

Anderson, Skyler@Waterboards

From: Will Harling <will@mkwc.org>
Sent: Tuesday, February 17, 2015 10:49 AM
To: Anderson, Skyler@Waterboards
Cc: konrad@klamathriver.org; tsoto@karuk.us
Subject: Re: CDFW sediment removal
Attachments: #P1110319_Final Report_3-31-14.pdf

Hi Skyler,

MKWC implemented this project in conjunction with Konrad and the Tribe. here's the final report to DFW. Let me know if you need more info.

Will

On Tue, Feb 17, 2015 at 9:55 AM, Anderson, Skyler@Waterboards <Skyler.Anderson@waterboards.ca.gov> wrote:

Good Morning Everyone,

I was wondering if any of you have information on the CDFW sediment removal/restoration project that occurred at the confluence of Stanshaw Creek and the Klamath River. I'm looking for documents that would describe the scope and need of the project, results of the project, amount of material excavated etc.

Do any of you have any contact info of the CDFW that was involved?

All your help is greatly appreciated.

Thank you,

Skyler Anderson, Environmental Scientist

Enforcement Unit 5, Division of Water Rights

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Stanshaw Creek Coho Habitat Enhancement Project

FRGP Grant Number: P1110319

Mid Klamath Watershed Council

P.O. Box 409 Orleans, CA 95556, (530) 627-3202

Author Information: Charles Wickman, Fisheries Program Co-director, Mid Klamath Watershed Council, charles@mkwc.org, (530) 627-3202

Overview of Project:

Project Description

This project successfully restored approximately 4,500 square feet of high quality coho rearing habitat at the mouth of Stanshaw Creek (Latitude 41.477, Longitude -123.512). Approximately 560 cubic yards of gravel and rock were removed from the head of an existing pool, restoring and enhancing the pre-2006 form and function of this heavily utilized off-channel rearing habitat. Originating from Stanshaw Creek, the bulk of the sediment plug was deposited during the 2005/2006 flood event when the upstream ditch diversion to Marble Mountain Ranch overtopped causing severe gully erosion. In addition, chronic wasting of Stanshaw Creek's banks, adjacent to the Fisher driveway below the Highway 96 culverts, continued to deposit material into the pool. Wood structures installed through this project at the head of the pool are functioning to direct this material away from the pond while maintaining Stanshaw Creek's important cold water contribution to the habitat. Implementation of this project type has been identified as a priority action in the Recovery Strategy for California Coho Salmon (CDFW 2004), and the Middle Klamath Subbasin Fisheries Resource Recovery Plan (Karuk Tribe 2006).

Construction Activities

Prior to construction of the project, MKWC Fisheries staff installed two rows of silt fencing across the existing pool, excluding the wetted portion of the pool, and its fish, from the construction area. After isolating the construction area, MKWC staff constructed a piped diversion of Stanshaw Creek's flow (approximately .24 cfs) around the construction area and into the existing wetted portion of the pool*. The Karuk Tribe Fisheries Program (KTFP) assisted MKWC Fisheries staff with relocating fish, amphibians and aquatic insects from the 100' of diverted channel and to an approved location above the point of diversion. Fish screens were installed at the top and bottom of the diversion pipe.

Construction of the project began on September 10, 2013 and was complete by September 16, 2013. Before site excavation began, a thirty foot coffer dam was constructed across the pond, parallel to the silt fencing. In addition, the contractor culled five douglas fir trees from the landowner's property and installed the log structure at the head of the pool

Approximately 560 cubic yards of material was excavated from the site with a 30,000 lb. excavator and placed in an approved fill location outside the immediate Klamath River floodplain using a ten yard dump truck. During excavation, the site was pumped with three and four inch trash pumps to reduce turbidity and facilitate an accurate adherence to the design specs. Pumped water was deposited 300' from the work site in an approved location on the Klamath River floodplain. . On September 16, the contractor decommissioned the access road, completing construction activities.

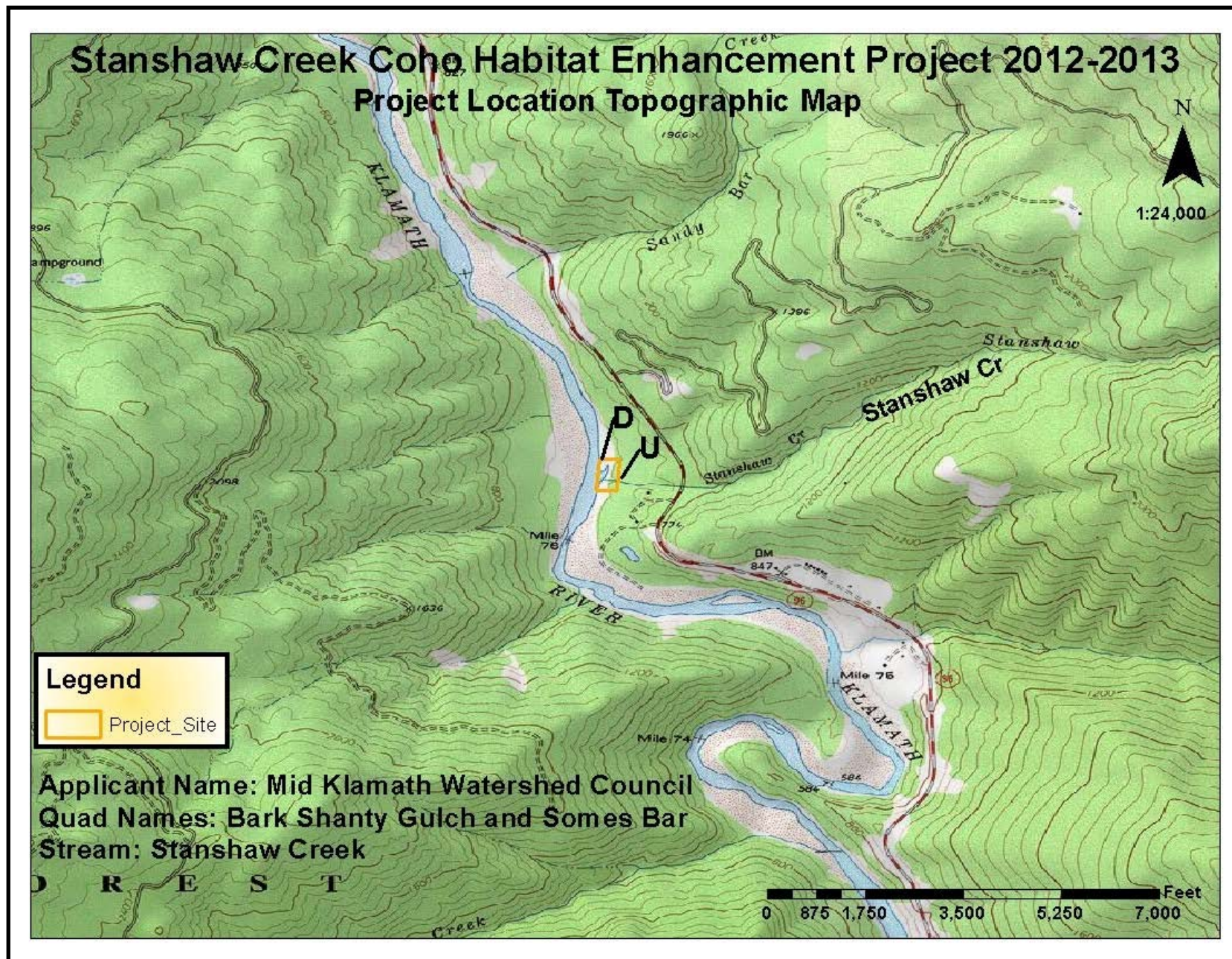
On September 30, the Karuk Tribe Watershed Program hydroseeded the access road and fill site with a native grass mix, and MKWC staff spread weed free straw over all seeded areas.

The coffer dam was removed by MKWC staff on September 19 and after letting the turbidity to settle out of the construction area, the silt fencing and diversion pipe was removed on September 30.

Monitoring

Monitoring of this project has included biological (fish counts), water quality (temperature and dissolved oxygen) and structural. KTFP has and will be conducting coho population estimates at this site four times each year. The first estimate was conducted over the period of February 25 -27, and estimated 105 juvenile coho utilizing the pool. Historically, this habitat has functioned as Klamath River edge unit, high flow refuge during the winter and spring, and retains fish utilizing this habitat on into the high temperature summer and fall months, when the pool is utilized as thermal refugia. Higher river flow events in March, and subsequent fry dispersal, may have added a significant number of fish to this habitat. KTFP will be performing another population estimate in May or June of 2014. MKWC fisheries technicians will be performing bi-weekly temperature and dissolved oxygen monitoring with a handheld YSI unit, and continuous temperature data is being collected in the pond, the Klamath River above the site, and Stanshaw Creek above the site. Site visits and photographs are used to monitor and record the structural integrity and function of the pond during high flow events.

Final Budget: Attached at end of document



Post Project Profile: N/A

Performance Measures:

- **Total miles of instream habitat treated;**

.02 miles of habitat was treated.

- **If the project is for channel reconfiguration and connectivity, select from:**
 - **Type of channel reconfiguration and connectivity, select from:**
Creation/connection to off-channel habitat; creation of instream pools; channel bed restored; or meanders added;

Creation/connection to off-channel habitat

- **Miles of stream treated for channel reconfiguration and connectivity;**

.02 miles of stream was treated for connectivity to off-channel habitat.

- **Miles of off-channel stream created;**

N/A

- **Number of instream pools created for channel reconfiguration;**

N/A

- **If project is for channel structure placement:**
 - **Type of materials used for channel structure placement, select from:**
Individual logs (unanchored); logs fastened together (logjam);
Rocks/boulders (unanchored); rocks/boulders (fastened or anchored);
Stumps with rootwads attached (rootwads); weirs; deflectors/barbs; or other
engineered structures;

Unfastened logs (30' of stem with rootwad attached) were woven into existing vegetation at the top of the pond. Washed, onsite river rock was used as ballast between logs.

- **Miles of stream treated with channel structure placement;**

.005 miles was treated with structure placement adjacent to Stanshaw Creek.

- **Number of instream pools created by structure placement;**

N/A

- **Number of structures placed in channel;**

N/A; Structure was placed outside the active channel.

- **If the project is for spawning gravel placement:**

N/A

- **If the project is for removal of aquatic non-native invasive plants:**

N/A

- **If monitoring was included in the project:**

- **Type of monitoring, select from: implementation monitoring; compliance monitoring-engineering design; compliance monitoring-project design; pre-treatment monitoring; post treatment monitoring; salmonid monitoring; non-salmonid biological monitoring; water flow monitoring; or physical monitoring;**

Implementation monitoring included oversight of all construction activities to ensure the contractor was meeting design objectives and permit compliance; pre-treatment and post treatment monitoring included photo monitoring from preselected photo points; salmonid monitoring includes periodic population estimates performed by the Karuk Tribe Fisheries Program; water flow monitoring will include weekly flow measurements in the summer and fall (June – October).

- **Location of monitoring, select from: onsite; upstream; downstream; or upslope.**

Onsite.

Project Photos:

File Name	Date	Subject/Site Name	Description	Standing	Facing
Figure 1	9/10/2013	Access Road	Before	Top of Road	West
Figure 2	9/10/2013	Access Road	After	Top of Road	West
Figure 3	9/12/2013	Access Road	After	Top of Fill Site	North
Figure 4	9/11/2013	Coffer Dam	During Construction	Eastern Edge of Pond	North
Figure 5	9/11/2013	Coffer Dam	Completed	Eastern Edge of Pond	North
Figure 6	9/15/2013	Diversion	Before	Below Point of Diversion	East
Figure 7	9/9/2013	Diversion	After	Below Point of Diversion	East
Figure 8	9/9/2013	Diversion	Piping	Center of Pond	East
Figure 9	9/9/2013	Log Structure	Before	Bottom of Access Road	North
Figure 10	9/10/13	Log Structure	After	Bottom of Access Road	North
Figure 11		Completed Pond	Completed Pond	Bottom of Access Road	North
Figure 12	6/12/2012	Gravel Plug	Before	Bottom of Pond	North
Figure 13	9/30/2013	Gravel Plug	After	Bottom of Pond	North



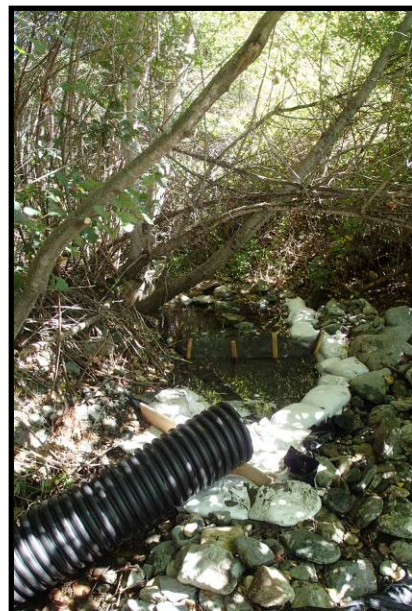
A 200 foot access road was constructed between an existing roadway and the project site, across the Klamath River floodplain. This access road was seeded and mulched after project construction was completed. Images above left and right show the access road from the top, before and after construction. Below, the perspective show's a more complete view of the access road from the top and across the river floodplain.





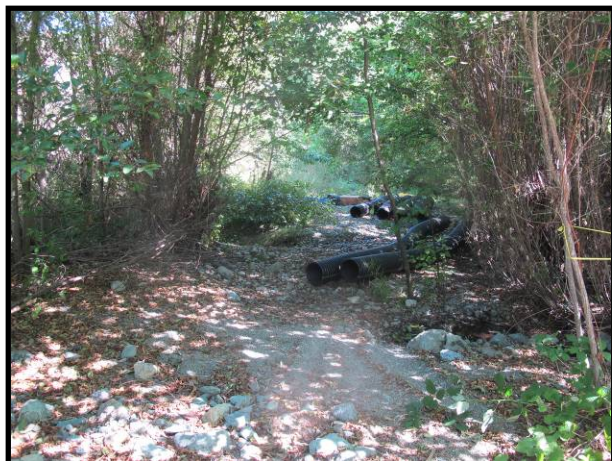
Before excavation began, a thirty foot coffer dam was constructed using 10mm plastic wrapped around washed gravel. This coffer dam excluded all mechanical construction activities from the existing pool habitat. Once construction activities were complete the dam was manually dismantled.





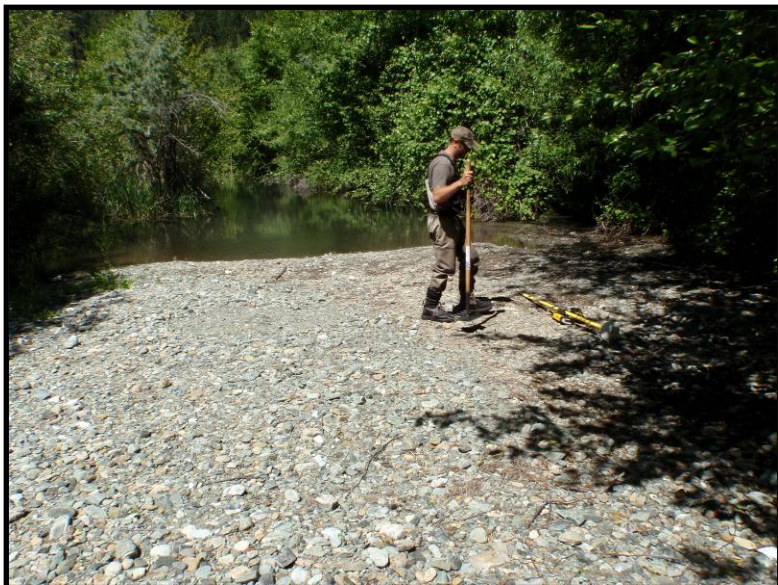
Prior to construction activities, it was necessary to divert a small amount of Stanshaw Creek's flow around the project area. The point of diversion was located at the top of Stanshaw Creek's active delta (above left and right), and 120' of 16" flexible tile was used to reroute approximately .24 cfs of water around the site and into the existing pool habitat, assuring a cold water connection to this habitat (below). The "head gate" was constructed using a plywood splash board, sand bags, and 1/8' screening both on the end of the tile and across the stream bed, approximately 6' above the diversion.





Five 30' logs with rootwads attached were locked into existing vegetation at the head of the off-channel pool, designed to redirect sediment around the project area in high flow events. The upper left and right photos show a close up, before and after, of the log placement, while the photo below shows the structure in relation to Stanshaw Creek and the off-channel habitat during winter flows.





Approximately 560 cubic yards of gravel, rock and sand was removed from the site, more than doubling the volume of off-channel habitat. Photos taken before and after (above and below) illustrate the quality and quantity of habitat restored through this project.

