

WHICH WAY DO YOU GO: SATELLITE TELEMETRY REVEALS REGIONALLY DIFFERENT FORAGING BEHAVIOR OF LEATHERBACK TURTLES

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Leatherbacks (*Dermochelys coriacea*) are wide ranging, long-distance migrating marine turtles that have been characterized as wandering foragers. In order to examine leatherback foraging areas, a Switching Space-State Model (SSSM) was used to estimate the behavioral state of 25 satellite-tracked leatherbacks from nesting beaches in Panama and Costa Rica. Tracking revealed that more than half of the leatherbacks utilize the Gulf of Mexico (GoM) for foraging, while the rest utilize the North Atlantic Ocean (NAO). Total track distance ranged from 2,702.73–29,631.58 km with a mean distance of 10,728.15 km ($\pm 7,033.42$). Mean distance for GoM and NAO turtles were 8,187.05 km and 13,481.02 km, respectively. Eight environmental variables were extracted from remote sensing imagery for each turtle location to compare the characteristics of migration and foraging behavior, and foraging regions. We used Hot Spot Analysis to elucidate high use foraging areas, focusing on temporal environmental trends and leatherback occupancy in these areas. The SSSM revealed an intermediate behavior between foraging and migration. The intermediate behavior had different movement characteristics between GoM and NAO, suggesting a casting behavior as opposed to a low foraging behavior at the respective sites. There were significant environmental differences ($p < 0.01$) between behaviors, both within and between foraging regions. Sea surface height and sea surface temperature associated with GoM hot spots showed seasonal oscillations. Leatherback occupancy in these areas often peaked with increases in Chlorophyll-a (Chl_a) and/or particulate organic carbon (POC). Our findings suggest that leatherbacks nesting along the Caribbean coast of Central America display different intermediate foraging strategies based on the turtle's foraging region, and that movement within the GoM may be influenced by peaks in Chl_a and POC. These differences are important considerations when developing conservation and management strategies for Atlantic leatherbacks.