.



Left: 180 harvested red mangle propagules ready for planting replacing damaged or dead saplings in Petite Carenage restoration site. Right: Carriacou Regatta 2019 Chairwoman Allison Caton appreciated Kido 'Summer Cat' catamaran, made of recycled material in 2014 - 2015 Rufford KIDO Youth Environmental Program.



Left: Research Assistant, Biologist Piero Becker measures a post-nesting leatherback. © Kate McDonald. Right: Noah Matthew, 12-year-old, is a born puppeteer. © Piero Becke.