Occurrence and distribution of large whales in the New York Bight: implications for marine spatial planning

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New York Bight whales

- **Blue whale**
- **Fin whale**
- **Right whale**
- **Humpback whale**

**Locations:**
- **Cape Cod & Massachusetts Bays:** Winter/Spring
- **Lower Bay of Fundy:** Summer/Fall
- **Great South Channel:** Spring/Summer
- **Southwestern Scotian Shelf:** Summer/Fall
- **Calving Grounds:** Fall/Winter
Potentially impacting anthropogenic activities
Humpback and Fin whale sightings:

• Whale watching off New York and Montauk (1981-2014)
• OBIS-USA data portal (NOAA-NEFSC & CETAP surveys)
Spatial modeling

- Sightings taken as presence locations
- Random locations taken as pseudo-absences
- Environmental covariate values extracted at presence/pseudo-absence locations
  - Static: Depth, distance from coast
  - Dynamic: daily temperature, weekly Chl \( a \) average
- Generalized Boosted (binomial) Regression Trees Modeling
- Predictions made weekly and averaged
Potentially impacting anthropogenic activities: spatial distribution

Shipping

Whale watching

Kernel-density from WW sightings (all sps.)

Offshore wind

BOEM current and planned leases
Spatially explicit cumulative impact index

- High impact areas: New York harbor entrance, south of Block island

- Ongoing analysis include other minke whales, fisheries data and weighting of impacts