OCEAN PLANNING IN THE NORTHEAST

# Marine Mammal and Sea Turtle Work Group Meeting #1
# Thursday, August 7; 2:00pm – 3:30pm

## Participants

Work Group: Brooke Wikgren (New England Aquarium), Peter Corkeron (NOAA NEFSC), Bryan Wallace (Stratus Consulting), Tom French (MA Fish & Wildlife), Giancarlo Cicchetti (EPA), Jay Odell (TNC), Elizabeth James-Perry (Aquinnah Wampanoag Tribe), Dan Sampson (MA CZM), Daniel Martin (NOAA OCM), Betsy Nicholson (RPB Co-lead, NOAA), Grover Fugate (RPB Co-lead, RI CRMC)

Marine Life Data & Analysis Team (MDAT): Pat Halpin (Duke), Jesse Cleary (Duke), Jason Roberts (Duke)

NROC: Nick Napoli, Emily Shumchenia, Katie Lund

## Introductions, regional ocean planning background, the role of this work group

Nick began the meeting by providing the ocean planning background and context. The June 25th Natural Resource Workshop was an opportunity to discuss the cross-cutting issues related to creating new marine life spatial data products with a broad audience (see table distributed with meeting materials). The goal of this expert work group is to inform MDAT's development of these new distribution and abundance products over the next year and to help identify longer-term priorities for marine life spatial data products. The intent is to have this group meeting every 4-6 weeks through the end of the year, with an eye towards preparing for public meetings in October and the November RPB meeting.

## "Marine mammal and sea turtle density models" – presentation by Jason Roberts – link to powerpoint

Jason gave a presentation describing the modeling methods currently used by the MDAT, specifically Duke, team for creating density maps of marine mammals and sea turtles for the Atlantic Coast. Incorporating feedback from this call and from interactions with work group members and others unable to make the call, MDAT will develop an analysis plan for marine mammals and sea turtles in the Northeast and present it during the next Marine Mammals & Sea Turtles Work Group call. This includes identifying other line-transect survey data that could be incorporated into the existing model and identifying sources and products for other areas not well covered by the surveys required to run the model. The following are the topics covered and resulting discussions from this presentation.

## Additional data

The data currently in-hand by the MDAT team are derived from a number of sources (see table distributed with meeting materials) that are both publicly released and privately held. Observations from the North Atlantic Right Whale Consortium (NARWC) database and from the Provincetown Center for Coastal Studies (PCCS) database are important potential additions that would improve the overall number of observations for several regionally important species, as well as the ability of MDAT's existing models to better cover nearshore areas if they include line-transect surveys. There may be other opportunities for using non line-transect survey data to represent these and other important datasets as well.

- **MDAT and NROC will communicate with NARWC and PCCS curators regarding sharing data for this modeling effort**

- **Work group members are encouraged to review the MDAT data sources and send any additional data sources or any other comments about data sources to MDAT: northeast_marinelife_data@duke.edu**

## Spatial Resolution

The work group discussed the spatial and temporal resolution of the new spatial data products from a number of angles, with the primary theme being usability for planning/management. The current MDAT models have a 10 km grid size and can produce monthly map outputs; this is due to the resolution of the environmental covariates that the modeling framework requires. The work group expressed concern that the spatial resolution may be too coarse for regional decision making and/or assessing vulnerability and risk, and discussed options for increasing resolution of new spatial data products.

- **MDAT will assess their ability to produce fine-scale geostatistical interpolations (that do not rely on environmental covariates, such as those used in Massachusetts), in nearshore areas for species with high observations to supplement the existing modeling techniques**
- **MDAT Marine mammal/sea turtle subgroup to explore options to coordinate with other marine life component subgroups (Avian and Fish) on utilizing a single suite of environmental covariate datasets at the highest resolution available for all modeling efforts to maximize the potential for meaningful ecological interpretations of new spatial data products**

## Nested models

In a discussion related to spatial resolution, the work group discussed the possibility of using the current MDAT modeling framework in certain localized areas and for species with high numbers of observations from line transect surveys. The final product could then be a nested model where some nearshore areas (for example) have higher-resolution outputs seamlessly embedded within the coarser-resolution outputs in offshore areas. The work group also discussed the possibility of nesting other approaches, such as those by MA and RI using the North Atlantic Right Whale Consortium data, for nearshore areas with the MDAT predictive model in other areas.

- **MDAT to explore options for nesting higher resolution models within their existing framework and for nesting with other approaches in the region**

## Analysis of trends and accounting for climate change

The work group briefly discussed the importance of understanding changing ocean conditions on marine mammal and sea turtle distribution and abundance. The MDAT database for this modeling effort contains observations from 1991 – present, and a comprehensive assessment of trends in these data has not been done. Jason discussed the difficulty of projecting future spatial distribution/abundance of species using MDAT's current modeling approach. Other options, such as mapping effort-corrected observations in different periods of years, could indicate temporal trends. The work group ran out of time to before finishing the discussion about climate change and trends – further consideration of this issue will be necessary.

## Next steps

MDAT and NROC will reach out to work group members who were not on the call to explore additional data holdings that may be available for use in the existing modeling framework, and to discuss development of products in addition to the abundance models. Scheduling for the next call in mid-September will go out shortly.