

GoMMAPPS: Sea Turtle Working Group

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Data gaps for marine turtles exist throughout the Gulf of Mexico. However, some of the biggest gaps in our knowledge of marine turtle ecology occur in areas of heavy oil and gas use including BOEM's Central and Western Planning Areas; this project will focus significant effort on those two regions, while analyzing broad-scale data from across the entire northern Gulf.

The overarching goal of this project is to collect broad-scale information on the distribution and abundance of sea turtles in the Gulf of Mexico to inform seasonally- and spatially-explicit density estimates for priority species.



Methods

1. Habitat Modeling
2. Broadscale Aerial Surveys
3. Satellite Tracking
4. Genetic Composition and Connectivity



Habitat Modeling

Phases:

- (1) Use historical aerial survey and satellite telemetry data to develop new, multispecies and multi-methods models that will allow us to combine data types. This will also help identify gaps we need to address during GoMMAPPS. In partnership with NMFS.
- (2) Model data collected during GoMMAPPS.

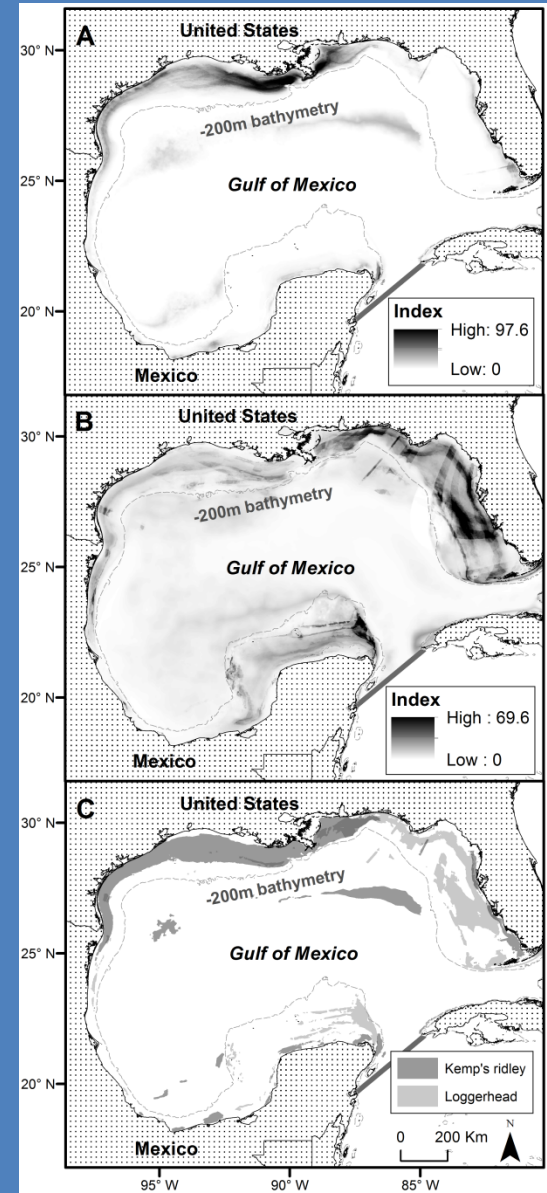
Multiple Modeling Approaches

Species Distribution

Bayesian

Non-linear Regression

Predicted index of suitable habitat (the index ranges 0 to 1 for low to high suitability) for Kemp's ridleys (A) and loggerheads (B) and predicted suitable habitat for both species in Gulf of Mexico (C) using ensemble ecological niche modeling (EENM).



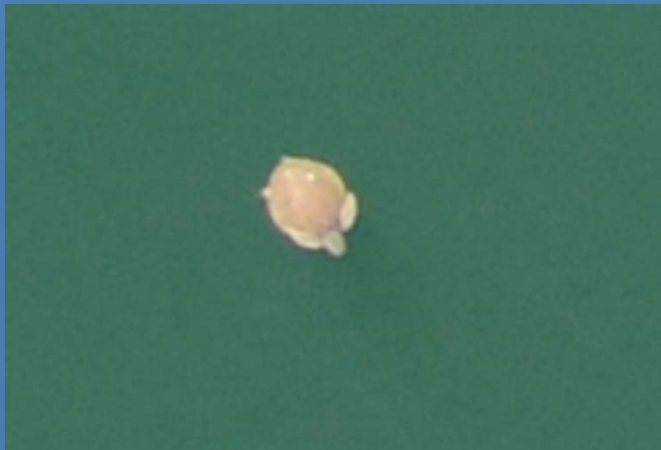
Broadscale Aerial Surveys

Offshore surveys: partnering with NMFS

Observers on NMFS aircraft

Inshore surveys: partnering with USFWS

Camera system on USFWS aircraft



Satellite Tracking

15 tags per site per year (3 sites initially focusing on the Central and Western Planning Areas)

Combination of location-only and depth tags



Partnering with National Park Service (GUIS, PAIS), Eglin AFB, BOEM-MMP



Genetic Analyses of biological samples to address connectivity and effective population size.

Partnering with University of Georgia (Dr. Brian Shamblin-loggerheads) and National Marine Fisheries Service-SWFSC (Dr. Peter Dutton-Kemp's)



Timeline

**June 2017: Start field work, captures off NW FL and MS Sound
Additional captures as part of BOEM-MMP
Begin first phase of habitat modeling (historic data)**

September 2017: start captures in TX waters

November 2017: begin genetic analyses of sampled turtles



Questions?

