

**Finding of No Significant Impact, and  
Final Environmental Assessment  
Pursuant to the National Environmental Policy Act  
for the Rock Creek Meadow Restoration Project, Shasta County, California**

The U.S. Fish and Wildlife Service (Service), in cooperation with the multi-agency Shasta Crayfish Technical Review Committee (TRC) and Shasta Crayfish Recovery Implementation Team (Recovery Team), is proposing to create refuge habitat for Shasta crayfish (*Pacifastacus fortis*) in an isolated, historically occupied segment of Rock Creek in the Hat Creek Drainage in Shasta County, California. Rock Creek is within the native range of Shasta crayfish, a species listed as endangered under both the federal and state Endangered Species Acts. Shasta crayfish inhabited Rock Creek prior to its diversion in 1950 to supply water to the California Department of Fish and Wildlife's (CDFW) Crystal Lake Hatchery. The objective of the proposed Rock Creek Meadow Restoration Project is to create a refuge habitat for Shasta crayfish where they will be isolated from invasive crayfish species that are causing their decline.

Pursuant to the National Environmental Policy Act (NEPA) of 1969 (40 CFR §1506.6), we evaluated the potential environmental effects associated with the Proposed Action, the restoration of Rock Creek, in an Environmental Assessment (EA). The EA addressed the Proposed Action (Alternative 2) as well as a no-action alternative (Alternative 1). The draft EA was made available for public review for 30 days, which closed on August 31, 2015. The Service did not receive any comments.

As a result of the analysis, we have made a Finding of No Significant Impact (FONSI). Only the EA and those documents made available during the public comment period were used in this FONSI. This FONSI briefly presents why the EA supports our finding and the reasons why the proposed action will not have a significant effect on the human environment.

We selected the Proposed Action Alternative of implementing the Rock Creek Restoration Project. The restoration of Rock Creek is an important first step in the eventual recovery of the Shasta crayfish and is intended to help meet the goals of the Shasta Crayfish Recovery Plan. To accomplish this objective the Rock Creek Meadow Restoration Project will restore a segment (~650 feet) of Rock Creek to pre-diversion conditions, which will provide high quality habitat for Shasta crayfish, and then reintroduce Shasta crayfish to the restored reach thereby establishing a refuge population safe from the effects of invasive crayfish. The restoration is described in detail in the attached EA. Two other alternatives were considered but were dismissed (see EA section 3.1).

No Action Alternative

Under this alternative, Upper Rock Creek Meadow would not be restored to create refuge habitat for Shasta crayfish. Management of Shasta crayfish in Crystal Lake and elsewhere would continue according to the relevant management plans, which would not help meet the goals of the Recovery Plan for the Shasta Crayfish (Service 1998); this would not meet the Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats.

## Proposed Action Alternative

Under the Proposed Action Alternative, the upper meadow portion of Rock Creek (Upper Rock Creek Meadow) would be restored to pre-diversion conditions in order to create 13,550 square feet (1,259 square meters) of Shasta crayfish habitat. After the stream channel is restored, Shasta crayfish would be collected from Crystal Lake, quarantined and acclimated to Rock Creek water in the Crystal Lake Hatchery facilities for a minimum of 10 days, and then released into the restored and re-watered portion of Rock Creek. The Proposed Action would implement important restoration and reintroduction actions identified in the Shasta Crayfish Recovery Plan, and thus assist in the eventual delisting (conservation) of Shasta crayfish.

The Proposed Action Alternative, is not expected to change or disrupt current land uses or constitute a significant effect on the human environment. These factors and a summary of the determination of effect for each resource is provided below:

1. **Water/Wetland Resources:** The Proposed Action will initially result in minor, temporary, adverse impacts to water/wetland resources, but would ultimately result in minor, long-term, beneficial impacts to water/wetland resources. Less than ½ acre of riparian habitat, including some riparian wetlands, will be temporarily and adversely impacted during stream channel restoration. To ensure long-term protection of water/wetland resources, and maintain the quality of the water supply for CDFW, all monitoring activities planned for the restoration area and future hatchery maintenance activities will adhere to the Best Management Practices (BMPs) and mitigation measures implemented during the restoration. To minimize disturbance to stream/wetland habitat during site access/mobilization, two temporary construction mat crossings will be placed across Rock Creek to facilitate stream crossings. To prevent/minimize turbidity in Rock Creek downstream of the restoration area, the stream channel will be dewatered before restoration work begins as described below:

- Rock Creek flow will be diverted around the restoration area by installing a temporary bypass pipeline that will direct flow from the existing hatchery diversion to the outlet of the new hatchery diversion at the downstream end of the restoration area.
- At the new diversion structure, 2 cubic feet per second of Rock Creek flow will be released to the natural channel and the remaining flow will be delivered to the Crystal Lake Hatchery via the existing water supply pipeline.
- A silt fence and straw wattles will be placed downstream of the new diversion structure location and at the upper end of the lower Rock Creek meadow.
- Water used to flush the newly restored channel will be allowed to flow by the new diversion structure until it is clear.
- Turbidity will be monitored in lower Rock Creek. The duration and volume of water used to initially flush the restored Rock Creek channel will be adjusted to minimize turbidity in lower Rock Creek.

The following BMPs will be implemented to prevent spills or releases of hazardous substances into waterways and/or wetland habitats:

- Hazardous waste products such as grease cartridges and oil absorbents will be placed in proper containers and transported from the job site to an authorized Hazardous Waste Collection Site.
- Equipment will be refueled by hand, using 5-gallon fuel cans kept in containment boxes.
- No fuel storage tanks will be placed on the site.
- No fueling or equipment service will be performed in the channel or within the active floodplain.
- All fuel storage containers will be equipped with a fuel containment unit matching the size of the storage.
- Stationary equipment containing lubricating oils and fuel (e.g., portable generators) will be placed within a secondary containment.
- Heavy-duty pressure washing and/or steam cleaning of heavy machinery will be done off-site. All machinery will be maintained in a leak-free condition.

With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect on water/wetland resources.

2. **Air Quality:** The use of heavy equipment during stream channel restoration activities could result in temporary airborne dust and fumes, but the effects will be localized and of short duration. Given that the total area of wetland habitat that will be altered during the Rock Creek Meadow Restoration Project is less than 0.5 acre and the duration of construction period is short (less than a month). Because of the small size of the Proposed Action Alternative, the Service does not expect any significant adverse effect on air quality.

3. **Wildlife Resources:** Although the portion of the stream channel that will be restored will be temporarily dewatered, a fish rescue will be performed and all captured fish will be released to suitable habitat outside of the construction footprint. If nesting birds are documented in the Project Area, a buffer of 50 feet will be implemented, or work will be scheduled at a time after the young have fledged. If any construction activities are planned during the migratory bird breeding period (generally March 1 to September 1), pre-construction clearance surveys for nesting migratory birds will be completed before any vegetation removal or noise-generating activities begin. If nesting birds are documented in the Project Area, a buffer of 50 feet will be implemented, or work will be scheduled at a time after the young have fledged. A fish rescue will be performed in the segment of Rock Creek that will be briefly dewatered during construction; native fish will be released to adjacent habitat outside of the construction area. With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect on wildlife resources.

4. **Threatened and Endangered Species:** The Proposed Action has the potential to affect federally or state threatened/endangered species (i.e., greater sandhill crane, bald eagle (note bald eagle was federally delisted in 2007), willow flycatcher, and Shasta crayfish). As noted above under Wildlife Resources, pre-construction clearance surveys are required if work would occur during the

breeding bird season. In addition, the following measures will be implemented to protect special status species:

Shasta crayfish: Shasta crayfish could be harmed or killed during or following translocation, quarantine, and reintroduction. In addition, recreation use and hatchery operations within and near Rock Creek meadow or the Upper Pool could potentially affect the reintroduced Shasta crayfish population or the refuge habitat. The potential impacts to Shasta crayfish from the translocation, quarantine, and reintroduction of Shasta crayfish from Crystal Lake to Rock Creek were also addressed in the biological opinion that the Service prepared for issuance of 10(a)1(A) recovery permits for the Shasta crayfish. Following the terms and conditions of the biological opinion and Spring Rivers' 10(a)1(A) recovery permit (TE806679-7), the Service has reviewed and approved the introduction plan for translocation and reintroduction of Shasta crayfish from Crystal Lake to Rock Creek. In addition the following measures will be implemented:

- Shasta crayfish will only be handled by experienced biologists that are covered under a valid Service Recovery Permit and a CDFW Memorandum of Understanding.
- Shasta crayfish will not be released into refuge habitat until the absence of predators, such as signal crayfish and brook trout, has been verified.
- The new hatchery diversion structure, which will include an “active” debris-screening structure and require necessary cleaning and maintenance activities, will be designed to minimize the potential for entrainment and take of Shasta crayfish.
- Once Shasta crayfish have been introduced to Rock Creek, no wading or walking on in-water substrate will be permitted. If, however, wading or walking on Shasta crayfish habitat (i.e., in-water lava substrate) is expected to be necessary and unavoidable due to maintenance work or land management requirements, then the Service will be notified.
- No ground-disturbing activities shall be done along Rock Creek upstream of the hatchery diversion structure without an erosion and sedimentation control plan.
- To minimize potential impacts to Shasta crayfish from recreation use, native shrubs may be planted near the location where the Pacific Crest Trail (PCT) crosses the hatchery supply pipeline to screen the Rock Creek Restoration/Shasta Crayfish Refuge Area from view of recreationists using the PCT. This measure should reduce the chances of recreationists wading in the Shasta Crayfish Refuge.
- An interpretation and education sign will be developed and installed at Crystal Lake Hatchery to educate the public about Shasta crayfish and the threats posed by non-native species. This sign can be viewed by hatchery visitors and recreationists using the PCT and fishing accesses around Baum Lake.

Bald Eagle: Prior to construction activities, the area will be surveyed for bald eagle. If a bald eagle nest is documented within 0.25 mile of the area, no construction will occur within the Limited Operating Period (LOP) of January 1 to August 15, or construction will be scheduled for a time after the young have fledged. Construction could be started prior to the end of the LOP following a

determination that the nest had failed. Implementation of the LOP will ensure that the Project does not significantly affect nesting bald eagles.

The Proposed Action would have beneficial impacts on Shasta crayfish. With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect on other threatened/endangered species.

5. Botanical Resources: The Proposed Action would have less than significant impacts on botanical resources, and no cumulative impacts on botanical resources are anticipated, because no special-status plant species are found within the footprint of proposed impacts/activities. Castelgar hawthorne, which is the only special-status plant species in the Project Area, has not been found directly within the footprint of proposed impacts/activities. However, any Castelgar hawthorne discovered within the Project Area, will be flagged to ensure that it is not disturbed. In addition, pre-construction botanical survey will be completed within the construction footprint before any ground-disturbing or vegetation thinning/removal activities begin. If special-status plant species are found within the construction area, those species will be flagged for avoidance, and construction crews will be advised to work around the flagged areas. To prevent spread of noxious weeds, all tracked construction equipment and other heavy machinery will be washed (high-pressure washing) before transport to the site. During the post construction phase, all disturbed areas will be seeded and mulched with native species. With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect on botanical resources.

6. Health and Safety: Per OSHA and Cal/OSHA guidelines, activities that could result in personal injury will be addressed for all phases of the proposed Project, and this information will be made available to all workplace personnel. A file of Material Safety Data Sheets for all substances used on the job site will be maintained in the contractors' office location and at the job site as required by the Hazard Communication Law, General Industry Safety Orders, Sec. 5194. Spring Rivers' personnel and the selected contractors will adhere to Pacific Gas and Electric's (PG&E's) general Workplace Injury and Illness Prevention Program, and to the site-specific safety plan. Safety tailgate meetings will be held to keep employees informed of work-related accidents, illnesses, and workplace hazards. The following measures will be implemented for fire prevention:

- If site preparation and construction take place during declared fire season, a fire plan will be developed and implemented.
- One shovel, one axe, and one or more UL-rated 4BC extinguisher(s) or five-gallon water-filled backpack pump will be on each pick up, crew truck, and personal vehicle on the project site. One shovel will be with each tractor or back-hoe.
- One shovel and one fully charged chemical fire extinguisher at a point not greater than 25 feet from the work site will be present for each gasoline-powered tool. Fire extinguishers shall be of the type and size set forth in the California Public Resources Code, Section 4431 and the California Administrative Code, Title 14, Section 1234.
- Shovels will be a type "O" with an overall length of not less than 46 inches. Axes or pulaskis (pulaskis being the tool of preference) will have a 2.5-pound or larger head and an overall length of not less than 28 inches.

With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect on health and safety.

7. Pathogens/Non-native Animals: A Hazard Analysis and Critical Control Points Plan (HACCP) addressing pathogen/invasive species concerns and identifying steps to reduce the potential for the spread of diseases and aquatic invasive species in Rock Creek is provided in Appendix B of the Rock Creek Meadow Restoration Plan. The HACCP and BMPs for invasive species will be implemented to prevent significant impacts to the environment and hatchery water supply that could result from introduction of pathogens and/or invasive animals. To prevent introduction of pathogens and/or non-native organisms to Rock Creek and/or the Crystal Lake Hatchery, the following measures will be implemented:

- All equipment, gear, and clothing (e.g., boots, waders, gloves, etc.) will be washed/ sanitized before entering Rock Creek or the Crystal Lake Hatchery facilities. After all mud and debris have been removed using a stiff brush, the equipment will be cleaned using one or more of the following methods:
  - (a) Dry equipment thoroughly (at 84-86°F for at least 24 hours or at 104°F for at least two hours. Alternatively, a drying time of at least 48 hours under low humidity is recommended to remove all pockets of dampness. Clothing and gear must be completely dry for a minimum of 24 hours.
  - (b) Freeze equipment overnight (at least 6 hours). Works well for hoses.
  - (c) Pressure wash with hot (>140°F) water or soak equipment in water maintained at 120°F for a few minutes.
  - (d) Soak equipment in Commercial Solution Formula 409® Cleaner Degreaser Disinfectant for at least five minutes.
- Crystal Lake water present in ice chests containing Shasta crayfish will not be drained or spilled within the Crystal Lake Hatchery building.
- Shasta crayfish will be quarantined for at least 10 days and tested to ensure absence of *Ceratomyxa* before they are transferred to Rock Creek.
- Additional gravel imported to the Project Area will be thoroughly dried for a minimum of 48 hours and visually inspected to ensure that it is completely dry prior to addition to channel (see above requirements for drying equipment). All boulders will be locally sourced from the Project vicinity.
- Standardized measures to prevent the spill of deleterious materials will be implemented to protect aquatic species.
- PG&E will install a hand pump water supply near the location where the PCT crosses the lower Rock Creek Meadow. By providing this water supply, PG&E will help prevent wading in the creek and potential contamination of Rock Creek and the hatchery water supply.

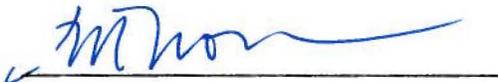
With the implementation of the above mentioned measures, the Service has determined that there would not be a significant adverse effect from pathogens/non-native animals.

## Conclusions

As discussed in the EA section 5, none of the actions described as part of the Proposed Action Alternative are likely to have highly controversial environmental effects, and there are no other actions which in combination with the Proposed Action Alternative would result in cumulatively significant actions.

In accordance with the National Environmental Policy Act of 1969, as amended, and the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR §1500-1508), the Service has found that based on the analysis in the Final EA, the proposed Action would not result in significant impacts to the physical and biological resources in the Rock Creek Meadow Restoration Project Area or in the surrounding area and would not significantly affect the quality of the human environment (40 CFR §1501.4 (e), 1508.13). Therefore, an Environmental Impact Statement is not required.

It is my determination that the Proposed Action is not a major Federal action significantly affecting the quality of the human environment under section 102(2)(c) of the NEPA. Accordingly, an Environmental Impact Statement on the Proposed Action is not required. An Environmental Assessment has been prepared in support of this finding and is incorporated by reference and attached. The Final EA is also available from the Service's Sacramento Fish and Wildlife Office.



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Date

## LITERATURE CITED

USFWS. 1998. Shasta crayfish recovery plan. United States Fish and Wildlife Service, Portland, Oregon, USA. Final EA

ATTACHMENT

Final Environmental Assessment  
Rock Creek Meadow Restoration Project