

A database of seabird occurrence and biophysical data for the U.S. Atlantic coastal and offshore marine environment: assessing our knowledge of seabird distribution in the context of evaluating offshore development.

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Problem:

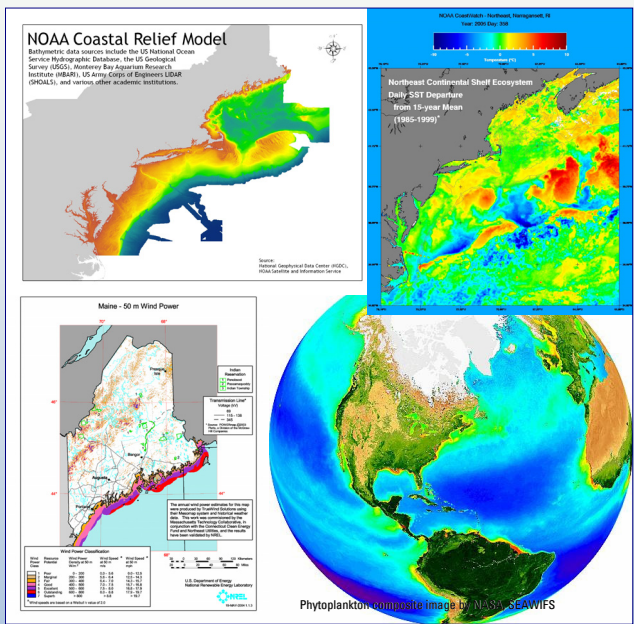
Proposed offshore development (e.g., windpower) has the potential to interact with coastal and offshore seabirds. However, it is not well understood how much seabird data exists, where it is located, and what condition it is in. This limits the ability of regulatory agencies to evaluate the placement of proposed offshore development and minimize adverse effects on seabirds.

Goal:

Compile information about seabird occurrence and relevant bio-physical parameters and bring together as much data as possible into a single database.

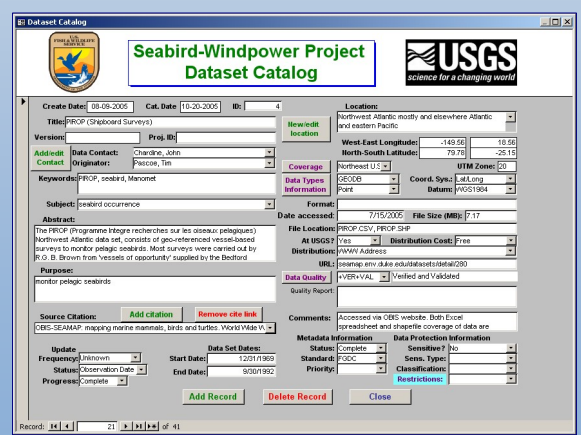
Methods:

- Developed a database in Microsoft Access 2000 (see below) of seabird occurrence, biophysical, and oceanographic datasets for offshore Atlantic waters of the eastern United States.
- Cataloged type of data, information and location of the data, etc.
- Searched online resources such as OBIS-SEAMAP, conducted literature searches for seabird studies in the Atlantic, and contacted agencies and scientists with potential data.
- Gathered relevant bio-physical data (e.g., bathymetry, temperature, bottom type) from a variety of sources such as National Climatic Data Center, National Oceanographic and Atmospheric Administration, and others.



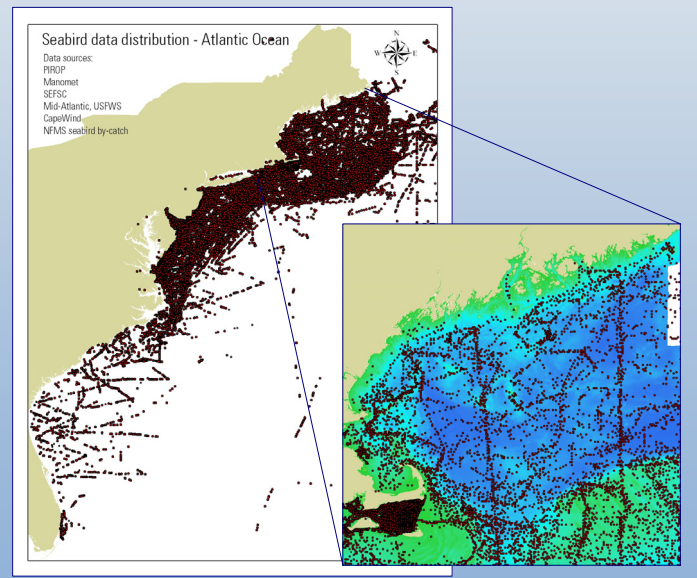
Bio-physical datasets

Resource	Geographic coverage
NOAA Coastal relief model (bathymetry)	U.S. Atlantic, Pacific, and Gulf of Mexico
GOES-East sea surface temperature (SST)	Western hemisphere
CONMAP sediments grain size distribution	East coast U.S. Atlantic Ocean
Northeastern U.S. Fisheries Bottom Trawl survey – NMFS	Northeastern U.S. waters
Phytoplankton – SeaWiFS satellite	Worldwide
Offshore wind resources – U.S. Dept. of Energy	United States and offshore waters



Significant seabird occurrence datasets for the Atlantic Ocean

Resource	Years	Geographic coverage
PIROP (Programme Integre recherches sur les oiseaux pelagiques)	23	Mostly U.S. and Canadian waters off of the eastern U.S.
Mid-winter waterfowl – USFWS	-60, 4 digital	Coastal Maine to Florida
Manomet Center for Conservation Sciences	9	Gulf of Maine
NOAA Southeast Fisheries Science Center	3	Offshore southern New Jersey to Florida
Mid-Atlantic survey – USFWS	2	Offshore northern New Jersey to Virginia including Delaware Bay and mouth of Chesapeake Bay
Cape Wind offshore wind park study	2	Nantucket shoals off Cape Cod Massachusetts
Long Island Offshore Wind Park study	2?	South of Long Island, New York
Seabird by-catch – NMFS	7	Offshore Maine to North Carolina



Future direction:

- Continue to compile data and convert to GIS datasets.
- Identify species for modeling.
- Model species distribution for select seabird species.
- Map potential windpower/offshore development-seabird conflict areas.

Data:

- Physically archived and loaded into a GIS database (ArcGIS 9.1, ESRI, Inc.).
- >100,000 seabird data points were collected for almost 50 datasets.
- >30 years of data spread out over many different seasons