

RECLAMATION

Managing Water in the West

Supplemental Environmental Assessment

Lower American River Salmonid Spawning Gravel Augmentation and Side-Channel Habitat Establishment Program



**U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California**

August 2011

Introduction

In 2008, the Bureau of Reclamation (Reclamation) prepared an environmental assessment (EA) for its Lower American River Salmonid Spawning Gravel Augmentation and Side Channel Habitat Establishment Program (Program). The Finding of No Significant Impact was signed on August 8, 2008. Reclamation began the gravel and channel habitat work in September 2008 and continued in 2009. In 2010, Reclamation completed a supplemental EA and signed a FONSI to modify its proposed action to meet the Program objectives by including the gravel acquisition site at Sailor Bar which was identified, and analyzed, as an alternative in the 2008 EA; to alter the gravel transportation route to the upper Sunrise gravel augmentation site; to alter hauling routes within Sailor Bar; and to alter the capacity of trucks delivering gravel to Sailor Bar. Also, the supplemental EA recognized that work in any one year could be completed in a shorter time than assumed in the 2008 EA.

The 2008 EA analyzed incorporation of woody material into side channels. Reclamation now plans to incorporate woody material into other more main channel features to improve Chinook salmon and steelhead spawning and rearing habitat. Woody material is a natural part of healthy rivers and provides important habitat for aquatic species, including cover from high flows and predators, collection of suitable spawning materials, and a food source for aquatic insects. It can create and maintain beneficial habitat features such as pools, islands, and gravel bars.

This supplemental EA includes details of the changes to the Program, and the environmental effects of these changes relative to the 2008 EA and 2010 supplemental EA.

Proposed Action

Reclamation would incorporate woody material into some or all of the main channel sites identified in the 2008 EA for gravel augmentation. Main channel sites are shown in Figure 1. Woody material can be placed below or above the low flow water line up to the Ordinary High Water line. Material can be trees or bush type material, including willow, cottonwood, alder, oak, ash, walnut, conifer, or other suitable tree species with a single, intact root ball and at least one trunk and crown. Wood may be keyed into the bank. An example of the incorporation into a project at mile 21 is described here. The anticipated location of the woody material at this site is along the north bank of the river. One end of the material would be keyed into the bank by trenching into the bank to create a trench for placement. The trench containing one end of the woody material would be covered with the onsite rock and soil to provide anchoring. A long island parallel to and near the north bank would be constructed from gravel and would harbor woody material if it can be successfully anchored (see figures 2 and 3 below).

Safety Considerations

Recognizing the high recreational use of the lower American River, a number of safety measures are proposed to reduce risk:

- The velocities at the designed site are relatively low (less than about four feet per second) during flows below 5,000 cfs when the majority of recreational activities occur on the water making for minimal hazard to people.
- The site is designed so the flow would not be concentrated along the shallow north bank and island where the woody material would be placed.
- A deeper channel was created on the south side of the river to funnel the majority of the flow (and boaters) through the site, making an easy route for boaters.
- While there is recreational boating use in this area, the most intense boating activity is downriver of the current project sites.
- The island and shallow area surrounding the island would create conditions that would discourage boaters from making use of this area.
- The natural wood material would be angled diagonally down river to reduce the chances of hazardous contact with swimmers, boaters, anglers, and material.
- If any woody material that Reclamation places in the river is washed downstream and, in the judgment of County Parks, becomes a safety hazard, Reclamation would pay existing County contractors to have it removed or moved to a safe location.
- The American River is a wild river with all the hazards inherent to flowing cold water. There is recognition that no project can be built to be completely hazard free, particularly during higher flows, and personal responsibility is involved when recreating in and around the river.

Similar measure would be developed for the addition of woody material to any of the other sites.

Woody Material

While the precise dimensions of woody material that would be placed is not known, it is unlikely going to be longer than 40 feet with a diameter less than two feet. Woody material would consist of parts of fallen trees collected locally, potentially from orchards.

Longevity

The placement of gravel and natural woody material would be implemented to provide beneficial near-term use. It is not anticipated that either the gravel or woody material would stay in place through all high flow events. High flows that occur about once every five years on average could move the material. Gravel and woody material naturally moves around during high flow in a healthy properly functioning river. Reclamation initially considered engineering the woody material more securely into the banks using materials such as steel cable; however, those measures were not put in the final plan due to a desire to create features more similar to naturally occurring woody material. The woody material will be keyed into the bank or into the placed gravel by burying one end in the existing soil and rock. Woody material that County Parks personnel identify as being a safety hazard would be removed, or moved to a safe location, by existing

contractors utilized by county parks for removing in-river hazards. Reclamation would pay for this removal.

Timeline

The placement of woody material would occur during Reclamation's ongoing gravel restoration program planned for the August – September timeframe, starting in 2011.

Project Support

The concept of placing natural woody material in the lower American River has been discussed at a number of planning meetings, starting in 2007, with staff from the following agencies: Sacramento County Parks, US Army Corps of Engineers, Bureau of Reclamation, California Department of Fish and Game, Fish and Wildlife Service, National Marine Fisheries Service, and members of the public (including fishing, environmental groups, and universities). There has been support from staff and members of the public in these meetings to place woody material in the lower American River to improve habitat for salmonids with recognition that safety needs to be considered in all woody material placement. Meetings included yearly CVPIA program coordination meetings, American River FISH group meetings, project specific planning meetings, and Reclamation/Army Corps joint stream restoration workshop. Meetings were held with Sacramento County Parks staff to specifically address safety concerns associated with intentionally placing woody material in the river. This proposal addresses the safety issues involved with placing woody material in a heavy recreational use river.

Figures 2, 3, 4, and 5 illustrate the concept and the considerations to safety that are planned. The figures depict site 5 at Upper Sunrise but the same concepts would apply at all sites.

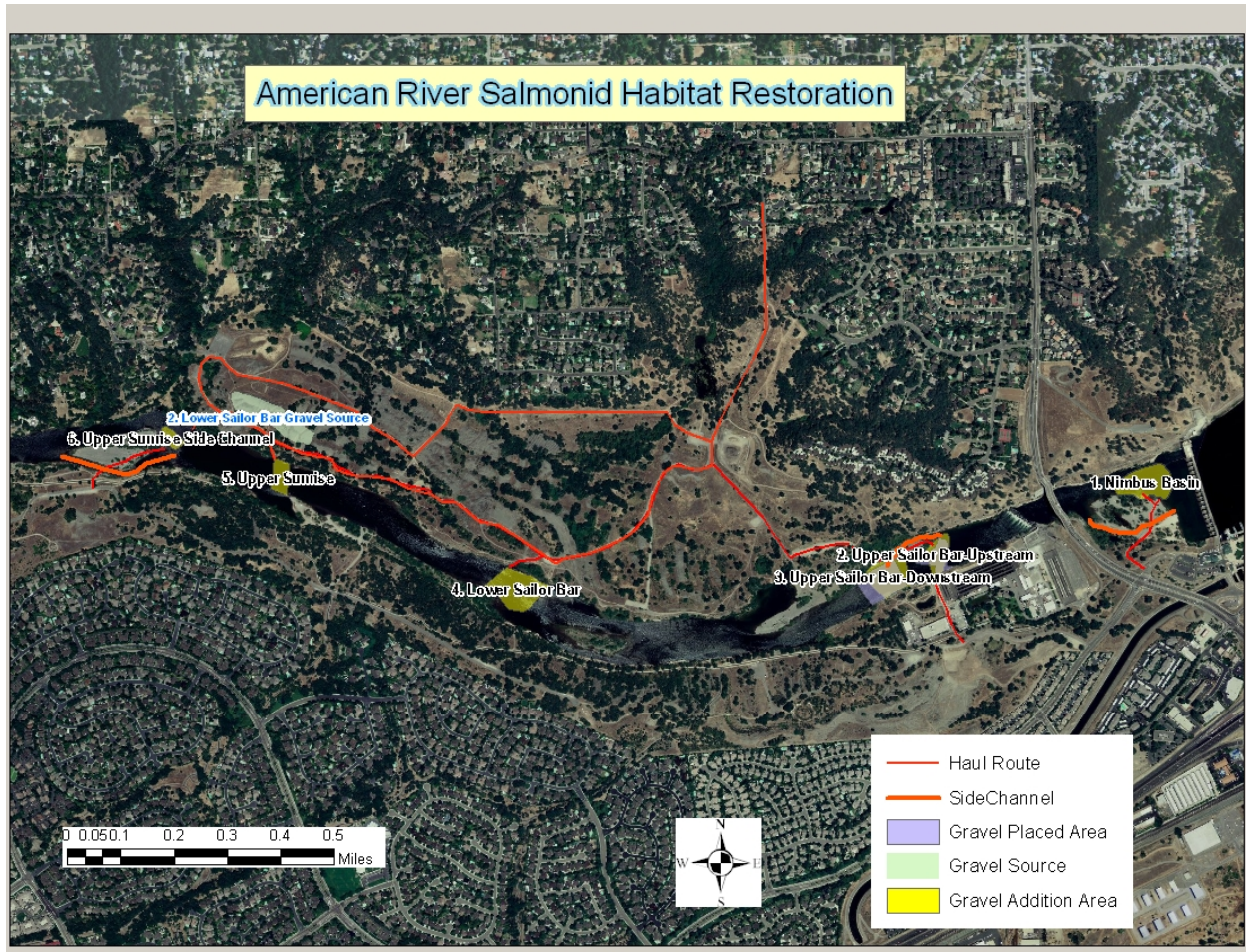


Figure 1. American River Salmonid Habitat Restoration Sites

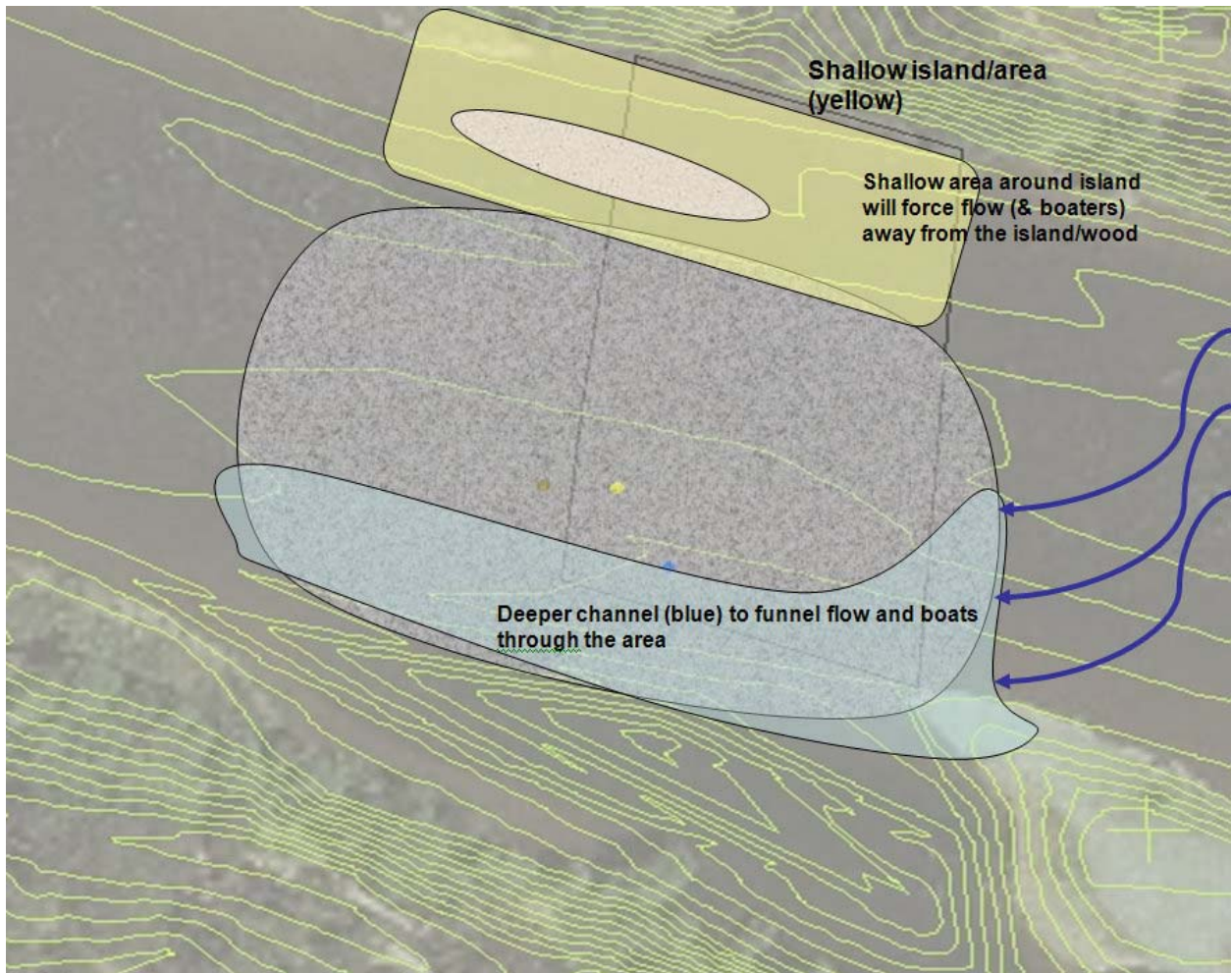


Figure 2. Hydrology at Example of Woody Material Placement Site. The deeper channel would be created by placing gravel across the channel in all areas except in the depicted deeper area. No gravel placement or removal would occur in the deeper channel area; the deeper channel feature would be created as a result of the placement of gravel across the remainder of the channel. This flow pattern would be most pronounced at flows less than 5,000 cfs. At higher flows the island and woody material would be mostly submerged.

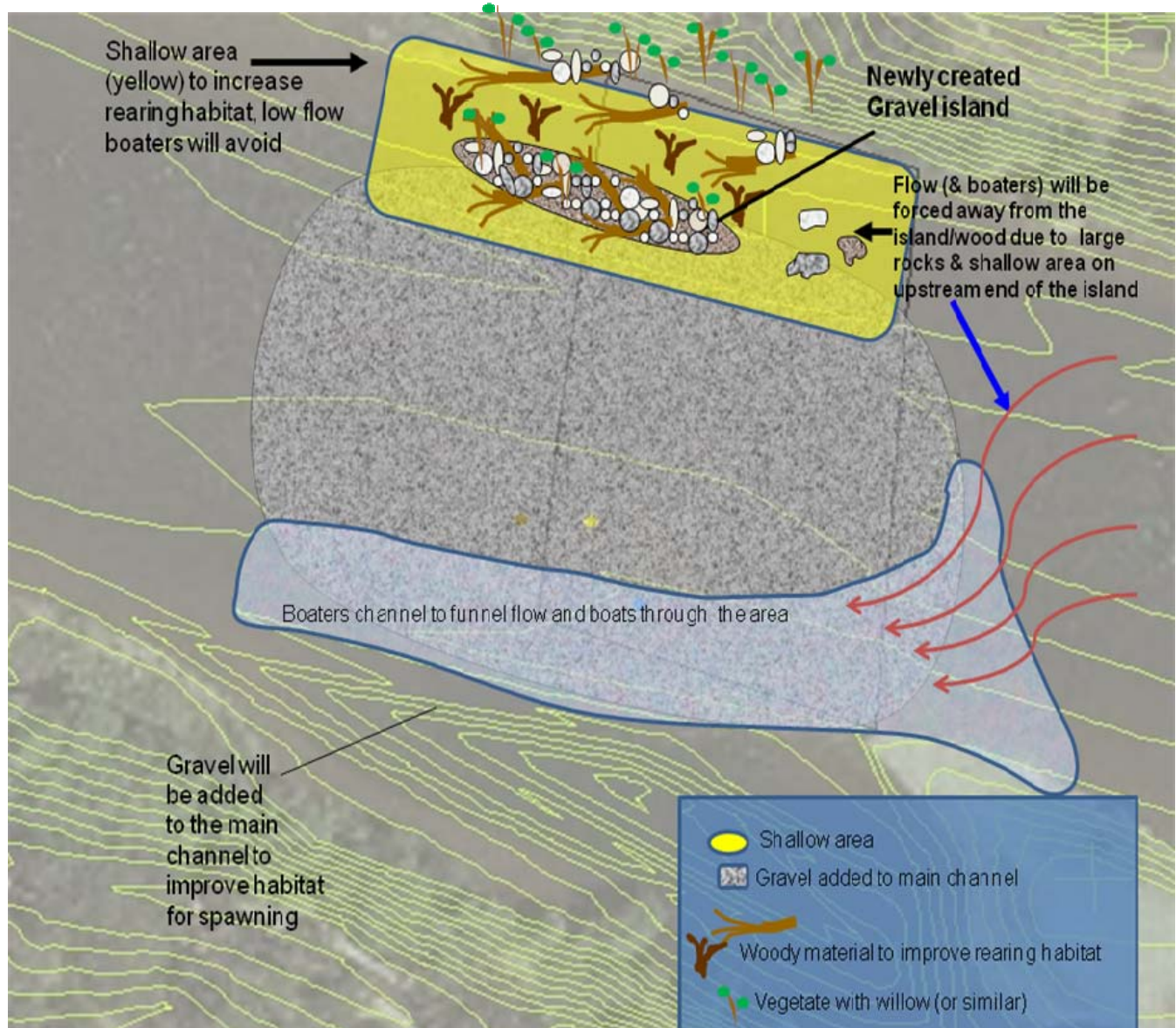


Figure 3. Gravel and Woody Material at Example Site.



Figure 4. Aerial photo taken during 2010 work with placement of woody material depicted at the site. At completion roughly half of each piece of wood would be buried and not visible.

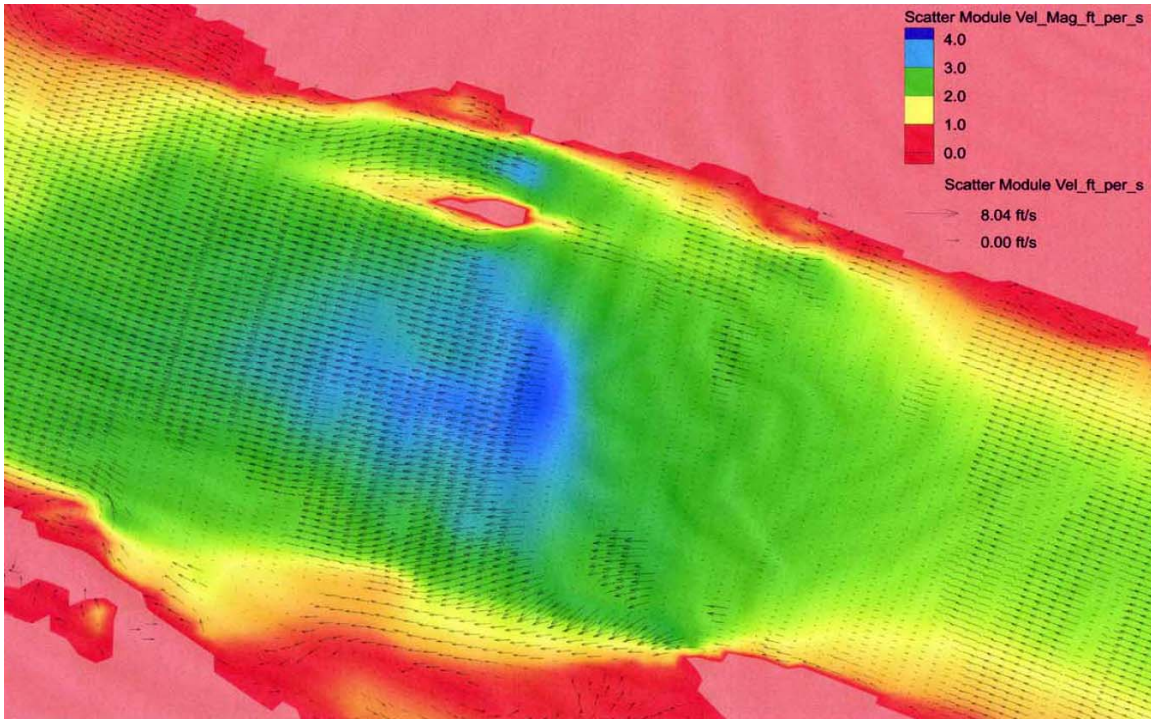


Figure 5. Water velocity and velocity vectors modeled at 2,000 cfs at the site using bathymetry from February 2011. This is following the gravel placement in September 2010. Additional gravel will be added in 2011 to increase desirable spawning and rearing habitat area.

Affected Environment and Environmental Consequences

The proposed modifications to the Program would not change the environmental consequences described in the 2008 EA and 2010 supplemental EA for: Water Quality, Geology and Soils, Vegetation and Wildlife, Threatened and Endangered Species, Cultural Resources, and Recreation.

The gravel placement design is being modeled, prior to construction, using a two dimensional hydrodynamic model to evaluate the quality of the spawning and rearing habitat created and to identify potential concerns relative to changes in water velocity, depth, and shear stress. Figure 5 shows water velocity and flow vectors through the project site in spring 2011, following the 2010 gravel placement. The 2011 gravel placement will concentrate flow through the deeper channel, primarily at lower flows (less than 5,000 cfs). A project team meets regularly during the design process to inform the design and evaluate the modeling results and effects on the river environment. The modeling identifies areas of concern relative to scour so that they can be addressed with design modifications as needed.

The addition of woody material would not affect fish because work in the river would be limited to July 1st to September 30th, before the spawning season and after the incubation period for steelhead trout and salmon. The placement of gravel and creation of side-channels would increase the amount of, and improve the existing, salmon and steelhead spawning and rearing habitat. Although juvenile steelhead and a few early

returning adult Chinook salmon would be present in the river, they would be sufficiently mobile to avoid construction activity and areas of temporary turbidity.

The woody material would create slow water areas in the immediate vicinity of the material placement (within about a meter) and provide cover and feeding areas for juvenile fish. Juvenile fish would be able to safely maintain positions next to more open water areas where drift food can be transported in close proximity to the rearing fish.

There would be no adverse affect to public safety because of the safety measures described above which are included in the design to discourage boaters, swimmers and anglers from using the woody material sites and reduce hazards to them. Most shore-based access to the channel by swimmers and anglers occurs from the south side of the river. The deeper channel left along the south side of the river will prevent most access, into the area of woody material by foot.

Consultation and Coordination

Section 404 of the Clean Water Act

The U. S. Army Corps of Engineers (Corps) issued an individual Clean Water Act Section 404 permit for the Program in 2008. A 404 permit is for any work in jurisdictional waters of the United States (American River) which could result in fill of jurisdictional wetlands and other waters of the United States (ponds and associated wetlands) located on low terraces adjacent to the American River. The Corps indicated that they can issue a permit modification for the incorporation of woody material. Therefore Reclamation requested, by letter, a modification to our permit to allow woody material at all project sites. Permit recommendations and requirements will be incorporated into the design.

Section 401 of the Clean Water Act

Reclamation obtained a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) for the Program in 2008 which stated that any discharge complied with all applicable effluent limitations and water quality standards. Daily monitoring of turbidity and settleable solids during in-river work is required and has occurred each year. The RWQCB indicated that a permit modification could specifically allow the woody material; therefore, Reclamation requested, via letter, a permit modification to specify the woody material inclusion. Reclamation will incorporate any recommendations into the project design that the RWQCB may make regarding the addition of woody material to the American River.

Endangered Species Act of 1973

Reclamation requested concurrence from FWS and NOAA Fisheries on May 8, 2008 that the Program is not likely to adverse affect the federally-listed threatened valley elderberry long-horned beetle, the federally listed threatened Central Valley steelhead, their respective designated critical habitat, or Essential Fish Habitat of the Pacific Salmon. FWS concurred on June 30, 2008 and NMFS concurred on July 22, 2008. NMFS has provided written support of the modification for incorporation of wood material (Gary

Sprague, NMFS, pers. com.) and no further consultation is necessary. The Corps requested NMFS concurrence from Gary Sprague on the modification for their permit. Gary Sprague sent an email (Attachment) to the Corps on August 11, 2011 which stated that the addition of woody material would be beneficial to salmonids and would not adversely impact Chinook, steelhead or green sturgeon. Mr. Spague also stated that the addition of woody material is covered under the July 22, 2008 NMFS concurrence letter.

Attachment

National Marine Fisheries Service Concurrence

From: Gary Sprague [<mailto:Gary.Sprague@noaa.gov>]
Sent: Thursday, August 11, 2011 1:12 PM
To: 'Gibson, Lisa M SPK'
Cc: Hannon, John M
Subject: RE: American River Salmonid Habitat Improvement Project - Woody Material (UNCLASSIFIED)

Hello Lisa,

From NMFS' perspective, adding wood (as proposed) would be beneficial to salmonids. From the information provided we do not believe there will be any adverse impacts from the addition of wood to Chinook, steelhead, or green sturgeon listed under the Federal Endangered Species Act. This activity is covered under our concurrence letter (attached) to the Bureau of Reclamation (July 22, 2008; 2008/003020; ARN 151422SWR2008/SA00189) for the Lower American River Salmonid Spawning Augmentation and Side-Channel Habitat Establishment Program (may affect, but is not likely to adversely affect . . .). Wood debris was identified in the Draft Environmental Assessment /Initial Study (May 2008) for this project as being incorporated into the side channel development (page 20). Our concurrence letter covers the identified activities from 2008 through 2013.

If you have questions, please feel free to contact me. I will be in the office today through about 3:50 p.m.. I plan to be in the office on Friday by 6:45 a.m., until about 3:50 p.m.. I will be working next week, but out of the office in meetings much of the week.

Thank you,
Gary

Gary Sprague
Fish Biologist
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814-4706
(916) 930-3615
Gary.Sprague@NOAA.gov

From: Gibson, Lisa M SPK [<mailto:Lisa.M.Gibson2@usace.army.mil>]
Sent: Wednesday, August 10, 2011 4:15 PM
To: Gary.Sprague@noaa.gov
Cc: Hannon, John M
Subject: FW: American River Salmonid Habitat Improvement Project - Woody Material (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Gary,

Do you agree that a determination that the addition of woody material for the subject project will not adversely affect listed species covers the Corps action for the subject project?

Thanks!

Lisa

Lisa M. Gibson

Senior Project Manager

Regulatory Division, California Delta Branch

U.S. Army Corps of Engineers

650 Capitol Mall, Suite 5-200

Sacramento, California 95814-4708

916-557-5288, fax: 916-557-6877

e-mail: lisa.m.gibson2@usace.army.mil



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

JUL 22 2008

In response refer to:
2008/003020

Susan M. Fry
Regional Environmental Officer
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95828-1898

Dear Ms. Fry:

This is in response to your May 8, 2008, letter requesting concurrence by NOAA's National Marine Fisheries Service (NMFS) that the Lower American River Salmonid Spawning Augmentation and Side-Channel Habitat Establishment Program in Sacramento County, California, may affect, but is not likely to adversely affect Federally listed threatened Central Valley steelhead (*Oncorhynchus mykiss*), endangered Sacramento River winter-run Chinook salmon (*O. tshawytscha*), threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*), their designated critical habitat, and threatened Southern Distinct Population Segment (DPS) of North American green sturgeon (*Acipenser medirostris*). In addition, your office has requested consultation on the impacts of the proposed projects to Essential Fish Habitat (EFH) for Pacific salmon pursuant to provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This letter also serves as consultation under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended.

The U.S. Bureau of Reclamation (BOR) plans to increase and improve Central Valley steelhead and Chinook salmon spawning and rearing habitat by replenishing spawning gravel, and constructing additional side-channel habitat. The restoration project is being implemented to meet requirements of the Central Valley Project Improvement Act, Section 3406(b)(13). Beginning in the summer of 2008, and continuing through 2013, between June 30 and September 30 of each year, a total of approximately 75,000 cubic yards of spawning gravel would be placed at seven locations in the Lower American River between Nimbus Dam and Upper Sunrise Recreation Area, and at Arden Rapids (River Miles 23.0, 22.5, 22.4, 21.8, 21.4, 21.2, and 13.6). The total area of restored spawning and rearing habitat is expected to be approximately 18.2 acres. Clean non-angular gravel rock with a size mixture ranging from 1/4 inch to 5 inches would be placed either along the banks for natural recruitment during high flows, or directly into selected riffles and pools to provide immediate spawning habitat. Heavy equipment such as front-end loaders, conveyor belts, and dump trucks would be used to strategically place the gravel. Best Management Practices and conservation measures to minimize impacts to listed species and their habitat (*i.e.*, water quality, sedimentation, and erosion control) would be implemented. Disturbed areas would be replanted with native



vegetation, maintained, and monitored for at least three years to ensure establishment of vegetation with a success survival rate of seventy percent. Since New Zealand mud snail, an introduced invasive species known to impact the food chain of native trout and alter the physical characteristics of the streams, have been found in one of the sites, equipment leaving the area would be steam-cleaned immediately after work is completed and before being used in other parts of the American River to prevent the snails from being transported and introduced to other water bodies.

Endangered Species Act (ESA) Section 7 Consultation

NMFS has received the information necessary to initiate consultation on Federally listed anadromous fish species within the proposed action area. Based on our review of the material provided with your requests, and the best scientific and commercial information currently available, NMFS concurs that the proposed Lower American River Salmonid Spawning Augmentation and Side-Channel Habitat Establishment Program is not likely to adversely affect Central Valley steelhead, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, their designated critical habitat, or North American green sturgeon. NMFS has determined that adverse effects from the project are extremely unlikely to occur, and are therefore considered discountable. NMFS reached this determination for the following reasons: (1) Cleansing the gravel before placing it will minimize siltation in the American River; (2) placing gravel on stream banks and selected areas of the streambed will mobilize the gravel during natural high-flow events, provide for a more natural and beneficial distribution of the gravel, and minimize the possibility of smothering fish; (3) implementation of gravel placement will occur between June 30 and September 30, when listed species are unlikely to occur in the action area; and (4) the project plan includes additional conservation measure to prevent non-native invasive species from spreading and impacting the habitat of the listed species in the American River.

This concludes ESA section 7 consultation for the proposed action. This concurrence does not provide incidental take authorization pursuant to section 7(b)(4) and section 7(o)(2) of the ESA. Reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

EFH Consultation

With regards to EFH consultation, the proposed project area has been identified as EFH for all races of Central Valley Chinook salmon (*O. tshawytscha*), including the fall-/late fall-run in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the MSA. Federal action agencies are mandated by the MSA [section 305(b)(2)] to consult with NMFS on all actions that may adversely affect EFH, and NMFS must provide EFH conservation recommendations to those agencies [section 305(b)(4)(A)]. Because you have determined that the proposed action would avoid adverse impacts to Central Valley fall/late fall-run Chinook,

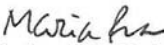
EFH consultation has not been conducted. However, if there is substantial revision to the action that may result in adverse impacts to EFH, Reclamation will need to initiate EFH consultation.

FWCA

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C 662(a)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA. Because the proposed project is designed to avoid environmental impacts to aquatic habitat within the action area, and is in fact intended to improve habitat conditions for aquatic species, NMFS has no additional FWCA comments to provide.

Please contact Madelyn T. Martinez at (916) 930-3605, or via e-mail at Madelyn.Martinez@noaa.gov, if you have any questions concerning this project, or require additional information.

Sincerely,


 Rodney R. McInnis
 Regional Administrator

cc: Copy to file – ARN 151422SWR2008/SA00189
 NMFS-PRD, Long Beach, CA
 BOR: DKLEINSMITH@mp.usbr.gov and JHANNON@mp.usbr.gov
 USACOE: Lisa.M.Gibson2@usace.army.mil
 USFWS, Endangered Species Division, 2800 Cottage Way, Sacramento, CA 95825
 CDFG: ghobgood@dfg.ca.gov
 Water Board: pgillum@waterboards.ca.gov