

Draft Compatibility Determination

Title:

Tijuana Slough National Wildlife, Refuge Research and Surveys

Refuge:

Tijuana Slough National Wildlife Refuge

Refuge Use Category:

Research and Surveys

Refuge Use Type(s):

Research, Scientific Collecting, Surveys

Establishing and Acquisition Authorities and Refuge Purpose(s):

The Tijuana Slough National Wildlife Refuge (NWR or refuge) was established in 1980 under the authority of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543: 87 Statute 884), "... to conserve (A) fish or wildlife which are listed as endangered species or threatened species ... or (B) plants ..." 16 U.S.C. 1534 (Endangered Species Act of 1973).

NWRS Mission:

The mission of the 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 it a priority Public Use:

No.

What is the Use:

This use involves research, scientific collecting, and surveys of natural resources conducted by non-FWS personnel or authorized agents, but does not address research related to cultural resources. Natural resources related research, consisting of planned, organized, and systematic investigations and/or collecting, would be conducted when the proposed research would provide data and/or results that would contribute to the management, restoration, and/or protection of the refuge's natural resources, particularly listed and sensitive species and their habitats.

Where would the Use be conducted:

Research activities related to natural resources may occur anywhere within the boundaries of the Tijuana Slough NWR, however, the specific locations for conducting research activities will be determined based on the type of research proposed and the species and/or natural environments on which the research is to be conducted. Habitat types that could be affected include coastal wetlands (e.g., intertidal mudflats, and low, mid, and high coastal salt marsh), subtidal open water habitats, coastal sand dunes, open beach areas, riparian habitat in and around the Tijuana River, vernal pool habitat, and native and disturbed transitional and upland habitats, as described in the Tijuana Slough NWR Comprehensive Management Plan (CMP) (USFWS 2000).

When would the Use be conducted:

The Refuge Manager receives periodic requests to conduct natural resources research and surveys on the refuge. These proposals are reviewed and approved by the Refuge Manager when it is determined that a proposed research activity would provide benefits to refuge fish, wildlife, plant populations, and/or their habitats, or expand our understanding of natural ecosystem processes and/or functions occurring on the refuge. In so doing, the research would support refuge purposes and the mission of the National Wildlife Refuge System. Specific start and end dates for a particular research proposal would consider time of year (e.g., avoiding the nesting season or sensitive plant growing season) and any restrictions related to time of day necessary to minimize disturbance to habitat and species.

How would the Use be conducted:

Research would be conducted in accordance with the procedures, conditions, and case-specific stipulations included in an approved refuge Special Use Permit (SUP).

The SUP process requires applicants to submit the details of the research proposal for review and approval, including:

- objectives of the study;
- justification for the study;
- detailed study methodology and schedule;
- research personnel required and their qualifications and experience;
- status of necessary permits (i.e., scientific collecting permits, endangered species permit);
- costs to refuge and refuge staff time requested, if any; and
- anticipated end products (i.e., reports, publications).

Once a proposal is submitted, the Refuge Manager would review the details of the proposal and if acceptable, would prepare an SUP that includes a complete project description, conditions, and project-specific stipulations to be followed during implementation of the proposal. Stipulations would be developed after considering the following factors:

- will information gained from the research or survey provide insight into current or future refuge management;
- is there a potential for short- and/or long-term disturbance, injury, and/or mortality to any listed species and/or other refuge wildlife and/or habitats; and if so, are there measures that can be implemented to avoid or minimize such impacts;

- could the proposal conflict with other ongoing research, monitoring, or management programs; if so, are there measures that can be implemented to avoid such conflicts;
- could the research or survey be implemented elsewhere, or does the refuge provide the only option for carrying out the specified research; and
- is the proposal designed to minimize disturbance by taking into consideration location, timing, and scope of the study, as well as the number of participants, study methods, and number of study sites.

Proposals for open-ended research projects would not be considered. All approved SUPs will have an initiation and termination date associated with the research to be implemented per the SUP.

If a proposal is approved, a SUP will be prepared that specifies rules of conduct, all permitted procedures, case-specific stipulations, and data reporting requirements. Projects would be reviewed annually to assess whether they:

- continue to meet the specified criteria or require additional stipulations,
- continue to operate as originally proposed, and
- can provide data to confirm that the objectives of the study are being accomplished.

Why would the Use be conducted:

Research projects conducted by non-FWS personnel or authorized agents allow for independent examination of natural processes occurring on the refuge, as well as for focused research on issues important to refuge management. Studies investigating the conditions of listed and sensitive species populations, invasive species detection and management, habitat structural and functional analyses, biological community population management, changes in tidal inundation are example categories. Pertinent results from research investigations can inform management recommendations in step-down plans, management plan updates, and compatibility determinations and inform NEPA analyses relating to proposed habitat restoration work. They can also inform the development and updating of monitoring protocols in habitat and species management plans. Research has been deemed a compatible use on the Tijuana Slough NWR since at least 1994 and is discussed in detail in the refuge's CMP (USFWS 2000).

Resources:

Existing Management Capability - Adequate staffing and funding exist to manage some level of research on the Tijuana Slough NWR. As always, discretionary use of staff time would be weighed through a cost-benefit analysis. Direct costs to administer research activities are primarily in the form of staff time.

Maintenance - No costs associated with maintenance are anticipated.

Monitoring - The availability of staff to monitor research activities will be taken into consideration when determining which and how many research proposals to approve for implementation on the refuge.

Special Equipment - No need for special equipment is anticipated.

Facilities - The refuge has some capacity to provide facilities for storing research-related materials and/or equipment, but adequate availability of temporary storage needs would have to be taken into consideration when determining which and how many research proposals to approve.

Improvements to Support the Use - No need for improvements to support research is anticipated.

Offsetting Revenue - No offsetting revenue would be provided for or from research activities occurring on the refuge.

Impacts:

Human activity in natural habitats, including activities associated with research and surveys, can have adverse impacts on plants and wildlife, as described in the environmental assessment prepared for the CMP (USFWS 2000). Of particular concern are impacts to federally listed species. The refuge supports critical habitat for the endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) (72 FR 70648) and the threatened western snowy plover (*Charadrius nivosus nivosus*) (77 FR 36727). Research activities on the Tijuana Slough NWR have the potential to disrupt bird nesting or foraging activities for species such as the endangered California least tern (*Sternula antillarum browni*) (Carney and Sydeman 1999), light-footed Ridgway's rail (*Rallus obsoletus levipes*) (USFWS 2009), and least Bell's vireo (*Vireo bellii pusillus*) (Kus 2002, Franzreb 1989), as well as threatened western snowy plover (Powell 1996) and California gnatcatcher (*Poliophtila californica californica*) (Atwood et al. 1998). Trampling of vegetation can result in damage to or loss of listed plants, such as the federally endangered salt marsh bird's-beak (*Chloropyron maritimum maritimum*) (USFWS 1985). The natural drainage patterns or microtopography in sensitive habitat areas including vernal pools that support the endangered San Diego fairy shrimp can also be altered by foot traffic and other activities that cause soil disturbance.

All research proposals will also be evaluated to ensure that no adverse effects to listed species or their habitat would occur as a result of the study design and/or implementation, or to ensure that if adverse effects occur, they are minimal and are outweighed by the benefit to the management of the species. Researchers working directly with federally listed species would be required to comply with section 10(a)(1)(A) of the Endangered Species Act and possess the appropriate permit.

In addition to potential impacts to listed species, human disturbance associated with research and surveys of natural resources can also affect other plant and wildlife species, as well as overall habitat quality. Many shorebird and marshbird species are sensitive to disturbance (Huffman 1999, Trulio and Sokale 2008, Fernández-Juricic et al. 2009) and salt marsh habitats that support the California State endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) are prone to degradation by foot traffic. Riparian areas and native upland habitats support a broad range of wildlife species that can be affected by noise, trampling, and other forms of disturbance. Therefore, the degree and type of disturbance that could occur must be carefully weighed when evaluating a research request.

Through the SUP process, project-specific conditions, including but not limited to where, when, and how access can occur on the refuge during research activities, will be included in each SUP's case-specific stipulations. Some level of disturbance is expected with all research activities since most researchers will be entering areas that are normally closed to the public and may be collecting samples or handling wildlife. However, stipulations included in the SUP will be tailored to specific work sites and research

proposals. In addition to addressing potential impacts to biological resources, SUP stipulations will also address the need to minimize soil disturbance and avoid activities that could impact water quality, prohibit ground disturbing activities where sensitive cultural resources are known to be present, and require monitoring during ground disturbance in areas where cultural resources may be present. The SUP process will address the need to limit the potential for conflicts with approved wildlife dependent recreational uses occurring on the refuge.

Determination:

Determination Status:

Compatible

Mandatory Re-evaluation Date:

July 2030

Public Review and Comment:

This compatibility determination will be available for public review and comment for a period of 15 days. Comments received from the public will be considered prior to completing this compatibility determination.

Stipulations:

The protection of listed and sensitive species and the integrity of the refuge's habitats require that refuge staff frequently monitor research activities occurring on the refuge. To minimize the potential for adverse effects, the following measures shall be implemented:

- approval of research projects will occur at the discretion of the Refuge Manager, who will consider the compatibility of the proposed research with refuge purposes, proximity of research activities to sensitive habitats, potential for impacts to refuge resources, and availability of staff to monitor the project;
- all research will occur consistent with the detailed description in the research proposal as agreed to by the Refuge Manager; (e.g., research purpose, proposed actions, benefits to the refuge, number of participants, times of the year for field studies and/or data collection, procedures for conducting the research, areas to be accessed, measures taken to minimize impacts to refuge resources);
- all research will be conducted in accordance with approved SUP and project-specific stipulations;
- renewals of SUPs will be subject to Refuge Manager review and approval, and will consider the current status of the study, compliance with the conditions in the SUP, and the extent to which the project resulted in anticipated or unanticipated impacts);
- highly intrusive or manipulative research, as well as research methods that have the potential to adversely affect refuge resources will generally not be permitted (however, if research proposal can demonstrate that the research will provide significant benefits in terms of achieving refuge purposes despite potential impacts, the Refuge Manager has the discretion to permit such research provided potential impacts can be identified in advance of their occurrence, measures will be implemented to minimize potential impacts, and all conditions in the SUP can be met);

- refuge staff may accompany researchers at any time to assess study methods and the potential for impacts to refuge resources;
- the Refuge Manager can suspend or modify conditions or terminate research that is already permitted and in progress, should unacceptable impacts/issues be identified;
- researchers will be responsible for acquiring and/or renewing required State and Federal permits prior to beginning or continuing their project;
- research should adhere to current species protocols for data collection to ensure that data collected on the refuge is standardized for comparison across a species range;
- if the phenology of the phenomenon being studied allows, research will generally be conducted outside of the breeding season for refuge bird species;
- researchers will avoid any unnecessary trampling of vegetation and/or disturbance of wildlife and no take of plants, animals, or their parts will be permitted unless specified in the SUP; and
- all data, reports, and publications related to the approved research shall be provided to the Refuge Manager in a timely manner.

Justification:

Research and surveys are not refuge uses identified by the National Wildlife Refuge System Improvement Act of 1997 as wildlife-dependent recreational uses; however, conducting research and surveys on a refuge can provide benefits to refuge resources through facilitation of informed management decisions. The knowledge gained through research can also contribute to environmental educational and interpretation. In so doing, research and surveys would support refuge purposes and the mission of the National Wildlife Refuge System. Based on the refuge purposes for the Tijuana Slough NWR, priority would be given to research and surveys that contribute to the enhancement, protection, and management of listed species and their habitats. However, research that addresses migratory birds, fire management, invasive species, and other wildlife and habitat management issues would all benefit the refuge and support refuge purposes.

All research proposals will be fully vetted and project-specific conditions will be incorporated into the SUP to ensure that adequate protections are in place to protect refuge resources. Refuge staff will monitor each research project to ensure compliance with the SUP and to address and resolve unanticipated impacts that may arise during project implementation. Prior to approving a research or survey proposal for the refuge, the Refuge Manager will consider the current extent of research activities being implemented on the refuge. Factors to be considered include: the level of disturbance, if any, associated with current activities, any potential effects on refuge resources of expanding these activities, , the availability of refuge staff to monitor additional activities, and any potential conflicts that could occur with ongoing wildlife dependent recreational uses. Implementing these procedures will ensure that research and survey activities support efforts to achieve refuge goals and objectives.

Research and survey activities on the refuge also support the larger research and monitoring efforts of the Tijuana River National Estuarine Research Reserve (TRNERR), which includes the boundaries of the Tijuana Slough NWR. TRNERR participates in the National Estuarine Research Reserve System Wide Monitoring Program, which is designed to measure changes in estuarine water quality, along with habitat and land use, and to provide information on environmental trends. The Reserve's research and

monitoring programs are guided by national plans that identify goals, priorities, and implementation strategies for these programs, as well as research needs specific to the TRNERR. The results of the research conducted within the TRNERR, including on the refuge, not only helps ensure the long-term protection and management of the Tijuana Estuary, but also various other estuaries, including those protected in NWRs throughout the system.

References:

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Signature Page:

Refuge Manager: _____

Approval Date: _____

Regional Chief: _____

Concurrence Date: _____