

# VIRGIN ISLANDS NATIONAL PARK

## SEA TURTLE MONITORING AND PROTECTION PROGRAM

### 2018 Season Report



The Virgin Islands National Park (VINP) Sea Turtle Monitoring and Protection Program, funded by the Friends of the Virgin Islands National Park, wrapped up the 2018 season with flying colors. The aim of the program is to conduct island-wide nesting surveys and foster awareness for sea turtle conservation. The program continued to implement nest protection strategies, collect nesting data, maintain and grow a devoted volunteer base, as well as participate in multiple education outreach opportunities.

### Which turtles call St. John home?

Sea turtles have been swimming the world's oceans for over 200 million years. Today, there are seven recognized species of sea turtles; all of which are threatened, endangered, or critically endangered by national (Endangered Species Act) and international (International Union for the Conservation of Nature) classifications. Three of the seven species have been known to nest in U.S. Virgin Islands: hawksbills, greens, and leatherbacks.

#### Hawksbill (*Eretmochelys imbricata*)

Hawksbill sea turtles contribute the majority of our nests on St. John. While these turtles nest year-round, the peak of the nesting season is from August to November in the Virgin Islands. During this time, these turtles will return to their natal beaches and deposit between 3-5 nests at 14 day intervals. Each nest contains around 100-200 ping-pong shaped eggs that incubate for around 55-75 days.

This is the smallest of our sea turtles in the USVI; reaching between 24-35 inches and averaging 100-150 pounds. This turtle gets its name from the narrow and pointed beak that resembles a hawk's bill. This turtle is found near reefs, feeding predominantly on sponges.

Hawksbill sea turtles are internationally listed as Critically Endangered and nationally listed as Endangered, mostly due to human induced threats. Aside from the common threats of all sea turtles, global hawksbill populations have been severely reduced due to overharvest for their desirable shells.





### Green (*Chelonia mydas*)

Green turtles are commonly found along the shores of St. John foraging on sea grasses. These turtles are the largest of the hard-shelled turtles found in the USVI. The average length of an adult is around 40 inches and can weigh somewhere between 200-500 pounds. Due to a diet of sea grasses, this turtle gets its name from the greenish color of their fat.

Green turtles are internationally listed as Endangered, and nationally listed as Threatened. These turtles are commonly poached for their meat and eggs.

### Leatherback (*Dermochelys coriacea*)

Leatherback sea turtles are the largest of all turtles. Adults can exceed 9 feet in length and weigh more than 2000 pounds. These turtles are roughly the size of a Volkswagen Beetle! They feed primarily on jellyfish, and will often mistakenly ingest plastic debris floating in the water. Leatherbacks, unlike other sea turtles, do not have a hard shell--hence the name. This flexible carapace gives them the ability to dive to depths greater than 3900 feet.

Although these turtles spend the majority of their time in the open water, leatherbacks have been known to nest on St. John. Trunk Bay was named after the large 'trunk-like' turtles using the area as a nesting ground.

Nationally listed as Endangered, and internationally ranked Critically Endangered, these turtles face a variety of threats ranging from entanglement in fishing gear to the harvest of eggs.



### Beach Monitoring

Regular beach monitoring for sea turtle nesting activity was conducted by 45 trained volunteers from late June-November. Thirty-seven beaches were monitored between 1 and 7 days a week. Beaches with higher historical numbers of nesting activities were monitored more frequently than beaches with no known activity. Beach patrols were conducted during the early hours of the morning and consisted of walking the length of the assigned beach looking for signs of sea turtle crawls, nest depredations, emergencies, stranded turtles and unusual activity.

### Nesting Activity

Forty-two nesting activities were observed on seven nesting beaches between June 25<sup>th</sup> and December 7<sup>th</sup>, comprised of 24 confirmed nests and 18 dry runs. Twenty-three of the nest belonged to hawksbill sea turtles, while one nest was laid by a green sea turtle.

All of the confirmed nests were screened against predators using a 36" x 36" metal screen with 2" x 4" openings. These screens deter predators from digging in to the nest, but allow hatchlings to escape through the openings. These

Prior to 2017, green turtles had not been recorded nesting on St. John. During the 2017 season, one green nest was found as well as one this 2018 season.

screens have proven to be very successful, noticeably deterring dogs and mongoose from depredating the nests. In several cases, both dog and mongoose tracks, as well as evidence of digging, have been observed around the periphery of the protective screen. Zero nest depredations have been observed this season, compared to an 80 percent depredation rate in 2015.

No nests were physically lost to erosional or storm events, however, 8 nests were inundated by seawater at least once during incubation, yielding varying outcomes.



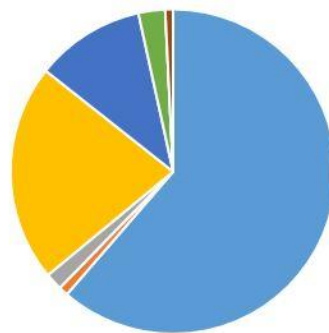
### Excavation

Following emergence, nests are excavated to determine hatch and emergence success. Hatch success is the percentage of eggs that hatch; emergence success is the percentage of eggs that hatch and make it out of the nest cavity.

Twenty-four nests were excavated yielding an average hatch success of 62.18% and emergence success of 59.40%, with a range from 0% to 98.1%. Four of the 24 nests were unfertilized. Excluding the unfertilized nests, the average hatch success was 78.54% and emergence success 75.04%, with a range of 1.27% to 98.1%. The average hatch success of fertilized hawksbill nests was 79.28% and emergence success of 71.76%. The one green turtle nest had a hatch success and emergence success of 65.26%. Fourteen nests had a hatch success over 80 percent, and 9 had a hatch success over 90 percent. According to the excavations, 1,694 hatchlings made it to the sea!

### Nest Contents

n=24



- Empty shells (hatched)
- Live hatchlings in nest
- Dead Hatchlings in Nest
- Undeveloped unhatched eggs with no embryo
- Unhatched eggs with embryo
- Unhatched term embryo/pipped
- Depredated
- Other

## Volunteer Programs

Aside from morning beach monitoring, volunteers were able to attend a variety of events to gain exposure to sea turtle conservation. Three night watch programs were held on nights that had a high probability of nesting activity. Dedicated volunteers patrolled the beach every 45 minutes from sunset to sunrise in hopes of finding a nesting turtle. Unfortunately, no turtles were observed. Later in the season, volunteers had the opportunity to attend a hatchling release, releasing live hatchlings that had been unearthed during excavation. Volunteers also showed up in great numbers to screen and excavate nests. All events were well attended by volunteers eager to promote sea turtle conservation. A reliable and involved volunteer group was fostered throughout the season.



## Collaborations

The VINP Sea Turtle Monitoring Program was pleased to take part in a collaborative project: *“Microplastics at sea turtle nesting sites: The world’s most extensive survey”* conducted by Exeter University. The study aims to assemble a worldwide dataset of microplastics (1-5mm) on turtle nesting beaches, involving as many people as possible to take a global look at this issue between now and early 2020. Sand samples from two nesting beaches were sent off for further analysis, and we are currently awaiting results.

The program also began to promote collaborations with neighboring programs and institutions to increase our knowledge of sea turtles in the Virgin Islands. This greater collaboration will enhance the continued effort to protect and conserve these endangered species.



## Education Outreach

Several education outreach programs were conducted to spread awareness of sea turtle conservation. These programs included interpretive programs with the Youth Conservation Corps, interactive school programs for seven grades in the classroom and on the beach, informative turtle talks and guided snorkels for the Friends Seminar Series, as well as participation in the Earth Day Fair, connecting with over 200 students from all of the schools of St. John.

## Conclusion

The program was pleased to have a very successful season and plans to keep up the momentum into the 2019 season. This season boasts the highest detection of nests in over a decade, discovered by an outstanding volunteer group. The program was proud to effectively protect every observed nest from depredation, maintain regular beach patrols with a dedicated volunteer base, promote conservation through education outreach, and collect information to be used to enhance our knowledge of sea turtles to build upon conservation management strategies.



## Thank you!

Thank you to all of the supporters of the VINP Sea Turtle Monitoring and Protection Program funded by the Friends of the Virgin Islands National Park. Thanks to all Friends employees, NPS personnel, and to all the wonderful volunteers that made this program possible!

