

Draft CVPIA Fiscal Year 2010 Annual Work Plan

October 1, 2009

Program Title

Trinity River Restoration Program (TRRP) - CVPIA Section 3406(b)(1) other/ (b)(23)

Responsible Entities

Staff Name	Agency	Role
Mike Hamman	USBR	Executive Director
Jennifer Faler	USBR	Implementation Branch Chief

Program Goals and Objectives for FY 2010

The Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) completed in October 2000, and the Record of Decision (ROD), signed on December 19, 2000, established a comprehensive science-based adaptive management program to restore the Trinity River's fishery. The program is based upon restoring the attributes of a healthy, alluvial river system by implementing variable annual instream flows, physical channel rehabilitation, sediment management, and floodplain infrastructure improvements.

Activities in Fiscal Year (FY) 2010 will focus on in-river construction activities and associated monitoring that support the program objective of increasing juvenile rearing habitat for salmonids. Specifically, CVPIA Restoration Funds will contribute to implementation of the following task in FY 2010:

Task 1.11.1. - Construct 3 channel rehabilitation projects (**high priority**) during the 2009/10 construction season and perform annual coarse sediment augmentation (**lower priority**). The channel rehabilitation projects (Lowden Ranch/Trinity House Gulch, Reading's Creek, and Wheel Gulch) will include a combination of habitat improvement projects that will focus on side channel construction, floodplain lowering, woody debris placement, spawning gravel processing and augmentation, and other juvenile rearing habitat enhancements. Annual coarse sediment augmentations are based on water year type. In 2010 it is anticipated that 5,000 cubic yards of coarse sediment will be placed through direct injection during high flows and an additional 15,000 – 20,000 cubic yards will be placed in conjunction with the construction of the Lowden Ranch/Trinity House Gulch, Reading's Creek, and Wheel Gulch channel rehabilitation sites.

Status of the Program

The TRRP has a fully staffed office dedicated to planning and implementing restoration activities, monitoring and program administration. Over the years, this Program has implemented many projects to improve anadromous fisheries habitat in the Trinity River Basin. The TRRP continues

to develop valuable scientific knowledge and restoration techniques to improve the success of this program and restoration projects on other rivers.

In fiscal years 2001-2009, the CVPIA Restoration Fund has allocated \$12,500,000 to the TRRP. Those funds, plus additional Federally appropriated funds and State funds, have been used to support the planning, environmental compliance, design, and construction activities at four bridge replacement sites, construction of seventeen channel rehabilitation projects, and placement of 24,700 cubic yards of spawning gravel below Lewiston Dam. Table A - Coarse Sediment Augmentation Summary Per Fiscal Year provides a complete accounting of TRRP's coarse sediment augmentation program. One house was relocated, a number of structures modified, and 120 domestic water or sewer systems have been upgraded. In addition, extensive efforts have been made to develop an Integrated Assessment Plan that will guide future monitoring and evaluation activities in a more cost efficient and effective manner. Interrelationships between and among geomorphic, riparian, and biological resources have been more thoroughly identified than ever before, and relative priorities are being established to ensure that key components are adequately addressed even in the event of constrained budgets. The success of this program element has a direct bearing on the ability of the TRRP to measure longer-term progress towards fishery restoration goals.

Implementation of the ROD-defined flow schedules is a cornerstone of the TRRP's outcome based fishery restoration goals. The volumes of water (acre-feet) and peak releases (cubic feet per second) are based on five water year types (Critically Dry, Dry, Normal, Wet, and Extremely Wet), and collectively are designed to create inter-annual variability that mimics the pre-dam snowmelt driven hydrograph and contributes to the desired healthy river attributes identified in the flow study. The program has made significant progress toward meeting goals of the program, although substantial additional effort is required to fully achieve performance goals. For example, the floodplain structures modification aspect of the program has achieved 100 percent capability of releasing maximum ROD flows for all water year types (critically dry, dry, normal, wet, extremely wet). Since the ROD was signed, nearly 2.26 million acre-feet more water has been released into the Trinity River than if it had not been signed. However, there have not been enough instances of each water year to adequately address the adaptive management requirements of the program. In addition to the flow accomplishments, the program has completed approximately 36% of the channel rehabilitation projects (17 out of 47 sites). Refer to Table B - Rehabilitation Site Construction Summary below for a summary of the mechanical channel rehabilitation sites. Lastly, watershed and sediment management (gravel augmentation and fine sediment control) activities are ongoing annual requirements employed to achieve long term equilibrium of gravel movement through the system.

Monitoring suggests there has generally been an improvement in health and vigor of outmigrating juveniles, as well as returning adult spawners of all species since 2000. Data suggest an upward trend in coho salmon and steelhead run size over the last 12 years, along with decreased prevalence of disease and improved egg/sperm viability of spawners of all species. The DFG responded to increases in 2006 and 2007 record fish runs in steelhead numbers by instituting a larger take limit for hatchery steelhead for recreational anglers in the Trinity River

during the 2008 fishing season. While much of the increased population consists of hatchery-produced fish, this suggests a response to system-wide improvements in temperatures and reduced fine sediment that likely is beneficial to all species and runs. The variable nature of these populations was demonstrated in preliminary 2008 weir counts, which suggests a smaller steelhead run than the past two years, but with a somewhat higher percentage of wild fish.

FY 2009 Restoration Fund (RF) Accomplishments

In fiscal year 2009, the CVPIA Restoration Fund allocated \$1,000,000 to support the Trinity River Restoration Program. Including \$1,550,000 in carryover from fiscal year 2008, a total of \$2,550,000 was used to accomplish the following activities:

- Contract award and construction of an extensive channel rehabilitation project in Lewiston. Construction on the Sawmill Rehabilitation Site project will be 50% complete by the end of the fiscal year and 100% complete by December 2009. Over 87,000 cubic yards of material is being excavated and 5,700 cubic yards of coarse sediment is being placed along a 1 mile section of the Trinity River. In addition, approximately 300 pieces of large woody debris, boulders, willow clumps, etc. will be placed in the mainstem and cemetery side channel for aquatic and geomorphic purposes. The project will improve approximately 2 miles of edge habitat and 25 acres of floodplain surfaces.
- Placement of 2,300 cubic yards of spawning gravel at Sawmill and Diversion Pool sites during the spring 2009 high flow event.
- Award of grant agreement for the purpose of implementing five watershed restoration projects developed and selected through the collaborative activities of the Trinity River Watershed Council and the TRRP Watershed Work Group. The restoration projects include mitigation projects in areas of high sediment production, preventative maintenance to reduce the likelihood that high rates of sediment projection will develop in the future, sediment detention, enhancing fish passage at road crossings or other obstructions, and assessments for identifying and prioritizing the watershed activities that will most effectively improve aquatic habitat conditions.
- The program worked with local landowners to complete an additional 53 water well upgrades to offset the effects of the higher flows.
- Other projects funded primarily with CVPIA funds include a detailed bathymetric and topographic survey to produce a digital elevation model (DEM) using light detection and ranging (LIDAR) technology and environmental mitigation monitoring (birds, reptiles, and amphibians).

Research indicates that a three to four-fold increase in rearing habitat is required to observe statistically significant increases in juvenile fish production. Completed work in 2009 significantly increases spawning gravel availability for adults and rearing habitat available for juvenile salmonids in the Lewiston area.

FY 2009 Water & Related Resources (W&RR) Fund Accomplishments:

In FY 2009, the TRRP obligated \$6,900,000 in W&RR funds. These funds helped accomplish the following activities:

- Program Administration of the TRRP, including Weaverville field office, Trinity Management Council (TMC) member agencies and tribes, and the federal advisory committee Trinity Adaptive Management Working Group (TAMWG).
- Flow schedule planning for WY2009.
- Completion of the final review draft of the Integrated Assessment Plan (science framework for monitoring activities) – reviewed and approved by the TMC in December 2008.
- The Master Environmental Assessment (EA)/Environmental Impact Report (EIR) was completed for the remaining construction activities (i.e. channel rehabilitation, gravel augmentation and other sediment management activities). A Master EA/EIR will reduce overall program costs and potentially accelerate the construction program implementation for the remaining 30 sites.
- The program worked with local landowners to complete an additional 53 water well upgrades to offset the effects of the higher flows. These projects were partially funded with CVPIA Restoration Funds.
- Ongoing monitoring/assessment tasks – approximately \$2 million to conduct stream gaging, sediment transport, juvenile outmigrant and fry utilization surveys, adult run size (weirs), sport and tribal harvest, pre-construction habitat assessment, juvenile/adult fish health, riparian vegetation and wildlife, etc.

The information in the following tables illustrates the progress of the site rehabilitation and gravel augmentation activities. Table A is a summary of the coarse sediment augmentation locations and quantities that were completed in FY 2003 - FY 2009. Table B provides a summary of the entire site rehabilitation aspect of the program.

Table A - Coarse Sediment Augmentation Summary Per Fiscal Year

Fiscal Year	Gravel Augmentation Location	Gravel (CY)	Total per Year
2003	Cableway	2,000	2,000
2004	--	0	0
2005	--	0	0
2006	Hatchery	1,621	1,621
2007	Hatchery	4,300	4,300
2008	High Flow Injections	2,300	14,300
	Lewiston-Dark Gulch	12,000	
2009	High Flow Injections	2,300	8,000
	Sawmill	5,700	

Table B - Rehabilitation Site Construction Summary

Fiscal Year	Rehabilitation Site	# Sites	Dirtwork (CY)	Gravel (CY)
2005 / 6	Hocker Flat (complete)	1	83,000	0
2006 / 7	Canyon Creek Sites (complete)	4	91,000	0
2007 / 8	Indian Creek Sites (complete)	3	77,800	0
2008 / 9	Lewiston and Dark Gulch Sites (complete)	8	56,900	10,700
2009 / 10	Sawmill (50% complete)	1	87,750	5,700
2010 / 11	Lowden, Trinity House Gulch, Reading Creek, and Wheel Gulch Sites	6	TBD	TBD
2011 / 12	Phase 2 (To Be Determined)	6	TBD	TBD
2012 / 13	Phase 2 (To Be Determined)	6	TBD	TBD
2013 / 14	Phase 2 (To Be Determined)	6	TBD	TBD
2014 / 15	Phase 2 (To Be Determined)	6	TBD	TBD

Table 1. FY 2010 Tasks, Costs, Schedules and Deliverables

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
1.1	Program Management							
1.1.1		3.5	DOI Co-designee for program implementation - USBR. NCAO Executive Director - USBR Trinity River Restoration Program (TRRP) Responsibilities include implementation of the Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Final EIS/EIR signed December 2000. Program activities are performed under the authority of CVPIA Section 3406(b)(23) for provisions of the ROD associated with implementation of annual instream flows. Other activities not specifically identified in Section 3406(b)(23) are performed under the authority of 3406(b)(1)(other). Budget components for FY2010 include personnel costs, office and vehicle lease charges, and Reclamation indirect charges. FTE's are identified as follows: Executive Director (1 FTE), Secretary (1 FTE), Grants & Agreements/Budget (1 FTE), RIG Branch Chief (.5 FTE)	Ongoing	\$0	\$1,065,900	\$0	\$1,065,900
	<u>Subtotal Costs</u>	3.5			\$0	\$1,065,900	\$0	\$1,065,900
1.2	Program Support							
1.2.1		See 1.1.1	Vacant, DOI Co-designee for program implementation - USFWS Arcata Field Office, with appropriated USFWS funds.	Ongoing	\$0	\$0	\$0	\$0
	<u>Subtotal Costs</u>				\$0	\$0	\$0	\$0
1.3	Technical Support							
1.3.1			Trinity Management Council (TMC) - Group of agencies and tribes established by Trinity ROD to advise the Secretary on management of the program. Provides broad direction on funding prioritization and program emphasis. Includes labor, travel and per diem costs for 8 principle TMC members and technical representatives and other direct and indirect costs.	Ongoing	\$0	\$750,800	\$0	\$750,800

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated	
1.3.2			Non-project specific funding in addition to that associated with TMC activities. This support allows the Hoopa Valley Tribe and the Yurok Tribe to fully administer and support on-going technical assessment activities related to the Trinity River Restoration Program's Adaptive Management (AEAM) of the program. This scope of work reflects the emphasis in overall planning and implementation of the Trinity Adaptive Environmental Management and Assessment Program (AEAMP), as well as policy deliberations, technical analysis, and coordination within Tribal government.	Ongoing	\$0	\$450,000	\$0	\$450,000	
1.3.3			Trinity Adaptive Management Working Group (TAMWG) - A chartered FACAs group of involved agencies and stakeholders. Includes travel and per diem costs for 15-20 members and administrative support costs. Funded through the USFWS.	Ongoing	\$0	\$0	\$0	\$0	
1.3.4			Independent Review Committees - Includes objective peer review by a Science Advisory Board and independent review panels to review draft Scopes of Work and RFP's.	Ongoing	\$0	\$100,000	\$0	\$100,000	
	<u>Subtotal Costs</u>					\$0	\$1,300,800	\$0	\$1,300,800
1.4	Restoration Actions								
1.4.1			Restoration actions to be implemented in FY2010 are identified in other tasks listed herein.		\$0	\$0	\$0	\$0	
	<u>Subtotal Costs</u>					\$0	\$0	\$0	\$0
1.5	Evaluations Studies Investigations Research								
1.5.1			Adult fish health study. The USFWS funds these projects and is responsible for reporting on other adult fish health and emigration studies that contribute to the Program.	Ongoing	\$0	\$0	\$240,000	\$240,000	
	<u>Subtotal Costs</u>					\$0	\$0	\$240,000	\$240,000
1.6	Land - Water - and - Conveyance - Acquisitions								
1.6.1		1.0	Realty agreements with private landowners to indemnify the Government from any liabilities associated with implementation of the ROD fishery flows. Includes signed "Agreement, Accord and Satisfaction" documents that are recorded against the property. Also supports the "Well and Septic Assistance Program" administered through a grant to Trinity County. Includes 1 FTE: Realty Specialist.	Ongoing	\$0	\$315,000	\$0	\$315,000	
	<u>Subtotal Costs</u>					\$0	\$315,000	\$0	\$315,000

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
1.7	Outreach and Public Involvement							
1.7.1			Program structure (TMC, TAMWG) and environmental compliance processes provide significant outreach and public involvement opportunities. Includes publications, program brochures, website maintenance, and exhibits	Ongoing	\$0	\$20,000	\$0	\$20,000
	<u>Subtotal Costs</u>				\$0	\$20,000	\$0	\$20,000
1.8	Planning							
1.8.1		1.0	Continued development of an Integrated Assessment Plan (IAP) and Integrated Information Management System (IIMS) to guide the adaptive management component of the program. Includes monitoring protocols, performance measure analysis, development and bi-annual science symposium. Includes: .5 FTE, Physical Scientist; .5 FTE Data Steward (contract employee)	9/30/2009	\$0	\$275,000	\$0	\$275,000
	<u>Subtotal Costs</u>	1.0			\$0	\$275,000	\$0	\$275,000
1.9	Environmental Compliance							
1.9.1		1.5	Environmental and cultural resource compliance as necessary to implement the channel rehabilitation and gravel augmentation components of the program. Includes preparation of CEQA/NEPA environmental reviews, environmental permitting, and mitigation planning for phase 2 channel rehab sites through 2014 with long-term gravel augmentation of 10,000 - 15,000 tons per year at multiple sites. Includes: 1.0 FTE, Environmental Specialist; .5 FTE, Vacant, GIS Technician.	9/30/2015	\$0	\$570,000	\$0	\$570,000
	<u>Subtotal Costs</u>	1.5			\$0	\$570,000	\$0	\$570,000
1.10	Design							

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
1.10.1		1.5	Preparation of IDIQ task orders to implement the channel rehabilitation and gravel augmentation components of the program. Includes planning and conceptual designs for 23 phase 2 channel rehabilitation sites to be constructed from 2011-2014 (see table 2, pg. 5), with associated gravel processing and augmentation. Three IDIQ task orders for the 2010 construction activities will be prepared by program partners, TRRP personnel, and a qualified consultant. The TRRP assembles the design packages and coordinates with MPCO and MP-3800 for reviews, document preparation, and contract solicitation and award. Includes a Value Engineering study, surveying, geologic and hydrologic investigations, and HEC RAS support. Includes: 1.0 FTE, Civil Engineer; .5 FTE, vacant, Civil Technician.	9/30/2015	\$0	\$575,000	\$0	\$575,000
	<u>Subtotal Costs</u>	1.5			\$0	\$575,000	\$0	\$575,000
1.11	Construction							
1.11.1		2.5	Construction of channel rehabilitation sites (high priority) and gravel augmentation (lower priority) projects as identified in the ROD. Includes funding for Upper Reading Creek and Wheel Gulch. Also includes environmental requirements. Projects have a direct affect on CPAR performance goals for 3406(b)(23) Trinity River Flow and (b)(1)(other) Fishery Restoration by increasing juvenile rearing and adult spawning habitat. Includes: .5 FTE, RIG Branch Chief; .5 FTE, vacancy, GIS Technician; .5 FTE, vacancy, Civil Technician; 1.0 FTE, vacancy, Contracting Officer's Representative.	9/30/2011	\$1,750,000	\$63,000	\$0	\$1,813,000
1.11.2			Construction of channel rehabilitation sites (high priority) and gravel augmentation (lower priority) projects as identified in the ROD. Includes contract award of four projects; Reading Creek, Lowden, Trinity House Gulch, and a portion of Wheel Gulch. ARRA FUNDING	3/31/2011	\$0	\$0	\$4,420,000	\$4,420,000
	<u>Subtotal Costs</u>	2.5			\$1,750,000	\$63,000	\$4,420,000	\$6,233,000
1.12	Monitoring							
1.12.1		3.0	Physical and biological monitoring activities to support the performance and adaptive management components of ROD implementation. Includes stream flow gauging and monitoring associated with water temperature, mainstem sediment transport, geomorphology, implementation, riparian vegetation, wildlife, habitat assessment, hatchery practices, and run size/angler harvest. Other fisheries monitoring activities are funded directly and reported on by the USFWS. Includes: .5 FTE, Special Projects; .5 FTE, Geomorphologist; .5 FTE Physical Scientist; 1 FTE, Fisheries Biologist; .5 FTE Database Steward, (contract employee)	Ongoing	\$0	\$2,193,300	\$845,000	\$3,038,300

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
	<u>Subtotal Costs</u>	3.0			\$0	\$2,193,300	\$845,000	\$3,038,300
1.14	Watersheds							
1.14.1		0.5	Watershed planning and implementation includes coordination with the local Watershed Council and implementation of restoration projects that reduce fine sediment input to the Trinity River. 11 projects are being implemented in 2009 and new projects are in the review stage for 2010. Since the ROD was signed in 2000, the program has been committed to funding and implementing watershed restoration projects on the Trinity River. Dependent on funding and the availability of approved projects by the Watershed Council, the program is committed to funding restoration projects annually. The watershed program is an ongoing annual requirement and includes .5 FTE, Geomorphologist	Ongoing	\$0	\$375,000	\$0	\$375,000
	<u>Subtotal Costs</u>	0.5			\$0	\$375,000	\$0	\$375,000
	Total Costs	14.5			\$1,750,000	\$6,753,000	\$5,505,000	\$14,008,000
	Reclamation funding ARRA	14.5			\$1,750,000	\$6,753,000	\$0	\$8,503,000
	USFWS				\$0	\$0	\$4,420,000	\$4,420,000
	Restoration Fund Carry Over	\$750,000			\$0	\$0	\$1,085,000	\$1,085,000
	Note: \$295,000 will be added to Water and Water Related as a fund transfer partially restoring the \$387,000 cut to construction (1.11.1)							

Table 2. Budget Breakout

Task	Agency	FTE	LABOR		CONTRACTS		USBR Only Misc. Costs	Total Costs
			Direct Salary, Benefits, and Admin. Costs ^{1/}	FWS Only Overhead Assess: 22% of Direct Salary and Benefits Costs ^{2/}	Contract, Grant, and Agreement Costs	FWS Only Overhead Assess: 6% Contract Costs ^{2/}		
1.1 Program Management	FWS			\$0	\$0	\$0		\$0
	USBR	3.5	\$602,400		\$0		\$463,500	\$1,065,900
1.3 Technical Support	FWS		\$0	\$0	\$0	\$0		\$0
	USBR		\$0		\$1,300,800		\$0	\$1,300,800
1.6 Land, Water and Conveyance Acquisitions	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	1	\$165,000		\$150,000		\$0	\$315,000
1.7 Outreach and Public Involvement	FWS		\$0	\$0	\$0	\$0		\$0
	USBR		\$0		\$20,000		\$0	\$20,000
1.8 Planning	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	1	\$150,000		\$125,000		\$0	\$275,000
1.9 Environmental Compliance	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	1.5	\$220,000		\$350,000		\$0	\$570,000
1.10 Design	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	1.5	\$205,000		\$370,000		\$0	\$575,000
1.11 Construction	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	2.5	\$300,000		\$1,513,000		\$0	\$1,813,000
1.12 Monitoring	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	3	\$465,000		\$1,728,300		\$0	\$2,193,300
1.14 Watersheds	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.5	\$75,000		\$300,000		\$0	\$375,000
Administrative Total - FWS			\$0	\$0		\$0		\$0
Contracts, Grants and Agreements Total - FWS					\$0			\$0
FWS Total Costs		0	\$0	\$0	\$0	\$0		\$0
Administrative Total - USBR			\$2,182,400				\$463,500	\$2,645,900

Contracts, Grants and Agreements Total - USBR				\$5,857,100			\$5,857,100
USBR Total Costs	14.5	\$2,182,400		\$5,857,100		\$463,500	\$8,503,000
TOTAL ALL	14.5	\$2,182,400	\$0	\$5,857,100	\$0	\$463,500	\$8,503,000

1/ For FWS only: The FWS develops a bio-rate which is the combination of both the salary/benefit and related administrative costs. The FWS simple definition reads, "It is an average \$\$ rate that is developed and used for estimating project costs. It incorporates a biologists' salary and benefits, supervisory, clerical and biologist support costs and all other office operating costs related to completing project tasks.

2/ FWS assesses an O/H Burden charge of 6% on all contracts/agreements related to budget object codes starting with 25, 41, and 32, and a charge of 22% on costs under all other budget object codes.

Table 3. Three-Year Budget Plan FY 2011 – 2013

(\$ amounts in thousands)

Year	Description of Activities (RF Funding)	Requested RF Funding	Requested W&RR Funding
2011	Restoration funds will contribute to implementation of up to 6 phase 2 channel rehabilitation sites. Conceptual designs are currently being developed for 9 of the phase 2 sites. Cost estimates have not yet been developed for Phase 2 sites.	\$1,000	\$ 11,823
2012	Restoration funds will contribute to implementation of up to 6 phase 2 channel rehabilitation sites. Cost estimates have not yet been developed for Phase 2 sites.	\$1,000	\$ 13,200
2013	Restoration funds will contribute to implementation of up to 6 phase 2 channel rehabilitation sites. Cost estimates have not yet been developed for Phase 2 sites.	\$1,000	\$13,200

Note: The FY 2011 – 2013 Budget Plan provides estimates of capability only. The amounts are displayed are those that might be reasonably appropriated each year. These figures do not reflect the future Congressional Appropriations process. All of these estimates will be adjusted annually as RF collections are realized.

Table 4. FY 2010 CVPIA Monitoring Projects

Project Description:	Riparian Vegetation Monitoring (At Channel Rehab sites and 40 Mile Trinity River reach)
FY 2009 Project Complete?	Field work just completed. Reporting and mapping in process
CVPIA annual work plan subtask number:	1.9.1
Scope of the monitoring effort:	Channel Rehabilitation sites and within 40 mile study reach
Product/deliverable:	Annual reports documenting riparian vegetation success at Channel Rehabilitation sites that have been previously implemented.
Cost:	\$100,000
Questions posed:	Which plants are surviving that we have planted at our rehab sites and why or why not? Have we succeeded in establishing a diverse assemblage of native riparian vegetation at our channel rehab sites? Has the vegetation within the 40-mile restoration reach changed since implementation of the ROD? How?
Objectives:	To monitor success of rehabilitation efforts and enhancing natural riverine processes on riparian vegetation at channel rehab sites and along the 40-mile Trinity River reach.
Results – expected or actual:	As more rehab sites are implemented we expect to see that our planting techniques are more successful and to realize better survival. Similarly, as conditions are improved along the Trinity (via ROD implementation). We expect to see more diverse (species and age classes) of riparian vegetation established
Data collection methods:	1) Vegetation mapping and success documentation at rehab sites 2) vegetation mapping along the river of 0.1 acre polygons and greater raft.
Data management:	By TRRP with information from consultants/partners
Assessment:	Comparison of impacted riparian acreages and the resultant acreages of riparian vegetation at the channel rehab sites after 10 years. Comparison of pre-ROD and post ROD riparian vegetation maps along the 40 mile study reach
Use of information in future decision making:	Long term assessment: Requires time to establish vegetation to self-maintaining

NMFS OCAP BO RPA	No
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Project Description:	Adults Run Size
FY 2009 Project Complete?	Field work ongoing for 2009 run
CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Whole Trinity River System
Product/deliverable:	Annual final Reports from HVT, and CDFG, USFWS documenting the results of the monitoring activity
Cost:	\$847,000
Questions posed:	Has the in-river run size shifted with ROD flows? Has escapement changed with rehabilitation or ROD flows? Has abundance and distribution of redds changed in response to ROD flows or rehabilitation efforts? Has tribal or in river sport harvest increased in response to rehabilitation actions or ROD flows?
Objectives:	To monitor success of rehabilitation efforts on harvest and escapement.
Results – expected or actual:	As conditions in river improve we predict that in river run size, escapement and harvest will increase. Trend analyses over a 10 year period may be used to answer the above questions.
Data collection methods:	Weirs, carcass/redd surveys, sport and tribal harvest surveys, coded wire tagging (CWT) of 25% of hatchery Chinook, 100% marking of hatchery steelhead and Coho. Scales collected and analyzed..
Data management:	Database maintained by CDFG, HVT and YT, data used for fall Chinook in harvest management of Klamath stocks, PFMC uses data
Assessment:	In river run size, escapement and harvest numbers for Chinook, Coho, and steelhead. Proportion of hatchery spawners in wild, separation of fall and spring Chinook, separation of different aged Chinook using scales and CWT
Use of information in future decision making:	Long term assessment , cannot be used for short term decision making

NMFS OCAP BO RPA	Yes for coho
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Project Description:	Gravel augmentation monitoring
FY 2009 Project Complete?	Yes
CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Determine fate of gravel introduced during high flow events
Product/deliverable:	Bathymetric data in the vicinity of gravel augmentations
Cost:	\$80,000
Questions posed:	Where does gravel introduced at specific locations during high flow events get deposited? Does the gravel clear from the pools where it is introduced?
Objectives:	Guide implementation of the gravel augmentation component of the Program
Results – expected or actual:	Maps showing regions of deposition and erosion of the bed
Data collection methods:	Sonar with integrated GPS
Data management:	yes
Assessment:	Where does gravel introduced at specific locations during high flow events get deposited? Does the gravel clear from the pools where it is introduced?
Use of information in future decision making:	Guide implementation of the gravel augmentation component of the Program
NMFS OCAP BO RPA	

Project Description:	Baseline Cross Sections and thalweg profiles at Rehabilitation Sites
FY 2009 Project Complete?	Yes

CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Survey cross sections and thalweg profiles at selected rehabilitation sites
Product/deliverable:	Cross section surveys and thalweg profiles
Cost:	na
Questions posed:	What is the as-built configuration of the stream channel at selected rehabilitation sites?
Objectives:	Implementation monitoring and documentation of as-built conditions for use in quantifying future channel changes
Results – expected or actual:	Document as-built conditions
Data collection methods:	Topographic surveys
Data management:	yes
Assessment:	Determine if sites were constructed as intended and quantify future channel changes
Use of information in future decision making:	Determine if sites were constructed as intended and quantify future channel changes
NMFS OCAP BO RPA	

Project Description:	Integrated habitat assessment
FY 2009 Project Complete?	No, it is being continued in 2010
CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Upper 40 miles and individual channel rehabilitation sites
Product/deliverable:	Final report and raw data
Cost:	\$1,141,300
Questions posed:	Are flow study management objectives being achieved by flow releases? Is there a cause and effect link between geomorphology, riparian vegetation, fish habitat, and Foothill Yellow Legged Frog egg

	incubation? Are channel rehabilitation design features performing as designed?
Objectives:	Inform management actions
Results – expected or actual:	None yet
Data collection methods:	Vegetation: band transects, planform mapping, and substrate sampling Geomorphic: Bar mobility and scour, topographic surveys (cross-sections, longitudinal profiles, and/or 1-D hydraulic modeling of selected constructed alcoves, scour channels, notches, and side channels)
Data management:	Yes
Assessment:	Flow scheduling, ecological effects, channel rehabilitation performance
Use of information in future decision making:	Flow scheduling and channel rehabilitation design
NMFS OCAP BO RPA	No

Project Description:	Outmigration
FY 2009 Project Complete?	Field work just completed, analyses started
CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Whole Trinity River System, North Fork ,Willow Creek
Product/deliverable:	An annual final Report from HVT, and one from YT & USFWS documenting the results of the monitoring activity
Cost:	\$650,000
Questions posed:	Has timing of outmigration and / or peak period of outmigration shifted with ROD flows? Has abundance changed in response to ROD flows or rehabilitation efforts? How has the smolt to adult ratio shifted in response to rehabilitation actions?
Objectives:	To monitor success of rehabilitation efforts on smolt production
Results – expected or actual:	As conditions in river improve we predict that

	outmigration numbers will increase. Trend analyses over a 10 year period may be used to answer the above questions.
Data collection methods:	Rotary screw traps
Data management:	Database maintained by HVT and USFWS
Assessment:	Timing of outmigration, peak period of outmigration, estimate of abundance during peak period
Use of information in future decision making:	Long term assessment , cannot be used for short term decision making
NMFS OCAP BO RPA	no

Project Description:	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
FY 2009 Project Complete?	Final report due in December.
CVPIA annual work plan subtask number:	1.12.1
Scope of the monitoring effort:	Trinity River – 4 locations.
Product/deliverable:	Digital database with quality controlled monitoring data, and a final report that provides an analysis of the data.
Cost:	The total cost for conducting this project in FY 2009 is approximately \$220,000.
Questions posed:	Have we met our sediment management objectives? Are we adding enough gravel? Are we reducing the total sand storage in the river?
Objectives:	Quantify total load and sediment budget for coarse and fine sediment. Use results to improve our ability to predict sediment transport associated with future high flow releases.
Results – expected or actual:	See deliverables. Data also feeds additional analyses conducted by the restoration program.
Data collection methods:	Synoptic sampling at 4 locations following USGS protocols. Samples collected from a boat mounted crane at temporary cableways.
Data management:	Quality controlled data delivered in an Access database developed to interface with the central database for the

	program for easy upload. Final report is archived in the digital document library. All data / reports are available to the public via the restoration program website.
Assessment:	Sediment transport rates are changing in response to implementation of restoration actions.
Use of information in future decision making:	Information used to plan gravel augmentation projects, improve our ability to predict sediment transport in response to management actions (e.g. high flow releases) and link management actions to program goals.
NMFS OCAP BO RPA	No