

Kate Swails  
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April 26<sup>th</sup>, 2012

Dear Kate,

Thanks for sharing the results of the separated co-occurrence model, and for the opportunity to comment on the final results. We are writing to alert you to a serious concern with the IEC model runs as they have been presented. As we reported at the January 2012 TRT meeting, over the last year, with funding from the Northeast Sea Grant College Consortium and matching funds from the Maine Lobstermen's Association, Woods Hole Oceanographic Institution, Keene State College, and the New England Aquarium, a group of us have been engaged in developing an alternative entanglement risk-assessment model for whales in the Gulf of Maine.

This alternative model uses the same underlying fishing, whale sightings, and survey effort data as the IEC model, but treats it differently. Instead of using co-occurrence as a measure of risk, we use the SPUE and fishing data to analyze the probability of encounters between whales and vertical lines (and ground lines, although it doesn't apply here), and calculate encounter risk levels (the expected number of whale-gear encounters) for the Maine lobster zones in Area 1 of the Gulf of Maine. We also apply a new method for including non-effort-corrected whale occurrence data into the model where sightings or satellite tag data exist, and add a fine scale fishing gear configuration layer. To date, we have only modeled the right whale data, although we plan to model humpback whale data as well. This work was motivated by our mutual interest in characterizing entanglement risk as precisely as possible so as to develop management measures that produce significant risk reduction and to address known sources of statistical uncertainty in the co-occurrence model. It has been our goal to make sure that we get it right, both for the fishermen and the whales.

Because the underlying data are the same, we expected a high level of concurrence between the IEC co-occurrence model and our model. Instead, we have found a wide divergence in results. For example, our analysis of the NMFS Northeast proposal for Maine suggests that risk of whale-fishing line encounters in Maine non-exempt waters would only be reduced by 9%, not the 43% shown for right whales by the IEC analysis presented in January. We think there may be several possible reasons for this difference, including a mismatch in spatial or temporal analytical timeframes, averaging errors for fishing effort over large areas in the IEC model, the swamping of offshore co-occurrence data by inshore vertical line counts, or something else.

In addition, some of the TRT proposals from states and NGOs showed little or no effect on the risk reduction results generated by the IEC co-occurrence model, despite the fact that these proposals address significant percentages of seasonal whale sightings and/or high risk fishing areas. These peculiarities lead us to question the adequacy of the co-occurrence model in managing for meaningful risk reduction.

In light of these concerns, we question the adequacy of the co-occurrence model to serve as the sole basis to guide the TRT and management regulations for the next 5 years and we strongly urge NMFS to delay the timeline driving the process forward. There are serious and legitimate scientific questions about the co-occurrence model and its potential conservation benefits. We believe there may be better approaches, and would like the opportunity to present the alternative encounter probability model for review to NMFS. At the very least, we believe that it is imperative that the full IEc model be reviewed with independent scientists outside of the TRT process before it is used as the definitive foundation for management actions. We need to determine why there are significant differences in the outcomes of the two models in order to make the most informed choices about reducing risk to whales without creating either undue hardship to fishermen, or the illusion of meaningful risk reduction.

Within the TRT, the goal of NMFS, fishermen, conservationists and scientists has been to reduce the injuries and mortalities to whales from fishing gear. It would be indefensible to develop a strategy that is not based upon the best available science. We believe that our alternative model presents an approach that will lead to greater reductions in risk than the co-occurrence model. Its flexibility and straight-forward approach allow for the rapid assessment of scenarios, including those with seasonal and spatially specific components, leading us to identify scenarios which could double the risk reduction likely to be achieved with the NMFS Northeast proposal in Maine waters. We believe that peer review of both the IEc model and the alternative encounter probability model is essential to the integrity and transparency of the TRT process. We welcome the opportunity to discuss this at your convenience.

Sincerely,

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