**Predicting Endangered North Atlantic Right Whales Using Prey Fields**

Predictions of North Atlantic right whale distributions form an increasingly important tool used in policy and management decisions for this endangered species. Incorporating plausible prey fields into right whale models has the potential to improve predicted whale distributions, and by implication the decisions based on them. We statistically modeled distributions of *Calanus finmarchicus*, *Centropages typicus*, and *Pseudocalanus* spp. with the goal of incorporating these prey fields into a right whale density surface model that is part of the National Oceanic and Atmospheric Administration’s (NOAA’s) North Atlantic right whale decision support tool. We used a Random Forest model with a subset of the environmental covariates used in the density surface model, combined with copepod data from NOAA’s Ecosystem Monitoring Program (EcoMon) survey, to create prey fields for these three species. We then incorporated these prey fields into the right whale density surface model and evaluated whether they improve right whale predictions. We investigated the effect of a range of covariate configurations on model skill. Results of the experiment indicate that prey fields improve predictions, but have variable contributions throughout the year.