Draft CVPIA Fiscal Year 2009 Annual Work Plan

December 1, 2008

Program Title

Red Bluff Fish Passage- CVPIA Section 3406(b)(10).

Responsible Entities

Staff Name	Agency	Role
Paul Freeman	USBR	Lead
Jim Smith	USFWS	Co-Lead

Program Goals and Objectives for FY 2009

Goal A - Substantially improve the long-term ability of fish to move reliably pass upstream and downstream.

Objective: To understand the genetics of the different run-types of Chinook salmon and thereby to better inform decisions regarding allocation of Central Valley Project (CVP) resources. Specifically, to 1) characterize the movement patterns of green sturgeon to ascertain the passage requirements of this species, 2) continue genetic run-type identifications of Chinook salmon at Red Bluff Diversion Dam (RBDD) during gates-in operations, 3) develop genetic baselines for Chinook salmon populations in selected upper Sacramento River tributaries, and 4) characterize the quality of the proposed power plant site with respect to hazardous wastes and initiate design of facilities to provide reliable passage for salmonids and green sturgeon.

Task 1.3.1. Genetic Composition of Adult Chinook Salmon During Gates-In Operations -

Continue the ongoing collaborative project between the Red Bluff Fish and Wildlife Office (RBFWO) and the Service's Abernathy Fish Technology Center (ATFC). The RBFWO will continue to collect genetic tissue samples during Calendar Year (CY) 2009, with AFTC personnel conducting on-going genetic analyses.

Task 1.3.2. Fish Passage Improvement Planning Project at Red Bluff Diversion Dam –

The RBFWO and Sacramento FWO (SFWO) will continue participation in the planning effort and assist in the design process to the extent that biological information is needed to guide the engineering work. The time requirements for this project have been mutually derived estimates between RBFWO, SFWO and USBR personnel since its inception and will continue to be so. They probably will be adjusted as work proceeds, as the needs of this project are difficult to predict in detail in advance.

Task 1.3.3. Green Sturgeon Population Assessment –

Continue the cooperative radio tagging study of the movements of green sturgeon in the upper Sacramento River involving the USFWS, the Bureau of Reclamation, and U.C. Davis.

Task 1.6 Land, Water and Conveyance Acquisitions-

Expand the characterization of the hazardous materials (HAZMAT) deposits on the proposed site of the 2500 cfs pumping facility as required to generate adequate engineering/remediation cost estimates..

Task 1.7 Outreach and Public Involvement

Coordinate with local government and conduct public informational meetings as needed to address the concerns of local residents.

Task 1.8 Planning

Provide further economic analyses if needed to satisfy the requirements of the Principles and Guidelines applicable to new projects. At a minimum updates are likely given the rapid changes in construction costs in recent years.

Task 1.9 Environmental Compliance

Complete the National Historic Preservation Act requirements and provide National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) support as necessary to ensure continued water deliveries.

Task 1.10 Design

Continue design of a pumping plant with a target of 40% complete (Reclamation's TSC).

Goal B - Maintain reliable water deliveries to existing users while improving fish passage.
Objectives: Maintain water deliveries while completing the design of the new pumping plant.

Goal C- Maintain consistency with the North of Delta Storage program.
Objectives: Maintain coordination with the North of Delta Storage team to ensure compatibility of the Red Bluff and Sites Reservoir design and operation.

Program guidance includes: 1) CVPIA Section 3406 (b)(10); 2) Record of Decision, Central Valley Project Improvement Act; 3) CALFED Bay-Delta Programmatic Record of Decision, proposed Ecosystem Restoration Program stage 1 actions; 4) CALFED Ecosystem Restoration Program Strategic Plan For Ecosystem Restoration; 5) Biological Opinion, Effects of the Central Valley Project and State Water Project Operations from October 1998 through March 2000 on Steelhead and Spring-run Chinook Salmon; and 6) Biological Opinion on the Long-Term Central

Valley Project and State Water Project Operations Criteria and Plan, October 2004.

Status of the Program

Passage

Fish passage at Red Bluff was substantially improved in the mid-90's in response to the operational requirements imposed by the 1992 Biological Opinion for the winter run Chinook salmon. Efforts to further improve passage with existing facilities, while maintaining the water diversions, have not been sufficiently successful. The helical and Archimedes screw pumps have demonstrated an ability to move water without substantial harm to the fisheries, the water users' deem those research pumps to be economically inefficient. Funding sources remain unclear in the face of massive demands for funding for competing fishery problems.

The passage issues of greatest concern, under the current mode of gate operations, are the needs of the adult green sturgeon and adult spring run Chinook. Downstream migration impacts for those species do not appear to be a problem at this time.

It appears that gate closure each year occurs about mid-way through the average migration period, and it appears that adults migrating downstream are at risk, in at least some years, when the gates are closed. It appears this downstream migration problem is essentially removed if gate openings are open at least 1 foot, and such operations are now standard practice. There is, however, uncertainty as to the significance of the blockage of the upstream migrating sturgeon since suitable spawning habitat appears to occur downstream of the Red Bluff Diversion Dam. However, access to suitable habitat is blocked for some fraction of the population. Nor do we know whether, on an annual basis that half of the upstream migrating adults are blocked, but the possibility exists that a substantial fraction may be. The responsible next step is to seek data on the movements of these fish and their reproductive biology to guide decisions.

Similarly, a substantial fraction of the adult spring run Chinook attempting to migrate upstream past Red Bluff are delayed by the current pattern of gate closures, and, some fraction of the later arriving fish, can be assumed to be blocked from movement into the headwaters of the tributaries which form their historic spawning habitat. However, the significance of this delay is unclear and the status of the spring run Chinook above Red Bluff is currently uncertain, although several stream restoration projects have potential for reestablishment of spring run populations, an event that would be beneficial to the recovery of the species and, hence, to CVP and State Water Project (SWP) operations. The responsible response therefore is to evaluate the genetic composition of the spring run Chinook passing Red Bluff. Currently, the USBR is funding the USFWS to conduct genetic sampling of Chinook salmon at the RBDD during gates-in operations, in an effort to better understand the Chinook salmon run composition.

Maintenance of Water Deliveries

Water deliveries have barely been able to meet springtime demand in most years and have only done so with the aid of temporary gate closures in some years. This has required the use of water

stored in Black Butte Reservoir which might otherwise be used to enhance the non-natal rearing habitat of listed salmonids in the mouth and lowermost reaches of Stony Creek, the last such tributary habitat for 100 miles along the Sacramento River. Implementation of a pumping plant alternative, as currently proposed by Reclamation and the Tehama-Colusa Canal Authority (TCCA) , would provide improved fish passage, reliable water deliveries, and allow use of water stored in Black Butte for improvement of non-natal rearing habitat, and might allow support of spawning habitat for fall run Chinook in some years. (This spawning habitat would likely be limited since the water warms early in the spring. Successful spawning could occur in some, but not most years.)

Consistency with North-of-Delta Offstream Storage Investigation (NODOS)

The current proposals are expected to be fully consistent with operation of a reservoir at Sites, extensions of the Tehama Colusa Canal to service the Interstate-80 urban corridor between Vallejo and Sacramento, and water management in portions of Suisan Bay should that be desired. A purely ladder based solution would not fully accomplish this goal and could become a stranded investment were a Sites reservoir to be built along with a pumping plant at Red Bluff to help fill it.

FY 2008 Accomplishments

Fish Passage

The significant fish passage event of recent years was the unprecedented loss of at least ten adult green sturgeon at or below the dam in 2007. Measures which were promptly taken to address the problem appear to successfully address the problem but uncertainty remains because the exact causes of the problem are unknown. The most plausible explanation appears to be that an unusually large number of green sturgeon were "holding" in the vicinity of the dam when the gates were lowered for a brief, emergency closure, and again when the gates went in for the season. Some of the sturgeon are presumed to have been impinged on the smaller gate openings and two are known to have been trapped under the gates. Necropsies identified blunt force trauma as a plausible explanation for the demise of the adult sturgeon that were examined by a fish pathologist, and the preponderance of available information suggests that the sturgeon impacted (collided with) the RBDD gates. Operations were changed to keep the gates open at least one foot or wholly closed and no further fatalities were observed, and after a year of operation without further mortalities the 1 foot minimum opening seems to be effective.

ESA and NEPA compliance are complete for the construction of a pumping plant, with a footprint capable of accommodating 2500 cfs of pumping capacity, although decisions concerning interim and long term operations are still pending. They await completion of the ESA consultation for the operation of the CVP as a whole. The preferred alternative is to build a pumping plant and to operate it, if allowed, ten months per year. The cost of the plant is expected to exceed 160 million dollars.

Water deliveries

Water deliveries were made without interruption or loss of green sturgeon, but early gate openings required by the Federal Courts were only feasible due to the drastically lowered rates of diversion caused by drought.

Consistency with NODOS

Coordination with the NODOS effort continued via Reclamation's representative in the NODOS planning effort.

Table 1. FY 2009 Task, Costs, Schedules and Deliverables

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source Restoration Fund	Funding Source Water & Related Resources
1.1	**Program Management**						
			There are four Program Management funding requirements. USBR, as the lead Federal agency; the USUSFWS, as a co-lead Federal agency; the Tehama-Colusa Canal authority (TCCA), as lead state agency, and CH2M Hill, Newfields the consultants.	9/30/2009			
1.1.1		0.25	(USBR)	9/30/2009	$50,000	$0	$50,000
1.1.2		0.25	(USBR)	9/30/2009	$50,000	$0	$50,000
	Subtotal Costs				**$100,000**	**$0**	**$100,000**
1.2	**Program Support**						
1.2.1			(TCCA) Red Bluff Pumping Plant		$0	$0	$0
	Subtotal Costs				$0	$0	$0
1.3	**Technical Support**						
1.3.1			CH2M Hill consultant (Working on tasks funded in 2008)	9/30/2009	$0	$0	$0
1.3.2		1.0	Green sturgeon study. (USBR)	9/30/2009	$200,000	$0	$200,000
1.3.3		0.1	Fish and Wildlife Service, Sacramento-	9/30/2009	$20,000	$0	$20,000
1.3.4		1.1	Fish and Wildlife Service, Red Bluff - staff and Abernathy Fish Technology Ctr	9/30/2009	$150,000	$0	$150,000
	Subtotal Costs				**$370,000**	**$0**	**$370,000**
		-					
1.4	**Restoration Actions**						
1.4.1			Improve fish passage at Red Bluff diversion dam.	9/30/2009	$0	$0	$0
1.4.2			Improve fish passage of juveniles migrating down stream, particularly Chinook salmon - (fall, late fall, winter and spring runs). (Source document, CVPIA)	9/30/2009	$0	0.00	$0
1.4.3			Improve upstream passage of adults. (Particularly Chinook Salmon - fall, late fall, winter and spring runs, and Steelhead). (Source document, CVPIA)	9/30/2009	$0	$0	$0
1.4.4			Provide water to users (farmers, and wildlife refuges) served by the Tehama-Colusa and Corning Canals. (Source document, CALFED)	9/30/2009	$0	$0	$0
1.4.5			Continue to allow Lake Red Bluff to exist if possible, by leaving the gates in during the summer months, while meeting Objectives 1.4.2, 1.4.3, 1.4.4, 1.4.6.	9/30/2009	$0	$0	$0

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source Restoration Fund	Funding Source Water & Related Resources
1.4.6			Select and implement further actions to minimize fish passage problems at Red Bluff Diversion Dam (RBDD). (Source document, CVPIA).	9/30/2009	$0	$0	$0
1.4.7			Complete EIS/EIR to ROD.	9/30/2009	$0	$0	$0
	Subtotal Costs				**$0**	**$0**	**$0**
1.6	**Land - Water - and - Conveyance - Acquisitions**						
1.6.1		0.3	When the ROD is signed, proceed with Land Acquisition for fish passage solution.	9/30/2009	$1,000,000	$0	$1,000,000
	Subtotal Costs				**$1,000,000**	**$0**	**$1,000,000**
1.7	**Outreach and Public Involvement**						
1.7.1		0.15	May be required when ROD is issued.	9/30/2009	$25,000	$0	$25,000
	Subtotal Costs				**$25,000**	**$0**	**$25,000**
1.8	**Planning**						
1.8.1		0.2	Planning document to OMB and congress.	9/30/2009	$50,000	$0	$50,000
	Subtotal Costs			0	**$50,000**	**$0**	**$50,000**
1.9	**Environmental Compliance**						
1.9.1		0.2	Litigation support as required. The City of Red Bluff has filed suit and others may do so.	10/31/2009	$50,000	$0	$50,000
	Subtotal Costs				**$50,000**	**$0**	**$50,000**
1.10	**Design**						
			Additional funds will be needed in FY09 to continue final design and construction specification drawings. Up to 15 million in FY 2009.	9/30/2009	$0	$0	$0
1.10.1		1.0	Sacramento, TSC Denver.	9/30/2009	$231,000	$0	$231,000
	Subtotal Costs				**$231,000**	**$0**	**$231,000**
1.11	**Construction**						
1.11.1		0	Construction will start after design and land acquisition is complete.	9/30/2009	$0	$0	$0

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source Restoration Fund	Funding Source Water & Related Resources
	Subtotal Costs				**$0**	**$0**	**$0**
1.12	**Monitoring**						
1.12.1		0	Upon completion of construction.	9/30/2009	$0	$0	$0
	Subtotal Costs				**$0**	**$0**	**$0**
1.13	**Modeling**						
1.13.1		0	Pumping plant intake screens and structure.	9/30/2009	$0	$0	$0
	Subtotal Costs				**$0**	**$0**	**$0**
	Total Costs	**4.55**			**$1,826,000**	**$0**	**$1,826,000**
	USFWS total cost	**1.2**			**$170,000**		**$170,000**
	USBR total cost	**3.35**			**$1,656,000**		**$1,656,000**
			Note: Funding Currently based on estimated $1.3 million dollar carry over from FY 2008 and budgeted amount of $526,000.00.				

Table 2. Budget Breakdown

Task	Agency	FTE	LABOR			CONTRACTS		Misc. Costs	Total Costs
			Direct Salary and Benefits Costs	Overhead Costs on Salary & Benefits	USFWS Overhead Assess: 22% of Direct Salary and Benefits Costs	Contract, Grant, and Agreement Costs	USFWS Overhead Assess: 6% Contract Costs 2/		
1.1 Program Management	USFWS		0	0	0	0	0	0	0
	USBR	0.5	53,279	28,689	18,033	0	0	0	100,000
1.3 Technical Support	USFWS	1.2	90,574	48,770	30,656	0	0	0	170,000
	USBR	1.0	106,557	57,377	36,066	0	0	0	200,000
1.6 Land, Water and Conveyance Acquisitions	USFWS		0	0	0	0	0	0	0
	USBR	0.3	532,787	286,885	180,328	0	0	0	1,000,000
1.7 Outreach and Public Involvement	USFWS		0	0	0	0	0	0	0
	USBR	0.15	13,320	7,172	4,508	0	0	0	25,000
1.8 Planning	USFWS		0	0	0	0	0	0	0
	USBR	0.2	26,639	14,344	9,016	0	0	0	50,000
1.9 Environmental Compliance	USFWS		0	0	0	0	0	0	0
	USBR	0.2	26,639	14,344	9,016	0	0	0	50,000
1.10 Design	USFWS		0	0	0	0	0	0	0
	USBR	1.0	123,047	66,270	41,656	0	0	0	231,000
USFWS Total Costs		1.2	90,574	48,770	30,656	0	0	0	170,000
USBR Total Costs		3.35	882,268	475,081	298,623	0	0	0	1,656,000
TOTAL ALL		4.55	972,842	523,851	329,279	0	0	0	1,826,000

Table 3. Three Year Budget Plan 2010-2012

Year	Description of Activities	Requested RF Funding	Requested W&RR Funding
2010	Finish design and advertise for contracting.	$0	$11 million
2011	Start construction of pumping plant.	$0	$50 million
2012	Continue construction of pumping plant. Estimated completion FY 2013.	$0	$75 million

Note: The FY 2010 – 2012 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.