

**Gulf of Mexico Marine Assessment Program for Protected Species
(GoMMAPPS)**

*An Assessment of Seabird, Sea Turtle, and Marine Mammal Abundance and
Spatial Distribution within U.S. Waters of the northern Gulf of Mexico*

Seabirds:

Project Management & Overview

U.S. Fish and Wildlife Service, Lead Agency

*A cooperative research effort between the Bureau of Ocean Energy Management,
Gulf of Mexico Region and the United States Fish and Wildlife Service,
Southeastern Region*

Last Updated: 2 February 2017

Background: The Gulf of Mexico (GoM) region is critically important in affording foraging, resting, breeding, transit and wintering habitats for North America's migratory bird resources. Unfortunately, limited information is available to more quantitatively characterize species composition, distribution, and abundance of birds – particularly seabirds – using nearshore and offshore waters of the northern GoM. Such information can play an important role in guiding decisions for offshore resource extraction in ways that moderate potential impacts on migratory bird populations.

Programmatic Objective: Document the distribution, abundance and diversity of birds in nearshore (≤ 50 nm from shore) and pelagic (outward to EEZ) environments of the GoM for the purposes of better informing regulatory and other decisions that influence the conservation of migratory birds.

Operational Objective: Identify and begin to understand how natural and anthropogenic characteristics of the GoM (e.g. oceanic and climatic variables, man-made structure) influence the distribution, abundance and diversity of birds in nearshore and pelagic environments

Null Model: The distribution, abundance and diversity of birds detected is not influenced by:

- (1) Presence (e.g. density) and status (e.g. inactive) of offshore platforms;
- (2) Proximal fisheries activities (e.g., trawling vessels);
- (3) Proximal micro-habitat or forage indicators (e.g., Sargassum, menhaden, etc.)
- (4) Oceanic physical features (e.g., depth, loop currents, eddies, salinity, etc.)
- (5) Broad scale weather conditions (e.g., fronts).

Tactical Objectives: (1) Design and implement aerial and vessel-based sample surveys to collect robust information characterizing the distribution, abundance and diversity of birds; and (2) using models and other empirical data, interpret the influence of natural and anthropogenic variables (e.g. salinity, current, structures, fishing vessels) on the distribution, abundance, and diversity of avian species.

Deliverables: Suite of models and maps that depict and explain the distribution, abundance, and diversity of bird using the Gulf of Mexico across seasons and years.

- Quarterly and Annual Reports
- Final Reports
- Publications
- Maps / Spatially-explicit Decision Support Tools

Timeline: 2016 – 2020; 2016 was a planning year with implementation of surveys scheduled for 2017-2019 and 2020 earmarked for data analysis and completion of reports and publications.

GoMMAPPS Coordination:

- Seabird Steering Committee Representatives: *Bill Uihlein (FWS-SA-R4) and John Tirpak (FWS-GRT-R4)*
- Seabird Science Team Representatives: *Jeff Gleason (FWS-MB/GRT-R4), Randy Wilson (FWS-MB-R4), Angela Trahan (FWS-ES-R4), Pete Tuttle (FWS-GRT-R4), Kelli Stone (FWS-MB-R2), Emily Silverman (FWS-MB-HQ), Pat Jodice (USGS-SC), Abby Powell (USGS-FL), Rebecca Green vice Kaye London (BOEM)*

USFWS Project Management:

- Overall Project Manager: *Bill Uihlein*
- Technical / Day-to-Day Project Management: *Jeff Gleason and Randy Wilson*

Vessel Surveys – Point of Contact: Jeff Gleason

- Principal Investigators – Survey Design: *Jeff Gleason (coordination with NOAA staff and vessels)*
- Principal Investigators – Data Collection: *Pat Jodice and Chris Haney (Terra Mar Applied Sciences, LLC)*
- Principal Investigators – Data Analysis and Reporting: *Pat Jodice*
- Principal Investigators – Data Management: *Pat Jodice and Emily Silverman*

Aerial Surveys – Point of Contact: Randy Wilson

- Principal Investigators – Survey Design: *Jim Lyons (USGS-PWRC) and Emily Silverman*
- Principal Investigators – Data Collection (aircraft): *Mark Koneff (FWS-MB-HQ) and Jim Wortham (FWS-MB-HQ)*
- Principal Investigators – Data Analysis and Reporting: *Elise Zipkin (Michigan State University) and Jim Lyons*
- Principal Investigators – Data Management: *Emily Silverman*

Aerial-based Surveys (nearshore environment out to 50nm)

- ★ **When:** See Figure 1. Summer (July 2017, 2018, 2019); Winter (mid-Dec. – mid Feb. 2017, 2018, 2019). *Footnote: Summer of 2017 will be pilot survey to test different survey designs and sampling protocols. Results will be used to determine the optimal survey design for out-years.*
- ★ **Where:** See Figure 2. Summer Surveys – an area starting circa 10nm offshore (i.e., omitting State waters) out to 50nm offshore; ranging from the Texas-Mexico border around to the Florida Keys. Winter Surveys – the same as summer but may also include sampling within bays, estuaries, mouth of river systems, etc (i.e., within State waters).
- ★ **What:** Birds – All birds detected will be recorded to the lowest taxonomic level possible. Other Metrics – undetermined at this time but will include a variety of abiotic and biotic variables (e.g., chlorophyll concentrations, salinity, Sargassum, fish assemblages, atmospheric conditions, etc.).
- ★ **How:** Aerial surveys will be conducted using three USFWS aircraft (Kodiak on floats); Survey design and protocols underdevelopment.
- ★ **Data Management:** Observers and pilots will download data daily and perform QA/QC checks as well as upload data to a stand-alone external hard drive. All data (both design and final) will be uploaded to a dedicated seabird USGS Confluence site to facilitate sharing. Archival storage will be within a SQL Database hosted by USGS-PWRC or USFWS.
- ★ **Training:** Workshops will be conducted prior to each survey. Workshop material will include: Bird ID, survey protocols, familiarity with onboard computer systems used to collect data, familiarity with aircraft, etc. All observers will need to complete all mandatory FWS Aviation Training Requirements.
- ★ **Safety:** USFWS pilots will complete a Search and Rescue Assessment for the Gulf of Mexico as well as develop aviation flight plans and coordinate flights with oil and gas helicopter traffic prior to any survey flights.

Vessel-based Surveys

★ **When:** See Figure 1.

Oregon II	~30DAS	28 April to 30 May	SEAMAP Spr. Plankton	(2 legs, 2 observers/leg)
Pisces	~15DAS	1 to 15 June	SEAMAP Reef Fish	(1 leg, 2 observers)
Gordon Gunter	~55DAS	27 June to 26 Aug	SE Marine Mammal	(3 legs, 1 observer/leg)
Gordon Gunter	~27DAS	1 to 30 Sept	SEAMAP Fall Plankton	(2 legs, 2 observers/leg)
Gordon Gunter	~30DAS	11 Oct to 10 Nov	Fall Pelagic Trawl	(2 legs, 2 observers/leg)

★ **Where:** See Figure 2. Northern Gulf of Mexico from Texas-Mexico border around to the Florida Keys and out to the Environmental Economic Zone – dependent upon the path and sampling points underpinning the Gulf States Marine Fisheries Commission’s Southeast Area Monitoring and Assessment Program and/or NOAA Marine Mammal surveys.

★ **What:** Birds – All birds detected will be recorded to the lowest taxonomic level possible. Other Metrics – undetermined at this time but will include a variety of abiotic and biotic variables (e.g., chlorophyll concentrations, salinity, Sargassum, fish assemblages, atmospheric conditions, etc.).

★ **How:** Vessel surveys will be conducted aboard NOAA vessels deployed for marine mammal and oceanic surveys. Survey design will be dictated by the SEAMAP / Marine Mammal survey. Data will be collected along transects using AMAPPS Survey Protocols developed by Balance and Force (2016) modified for the GoM (Haney 2017). During the 2017 season, we will also test a point-count protocol (Haney 2010) while vessels are stopped (i.e., not under power).

★ **Data Management:** Observers will download data daily and perform QA/QC checks as well as upload data to a stand-alone external hard drive. All data (both design and final) will be uploaded to a dedicated seabird USGS Confluence site to facilitate sharing. Archival storage will be within a SQL Databased hosted by USGS-PWRC or USFWS.

★ **Training:** Workshops will be conducted prior to each survey. Workshop material will include: Bird ID, survey protocols, familiarity with computer systems used to collect data, etc. All observers will also complete any required NOAA training related to their vessels.

★ **Safety:** All observers will comply with NOAA safety procedures while onboard vessels.

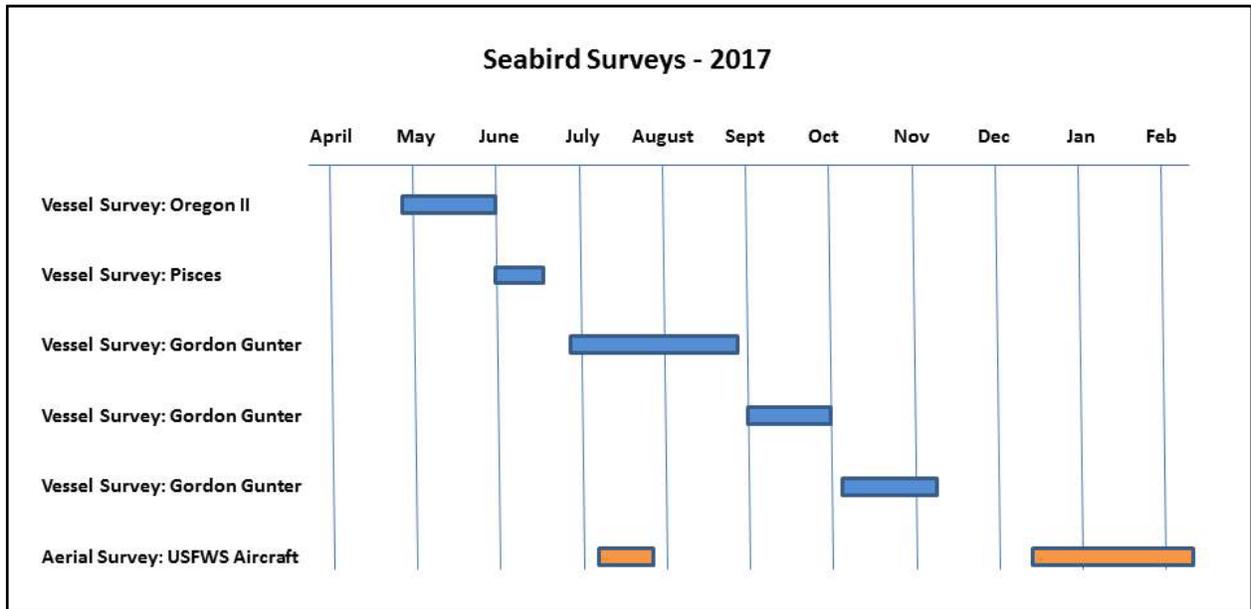


Figure 1. Timeline for 2017 seabird surveys with the northern Gulf of Mexico.

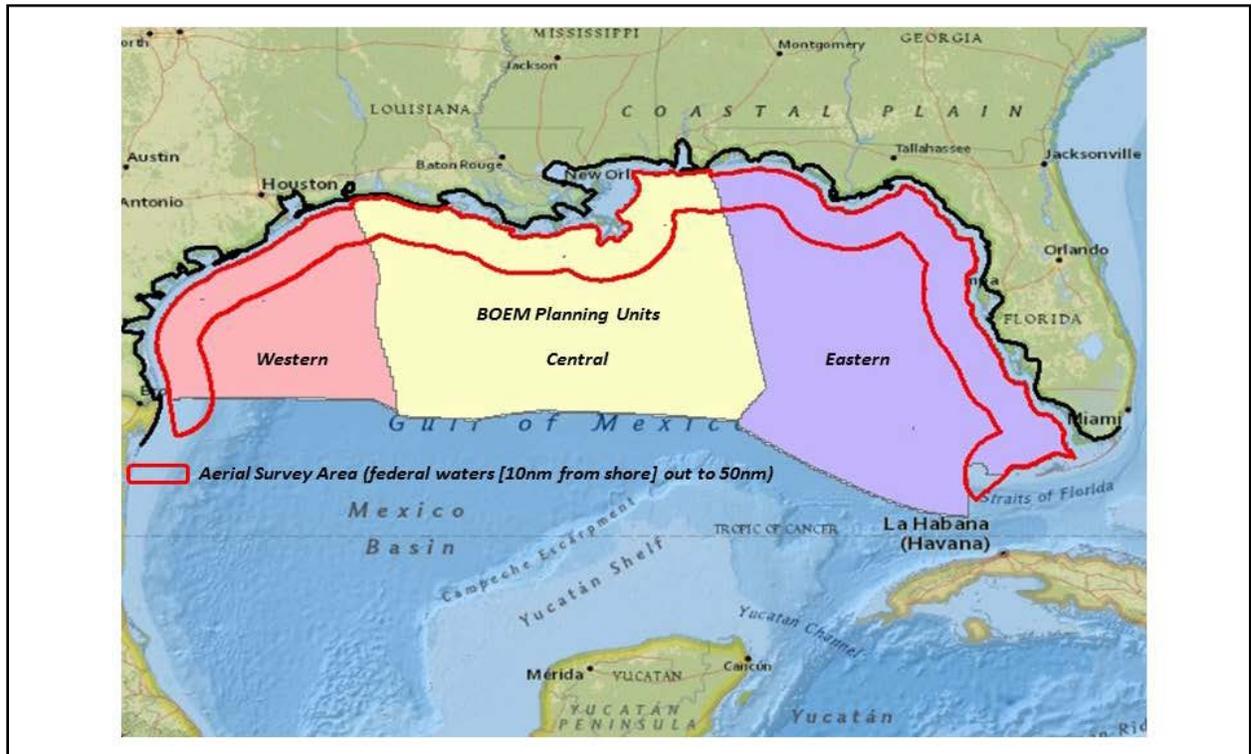


Figure 2. Spatial bounds of seabird surveys within northern Gulf of Mexico.