

Draft Compatibility Determination

Title

Compatibility Determination for Research, Scientific Collecting and Surveys by Third Parties at Fish Springs National Wildlife Refuge.

Refuge Use Category

Research and Surveys

Refuge Use Type(s)

Research, Scientific Collecting and Surveys

Refuge

Fish Springs National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Fish Springs National Wildlife Refuge (Refuge) was acquired under the Migratory Bird Conservation Act (MBCA) by the Migratory Bird Conservation Commission in 1957, and construction was completed in 1961. The stated purpose is "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. 715d).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is 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 (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

Yes

This compatibility determination (CD) reviews and replaces the October 7, 2004 CD for Research included in the Refuge's Comprehensive Conservation Plan (USFWS 2004).

What is the use?

The use is research and surveys (collectively known as research) conducted by non-U.S. Fish and Wildlife Service (Service) agents including: federal, state, or local agencies, federally recognized tribes, students, universities, non-governmental organizations, and qualified members of the public to fulfill one or more purposes of a national wildlife refuge (refuge) or the mission of the Refuge System (603 FW 2). Research that is conducted by Service-authorized agents is a refuge management activity, not a use, and is not subject to this CD (603 FW 2).

Research is a planned, organized, and systematic investigation of a scientific nature. A survey is a scientific inventory or monitoring activity. These activities are intended to advance our collective understanding of the natural and human environment.

Examples of research that may be allowed include: presence/absence surveys (e.g., point count surveys for birds, acoustic bat monitoring, radio telemetry); capture of organisms for identification, tagging or genetic sampling (e.g., mist-netting and/or banding of birds or bats, fish or amphibian tagging, electrofishing, small mammal trapping and tagging, pollinator sampling, or use of traps); studies of habitat use and life-history requirements (e.g., radiotelemetry tracking, use of cameras or recording devices); productivity estimates (e.g., non-destructive searches of nests, dens, or burrows); sampling of plant parts (e.g., removing leaves or seeds); biotic and abiotic variables monitoring (e.g., water quality sampling, soil sampling, seismic activity, weather observations); visitor use surveys, LiDAR or aerial imagery aided sampling (e.g. bathymetry verification, ground truthing light band models) and other research sampling protocols deemed rigorous and minimally invasive by the best available science.

It is anticipated that most requests for research activities will support the goals and objectives of the Refuge's Comprehensive Conservation Plan. The refuge or district manager may, however, also consider other research projects under this CD provided it has been found to be appropriate.

Is the use a priority public use?

No. Research is not a priority public use of the Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), and the Refuge System Improvement Act of 1997 (Public Law 105-57).

Where would the use be conducted?

Locations for research, collection and survey activities will depend on the particular action conducted and may occur in a variety of areas throughout the Refuge. Authorized research activities will be approved through the Special Use Permit (SUP) process. Research locations will be specifically identified in the research proposal and

SUP. Research areas or access routes may be restricted, as needed, to ensure the protection of species, habitats, or other sensitive resources, to avoid cumulative negative impacts from excessive research activity in one area, or to reduce conflicts with other compatible public uses.

When would the use be conducted?

The timing of research, collection and survey activities will depend on the individual project. The Refuge may be open to research, collecting and survey activities throughout the year, day or night, as officially permitted through the issuance of an SUP. The timing, duration, and number of visits by permittees may be restricted by the SUP at the discretion of the refuge manager or designee.

How would the use be conducted?

The individual requesting a SUP provides both the Research and Monitoring Special Use Permit application (FWS Form 3-1383-R) and a copy of the full study proposal. Research proposals are typically, but not always, developed by non-Service entities in support of refuge -specific needs or with refuge staff input into larger scale proposals that use Refuge System lands and waters as a base of study. Service employees from other programs may also request a SUP. Other than staff review time, these research proposals and resultant studies are the responsibility and expense of the sponsoring individual, school, group or agency.

All researchers will be required to obtain necessary State and Federal permits. Researchers must provide an Assurance of Animal Care form or an Institutional Animal approval form, if applicable. Projects that occur within the habitat of federally endangered or threatened species, or include the monitoring of those species, will be subject to a Section 7 review under the Endangered Species Act of 1973, as amended. Approval by the FWS Ecological Services Field Office is required before any research affecting federally listed species can be initiated. Research projects that are likely to adversely affect critical habitat or endangered and threatened species will not be permitted. Research involving ground disturbance requires historic preservation consultation with the Regional Historic Preservation Officer and/or State Historic Preservation Officer.

Projects will adhere to scientifically defensible protocols for data collection, where available and applicable. Research study site(s), collection and sampling location(s) and transect(s) may be temporarily marked by highly visible wooden or metal posts or other pre-approved methods if requested. Site markers may be detrimental to local organisms and will be approved on a case-by-case basis. Access to study sites can be by foot, bicycle, car, truck, UTV, ATV, or canoe/kayak as permitted. Vehicle use will be allowed on refuge roads, trails and parking lots that are normally open to the public or other locations as specified in the SUP.

Refuge staff will monitor compliance with SUP terms and conditions, and review progress reports from researchers. Multi-year research projects will be reviewed annually to ensure that they meet their intended purpose, that CD and SUP conditions are being followed, and that reporting and communication with refuge staff is occurring.

A refuge manager may decide to deny, modify, or halt a specific research project at any time.

Why is this use being proposed or reevaluated?

Quality research projects can improve our understanding of biological, physical and cultural resources, and advance many fields of study that may be relevant to refuge management and the mission of the National Wildlife Refuge System. Research can evaluate the effectiveness of strategies used to achieve objectives for species or habitats, help inform and improve species or habitat management decisions on the refuge, and may also benefit other properties and the scientific community in general.

Availability of Resources

Assessment of current resources and capacity

Monitoring and implementing research will require less than 6% of refuge staff time. Studies may be quite labor intensive and range from a few weeks to several months or years in duration from data collection and analysis to publishing of results, however, all of this will be accomplished with little or no direct involvement of refuge staff. Staff responsibilities for projects by non-Service entities will be primarily limited to the following: review of proposals, preparation of SUP(s) and other compliance documents (e.g. Section 7 of the Endangered Species Act of 1973, Section 106 of the National Historic Preservation Act, National Environmental Policy Act), monitoring of project implementation to ensure compatibility over time, and review of research results.

Additional administrative, logistical, and operational support may also be provided depending on each specific request. Facilities and staff are currently available to provide access by maintaining roads, parking lots, and secondary access roads, as well as to issue SUPs for research, collecting, and survey projects. Based on interest in previous years, staff resources are deemed adequate to manage this use at a level of four research SUPs issued per calendar year. We project that administering research SUPs will require two weeks of intermittent staff time per refuge.

- Special equipment, facilities, or improvements necessary to support the use: funded through regular management activities; no additional funding is needed.
- Maintenance costs: funded through regular management activities; no additional funding is needed.

- Monitoring costs: Volunteers and staff monitor usage of the refuge system lands through current funding capacity; no additional funding is needed.
- Offsetting revenues: none

Impacts of changes to resources and capacity

The availability of resources is subject to change and the level of use provided may vary based on current staffing, partner support, funding, or infrastructure conditions. Costs may increase over time, in relation to changes in the costs for equipment, maintaining facilities, etc. A substantial increase to the number of requests may also create the need for additional resources to administer the use. The Refuge Manager in conjunction with the Project Leader will use sound professional judgment in evaluating whether the refuge or its partners can develop, operate, and maintain the use in a compatible manner.

If resource conditions shift such that the refuge can no longer sustain the use in a compatible manner, the Project Leader may modify or suspend the use pursuant to 50 CFR 25.21 (or 50 CFR 36.42 for Alaska). The public will be notified of any changes to refuge uses, including temporary modification or suspension, re-evaluation of compatibility and/or discontinuing of refuge uses.

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

The effects and impacts of the proposed use to Refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use. This CD includes written analyses of the environmental consequences on a resource only when the impacts on that resource could materially interfere or detract from the purpose for which a refuge was established and the mission of the Refuge System. Air quality, sound and noise, soil, topography, geology and soils, hydrology, cultural resources, greenhouse gas emissions, climate change, and threatened and endangered species will not be more than negligibly impacted by the action and have been dismissed from further analysis.

This CD only covers research with low or no-adverse impacts, which includes projects that have minimal potential to adversely affect populations of plants, wildlife, or their habitats, or ecosystems. Any adverse impacts from these research activities would be expected to affect only individual organisms or resources, at most; to rarely or never result in accidental mortality of individuals; and to not have detectable effects at the population level. Additionally, any adverse impacts to habitat would be short-term, at most.

Short-term impacts

Research activities may directly or indirectly affect wildlife, plants, soil, and water as researchers access their study sites or conduct project activities. These impacts could be more pronounced if researchers are granted access to sensitive areas, so refuge staff will give special attention to any requests for research in such an area. Overall, with CD stipulations and permit requirements, all impacts are expected to be minor, short-term, and project- or site-specific.

Disturbance to wildlife may temporarily result in reduced use of preferred habitat, unusual behavior and stress including reduced singing behavior or increased time being alert rather than foraging or resting, and reduced productivity including disruption of nesting or breeding activities like nest attendance (Carney and Sydeman, 1999; Cline et al., 2007; Gaynor et al., 2018; Gill et al., 1996; Gutzwiller et al., 1994). Electrofishing may cause short-term physiological stress, temporary impairment, or occasional injury to individual fish; however, when conducted following established best practices, these effects are typically minimal and not expected to result in population-level impacts (Sydner 2003). Disturbance from humans on trails may result in temporary reductions in species richness and abundance (Bötsch et al. 2017, Riffell et al. 1996). Equipment or methodologies creating excessive light (Dominoni, 2015) noise above ambient sound levels will be avoided to prevent light-sensitive chronodisruption, altered bioacoustics between adults, interruption of nests and caring for young during breeding season (Toth et al., 2022).

Minor short-term disturbance to plant populations, soil, or water is possible from walking, driving, boating, sample collection, or other research activities. Individual plants may be damaged and soil may be compacted, possibly reducing survival of plants or microbes (Pescott and Stewart, 2014; Zabinski and Gannon, 1997). Hydrology may also be temporarily affected. However, low or no-impact research projects will have minimal potential to adversely affect plants, soil, or water.

Introduction of invasive plants, animals, or pathogens is possible from research activities. For example, seeds or pathogens can be transported onto the refuge by boots, equipment, or people. To minimize the risk of introducing invasive species or pathogens, stipulations require proper cleaning and decontamination of people and their equipment, vehicles and clothing, use of personal protective equipment (PPE), proper disposal of potentially contaminated materials, and quarantine procedures, if necessary. Also, careful monitoring may detect any inadvertent transport of invasive species so they can be removed before establishment. There is also a risk of long-term impacts from introduced species or pathogens, which is discussed below.

Social science research activities, such as visitor surveys, can provide information that improves our understanding of conservation practice (Bennett et al. 2016) and may be especially relevant for certain management issues, such as human disturbance of wildlife. Such research may impact visitors, wildlife, and habitat through disturbance or interruption of visitor activities, but these impacts would be temporary and localized. Refuge staff would ensure that any surveys of the public or staff follow the requirements of the Paperwork Reduction Act of 1995.

Potential short-term impacts from research activities are most likely to be localized, temporary, and small because refuge staff would work with researchers to minimize or avoid impacts, and because only low- or no-impact research projects would be allowed under this CD. If a study requires the installation of monitoring equipment, refuge staff will work with researchers to ensure disturbance is minimized. Minor disturbance or other impacts would be weighed against the potential benefit of the research in informing refuge wildlife and habitat management actions or species conservation. Monitoring by refuge staff would help ensure that any unexpected impacts are detected, and project activities can be adjusted, as needed. Where possible, refuge staff would encourage researchers to coordinate and share information to reduce sampling needed for multiple projects. Finally, all the potential impacts described above would be minimized through study design and methodological considerations, including adjusting location, timing, scope, number of permittees, study methods, sample size, or number of study sites.

Long-term impacts

The long-term impacts of research are expected to be positive because results would likely provide information that contributes to the understanding and conservation of the refuge's plants, wildlife, other biota, and their habitats. Any negative impacts would be weighed against the benefits of the information gained.

Nevertheless, long-term adverse impacts from research are possible. For example, though it's a small risk, research activities could result in the introduction of novel pathogens with long-term impacts. This is especially true if researchers work in a remote refuge such as Fish Springs and research activities transfer pathogens that would be unlikely to spread through other means. Such pathogens could be difficult to contain once introduced, creating the potential for long-term impacts. Novel pathogens, such as ranavirus and chytrid fungus, have been shown to cause mortality events and may contribute to population declines (Green et al., 2002; Johnson et al., 2008; Price et al., 2014). However, the risk of introduction would be low because the refuge would evaluate the potential for pathogen spread during proposal review, and stipulations would mandate appropriate decontamination procedures.

Techniques to capture wildlife for the purposes of marking, banding, or taking measurements or samples may cause injury or additional stress to the individuals

captured. For example, mist-netting and banding, which are common research methods, can cause stress, especially when birds are captured, banded, and weighed. In very rare cases, birds have been injured or killed during mist netting or killed by predators that reach the netted birds before researchers (Spotswood et al. 2012). To minimize the potential for stress or injuries, researchers must be properly trained (Fair et al. 2010, Spotswood et al. 2012) and sample sizes will be kept to a minimum.

Overall, allowing carefully-designed research conducted by non-Service personnel is expected to have a positive impact on refuge plant and wildlife populations and their habitats. We anticipate that research would, at most, have only negligible to minor impacts to plants, wildlife, habitats, visitors, and cultural resources because it would only be conducted after the refuge approves a detailed project proposal, and only low or no-impact research would be allowed. Also, Service staff would monitor this activity and it would be conducted in accordance with refuge regulations. Permits for multi-year research projects would be reviewed on an annual basis, providing staff the opportunity to identify unexpected adverse impacts and make modifications to address those impacts. In the event of persistent disturbance or other adverse impacts, the activity would be further restricted or discontinued.

Public Review and Comment

The draft CD will be available for public review and comment for 14 days from June 17 through July 1, 2026. A hard copy of this document will be posted at the Fish Springs National Wildlife Refuge headquarters at 8454 Auto Tour Route 010, Ibapah, UT 84034, and the Bear River National Wildlife Refuge headquarters at 2155 W Forest Street, Brigham City, UT 84302. Electronic copies will be made available on the refuge and district websites. Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final determination document.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. Research activities must not result in long-term, negative alterations to wildlife behavior (e.g., wildlife abandoning areas for long periods; significantly modifying their use of habitat; or abandoning nests, dens, or young) or negative impacts at the population level.
2. Research activities should have minimal soil disturbance, at most, and should not contaminate surface water, ground water, aquifer delivery mechanisms, wetlands or air.

3. Research activities should not adversely affect public safety.
4. Researchers should not collect (or lethally sample) animals or whole native plants.
5. Researchers should not alter, remove, or otherwise destroy cultural resources.
6. Researchers using mechanized equipment will avoid operating in or around breeding birds, mammals, or other noise sensitive species, or operating within the breeding window for those species.
7. Researchers will not have excessive nighttime lighting, or construct any perpetually operating, unattended light sources within the refuge.
8. Sampling efforts will not generate excessive noise, and researchers will not construct any perpetually operating, unattended noise sources above 60 decibels within the refuge
9. All necessary State and Federal permits, Section 7 consultations, or Section 106 consultations (as applicable) must be obtained before starting research on the refuge. An Archeological Resources Protection Act permit application must be reviewed by the Regional Historical Preservation Officer and signed by the Regional Refuge Chief prior to any cultural or archeological research occurring on the refuge.
10. If a proposal is approved, a Special Use Permit (SUP) will be issued. The SUP will contain this CD's stipulations and non-compatibility related project-specific terms and conditions. Permittees must possess and be able to present their SUP if requested by refuge officials or State or Federal law enforcement officers.
11. Researchers may not use any chemicals (e.g., pesticides) or hazardous materials without prior written consent of the refuge manager, who will approve the type of chemical, timing of use, and rate of application. All activities will be consistent with Service policy and an approved Pesticide Use Plan.
12. Researchers must clearly mark posts, equipment platforms, fencing material and other equipment left unattended. Such items, including flagging, must be removed as soon as practicable upon completion of the research, and sites must be restored to the refuge manager's satisfaction.
13. Researchers must take all reasonable precautions to ensure that invasive species and pathogens are not inadvertently transported or introduced to the refuge. This involves following current best practices for proper cleaning and decontamination of persons, equipment, vehicles and clothing, use of personal protective equipment (PPE), proper disposal of potentially contaminated materials, and quarantine procedures when necessary. Information may be found at <https://www.northeastparc.org/index.php>, <https://www.invasivespeciesinfo.gov/subject/watercraft-inspection->

and decontamination programs, <https://playcleango.org/take-action/>,
<https://www.cdc.gov/>.

14. All research staff handling wildlife must be properly trained to minimize the potential for impacts to wildlife prior to initiating the project. In addition, a review of the U.S. Department of Agriculture's Animal Welfare Information Center website must be documented by the researcher with identification of practices that will be followed to help further minimize stress, injury, and mortality of wildlife. The website is reached at:
<https://www.nal.usda.gov/awic/>.
15. Researchers will submit a final report to the refuge upon completion of their work. For long-term studies, interim progress reports may also be required. The SUP will identify a schedule for progress reports and the submission of a final report or scientific paper.

Justification

The stipulations outlined above would help ensure that research conducted by entities not operating as Service-authorized agents is compatible with the purposes of the Refuge. Research and surveys, as outlined above, would not conflict with federal law and policy to maintain the biological diversity, integrity, and environmental health of the national wildlife refuge. Based on available science and best professional judgement, the Service has determined that research within the Refuge; in conjunction with the stipulations provided, would not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of Fish Springs National Wildlife Refuge. Rather, compatible research and surveys would expand scientific knowledge for the benefit of the Refuge and the conservation community.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2036

Literature Cited/References

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