

Compatibility Determination

Use: Scientific Research

Refuge Name: Great Meadows National Wildlife Refuges

Establishing Authority: Great Meadows National Wildlife Refuge (NWR) was established May 3, 1944 under the authority of the Migratory Bird Conservation Act (16 U.S.C. § 715d) and Refuge Recreation Act (16 U.S.C. § 460k-1).

Refuge Purposes:

- "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. § 715d),
- "... suitable for -- incidental fish and wildlife-oriented recreational development," (16 U.S.C. § 460k-1),
- "the protection of natural resources," (16 U.S.C. § 460k-1),
- "and the conservation of threatened or endangered species..." (16 U.S.C. § 460k-1)

National Wildlife Refuge System Mission: To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use:

(a) What is the use? Is the use a priority public use?

The use is research conducted by non-Service personnel. The purposes of research conducted on the refuge are to further the understanding of the natural resources and to improve the management of such resources on the refuge or within the National Wildlife Refuge System (Refuge System). Priority will be given to research which is applicable to wildlife, habitat, or public use management on and near the refuge. Research conducted by non-Service personnel is not a priority public use of the Refuge System.

(b) Where would the use be conducted?

The location of the research will vary depending on the individual research project that is being conducted. The entire refuge may be made available for specific scientific research projects. However, an individual research project is usually limited to a particular habitat type, plant or wildlife species. On occasion research projects may encompass an assemblage of habitat types, plants or wildlife. The research location will be limited to only those areas of the refuge that are necessary to conduct any specific, approved research project.

(c) When would the use be conducted?

The timing of the research will depend on the individual research project that is being conducted. Scientific research may be allowed to occur on the refuge throughout the

year. An individual research project could be short-term in design, requiring one or two visits over the course of a few days. Other research projects could be multiple-year studies that require daily visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project. If a research project occurs during a refuge hunting season, special precautions or limitations may be required to ensure the safety of researchers or staff.

(d) How would the use be conducted?

The methods of a research project will depend on the individual project that is being conducted. The methods of each research project will be evaluated before it will be allowed to occur on the refuge. No research project will be allowed to occur if it does not have a study plan approved by the refuge manager, or if the refuge manager determines the project may adversely affect wildlife, wildlife habitat, on-going or planned refuge management activities, previously approved research programs, approved priority public uses, or public health and safety.

(e) Why is this use being proposed?

Research by non-Service personnel is conducted by colleges, universities, Federal, State, and local agencies, non-governmental organizations, and qualified members of the general public. The purposes of research conducted on the refuge are to further the understanding of the natural resources and to improve the management of such resources on the refuge or within the National Wildlife Refuge System. Priority will be given to research which is applicable to wildlife, habitat, or public use management on and near the refuge.

Most research projects on the refuges comprising the Eastern Massachusetts NWR Complex examine management of avian resources, various public uses, and rare, threatened or endangered species. Currently, research by non-Refuge staff is concentrated on 5 of the Refuges in Eastern Massachusetts NWR Complex: Great Meadows, Assabet River, Oxbow, Monomoy, and Massasoit. Much of the research is focused on management of migratory birds, or resident herptiles and mammals, but other more specific research projects have also been implemented. In addition, much of the research conducted at the Refuges is part of larger, landscape based projects. At Great Meadows NWR, Special Use Permits have been issued for research which has included: investigating deer populations and movements, particularly in the winter months; investigating Blanding's turtle populations, movements, and habitat occupancy during the non-nesting season; mapping the spread of West Nile Virus; and evaluating mercury contamination in the Sudbury and Concord Rivers. At Assabet River and Oxbow NWRs, research activities have included establishing presence, documenting habitat use, and monitoring impacts to productivity of Blanding's Turtles, Spotted Turtles, Box Turtles, and Wood Turtles. At Monomoy NWR, research has covered the breadth of biological resources including: neurological studies involving horseshoe crabs; movement patterns and use of the Refuge by grey and harbor seals; and tern phenology, behavior, and productivity on Monomoy (a control site for oil spill studies occurring in Buzzards Bay). At Massasoit NWR, research has focused on the natural history of the federally listed Northern red-bellied cooter. Although no Special Use Permits have been issued to date

for biological research on Nomans Land Island, Mashpee, and Nantucket NWRs, it is likely that research will occur on these sites in the future.

The Service will encourage and support research and management studies on refuge lands that improve and strengthen natural resource management decisions. The refuge manager will encourage and seek research relative to approved refuge objectives that clearly improves land management and promotes adaptive management. Information that enables better management of the Nation's biological resources and is generally considered important to agencies of the Department of Interior, including the U.S. Fish and Wildlife Service; the Refuge System; and State Fish and Game Agencies, and that addresses important management issues or demonstrate techniques for management of species and/or habitats will be the priority.

The refuge may also consider research for other purposes which may not be directly related to refuge-specific objectives, but would contribute to the broader enhancement, protection, use, preservation and management of populations of fish, wildlife and plants, and their natural diversity within the region or flyway. These proposals must comply with the Service's compatibility policy.

The refuge may develop a list of research needs that will be provided to prospective researchers or organizations upon request. Refuge support of research directly related to refuge objectives may take the form of funding, in-kind services such as housing or use of other facilities, direct staff assistance with the project in the form of data collection, provision of historical records, conducting of management treatments, or other assistance as appropriate.

Availability of Resources: The bulk of the cost for research is incurred in staff time to review research proposals, coordinate with researchers, write Special Use Permits, and review the research results. In some cases, a research project may only require one day of staff time to write a Special Use Permit. In other cases, a research project may require weeks of staff time. Currently, a senior refuge biologist spends an average of seven weeks a year working full time on research projects conducted by outside researchers. At an hourly wage of approximately \$30 (for a GS-12), this adds up to about \$8,500 annually for resources spent on outside research.

Anticipated Impacts of the Use: Disturbance to wildlife and vegetation by researchers could occur through observation, a variety of wildlife capture techniques, banding, and accessing the study area by foot or vehicle. It is possible that direct or indirect mortality could result as a by-product of research activities. Mist-netting or other wildlife capture techniques, for example, can cause mortality directly through the capture method or in-trap predation, and indirectly through capture injury or stress caused to the organism. Overall, however, allowing well designed and properly reviewed research to be conducted by non-Service personnel is likely to have very little impact on refuge wildlife populations. If the research project is conducted with professionalism and integrity, potential adverse impacts are likely to be outweighed by the knowledge gained about an entire species, habitat or public use.

Public Review and Comment: This compatibility determination has been made available for public review by posting on the refuge bulletin board for a period of thirty days, including information about the release of the compatibility determination in a planning update that was sent to all of the individuals on the comprehensive conservation plan mailing list, and posted on the refuge website.

Determination (check one below):

Use is Not Compatible

Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: All researchers will be required to submit a detailed research proposal following Service Policy (FWS Refuge Manual Chapter 4 Section 6, as may be amended). The refuge must be given at least 45 days to review proposals before initiation of research. If collection of wildlife is involved, the refuge must be given 60 days to review the proposal. Proposals will be prioritized and approved based on need, benefit, compatibility, and funding required.

Special Use Permits (SUP) will be issued for all research conducted by non-Service personnel. The SUP will list the conditions that the refuge manager determines to be necessary to ensure compatibility. The Special Use Permits will also identify a schedule for progress reports and the submittal of a final report or scientific paper.

Regional refuge biologists, other Service Divisions, State agencies or non-governmental organizations and biologists may be asked to provide additional review and comment on any research proposal.

All researchers will be required to obtain appropriate State and Federal permits.

All research related Special Use Permits will contain a statement regarding the Service's policy regarding disposition of biotic specimen. The current Service policy language in this regard (USFWS, 1999) is, *"You may use specimens collected under this permit, any components of any specimens (including natural organisms, enzymes, genetic material or seeds), and research results derived from collected specimens for scientific or educational purposes only, and not for commercial purposes unless you have entered into a Cooperative Research and Development Agreement (CRADA) with us. We prohibit the sale of collected research specimens or other transfers to third parties. Breach of any of the terms of this permit will be grounds for revocation of this permit and denial of future permits. Furthermore, if you sell or otherwise transfer collected specimens, any components thereof, or any products or any research results developed from such specimens or their components without a CRADA, you will pay us a royalty rate of 20 percent of gross revenue from such sales. In addition to such royalty, we may seek other damages and injunctive relief against you."*

Any research project may be terminated at any time for non-compliance with the SUP conditions, or modified, redesigned, relocated or terminated, upon a determination by the refuge manager that the project is causing unanticipated adverse impacts to wildlife, wildlife habitat, approved priority public uses, or other refuge management activities.

Justification: The Service encourages approved research to further understanding of refuge natural resources. Research by non- Service personnel adds greatly to the information base for refuge managers to make proper decisions. Research conducted by non-Service personnel will not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established.

Signature - Refuge Manager: _____
(Signature and Date)

Concurrence - Regional Chief: _____
(Signature and Date)

Mandatory 10-year Re-evaluation Date: _____

Literature Cited:

U.S. Fish and Wildlife Service. 1985. Refuge Manual. Washington, D.C.: U.S. Government Printing Office.

U.S. Fish and Wildlife Service. 1999. Director's Order No. 109: Use of Specimens Collected on Fish and Wildlife Lands. March 30, 1999.