



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

IN REPLY
REFER TO:

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00735

Mr. Garwin Yip
Chief
Water Operations and Delta Consultations Branch
Central Valley Office, National Marine Fisheries Service
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814

Subject: Draft Juvenile Steelhead Habitat Improvement Project List

Dear Mr. Yip:

This draft Juvenile Steelhead Habitat Improvement Project List is a partial fulfillment of the Bureau of Reclamation's responsibilities to minimize effects of water operations on the Stanislaus River through improving spawning habitat for steelhead trout (*Oncorhynchus mykiss*) as described in Action III.2.3 of the Reasonable and Prudent Alternative (RPA) that accompanied the National Marine Fisheries Service (NMFS) 2009 Biological Opinion on the Long-Term Operations of the Central Valley Project and State Water Project. The draft list enumerates and briefly summarizes Stanislaus River projects that may increase floodplain connectivity and reduce predation risk during migration of juvenile steelhead. The projects included on the list meet the criteria set forward in Action III.2.3 and have the potential to be at some level of implementation by June 2011.

Reclamation requests NMFS affirm that this list meets the objective of RPA Action III.2.3 and provide any relevant technical advice on the implementation of these restoration projects. If you have any questions about this plan, please contact Elizabeth Vasquez, Natural Resource Specialist, at 916-978-5040 or evasquez@usbr.gov.

Sincerely,

FOR

Michael A. Chotkowski
Regional Environmental Officer

Enclosure

Juvenile Steelhead Habitat Improvement Project List

I. Projects scheduled (or likely) to occur

USBR, with the assistance of NMFS, USFWS, and CDFG, has identified six restoration projects that are likely to occur on the Stanislaus River and maybe at some level of implementation by June 2011. These projects will assist in increasing floodplain connectivity and reducing predation risk during migration of juvenile steelhead.

- (1) **Honolulu Bar:** This is an ongoing project of USBR and USFWS's Anadromous Fish Restoration Program (AFRP). Construction is expected to occur during summer 2011. Approximately 8,000 cubic yards of screened spawning sized gravel from the site will be placed in the main channel adjacent to the bar to augment spawning riffles, and used to construct a 0.7 acre floodplain bench upstream on the south (east) side of the river. USBR will contribute \$62,400 in (b)(13) funding (FY 2011). Remainder of funding is from AFRP [(b)(1)], Tri-Dam, and Oakdale Irrigation District.
- (2) **Goodwin Canyon @ cable crossing:** This location has received successful gravel additions in the past. This project has some existing permitting that could be renewed. Potential (b)(13) funds exist to place an estimated 4,000 cubic yards in summer 2011. The project maintains spawning and rearing habitat by providing spawning sized gravel in a configuration usable by spawning steelhead and Chinook and increasing diversity in depth, velocity, and substrate for juvenile steelhead rearing and food production at and downstream of the site.
- (3) **Goodwin Canyon @ float tube pool:** This location has received successful gravel additions in the past through helicopter and sluice delivery systems. This project has some existing permitting that could be renewed. An estimated 2,000 cubic yards could be placed in summer 2012, although no funding has been identified. The cost per unit of gravel placed at this site is twice that of sites with front end loader access. However, spawning fish density (Chinook salmon and *O. mykiss*) is high and water is coolest at this upper most spawning habitat in the river. The project provides spawning and rearing habitat by providing spawning sized gravel in a configuration usable by spawning steelhead and Chinook and increasing diversity in depth, velocity, and substrate for juvenile steelhead rearing and food production at and downstream of the site.
- (4) **Lover's Leap:** One mile of riparian floodplain habitat is available for restoration. There is potentially enough gravel to meet the entire OCAP BO requirement in perched floodplain on this site. AFRP is planning to start a cooperative agreement with the landowners this fiscal year (2011) to begin planning, outreach, design, and permitting. The Natural Resources Conservation Service (NRCS) is interested in funding the project implementation. Given the scale of the project, and the likelihood of the gravel needing to be moved off the project site, it is likely that a Surface Mining and Reclamation Act (SMARA) permit will be

required. At the earliest, this restoration project would occur in 2012, but may not occur until 2013 given constraints in funding and necessary permits. Gravel from this project has the potential to be stockpiled for future gravel work on the river to meet placement of 8,000 cubic yards subsequent to 2014 per Action III.2.1 of the OCAP BO. The project provides spawning and rearing habitat by providing spawning sized gravel in a configuration usable by spawning steelhead and Chinook and increasing diversity in depth, velocity, and substrate for juvenile steelhead rearing and food production at and downstream of the site.

- (5) **Predator Reduction at Willms Pond:** Approximately six acres of pond type habitat was created in the mainstem of the Stanislaus River by past gravel removal activities at Willms Pond, river mile 51. This habitat increases downstream water temperature by exposing more surface area to warm air temperatures and solar radiation and slowing water velocity. This area is thought to increase the carrying capacity for non-native fish species that can prey on juvenile steelhead. The project would consist of filling much of the ponded area with gravel and other floodplain material (likely from the Lover's Leap floodplain) to create higher velocity channels with riffles and pools and reduce predatory fish habitat. The area is private land. The project could occur in conjunction with the Lover's Leap project on the same timescale.
- (6) **Predator Reduction at Oakdale Recreation Area Pond:** Approximately 40 acres of old gravel pit ponds on the mainstem of the Stanislaus River at river mile 40 increase water temperature and provide habitat for non-native predatory fish species. The presence of this habitat may reduce survival of juvenile steelhead emigrating through the area. DWR developed conceptual designs for isolating the ponds from the river channel and providing juvenile rearing habitat conditions more conducive to steelhead and Chinook salmon survival. The three designs include manipulation of 500,000 to 800,000 cubic yards of material at a cost of \$4-5 million. An investigation of the baseline level of predation needs to be completed to establish current levels of predation and the potential benefits of this project. Much of the area is Federal (Corps of Engineers) land. Public use of the area by shore anglers is relatively high so the project would likely need to provide some continued fishing opportunity. Implementation could possibly occur as soon as 2014.

II. Potential projects and impediments to their progress

- (1) **Two Mile Bar:** This project could provide floodplain, side channel, and a significant amount of screened spawning sized gravel for placement in the main channel. This land is privately owned and is moderately accessible. Topographic surveys of the site have been completed. The CVPIA program attempted, but could not purchase the property because the owner wanted to be paid with inclusion of mineral rights; raising the cost so the realty personnel

would not approve the purchase. Trust for Public land was the partner lined up to take possession of the land. USBR will contact the landowner to determine whether a conservation easement could be granted or if a project could be conducted over time to excavate floodplain and process gravel on an annual basis as funding allows.

- (2) Horseshoe Recreation Area:** This land is owned by the US Army Corps and is accessible. CDWR Four Pumps (now known as the Delta Fish Agreement) has previously augmented spawning riffles in the upstream part of this reach. This project would provide top dressing to the riffles and could provide additional spawning and rearing habitat further downstream within this $\frac{3}{4}$ mile river reach. One benefit to the project is that it would provide clean-coarse gravel providing good habitat for macro-invertebrate production lower down in the river than most of the other projects. It would also assist in breaking up the river into more complex riffle/ pool habitat, reducing predator habitat and improving juvenile rearing habitat by increasing habitat complexity.
- (3) Valley Oak Recreation Area:** This land is owned by the US Army Corps and is accessible. Spawning riffles were previously created in the upstream part of this reach. They have degraded and could benefit from additional gravel placement to maintain spawning habitat. This is not a high density spawning area but some spawning does occur each year. It may not be the most desirable area for steelhead to spawn because it is lower in the river where over-summer rearing temperatures can approach 65 F, but adding or augmenting riffles would break up long glide habitat favored by predators as well as increasing production of aquatic macroinvertebrates favored by salmonids.