

Lower Klamath Sub-Basin Coordination & Planning
FY 2009



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Abstract

This project provided planning and coordination to the Lower Klamath River Sub-basin during the project period: August 1, 2009 – July 1, 2010. This included continued participation in the Lower Klamath Restoration Partnership, and continued coordination and implementation of watershed restoration activities identified in the Lower Klamath Sub-basin Watershed Restoration Plan (LKWRP) (Gale and Randolph 2000) and other Yurok Tribal Fisheries Program (YTFP) restoration plans (Beesley and Fiori 2004, 2007, 2007b, 2008, and 2008b). YTFP also continued conducting assessments and restoration planning activities in several high priority off-estuary and coastal tributaries during the project period. A priority objective of these activities is to develop a large-scale, process-based restoration plan for the Klamath River estuary and associated off-estuary tributary, wetland, and slough habitats; and to update the LKWRP.

YTFP worked closely with Rocco Fiori (Licensed Geologist - Fiori GeoSciences) to design and implement wood loading activities in the McGarvey Creek watershed. In summer 2009, YTFP and Fiori built ~13 complex wood jams (CWJs) in McGarvey Creek downstream of the West Fork confluence; 13 CWJs in Waukell Creek a priority off-estuary tributary; and two engineered log jams and ~100 willow siltation baffles in lower Terwer Creek. Some of the wood obtained to complete these projects was generated from upslope enhancement projects conducted by the Yurok Tribe Watershed Restoration Department (YTWRD) in the Terwer Creek watershed. The rest of the wood was either purchased from or donated by Green Diamond Resource Company.

YTFP and Fiori also planned for upcoming off-channel enhancement and wood loading activities scheduled for late summer 2010 in Terwer Creek and McGarvey Creek. YTFP received the funding to implement the multi-phased restoration plan developed for lower McGarvey Creek. Activities scheduled for late summer 2010 and summer 2011 focus on increasing the quantity and quality of off-channel habitats (e.g. side channels, ponds, alcoves) to immediately improve overwinter rearing conditions for natal and non-natal salmonids, especially ESA listed Klamath Basin coho (YTFP 2009).

In winter 2009-2010, YTFP planted over 9,000 native conifers in riparian habitats of McGarvey Creek upstream of wood loading activities; 27,832 conifers and 283 deciduous trees in riparian habitats of Terwer Creek; 15,889 conifers in riparian habitats Hunter Creek; and 2,550 conifers in riparian habitats of Waukell Creek. Tree planting activities will continue in Terwer Creek and Hunter Creek in winter 2010-2011 to continue promoting improved riparian forest conditions in the sub-basin.

During the project period, YTFP submitted nine proposals to various resource agencies to conduct fisheries restoration and monitoring projects in the Lower Klamath Sub-basin. For the next several years, YTFP will continue focusing restoration efforts in McGarvey Creek, Terwer Creek, Hunter Creek, and Waukell Creek. To meet these objectives, YTFP received nearly one million dollars in resource restoration and monitoring funding during the project period and are currently conducting funded tasks.

During the project period, YTWRD planned and obtained the necessary permits for multiple upslope projects in the sub-basin; continued decommissioning high priority road segments in the Terwer Creek watershed; and further developed the working relationship with Trinity River Restoration Program to help restore salmon spawning habitat below the dams on the Trinity River. In addition to habitat rehabilitation activities, YTWRD coordinated with Redwood National and State Parks to plan for and implement the Requa Facility decommissioning project. YTWRP and YTFP participated in over 50 meetings or site visits during the project period related to restoration planning, assessment, implementation, and monitoring in the Lower Klamath Sub-basin.

Introduction

Historically the Klamath River Basin contained bountiful anadromous fish runs, supporting indigenous peoples throughout the region. Anthropogenic activities over the last 150 years, coupled with natural events, have resulted in substantial declines in these fish populations and widespread reduction and degradation of associated habitat. Concern over diminishing runs resulted in the 1997 listing of Klamath Basin coho salmon (*Oncorhynchus kisutch*) as threatened under the Endangered Species Act (ESA), Klamath River chinook salmon (*O. tshawytscha*), steelhead (*O. mykiss*) and coastal cutthroat trout (*O. clarki clarki*) populations were also petitioned for ESA listing, and despite the listings being determined “Not Warranted”, concern continues to exist over their status.

The declining health and productivity of the Klamath River’s anadromous fisheries is of great cultural and economic concern to the Yurok Tribe. To address this decline, the Tribe has initiated a large-scale, coordinated watershed restoration effort in the Lower Klamath Sub-basin. The sub-basin includes all Klamath tributaries downstream of the confluence of the Trinity River, encompassing a drainage area of approximately 450 square miles. These tributaries have been subjected to substantial timber harvest and related road construction over the last 60 years. These activities, occurring in a region with steep, erodible terrain and high annual rainfall, have contributed to excessive sedimentation and degradation of tributary and river habitats and led to substantial declines in salmonid populations (Gale and Randolph 2000; Beesley and Fiori 2007b).

The Lower Klamath Restoration Partnership (LKRP), composed of representatives of the Yurok Tribe Natural Resources Department, Green Diamond Resource Company (GDRC - formerly Simpson Resource Company), and the California State Coastal Conservancy was formed in 1995. This Project Advisory Committee was formed to facilitate a coordinated approach to watershed restoration planning and to find innovative solutions to resource management issues between private landowners, Tribal interests, and public agencies. In the 1990s, Yurok Tribal Fisheries Program (YTFP) conducted extensive watershed and fisheries assessments throughout all the Lower Klamath tributaries to provide the necessary physical and biological baseline data to prepare the Lower Klamath River Sub-basin Watershed Restoration Plan (Gale and Randolph 2000).

This project provided planning and coordination to the Lower Klamath River Sub-basin for the period 01-Aug-2009 through 30-June-2010 (hereafter referred to as the project

period), including continued participation in the Lower Klamath Restoration Partnership (LKRP). YTFP continued coordinating the implementation of watershed assessment, planning, and restoration activities identified in the Lower Klamath Sub-basin Watershed Restoration Plan (Gale and Randolph 2000); and other Yurok Tribal Fisheries Program (YTFP) restoration plans (Beesley and Fiori 2004, 2007, 2007b, 2008, and 2008b).

Accomplishments

- **Assessments**

During the project period, YTFP conducted several geomorphic assessments and restoration planning efforts throughout the Lower Klamath Sub-Basin. The results of these efforts are being used to plan and prioritize restoration throughout the sub-basin, as well as provide baseline data to assess ongoing and future restoration effectiveness.

Restoration Planning in Waukell Creek

YTFP continued working with Rocco Fiori (Licensed Geologist - Fiori GeoSciences (FGS)), several resource agencies, and stakeholders to develop stream and wetland enhancement strategies to increase juvenile salmonid rearing capacity in the Waukell Creek watershed. Fisheries research conducted in this watershed over the last several years have revealed significant use of this tributary by both natal and non-natal juvenile coho salmon (Soto et al. 2008; Hillemeier et al. 2010). Priority restoration objectives for the watershed include 1) improving hydrologic and geomorphic function to ensure protection of critical downstream habitats; 2) increasing juvenile salmonid rearing capacity and productivity; and 3) enhancing adult salmonid staging and spawning.

The following tasks were conducted to help meet restoration objectives in the watershed:

- YTFP and FGS continued operating stream gages in Waukell Creek to monitor stage, temperature, and salinity every 15 minutes to document water quality/quantity; investigate stream flow, wetland storage and outflow relations; and assess sediment transport dynamics in the watershed to inform restoration designs.
- YTFP and FGS worked with U.S. Fish and Wildlife Service staff and other stakeholders to construct 13 complex wood jams and plant 2,550 native conifers in upper Waukell Creek to immediately improve conditions for fish and wildlife.
- Conducted repeat topographic surveys of the channel, floodplain, and wetland habitats throughout upper Waukell Creek to document conditions following the 2009 wood loading activities to better inform restoration design and land management.
- YTFP and FGS developed a draft feasibility study and sediment budget analysis to allow for the development of wetland designs that address current land management constraints (i.e. increased rates of sedimentation throughout the watershed).

Restoration Effectiveness Monitoring in McGarvey Creek and East Fork Hunter Creek

Crews continued conducting 3-D topographic surveys of the channel, floodplain, and large wood in the McGarvey Creek watershed to document baseline conditions prior to conducting wood loading activities; and collect post-project and post-winter flow data. YTFP and FGS constructed several large wood structures in West Fork McGarvey Creek in summer 2007; and in McGarvey Creek (upstream of West Fork) in summer 2008 (Gale 2008 and 2009). In late summer 2009, YTFP and FGS constructed an additional 13 complex wood jams in McGarvey Creek downstream of West Fork (Figures 1-2). The topographic data allows YTFP and FGS to quantitatively assess changes associated with implemented restoration activities and to guide future efforts.



Figure 1. Photographs of the 2009 Site 5 prior to wood loading activities (Top – Summer 2009) and following construction of the wood jam (Bottom – Fall 2009).



Figure 2. Photographs of the 2009 Site 5 prior to wood loading activities (Top – Summer 2009) and following construction of the wood jam (Bottom – Fall 2009).

YTFP and FGS established survey control in Hunter Creek and East Fork Hunter Creek to prepare for the upcoming wood loading activities currently scheduled for late summer 2010. Survey crews conducted detailed 3-D topographic surveys of the channel, floodplain, and large wood in East Fork Hunter Creek to document baseline conditions. YTFP also established a network of permanent photographic monitoring sites.

Geomorphic Assessment and Restoration Planning in Blue Creek

YTFP and FGS continued watershed restoration assessment and planning efforts in lower Blue Creek to better characterize habitat conditions and the factors currently limiting fish and riparian production. YTFP crews began repeat topographic surveys in the lower watershed in spring 2010 and will complete them in late summer 2010. This data and other pertinent geomorphic data will be used to further refine restoration strategies and coordinate with stakeholders to plan for future restoration in this priority watershed.

Estuary and Off-Estuary Habitat Study

Since 2002, YTFP has been working with FGS to conduct watershed assessments and plan restoration in off-estuary habitats of the Klamath River (Beesley and Fiori 2004, 2007, and 2008). As part of these efforts, YTFP has been coordinating with the Yurok Tribe Environmental Program (YTEP) to monitor seasonal water quality conditions in the

South Slough of the estuary and in off-estuary tributaries (Beesley 2007; Beesley and Fiori 2010; Sillaway 2010). Both YTFP and YTEP continued deploying datasonde probes in priority off-estuary tributaries and in the South Slough of the estuary to document diurnal water quality conditions during critical salmonid migration periods to help inform restoration design and document conditions prior to initiating restoration.

YTFP and FGS continued conducting detailed, 3-dimensional topographic surveys of stream, floodplain, and wetland features in the Klamath River estuary and associated off-estuary tributaries. FGS continued using ground-based survey and the estuary LiDAR data to refine existing digital elevation models (DEMs) for the region. This DEM has been a critically valuable restoration planning tool. YTFP, FGS, and YTEP have also been developing bathymetric survey protocols for monitoring bed topography in the estuary and seeking funding to purchase the necessary equipment. We also continued operating stream gages in the estuary, the South Slough, and in a few priority off-estuary tributaries to develop hydrologic DEMs to: 1) assess and document habitat conditions at various flows; and 2) develop large-scale, process-based restoration and management strategies for the estuary and associated off-estuary habitats.

YTFP and FGS continued obtaining the necessary physical and biological data to develop a large-scale, process-based restoration plan for the Klamath River estuary; and developing conceptual designs and permitting strategies for the area. As part of these efforts, YTFP and FGS have been coordinating with YTEP to integrate their coastal wetland assessment program (Patterson 2009) into the estuary restoration planning effort.

- **Restoration Implementation.**

McGarvey Creek Wood Loading

In late summer 2009, YTFP and FGS constructed ~13 complex wood jams in McGarvey Creek habitats located downstream of the West Fork (Figures 1-2). The objective of these efforts was to immediately improve spawning and rearing habitat for natal and non-natal salmonid populations; and promote the development and maintenance of complex and resilient stream and riparian habitats (Gale 2008 and 2009). YTFP and FGS also received funding to implement the first few phases of a comprehensive restoration plan for lower McGarvey Creek. The first few phases will focus on creation and enhancement of floodplain and off-channel habitats to increase the quality and quantity of rearing habitat available for natal and non-natal salmonid populations, especially ESA listed Klamath coho salmon (Figure 3). Recent investigations documented significant overwinter use of lower McGarvey Creek by non-natal juvenile salmonids (YTFP 2009). YTFP and FGS are planning to construct the first alcove channel in late summer 2010.

Waukell Creek Wood Loading

In late summer 2009, YTFP and FGS constructed 13 complex wood jams in upper Waukell Creek to immediately improve spawning and rearing habitat for natal and non-natal salmonid populations; and promote the development and maintenance of complex

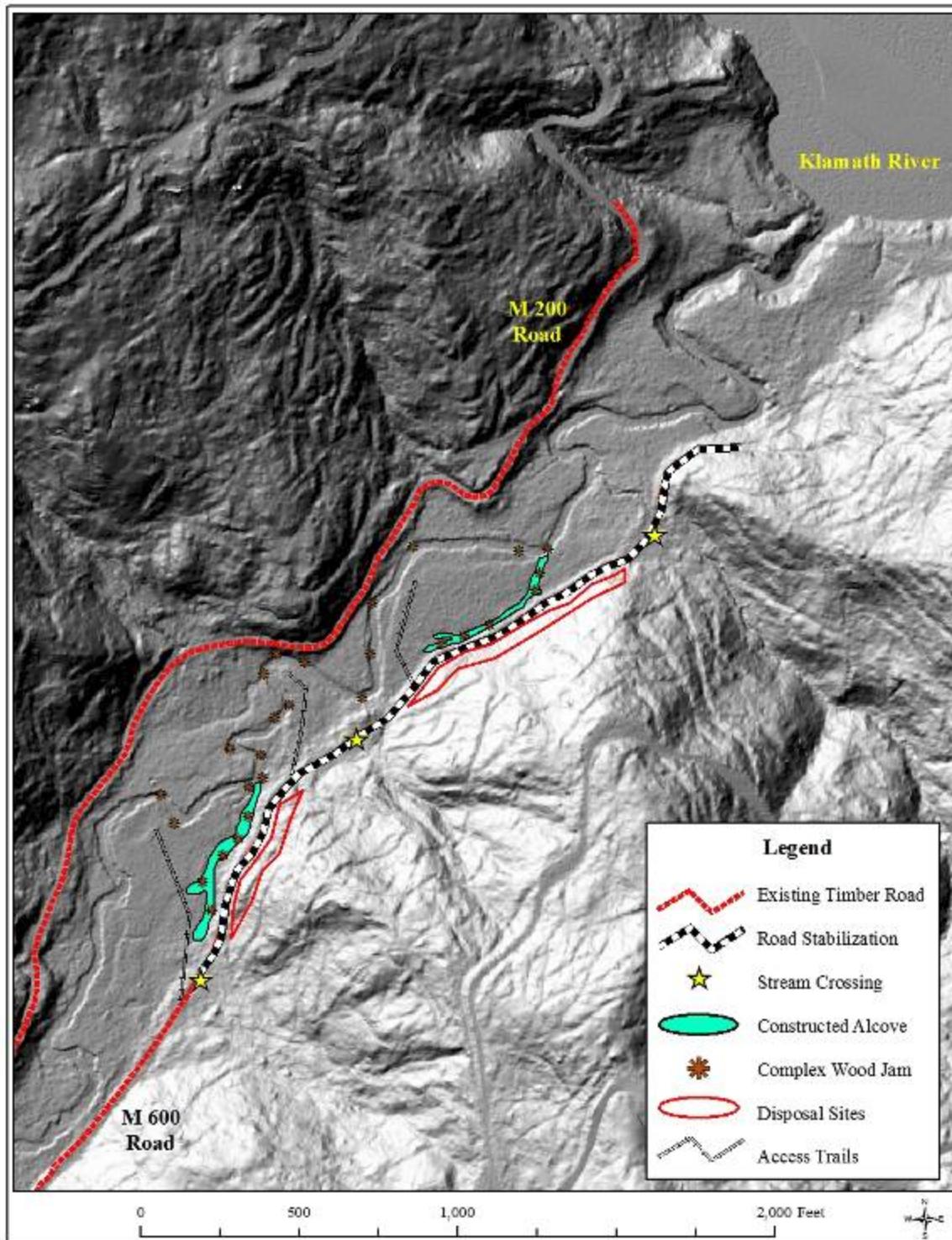


Figure 3. Map depicting Phase I – II restoration plans for lower McGarvey Creek.

and resilient stream and riparian habitats (Figure 4). In spring 2010, crews planted 2,550 native conifers in the reach located directly upstream of the fish structures to promote future wood recruitment to downstream habitats (Figure 5).



Figure 4. Photographs of complex wood jams constructed in Waukell Creek in summer 2009 and the numbered ID tags surveyed to document any movement of wood over time.



Figure 5. Redwood saplings recently planted in riparian habitats of Waukell Creek.

Riparian Forest Restoration

YTFP continued operation of our native tree nursery at the Yurok Fisheries office in Klamath. The nursery provides quality employment opportunities with staff receiving training in native seed collection and germination; cutting, collection and propagation of several species; and tree transplanting and growing skills. The nursery currently provides hundreds of native conifer and deciduous saplings each year for Lower Klamath River watershed restoration projects. Species cultivated and grown to date include coastal redwood, Douglas fir, Sitka spruce, western red cedar, Port Orford cedar, big-leaf maple, red alder, black cottonwood, tanoak, white oak, red alder, and bay laurel. In spring 2009, YTFP worked with a local contractor to construct a green house facility (Figure 6).

In winter 2009-2010, YTFP planted over 9,000 native conifers in riparian habitats of McGarvey Creek upstream of wood loading activities; 27,832 conifers and 283 deciduous trees in riparian habitats of Terwer Creek; 15,889 conifers in riparian habitats Hunter Creek; and 2,550 conifers in riparian habitats of Waukell Creek. Crews also worked with local contractors to construct a greenhouse facility for the tree nursery.

Lower Terwer Creek Restoration

In summer 2009, YTFP continued implementing riparian and stream restoration project tasks in lower Terwer Creek. Funding to complete these efforts was secured through grants from U.S. Bureau of Indian Affairs (BIA), the U.S. Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration's (NOAA) America Recovery and Reinvestment Act Program. Restoration techniques implemented included construction of willow siltation baffles, log-boulder structures, and engineered log jams (ELJs) to reduce bank erosion rates and protect riparian habitats (Figures 7-8).

YTFP and FGS also worked closely with GDRC, USFWS, and NOAA to further develop 2010 restoration plans and to obtain the necessary permits. In spring 2010, YTFP completed a restoration report for USFWS Tribal Landowner Incentive Program. The report documented restoration and monitoring activities in lower Terwer Creek from 2007 – 2009 (YTFP 2010). Starting in July 2010, YTFP and FGS will enhance two existing off-channel ponds in lower Terwer Creek and construct associated willow baffles and ELJs to continue improving stream and riparian habitats in this priority watershed.



Figure 6. Photographs of willow baffle construction (Top Left – winter 2009) and following construction and high flow events (Top Right and Middle and Bottom).



ELJ 1 Post Construction



ELJ 1 During Winter 2009-2010 High Flows



ELJ 2 During
Construction (Above)
and During a High Flow
Event (Bottom Left)



Figure 7. Photographs of engineered log jams constructed in Terwer Creek in 2009.

- **Yurok Tribe Watershed Restoration Department**

During the project period YTWRD accomplished the following tasks:

- Coordinated with the Yurok Forestry Department regarding development of two rock quarries in the sub-basin and for the removal of invasive plant species on Tribal land. YTWRD also coordinated with the Yurok Tribe Environmental Program regarding naturally occurring asbestos (NOA) at Two Snakes and Mahwah rock quarries.
- Coordinated with EPA to excavate two hazardous material remediation sites and haul the excavated material to a proper land fill as part of the Requa Demolition project.
- Coordinated with the Trinity River Restoration Project regarding upcoming gravel augmentation projects occurring below the Lewiston Dam.
- Completed the U1102 Upslope Rehabilitation Project funded by the USFWS.
- Developed two new positions within the department and hired a Road Maintenance Foreman/Heavy Equipment Operator and a Road Maintenance Laborer.
- Implemented a Knotweed Eradication Project in and around the town of Klamath. The eradication work was conducted by YTWRD staff, Del Norte County Agriculture Department staff, and two interns. Eradication efforts will continue throughout 2010-2011 at a minimum since it is expected to take 3-4 years to completely eradicate.
- Worked with the Karuk Tribe and the United States Forest Service to decommission 17 miles of roads in the Bluff Creek watershed, a priority Mid-Klamath tributary.
- Coordinated with Redwood National Parks Service (RNPS) for the upcoming decommissioning of their Requa facility that is expected to begin in August 2010; and regarding road and stream crossing upgrades on the B-line road in Redwood Creek.
- Repaired the water system at the YTWRD facility and staff continued working to remodel the new office building and prepare for the move to the new office.

- **Proposals Submitted**

YTFP Lower Klamath Division submitted the following proposals:

California Department of Fish and Game (Fisheries Restoration Grant Program):

- Stream and Floodplain Enhancement of Hunter, Lower Klamath River - \$92,260

U.S. Bureau of Reclamation (Klamath River Watershed Restoration Program):

- Installation of a Stream-width PIT tag Interrogation System to Track Habitat Use and Non-natal Rearing Patterns of Juvenile Coho in McGarvey Creek - \$88,938

- Enhancement of Overwinter Rearing Habitat for Natal and Non-natal Salmonids in McGarvey Creek, Lower Klamath River - \$98,345

U.S. Bureau of Reclamation Native American Affairs Funding (NAAP):

- Restoration of Coastal Stream and Floodplain Habitats of McGarvey Creek - \$49,000
- Restoration Planning for the Klamath River Estuary and Off-Estuary Habitats - \$20,000

USFWS Partners for Fish and Wildlife Funding:

- Stream and Floodplain Enhancement of Hunter Creek - \$67,374
- Terwer Creek Riparian Conifer Revegetation Project - \$48,939
- Enhancement of Overwinter Rearing Habitat for Salmonids in Hunter Creek - \$48,702
- Enhancement of Overwinter Rearing Habitat in McGarvey Creek, Phase II - \$100,000

- **Funding Secured**

YTFP Lower Klamath Division received funding for the following projects:

California Department of Fish and Game (Fisheries Restoration Grant Program):

- Monitoring Natal and Non-natal Salmonids in McGarvey Creek - \$145,908

U.S. Bureau of Reclamation (Klamath River Watershed Restoration Program):

- Installation of a Stream-width PIT tag Interrogation System to Track Habitat Use and Non-natal Rearing Patterns of Juvenile Coho in McGarvey Creek - \$88,938
- Enhancement of Overwinter Rearing Habitat for Natal and Non-natal Salmonids in McGarvey Creek, Lower Klamath River - \$98,345

U.S. Bureau of Reclamation Native American Affairs Funding (NAAP):

- Restoration of Coastal Stream and Floodplain Habitats of McGarvey Creek - \$10,000

USFWS Partners for Fish and Wildlife Funding:

- Stream and Floodplain Enhancement of Hunter Creek - \$67,374
- Terwer Creek Riparian Conifer Revegetation Project - \$48,939
- Enhancement of Overwinter Rearing Habitat for Salmonids in Hunter Creek - \$48,702
- Enhancement of Overwinter Rearing Habitat in McGarvey Creek, Phase II - \$100,000

IFC International (Formerly IFC Jones and Stokes) Contract:

- Fish Surveys Related to the Proposed Klamath Grade Raise Project - \$70,000

U.S. Bureau of Reclamation:

- Juvenile Coho Ecology Study - \$180,000
- Juvenile Salmonid Disease Research in the Klamath River - \$64,000

National Marine Fisheries Service Tribal Pacific Salmon Funds:

- Juvenile Coho Ecology Study - \$65,000

USFWS (Yreka, California):

- Fall Chinook Escapement and Age Composition in Blue Creek - \$180,000

YTWRD received funding for the following projects:

Effective Date	Projects Code	Granting Agency	Projects Title	Awarded
FY 2010				
10/1/2009	514	USFWS	USFWS 2009 Lower Klamath Sub Basin Planning and Coordination 813339G010	\$5,000.00
10/1/2009	625	RNSP	REQUA DECONSTRUCTION & SITE RESTORATION - RNP	\$120,000.00
10/1/2009	638	USFWS	USFWS 2010 Terwer Creek Upslope Sediment Reduction K5 Road Segment	\$50,000.00
10/1/2009	645	BOR	BOR 2010 Sub Basin Upslope Sediment Prevention in Terwer Creek R09AP20065	\$168,958.83
10/1/2009	965	BOR	2010 BOR TRRP Geological Investigation - Test Pitting Task 12	\$17,244.00
10/1/2009	966	BOR	2010 BOR TRRP High Flow Gravel Injection into Trinity River Task 13	\$40,751.00
6/1/2010	634	BIA	BIA ARRA 2010 Road Repair and Restoration	\$434,679.00
6/1/2010	634	BIA	BIA ARRA 2010 Bridge Repair and Restoration	\$31,633.00
6/1/2010	647	RNSP	RNSP 2010 Requa Maintenance Facility Deconstruction TA J201109646A	\$1,894,817.00
6/1/2010	648	RNSP	RNSP 2010 Requa Site Restoration & Revegetation TA J201109646A	\$395,662.00
6/1/2010	649	CDFG	CDFG 2010 Klamath River Road Decommissioning & Sediment Prevention P0910307	\$169,108.00
				Total FY 2010 \$3,327,852.83

• **Meetings Attended**

YTFP and YTWRD held monthly meetings throughout the project period to coordinate ongoing and future watershed restoration, assessment, and monitoring activities throughout the Lower Klamath Sub-basin.

YTFP and YTWRD held regular meetings with GDRC during the project period. These meetings were held to discuss ongoing and future watershed restoration, assessment, and monitoring projects within the Lower Klamath Sub-basin.

YTFP and YTWRD met on a regular basis with the Yurok Tribal Council during the project period to hold fisheries and watershed restoration related planning sessions; and to discuss and seek approval from the Council for proposed watershed restoration, assessment, and monitoring projects within the Lower Klamath sub-basin.

YTFP and YTWRD held regular meetings with Rocco Fiori (FGS - Licensed Geologist) during the project period to discuss ongoing and future watershed restoration, assessment, and monitoring projects in the Lower Klamath Sub-basin.

YTFP and YTWRD staff met regularly with staff from CDFG, BOR, NOAA, and USFWS during the project period to discuss and coordinate ongoing and future watershed restoration projects; and conduct pre- and post-project field reviews of Tribal projects.

YTWRD met regularly throughout the project period with representatives of RNPS to discuss ongoing and future projects on RNP property and at the Requa Facility Project.

YTFP and FGS held several meetings with YTWRD and GDRC to obtain the wood necessary to implement wood loading activities in several Lower Klamath tributaries.

YTFP and FGS met with Ken Farley (Terwer Creek landowner) and resource agency staff on several occasions during the project period to discuss ongoing and future restoration work on Mr. Farley's property in lower Terwer Creek.

YTFP met several times with the Resighini Rancheria Tribal Council and Rob Cozens (Resighini EPA Director) to discuss the Coho Salmon Ecology Study and to discuss potential road rehabilitation and restoration projects in the Waukell Creek watershed.

YTFP worked closely with staff from the BOR, Karuk Tribe, CDFG, and Larry Lestelle over the project period to plan and implement the Coho Salmon Ecology Study.

YTFP met with CDFG, BOR, USFWS, Kate Sloan (YTEP), and Bob McConnell (THPO) on several occasions to discuss environmental and cultural compliance requirements for 2010-2011 wood loading and off-channel restoration projects in the Lower Klamath.

YTFP continued coordinating with multiple Yurok Tribal Departments and California Department of Transportation (Caltrans) staff regarding their Klamath Grade Raise (KGR) Project proposed to be implemented in the lower portion of the Yurok Reservation. Participation in this process has included attending 1) bi-weekly KGR planning meetings; 2) meetings with multiple resource agencies regarding potential impacts to wetland and fisheries resources and to discuss potential minimization actions and project mitigation; and 3) internal meetings to discuss potential benefits and impacts.

YTFP provided fisheries monitoring and watershed restoration related training and curriculum to Klamath Early College students during the project period.

YTFP staff (Dave Weskamp, Gilberto Calleja, Aldaron McCovey, Delmer Jordan, and Sarah Beesley) attended the first annual joint California-Nevada Chapter of the American Fisheries Society and the Salmonid Restoration Federation conference held in Redding in March 2010. Sarah Beesley coordinated with Rocco Fiori (FGS) on a presentation regarding wood loading techniques and the importance of these projects to the survival of

California salmonids, especially coho. FGS presented several case studies including the wood loading projects implemented in Terwer, McGarvey, and Tectah Creeks.

YTFP held regular coordination meetings with staff from the USFWS CA-NV Fish Health Center and other involved stakeholders to conduct sampling activities associated with the Klamath Basin Juvenile Pathology Monitoring Project in 2009-2010.

Literature Cited

Beesley, S. 2007. Update Report: Evaluation of current and historical habitat conditions and water quality in off-estuary habitats of the Klamath River. Yurok Tribal Fisheries Program, Klamath, California.

Beesley, S. and R.A. Fiori. 2004. Habitat assessment and restoration planning in the Salt Creek watershed, Lower Klamath River Sub-basin, California. Yurok Tribal Fisheries Program, Klamath, California.

Beesley, S and R.A. Fiori. 2007. Geomorphic and hydrologic assessment and restoration planning in the Salt Creek watershed, Lower Klamath River Sub-basin, California. Yurok Tribal Fisheries Program. Klamath, California.

Beesley, S. and R.A. Fiori. 2007b. Lower Klamath River Tributary Delta and Subsurface Flow Study, Lower Klamath River Sub-basin, California. Yurok Tribal Fisheries Program, Klamath, California.

Beesley, S and R.A. Fiori. 2008. Cooperative restoration of Tribal Trust fish and wildlife habitat in Lower Klamath River tributaries. Yurok Tribal Fisheries Program. Klamath, California.

Beesley, S. and R.A. Fiori. 2008b. Restoration Planning in Lower Blue Creek, Lower Klamath River: Phase I. Yurok Tribal Fisheries Program, Klamath, California.

Beesley and Fiori. 2010. Waukell Creek Draft Feasibility Report to the California Department of Fish and Game. Yurok Tribal Fisheries Program, Klamath, California.

Gale, D.B. 2008. Instream Restoration of Lower West Fork McGarvey Creek. Yurok Tribal Fisheries Program, Klamath, California.

Gale, D.B. 2009. Instream and Riparian Enhancement of Mainstem McGarvey Creek (Phase I). Yurok Tribal Fisheries Program, Klamath, California.

Gale, D.B., and D.B. Randolph. 2000. Lower Klamath River sub-basin watershed restoration plan. Yurok Tribal Fisheries Program, Klamath California.

Hillemeier, D., T. Soto, S. Sillway, A. Corum, M. Kleeman, and L. Lestelle. 2010. The Role of the Klamath River Mainstem Corridor in the Life History and Performance of Juvenile Coho Salmon (*Oncorhynchus kisutch*) - Year 2 Report May 2007 – May 2008. Report to the U.S. Bureau of Reclamation, Klamath Area Office, Klamath Falls, Oregon.

Patterson, W.D. 2009. Klamath River Estuary Wetlands Restoration Prioritization Plan. Yurok Tribe Environmental Program-Water Division, Klamath California.

Sillway, S. 2010. Fish Surveys Related to the Proposed Del Norte Highway 101 Klamath Grade Raise Project. Yurok Tribal Fisheries Program, Klamath, California.

Soto, T., A. Corum, H. Voight, D. Hillemeier, and L. Lestelle. 2008. The Role of the Klamath River Mainstem Corridor in the Life History and Performance of Juvenile Coho Salmon (*Oncorhynchus kisutch*). Phase I Report Submitted to the U.S. Bureau of Reclamation, Klamath Area Office, Klamath Falls, Oregon.

Yurok Tribal Fisheries Program. 2009. A Complete Life History Monitoring of Salmonids in McGarvey Creek, Lower Klamath River Sub-Basin, 2006-2009. Yurok Tribal Fisheries Program, Klamath, California.

Yurok Tribal Fisheries Program. 2010. Lower Terwer Creek Streambank and Riparian Restoration - U.S. Fish and Wildlife Service – Tribal Landowner Incentive Program Project. Yurok Tribal Fisheries Program, Klamath, California.

Budget

Project Funding:

Personnel Costs

Salaries	\$8,420.00
Staff Benefits:	\$2,711.00
Total Personnel Costs:	\$11,131.00

Material and Supplies

Office Supplies	<u>\$512.00</u>
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Administrative Costs

Administrative Overhead:	<u>\$2,357.00</u>
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Total Funds Expended: **\$15,000.00**