**A comparison of three approaches to estimate North Atlantic right whale regional abundance**

A wealth of data have been collected documenting when and where North Atlantic right whales have been observed. These data are indicators of how right whales are distributed through time and space but are biased by the uneven distribution of survey effort and variation in right whale behavior. Taken alone these raw data may provide a misleading picture of right whale distribution and demographics and therefore misinform management actions. Statistical models, such as distance sampling, mark-recapture, and spatial capture-recapture, can account for such biases while estimating abundance, spatial patterns of density, and demographic rates. Each type of model has strengths and weaknesses and produces estimates that may be appropriate for informing some management plans and actions and not others. For instance, distance sampling can estimate spatial patterns of density, which are well-suited to be used in ship strike and entanglement risk analyses. However, distance sampling has difficulty estimating demographic rates such as survival and fecundity because it does not use photo-ID data that tracks individuals through time. Conversely, mark-recapture uses photo-ID data to robustly estimate demographic rates and regional or total population abundance, making it a good approach to track population trends over time. However, mark-recapture does not use the fine scale location data associated with individuals’ sightings and therefore cannot estimate spatial patterns of abundance. Spatial capture-recapture combines the important aspects of distance sampling and mark-recapture by integrating photo-ID and sighting location data to estimate demographic rates, individual movement, abundance, and spatial patterns of density. We will present an example spatial capture-recapture analysis of right whale aerial survey data in the Southeastern US. Additionally, we will discuss the data required for these three models, the estimates that they produce and their utility for informing management actions.