

# SPATIAL DISTRIBUTION OF NATURAL AND RELOCATED LEATHERBACK NESTS AT SANDY POINT NATIONAL WILDLIFE REFUGE, ST. CROIX USVI

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The Sandy Point National Wildlife Refuge (SPNWR), located on the southwestern tip of St. Croix, USVI, is a critically important sea turtle nesting area that was specifically designated for protection of leatherback sea turtle (*Dermochelys coriacea*) nesting habitat in the 1984. Since its designation, it has become an important site for leatherback research, monitoring, and management.

The conditions that influence nesting habitat favorability relate to the basic geography of the beach; its peninsular shape creates three distinct environments. The north side is large and sandy, and the western portion has a highly changing morphology due to longshore current erosion. The southeastern stretch is often covered in dried seagrass and algae and experiences some annual erosion. Due to the dynamic nature of certain sections of the SPNWR beach profile, washout during nest incubation poses a significant threat to leatherback hatch success. As such, nest relocation based on a knowledge of past erosion patterns is an integral tool in leatherback conservation and management, and increasing hatchling production through nest relocation is one of the principal goals of the Comprehensive Conservation Plan for SPNWR.

The goal of this study was to determine the distribution of natural and relocated leatherback sea turtle nests at the refuge during the 2018 leatherback nesting season, and to examine trends in nest washout to provide recommendations for future management. To address these questions, we conducted nighttime nesting patrols to encounter nesting females and triangulate nest positions with respect to standardized beach marker stakes. Clutches were relocated when they were laid too close to the high-water mark or were on the western beach. We then did hatchling emergence surveys to determine the fate of each natural and relocated nest by beach zone marker. Global Positioning System coordinates were collected and processed in ESRI's ArcGIS. Throughout the 2018 season, 28 of 130 total nests were relocated. Preliminary results suggest a higher prevalence of both nest relocations and washouts on the western side of the beach. Results from this study could inform future relocation decisions. By looking at the nest distribution patterns over several years and the hatching success of all nests by beach zone, we can identify the best sections of beach on the refuge to place future threatened egg clutches. Analysis of several nesting seasons is necessary to determine long-term historical trends in nest relocation and beach erosion.