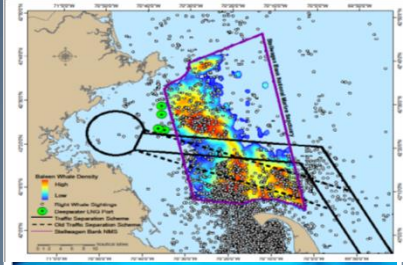
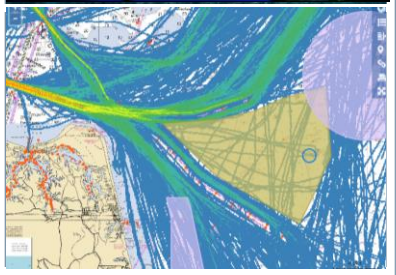
The Nature Conservancy

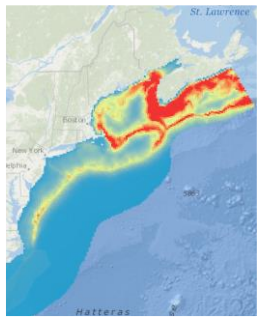
Protecting nature. Preserving life.™

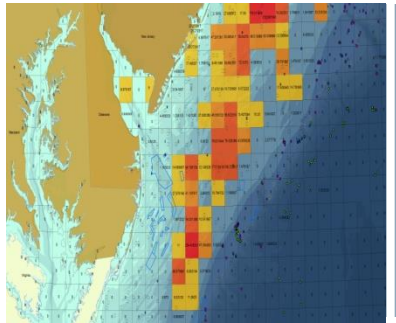
Orientation to Available Baseline Marine Wildlife Data for Offshore Wind Development Planning





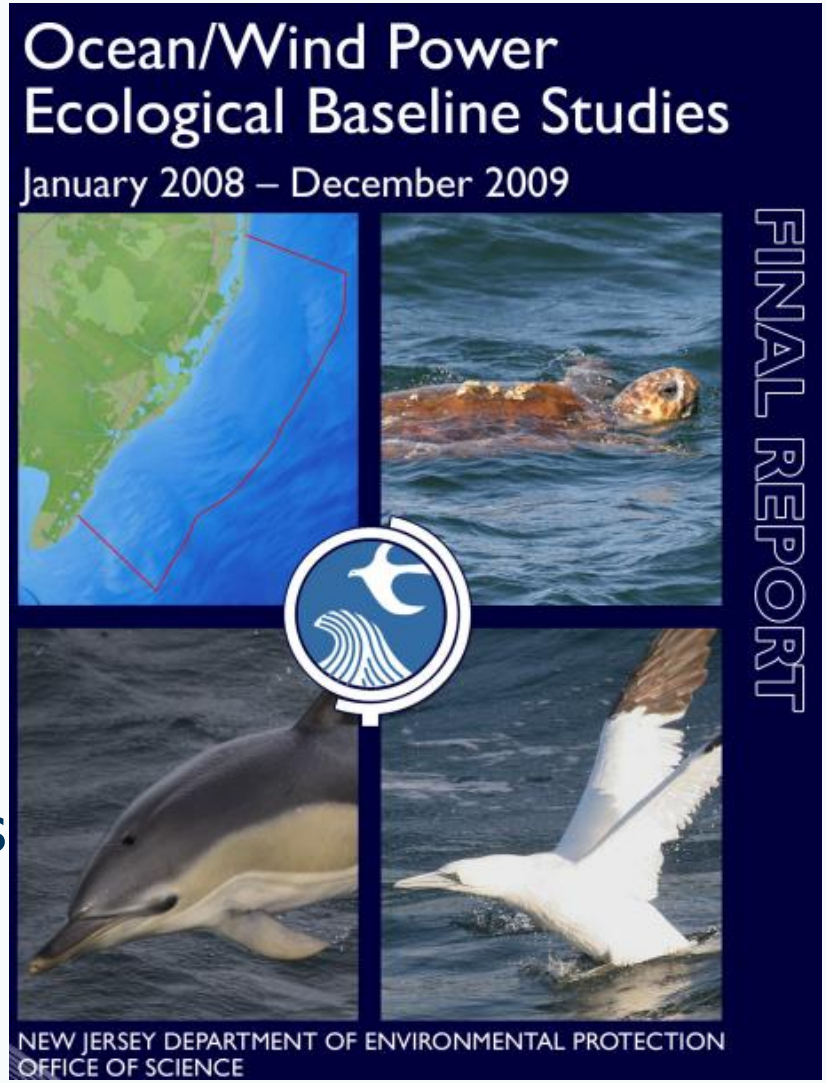
Jay Odell
BOEM Workshop: Best Management Practices for Atlantic Offshore Wind Facilities
March 9, 2017





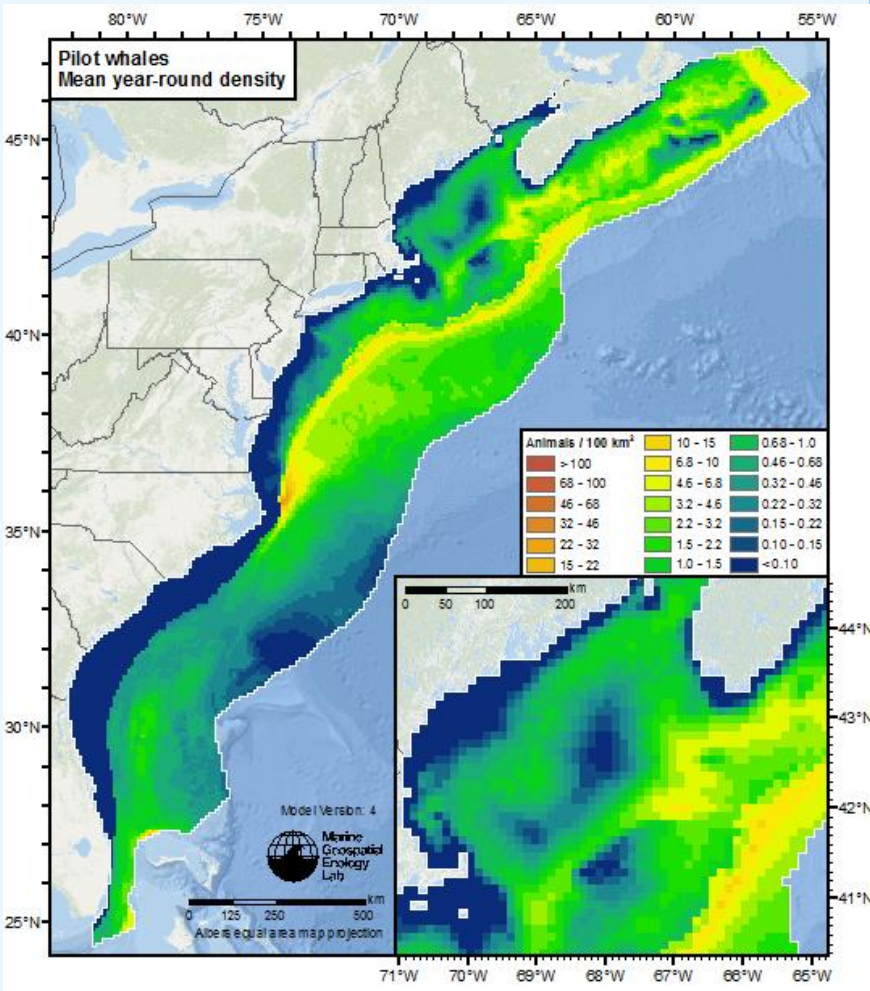
New Jersey DEP

- Geo-Marine, NJDEP, Rutgers, Cornell, USFWS & others
- Marine wildlife – birds, fishes, turtles, mammals, shellfish
- 2008-2009
- Shipboard, small boat, aerial, radar, acoustic
- Interpolated density, models with environmental covariates
- Data available from NJDEP



Duke MGEL and Collaborators

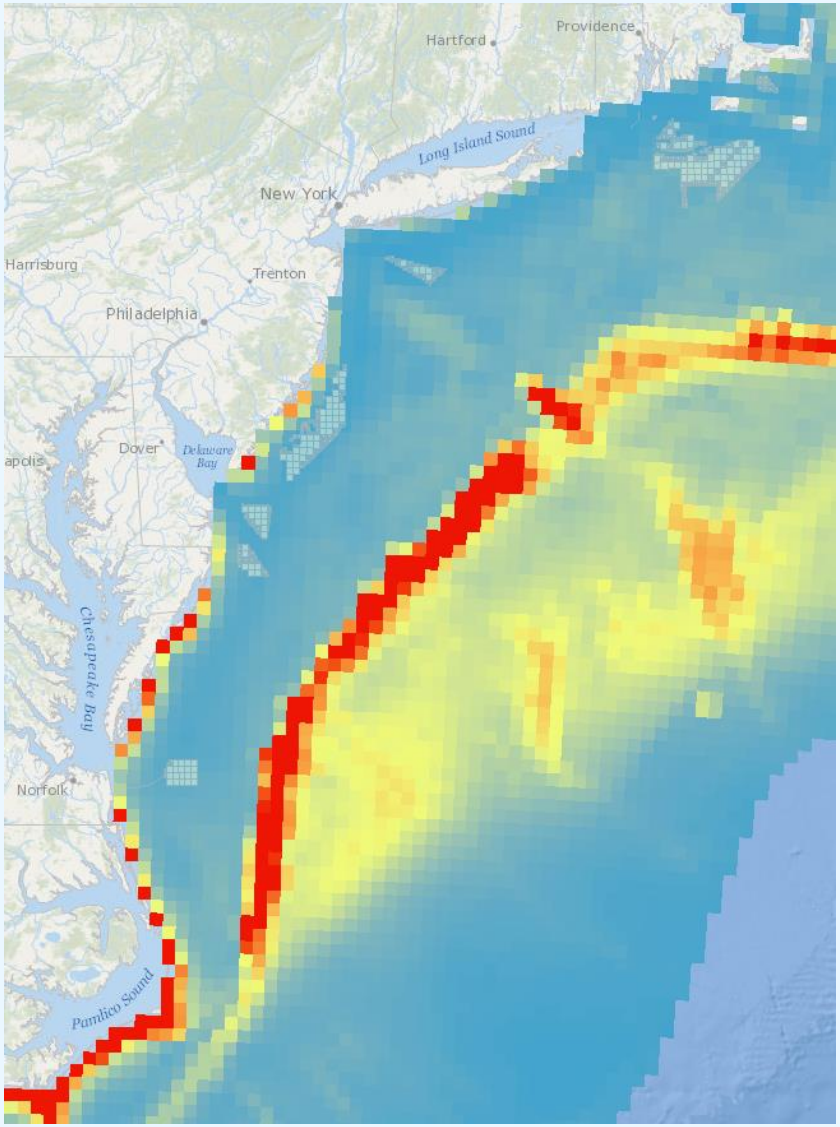
- Duke MGEL, NOAA NEFSC, SEFSC, UNCW, VA Aquarium, NJ-DEP
- 26 cetacean species + 3 guilds
- Aerial and shipboard visual line transect surveys (~1.1 million km)
- Currently 1992-2014; pending update will extend through 2016
- Density (individuals km^{-2}) and uncertainty maps; monthly maps for 11 taxa; 10 km resolution
- Freely available from MARCO and NROC portals (next slide), NOAA CetMap, and Duke websites



Roberts et al. (2016)

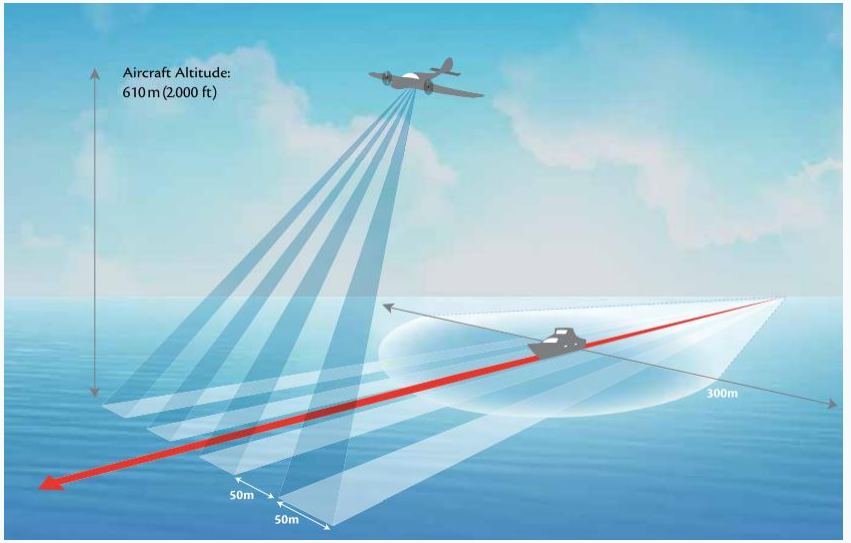
MDAT Models

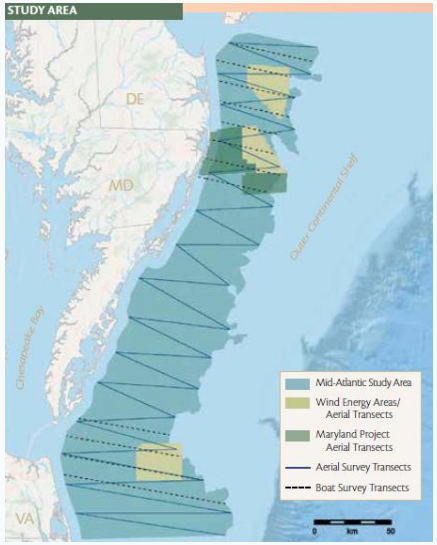
- Duke MGEL, NOAA-NCCOS & NEFSC, Loyola, NROC, MARCO, DOI/BOEM
- Mammals, Birds, Turtles, Fishes
- Diverse aerial & boat line transect surveys
- Survey period: 1992-2014
- Density and derived products, including abundance and richness of important species groups
- Most available now via NE and MidA Portals, updates expected Summer 2017. Turtle models still in development stage

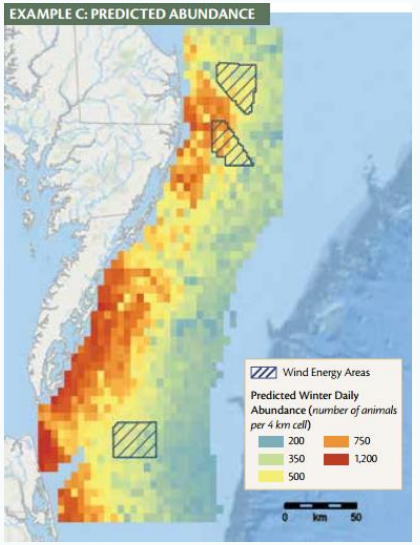


Biodiversity Research Institute

- BRI, CUNY, NC State, Duke, OR State, U of OK, MD DNR, MEA, USFWS, BOEM, DOE
- Marine wildlife: birds, mammals, turtles and fishes
- High resolution aerial and boat surveys, telemetry
- 2012-2014
- Density models with environmental covariates, persistent hotspots for abundance & richness, & much more
- Data available from BRI, expect to add to Mid-Atlantic Ocean Data Portal in 2017



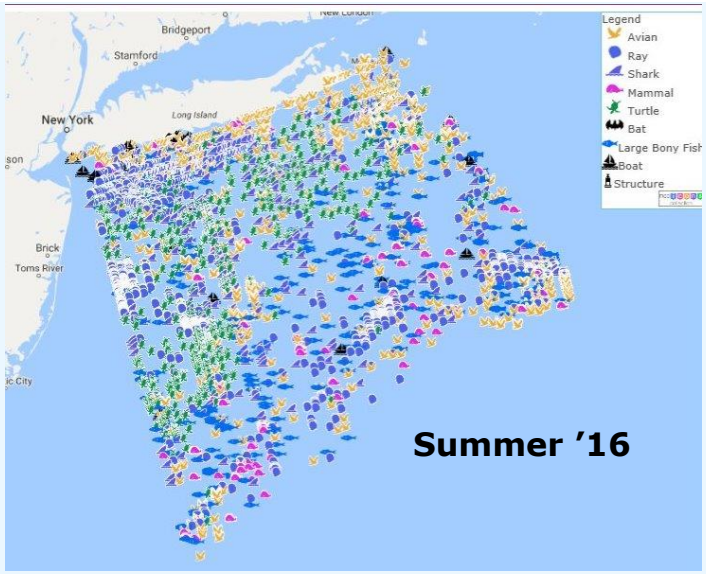


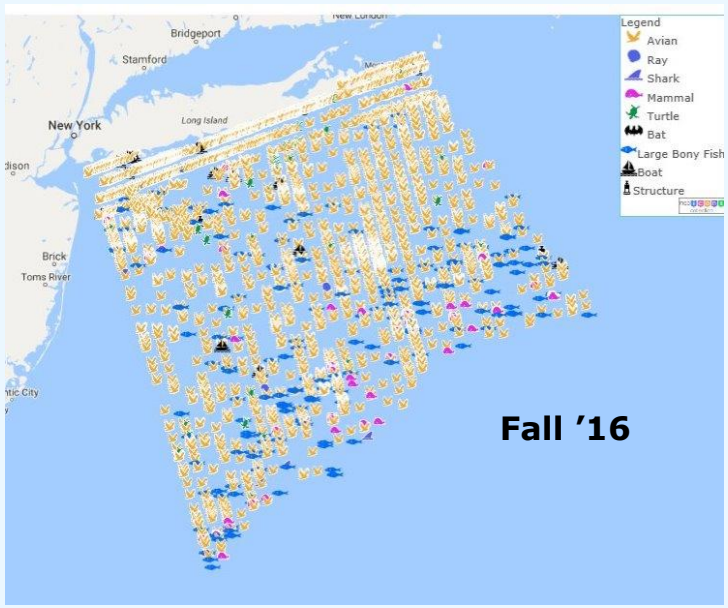


Digital Aerial Baseline Survey of Marine Wildlife- In Support of NY State Offshore Wind Energy

- NYSERDA- Normandeau/APEM
- Birds, Mammals, Turtles, Rays, Sharks, Fish, Human Activity
- High-resolution (1.5 cm GSD) aerial imagery surveys; Transects (7% of OPA) & Grids (20% of WEA)
- Seasonal starting summer 2016 through spring 2019
- Species maps, density maps, GIS shapefiles, imagery
- Ongoing with annual targeted data submittals

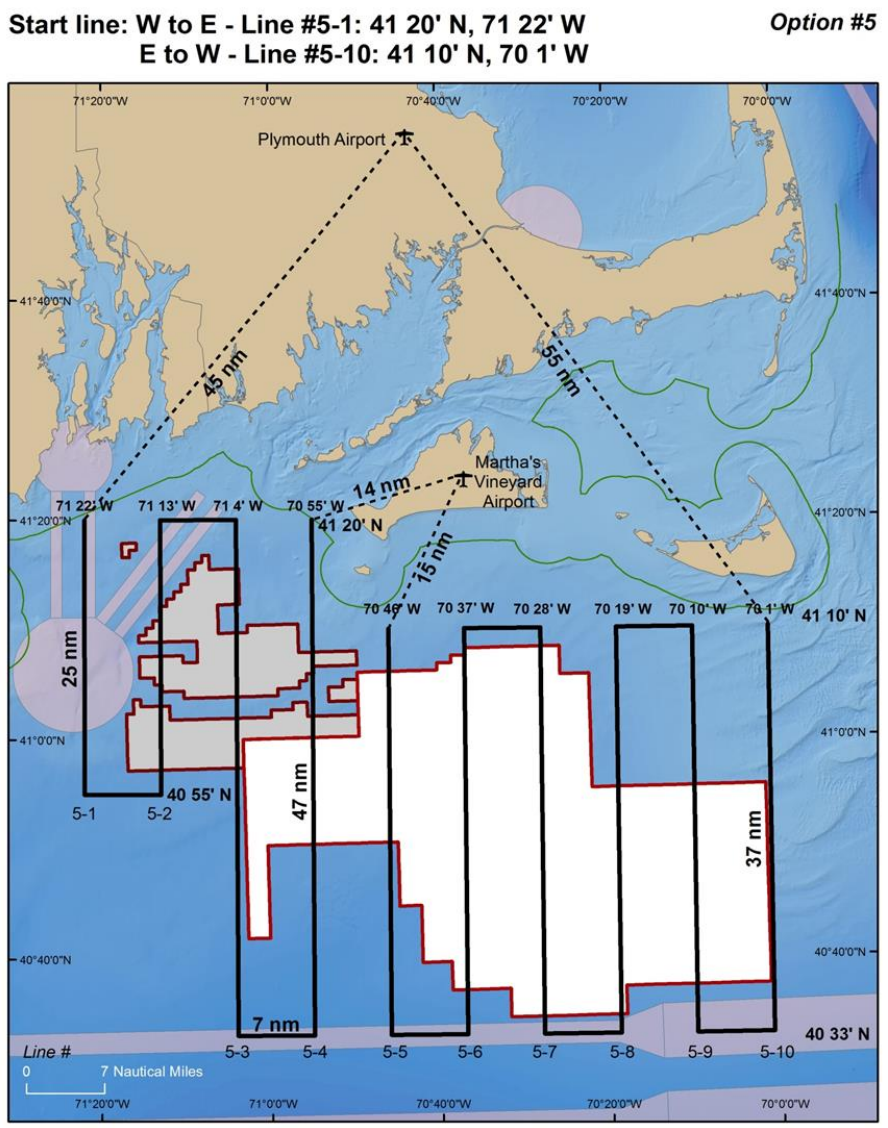
www.remote.normandeau.com/public_data.php





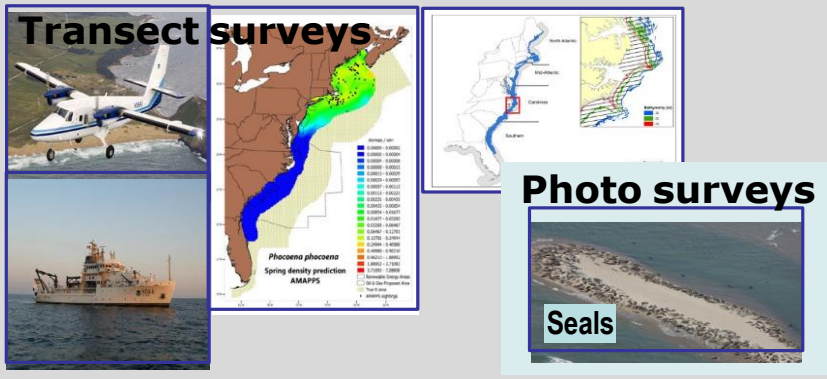
Field Studies of Whales, Dolphins, & Sea Turtles for Offshore Alternative Energy Planning in Massachusetts

- New England Aquarium, Cornell Univ., Provincetown Center for Coastal Studies, MA Clean Energy Center, BOEM
- All marine mammals, sea turtles, sharks
- Aerial surveys using observers and cameras, supplemented w/MARU's
- Oct 2011 – June 2015
- Sightings data, density and abundance estimates, SPUE, NARW demographics
- Data available now. Surveys re-started this month with a focus on right whale occurrence in the area

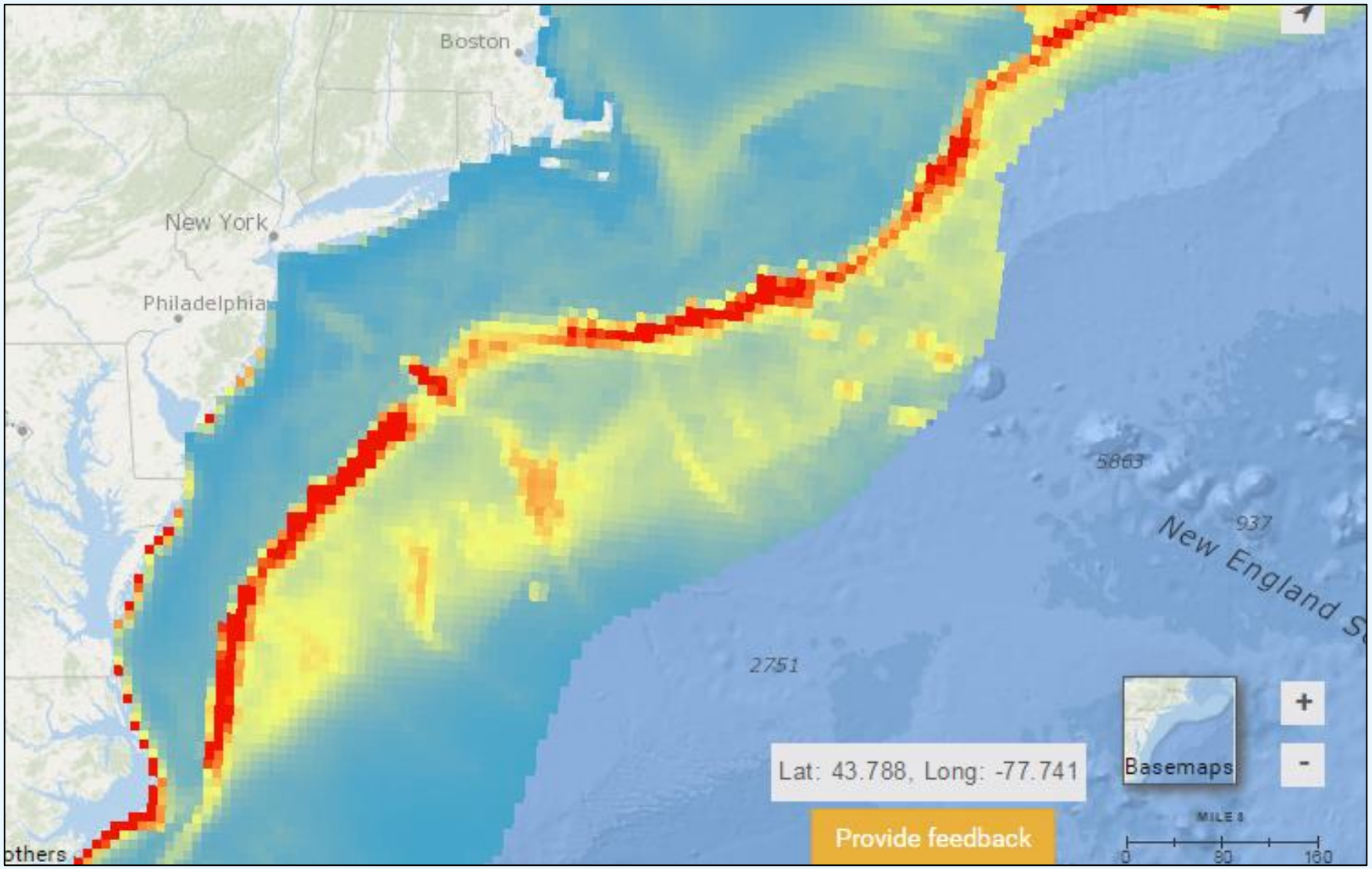


Atlantic Marine Assessment Program for Protected Species (AMAPPS)

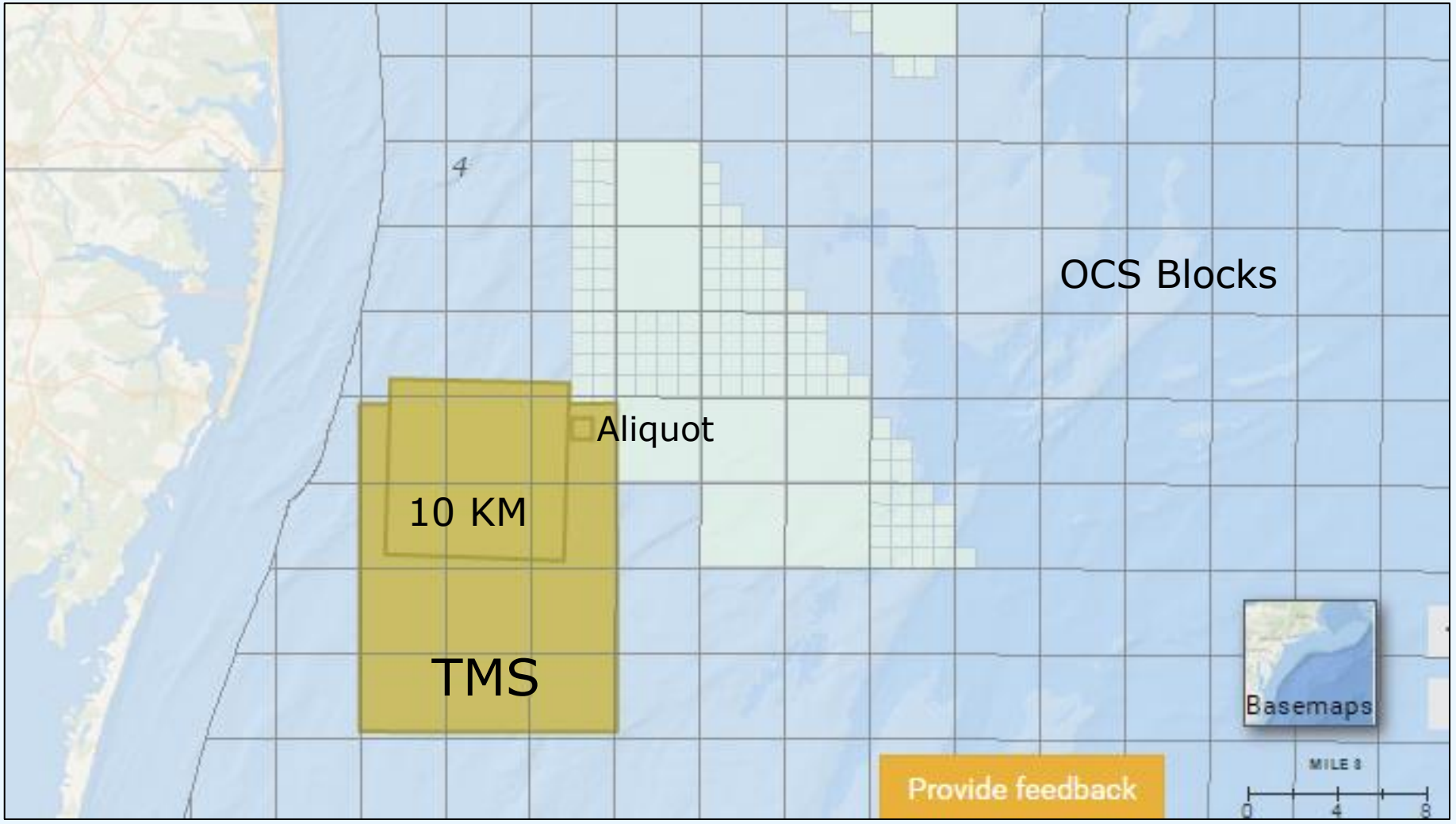
- NMFS, USFWS, BOEM, Navy + other organizations
- Cetaceans, sea turtles, seabirds, pinnipeds, other trophic levels
- Line and strip transects; towed & bottom mounted acoustic arrays; individual animal tags
- 2010-now
- Abundance, density maps, relative density, habitat relationships
- Seasonal abundance & density maps expected Summer 2017. Transect data in OBIS and Seabird Compendium. More to come!



Analysis Unit Scale Options, Choices, Limitations



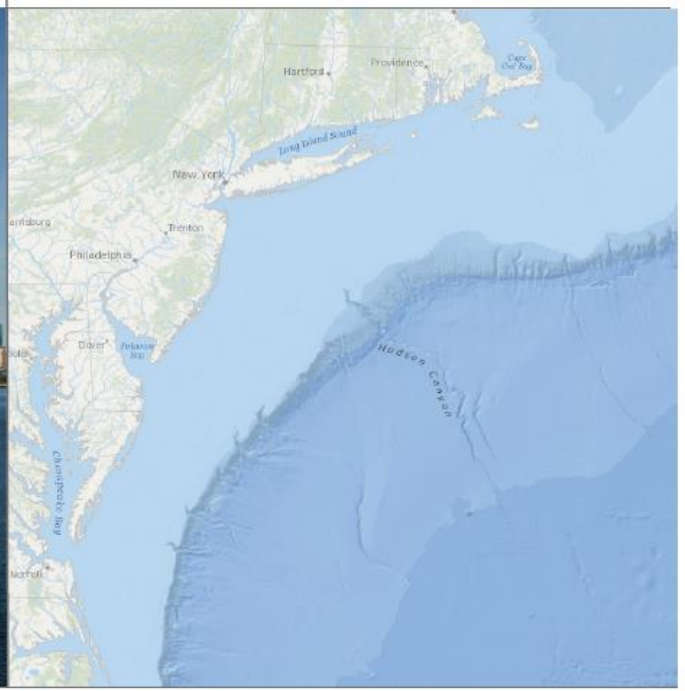
Analysis Unit Scale Options, Choices, Limitations



MARCO

Mid-Atlantic Ocean Data Portal

RESOURCES FOR
REGIONAL OCEAN PLANNING



Tour the portal at **portal.midatlanticocean.org**

Monmouth University — Where Leaders Look Forward
Rutgers — Edward J. Bloustein School of Planning and Public Policy
CRSSA
The Nature Conservancy — Protecting nature. Preserving life.
University of Delaware
CMP
ecotrust


Artie Raslich © 2013

Key Questions / Frontiers

- When to use which products, e.g. density estimates, relative abundance, local vs. coast wide scales? More discussion & guidance needed.
- Citizen Science / Ships of Opportunity-how to use & assimilate – e.g. Gotham Whale & CRESLI data
- Climate mediated range shifts?
- How do we move from abundance/density maps to identify or infer ecologically based products – e.g. migratory corridors, feeding grounds