

Draft Compatibility Determination

Research

Refuge Use Category

Research and Surveys

Refuge Use Type(s)

Research

Refuge

Humboldt Bay National Wildlife Refuge

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

Humboldt Bay National Wildlife Refuge (NWR) was established under the authority of The Migratory Bird Conservation Act of 1929, The Migratory Bird Hunting and Conservation Stamp Act of 1934, the Fish and Wildlife Act of 1956, the Refuge Recreation Act of 1962, and The Endangered Species Act of 1973.

According to these authorities, Humboldt Bay NWR's purposes are:

- "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. §§ 715d (Migratory Bird Conservation Act)
- "... as Waterfowl Production Areas subject to... all of the provisions of such Act [Migratory Bird Conservation Act] ... except the inviolate sanctuary provisions ..." 16 U.S.C. 718(c) (Migratory Bird Hunting and Conservation Stamp Act)
- "... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. §§ 742f(a)(4) and "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. §§ 742f(b)(1) (Fish and Wildlife Act of 1956)
- "...suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species..." 16 U.S.C. §§ 460k-1 and "... the Secretary...may accept and use...real...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors..." 16 U.S.C. §§ 460k-2 (Refuge Recreation Act [16 U.S.C. §§ 460k-460k-4], as amended)

- “... to conserve (A) fish or wildlife which are listed as endangered species or threatened speciesor (B) plants ...” 16 U.S.C. §§ 1534 (Endangered Species Act of 1973)

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

What is the use?

For the purposes of this compatibility determination, research is considered to be a planned, organized, and systematic investigation of a scientific nature conducted by non-U.S. Fish and Wildlife Service (Service) personnel. There is much that can be learned from field research within the refuge. Baseline information in the biological, geophysical, hydrological and other fields is still in need of being collected. There are many opportunities for consultants, colleges and universities, and other agencies to obtain permission to conduct critical and noteworthy research on the refuge.

Is the use a priority public use?

No

Where would the use be conducted?

The location of the research will vary by project. Usually, a research project is limited to a particular habitat type, plant, or wildlife species. On occasion, research projects may encompass an assemblage of habitat types, plants or wildlife. Refuge management will limit the locations of research to those areas of the refuge necessary to conduct any specific, scientific research projects that require it.

When would the use be conducted?

The timing of the research will depend on the project. Refuge management may allow scientific research on the refuge throughout the year. A research project could be short-term in design, requiring one or two visits over the course of a few days. Others could be multi-year studies that require daily visits to the study site. The timing of

each research project will be limited to the minimum time required to complete it. If a research project overlaps a refuge hunting season, special precautions or limitations may be required to ensure the safety of researchers or staff.

How would the use be conducted?

The Refuge issues Special Use Permits (SUP) for approved research and monitoring projects. SUPs would only be issued for monitoring and investigation that contribute to the enhancement, protection, preservation, and management of native Refuge plant and wildlife populations and their habitats and involve no or negligible animal mortality, disturbance or habitat destruction, and no introduction of either exotic organisms or contaminants. Research applicants are required to submit a proposal that outlines the study's: (1) objectives; (2) justification; (3) methodology and schedule; (4) potential impacts on Refuge wildlife and habitat, including disturbance (short- and long-term), injury, or mortality (this includes a description of measures the researcher will take to reduce disturbance or impacts); (5) research personnel required; (6) costs to the Service, if any; and (7) progress reports and end products (e.g., reports, thesis, dissertations, publications). Research proposals are reviewed by refuge staff and conservation partners, as appropriate, for approval.

Evaluation criteria will include, but not be limited to, the following:

1. Research that will contribute to specific refuge management activities will be given higher priority over other research requests.
2. Research that will conflict with other ongoing research, monitoring, or management programs will not be granted.
3. Research projects that can be accomplished off-refuge are less likely to be approved.
4. Research that causes undue disturbance or is intrusive will likely not be granted. Level and type of disturbance will be carefully evaluated when considering a request.
5. The refuge requires the submission of annual or final reports and any/all publications associated with the work done on the refuge. All information, reports, data, collections or documented sightings and observations, that are obtained as a result of a permit are the property of the Service and can be accessed by the Service at any time from the permittee at no cost, unless specific written arrangements are made to the contrary.
6. If staffing or logistics make it impossible for the refuge to monitor researcher activity in a sensitive area, the research request may be denied, depending on the specific circumstances. The length of the project will be considered and agreed upon before approval. Projects will be reviewed annually.
7. If proposed research methods are evaluated and determined to have potential

adverse impacts on refuge wildlife or habitat, then the refuge would determine the utility and need of such research to conservation and management of refuge wildlife and habitat. If the need is demonstrated by the research permittee and accepted by the refuge, then measures to minimize potential impacts (e.g., reduce the numbers of researchers entering an area, restrict research in specified areas) would be developed and included as part of the study design and on the SUP. SUPs will contain specific terms and conditions that the researcher(s) must follow relative to activity, location, duration, seasonality, etc. to ensure continued compatibility.

8. All refuge rules and regulations must be followed unless otherwise accepted in writing by refuge management.
9. Extremely sensitive wildlife habitat areas will be avoided unless sufficient protection from research activities (i.e., disturbance, collection, capture and handling) is implemented to limit the area and/or wildlife potentially impacted by the proposed research, as approved by the refuge manager. Where appropriate, some areas may be temporarily/seasonally closed so that research would be permitted when impacts to wildlife and habitat are no longer a concern.
10. Research activities will be modified to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise.
11. Refuge staff will monitor researcher activities for potential impacts to the refuge resources and for compliance with conditions on the SUP. The refuge manager may determine that previously approved research and SUPs be terminated due to observed impacts. The refuge manager will also have the ability to cancel a SUP if the researcher is out of compliance with the conditions of the SUP.

Why is this use being proposed or reevaluated?

The National Wildlife Refuge System Administration Act directs the Service to "...ensure that the biological integrity, diversity, and environmental health of the System are maintained ..." and to "...monitor the status and trends of fish, wildlife, and plants in each refuge..." Monitoring and research are an integral part of the Refuge System's management process. Plans and actions based on research and monitoring provide an informed approach, which analyzes the effects of management actions on refuge resources. Research is an ongoing use of the Refuge; it was determined to be a compatible use in 2009 when we issued the Final Comprehensive Conservation Plan (USFWS 2009). In accordance with Service Policy 602 FW 2.11H, we are now re-evaluating this use.

Availability of Resources

Permit requests typically require a couple hours to process; however, others may take a few days, depending on the complexity of the request and whether pre-research surveys are required. Refuge operational funds are currently available through the Service's budget; nonetheless, researchers will be required to furnish their own materials and supplies. Supplies and staff time associated with cooperative studies involving the refuge and other agencies or universities should be covered by appropriate refuge/joint funds.

Anticipated Impacts of the Use

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

Use of the Refuge to conduct research will benefit refuge fish, wildlife, plant populations, and their habitats. Monitoring and research investigations are an important component of adaptive management. Research investigations would be used to evaluate habitat restoration projects and ecosystem health (CVJV 2009a., 2009b., 2009c., 2010; Gardali et al. 2006; Golet et al. 2003, 2008, 2013; RHJV 2004; USFWS 2009). Specific restoration and habitat management questions would be addressed in most research investigations to improve habitat and benefit wildlife populations. Monitoring would be standardized to help refuge managers identify less productive areas that may be suitable for habitat enhancement and restoration (Elzinga et al. 1998; Ralph et al. 1993).

Short-term impacts

Some negative direct and indirect effects would occur through disturbance, which is expected with some research activities, especially where researchers are entering sensitive habitat areas. Studies of researchers and research disturbance to wildlife are limited. Recreationist disturbance to wildlife has been studied more extensively. These studies of recreationists disturbance to wildlife serves as a suitable proxy for the kind of disturbance Refuge's can expect from researchers and research activities.

Researcher disturbance may include actions that could alter wildlife behavior and habitat potentially causing shifts in reproductive success, habitat abandonment, and increased energy demands (MacDonald 2015, Snetsinger and White 2009, Reed and Merenlender 2008, Gill et al. 2001, Miller et al. 1998, Gill et al. 1996, Schulz and Stock 1993, Knight and Cole 1991, Arrese 1987). Researcher disturbance may also include collecting soil, plant and animal samples, trapping, handling and euthanizing wildlife, going off designated trails, trampling of plants and animals, compacting soils (Kuss 1986, Roovers et al. 2004, Hammitt and Cole 1998), or the introduction of invasive organisms (e.g., non-native weeds and chytrid) (McNeely 2001). However, most of

these effects would be short-term because only the minimum of samples (e.g., water, soils, vegetative litter, plants, macroinvertebrates) required for identification and/or experimentation and statistical analysis would be permitted and captured; marked wildlife would be released.

Long-term impacts

The long-term effects would be eliminated or reduced because of the Service's evaluation of research proposals. The evaluation would work to ensure only proposals with adequate safeguards to avoid or minimize impacts would be accepted. Potential impacts associated with research activities would be minimized because sufficient restrictions would be included as part of the study design and researcher activities would be monitored by refuge staff. Refuge staff would ensure research projects contribute to the enhancement, protection, preservation, and management of native refuge wildlife populations and their habitats, thereby helping the refuge fulfill the purposes for which it was established, the mission of the National Wildlife Refuge System, and the need to maintain ecological integrity. Additionally, the SUP would include conditions to further ensure that impacts to wildlife and habitats are avoided and minimized.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for (insert number of days) days from (insert date) to (insert date). The public will be made aware of this opportunity to comment through the local newspaper and the Refuge's social media. A hard copy of this document will be posted in the Visitor Center at 1020 Ranch Rd, Loleta, CA 95551. It will be made available electronically on the refuge website. Concerns expressed during the public comment period will be addressed in the final Compatibility Determination.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. The criteria for evaluating a research proposal, as outlined in the How Would the Use be Conducted section above, will be used when determining whether a proposed study will be approved on the refuge.
2. If proposed research methods are evaluated and determined to have potential adverse impacts on refuge wildlife or habitat, the refuge will either deny the request or restrict research activities. These restrictions would be outlined in the SUP, if granted.

3. All refuge rules and regulations must be followed unless otherwise accepted in writing by refuge management.
4. Extremely sensitive wildlife habitat areas will be avoided unless sufficient protection from research activities (i.e., disturbance, collection, capture and handling) is implemented to limit the area and/or wildlife potentially impacted by the proposed research, as approved by the refuge manager. Where appropriate, some areas may be temporarily/seasonally closed so that research would be permitted when impacts to wildlife and habitat are no longer a concern.
5. Researchers will be required to obtain appropriate state and Federal permits and complete all environmental compliance requirements; for example, if the proposed research activity may affect listed species, the researcher is responsible for ensuring compliance with Section 10 of the Endangered Species Act.
6. Research activities will be modified to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise.
7. Refuge staff will monitor researcher activities for potential impacts to the refuge and for compliance with conditions on the SUP. The refuge manager may determine that previously approved research and SUPs be terminated due to observed impacts. The refuge manager will also have the ability to cancel a SUP if the researcher is out of compliance with the conditions of the SUP.

Justification

This program, as described, is determined to be compatible. Based upon impacts described in the Comprehensive Conservation Plan (USFWS 2009), it is determined that research within the refuge, as described herein, will not materially interfere with or detract from the purposes for which the refuge was established or the mission of the Refuge System. Refuge monitoring and research will directly benefit and support refuge goals, objectives and management plans and activities. Fish, wildlife, plants and their habitat will improve through the application of knowledge gained from monitoring and research. Biological integrity, diversity and environmental health would also benefit from scientific research conducted on natural resources at the refuge. The wildlife-dependent, priority public uses of Refuges (wildlife viewing and photography, environmental education and interpretation, and hunting) would also benefit as a result of increased biodiversity and wildlife and native plant populations from improved restoration and management plans and activities associated with monitoring and research investigations, which address specific restoration and management questions.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2037

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