

Delaware Sea Grant Project:

An Economic Analysis of Shorebirds and Shorebirding on the Delaware Bay (R/CT-4)

Investigator:

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Project Abstract:

Hundreds of thousands of migratory birds visit the Delaware Bay on their journey from South America to Canada each year. Red knots, sanderlings, ruddy turnstones, semipalmated sandpipers, and other shorebirds stop to feed on horseshoe crab eggs in the shallow waters of the Bay and its tributaries. The Bay is a vital staging area for the survival of these unique birds. One of these species, the red knot, has been in decline for more than a decade and many scientists believe it may become extinct in the absence of improved management. Some of the other species are in decline but none to extent of the red knot.

I propose to design and estimate an economic model for valuing programs to protect the red knot and its companion species. I would use a stated preference contingent valuation methodology and, in turn, use the results to evaluate horseshoe crab harvest moratoria and other habitat protection programs in Delaware and New Jersey. This research would build on an earlier Sea Grant project focusing on revealed preference analysis and a DuPont 'Clear into the Future' fellowship held by a graduate student at the University of Delaware.

Two separate surveys would be conducted — one of the general populations of New Jersey and Delaware and another of members of birding societies in both states. Individuals would answer voting questions on hypothetical shorebird protection projects in which willingness to pay could be inferred. Values would be estimated for preventing endangerment as well as extinction. Different degrees of protection would be estimated as well — moving from extinction (or endangerment) to threatened, stabilized, and recovered. The theory follows a random utility theoretic model and the econometrics uses a conventional probabilistic framework of logit or probit.

In an earlier Sea Grant project I focused on the user population, birders visiting the Delaware Bay to view the migration. From that work I will be estimating use values for the resource. A survey of 75 respondents was pre-tested on-site in May 2007 during the migration. A full survey will be conducted in May 2008. I hope to value individual birding sites implicit in household choices. In the course of this research it has become evident that the non-use or intrinsic value of the species is likely to play a significant role in their overall economic worth, thus initiating this second phase.