

Peer Review of Scientific Information Checklist

1. Title: Distribution patterns of wintering sea ducks in relation to the North Atlantic Oscillation and local environmental characteristics
2. Description: To characterize the environmental conditions that affect sea duck wintering distributions and geographic ranges, we analyzed data on five species (black scoters *Melanitta nigra Americana*, surf scoters *Melanitta perspicillata*, white-winged scoters *Melanitta fusca*, common eiders *Somateria mollissima*, and long-tailed ducks *Clangula hyemalis*) that were collected during the Atlantic Flyway Sea Duck Survey for ten years starting in the early 1990s. We modeled the count data for each species using a zero-inflated negative binomial model that included four local-scale habitat covariates: sea surface temperature (SST), mean bottom depth, maximum bottom slope, and a variable to indicate if the segment was in a bay or not; one broad-scale covariate: the North Atlantic Oscillation (NAO); and a temporal correlation component. Our results indicate that species distributions have strong latitudinal gradients and consistency in local habitat use. NAO was the only environmental covariate that had a significant (but variable) effect on the expected count for all five species suggesting that broad scale climatic conditions may be important to the distributions of wintering sea ducks. Our results provide critical information on species-habitat associations and shed light on the complicated relationship between NAO, SST, and sea duck abundance.
3. Estimated dissemination date of the final version of the document: November 2009
4. Kind of peer review that will be conducted: Scientific and policy review by USGS; individual letters from the reviewers selected by the editor of the scientific journal to which manuscript will be submitted.
5. Anticipated number of reviewers: 6 (2 scientific reviewers and a policy reviewer for USGS; 2 anonymous journal peer reviews and 1 review from editor)
6. Reviewer selection method: USGS peer reviewers will be selected by a research manager at Patuxent Wildlife Research Center; policy review will be conducted by the USGS Eastern Regional Office; other peer reviewers will be selected by the journal *Ecography*.
7. Primary disciplines or expertise needed in the review: Reviewers should have expertise in Bayesian hierarchical modeling, population biology, sea ducks and aerial waterfowl surveys, and/or migratory bird ecology.
8. Estimated start date of the peer review: November 2009
9. Opportunities for the public to comment on the work product to be peer reviewed: Public comment will not be sought, but the public may comment via letters to the editor of the journal or to the corresponding author.
10. Indicated whether the public, including scientific or professional organizations, will be asked to nominate potential peer reviewers: The public, including scientific and professional

organizations, will not be asked to nominate potential peer reviewers. The peer reviewers will be selected by Patuxent Wildlife Research Center and the editor of the *Ecography*.

11. Contact:

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