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CHARLES E. SCHMIDT COLLEGE OF SCIENCE

A Bird's Eye View: Assessing Sea Turtle Presence in Florida's Gulf Stream and Coastal Waters

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Assessing the presence or absence of marine turtles in an open system poses both observational and analytical challenges due to the migratory nature of marine turtles and their use of large current systems. Concentrations can shift as turtles shift between oceanic and neritic stages and migrate between breeding and foraging grounds. We conducted standard aerial surveys monthly from 2011-2012 to capture seasonal snapshots of sea turtle presence. Each survey covered the area from a northern boundary near West Palm Beach, Florida $26^{\circ}43'N$ to a southern boundary near Miami, Florida $25^{\circ}40'N$, USA with transects up to 20-50 km offshore. 218 turtles were observed during the course of this study 2011: n 79; 2012: n 139. We summarize our sightings by season: Winter December-February, Spring March-May, Summer June-August, and Fall September-November to examine trends in presence of sea turtles. A variety of sizes were observed throughout the year, indicating the presence of several life stages of marine turtles in Florida's waters during all four seasons. While it is understood that marine turtles use the waters off the eastern coast of Florida, here we document the magnitude of the shift in turtle presence each season throughout two years and where the turtles occur most frequently. Our assessment of marine turtles in the waters off of southeast Florida provide valuable metrics describing the in-water biology of these turtles and for the first time, provide a quantitative assessment of annual and inter-annual fluctuations in presence in the major current and along our coast.