

# **Gulf of Mexico Marine Assessment Program for Protected Species: Sea Turtles**

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## **Abstract**

The overarching goal of the Gulf of Mexico Marine Assessment Program for Protected Species (GOMMAPPS) was to collect broad-scale information on the distribution and abundance of seabirds (USFWS), marine mammals (NOAA), and sea turtles (USGS) to inform seasonally- and spatially-explicit density and abundance estimates for these taxa. The primary method used to gather basin-wide density and distribution data for wildlife is aerial surveys. However, sea turtles only spend a portion of their time at the water's surface, during which they are available to be counted by aerial observers. The presence of unobservable individuals limits accurate estimates of density and distribution for these imperiled species. Therefore, the objective of the GOMMAPPS sea turtle project was to analyze dive data, specifically time spent at the surface (TAS), to contribute to bias-corrected estimates of density that can then be translated into aerial correction factors. From 2017-2019, we satellite-tagged 48 sea turtles across the Gulf of Mexico including 23 green turtles, 14 Kemp's ridleys, and 11 loggerheads. From those tags, overall mean TAS was 19.4%. Green turtles spent a greater proportion of TAS compared to Kemp's ridleys or loggerheads. We found spatial and seasonal variability in TAS, with higher surface intervals occurring in summer and lower surface intervals in the central Gulf planning region. These data have also contributed to a much larger, collaborative analysis to examine the influence of 11 oceanographic and environmental variables on TAS in the Gulf of Mexico.