

Nomination Justification

Stephanie L. Koch

Science Leadership Award

Demonstration of Leadership Traits:

Ms. Koch is the lead wildlife biologist at the Eastern Massachusetts National Wildlife Refuge (NWR) Complex, and she oversees the biological and habitat management activities of the eight refuges that make up the refuge complex. This complex supports four federally listed threatened and endangered species, two candidate species for protection under the Endangered Species Act, and the largest common tern colony on the Atlantic seaboard. These refuges present a broad array of scientific and biological challenges due to the diversity of habitat types ranging from salt marsh and tidal flats, oligotrophic wetlands, old field habitat and hardwood forest. Additionally, some of these refuges are located in primarily urban settings where the ability to manage habitats or conduct research can be affected by adjacent land use, public sentiment, or public use. Other refuges are only accessible by boat and are challenging to work on for logistical reasons, including the presence of unexploded ordnance on one refuge!

Ms. Koch has an outstanding record of objectively evaluating scientific information and making recommendations that result in scientifically based solutions to fish and wildlife conservation issues. She has wisely and effectively used partnerships to secure funding sources and to develop a research program on the refuge complex which places our refuges in the regional landscape context. Over the past 10 years, Ms. Koch has overseen the transition of the refuge complex's biological programs from simple wildlife monitoring and use of "best professional judgment" to the design and implementation of several research programs that have enabled refuge managers to make management decisions based on sound science. She began this work at Monomoy NWR where she developed a research program designed to demonstrate that shorebirds ate horseshoe crabs eggs during spring migration. She then incorporated the results from this research into a compatibility determination that found the continued harvest of horseshoe crabs on the refuge to be an incompatible activity. This determination was upheld in a lawsuit against the Fish and Wildlife Service. This was a highly controversial issue as it was part of a much larger concern about the harvest of horseshoe crabs along the Atlantic Seaboard and the impact this harvest has on the survival of red knots during spring migration.

Ms. Koch's work at Monomoy NWR has evolved to include recent research she conducted as part of her doctoral program at the University of Rhode Island. Monomoy NWR was designated a Western Hemisphere Shorebird Reserve Network site because it provides shorebird habitat for tens of thousands of shorebirds representing 24 species during migration. However, no quantitative studies that assessed the abundance, spatial distribution, or habitat use of migratory shorebirds on the refuge had ever been conducted. Additionally, public use impacts had not been quantitatively investigated. With a controversial comprehensive conservation plan under development, it was essential to obtain sound, objective scientific data for use in developing management alternatives and compatibility determinations. Ms. Koch developed a cooperative agreement with the University of Rhode Island to (1) quantify spatial distribution, abundance, and phenology of shorebirds using the refuge during migration; (2) assess the spatial distribution, abundance, and phenology of potential anthropogenic disturbance, and (3) quantify shorebird responses to anthropogenic disturbances. She conducted the research herself and also hired several biologists to assist her, serving as a positive role model for scientific excellence. The research results have recently been published in scientific journals

such as *Waterbirds* and the *Wader Study Group Bulletin*. The results of this research are being used to update compatibility determinations for a number of public uses including additional restrictions or closures that may be necessary to protect staging shorebirds, and are being used by other agencies and organizations engaged in shorebird management.

Ms. Koch will be receiving a PhD from the University of Rhode Island in December 2010.

Support for Scientific Activities of Staff:

Ms. Koch has guided the scientific and biological program of the refuge complex for the last 10 years, demonstrating strong scientific leadership to all the refuge staff, interns, and the general public. Ms. Koch directly oversees the work of the refuge complex's permanent wildlife biologists, seasonal biological technicians, volunteers, and interns. She has helped young biologists develop strong research skills and learn how to contribute effectively to sound conservation management. There have been a number of new initiatives under her management that would not have happened without her leadership and without her direct supervision of refuge staff and coordination with refuge partners.

In the past 5 years, Ms. Koch has worked closely with the U.S. Geological Survey, Biological Resources Division, to study the impact of jogging on wildlife using impoundments at a highly visited trail at the Great Meadows NWR. She coordinated the participation of Great Meadows NWR in a regional impoundment research project which identified the importance of the refuge's impoundments to waterfowl and shorebirds during fall migration. She is currently actively involved in another regional research project - an Adaptive Management Consultancy which is focused on restoring shrubland habitats using native plants in the Northeast. She has worked very closely and successfully with partners from the Savannah River Ecology Laboratory and local herpetile experts to develop a program to repatriate Blanding's turtles on Assabet River NWR, and to help secure the population of these turtles at Oxbow and Great Meadows NWRs. She is overseeing the work of refuge staff on identifying the distribution of New England Cottontail on our Cape and Island refuges and on adjacent State, tribal, and private conservation partner lands. She will be directly overseeing a research project on Nomans Land Island NWR that is assessing the impacts of a possible introduction of New England Cottontail on the refuge and its benefit for the species.

Ms. Koch received two prestigious National Science Foundation fellowships to conduct her research and obtained funding through the National Fish and Wildlife Foundation for shorebird work at Monomoy NWR. She established shorebird conservation partnerships with the Manomet Center for Conservation Science, a leader in shorebird research, and with Conserve Wildlife, a private foundation with a strong emphasis on red knot conservation, and Massachusetts Audubon Society's Coastal Waterbirds Program. Shorebird protection and wildlife management in Massachusetts is greatly enhanced as a result of Ms. Koch's scientific leadership at the Eastern Massachusetts NWR Complex.