

THE HAWKSBILL TURTLES OF BUCK ISLAND REEF NATIONAL MONUMENT:

A Shared Caribbean Resource

By ZANDY-MARIE HILLIS

SITUATED NEAR THE CARIBBEAN ISLAND of Saint Croix in the U.S. Virgin Islands, Buck Island Reef National Monument is home to a small population of nesting hawksbill sea turtles (*Eretmochelys imbricata*). Interested in their nesting activities and seasonal and long-term migration patterns, we began to research the turtle in 1988 using a mark-recapture tagging technique. Our ultimate goal is to develop an effective management strategy for this endangered species.

In the mark-recapture phase of the project, park staff conducted nightly nesting beach patrols each July through October from 1988-94 and found hawksbill turtles returning to nest both within the season and following multiyear intervals. During this time, we tagged 81 individual nesting hawksbill turtles. Of these, 41 have returned to the park for one or more breeding seasons. The majority of nesting females returned to nest on an average of 2- to 4-year intervals, with only one female returning in 1994 after just 1 year. According to cumulative recapture data, we can anticipate that 50-80% of all tagged hawksbill turtles will return to nest in the park in a subsequent season.

Even after prolonged periods of absence, individual turtles exhibit a very high degree of fidelity to park nesting beaches and to specific sections within the 1.4-km long (0.9 mi) nesting habitat. These sections, approximately 300-m (328-yd) long, equal the average length of any one of the three distinct park nesting beaches, and are defined by eroded berms, fallen trees, and rock walls or cliffs. Hawksbill turtle nesting fidelity is comparable to that reported for green, loggerhead, and flatback sea turtles. This emphasizes the need for careful management of all sea turtle nesting beaches.

Although hawksbill turtles had proven their fidelity to Buck Island Reef during our study, we had no clue as to where

they were coming from. When the program first began, local information and other NPS marine field census studies indicated little to no sightings of adult hawksbill turtles around the monument prior to or after the nesting season. To date, no hawksbills have been seen around either Buck Island Reef or Saint Croix outside the breeding season, and none of the park-tagged turtles have been observed nesting at other patrolled rookeries in the Caribbean.

In 1991, the National Marine Fisheries Service Miami Laboratory reported that the national monument-tagged hawksbill "QQD-033" was recovered from the Miskito Cays, Nicaragua, Central America. A student there had purchased the tag and returned it to the National Marine Fisheries Service return address. We believe that this hawksbill was captured by a fisherman, and we presume it is dead. This was our first monument tag recovery, and the long distance traveled by the turtle automatically raised questions about species migratory range. Individual hawksbill turtles repeatedly return to nest at the monument, and we now had preliminary evidence that they were traveling vast distances to do so.

In 1991 and 1992, we conducted both radio and satellite telemetry tracking studies to identify turtles locations between nestings and to determine whether or not they migrate between feeding and nesting areas. From both boats and stations ashore, we tracked the turtles using radio

and sonar telemetry. We found that nesting females reside in nearshore waters (within 1-1.5 km of the monument) between nestings. At the end of the nesting season, after laying three to five egg clutches, four turtles fitted with transmitters disappeared beyond radio range. During the 1992 season, a cooperative NPS-U.S. Fish and Wildlife Service satellite tracking study of seven nesting turtles showed that nesting females dispersed from the park to different regions in the Caribbean at the end of the nesting season. All evidence indicates that hawksbill

turtles nesting on Buck Island Reef National Monument do not live in the adjacent reef environment, but are migratory!

Marine turtle conservation is not accomplished solely in the isolation of a nesting beach. To be sure, Caribbean nesting beach studies must organize efforts by standardizing field methodologies and reporting tagging study results to a common regional database where tag recoveries can be coordinated. Studies also need to determine the location of feeding grounds and migratory routes to and from nesting beaches, and provide for their protection. The information gathered by the park and other Caribbean hawksbill projects is critical to understanding our shared

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hawksbill turtle population and is essential to the management and preservation of this highly migratory species. Finally, this research emphasizes NPS long-term responsibility in maintaining the hawksbill nesting and foraging habitats at Buck Island Reef National Monument.

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