CPIA Fiscal Year 2008 Annual Work Plan

November 2, 2007

Program Title

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

Responsible Entities

	Agency	**Role**
	Reclamation	Lead
	FWS	Co-Lead

Program Goals and Objectives for FY 2008

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

Objectives: 1) initiate studies of the movement patterns of green sturgeon to ascertain the passage requirements of this species, 2) continue genetic studies of the nominally "spring-run" Chinook passing Red Bluff, and 3) complete the NEPA compliance 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 -

This project was originally funded during CY 2007. This project is a collaborative project between the RBFWO and the Service's Abernathy Fish Technology Center (ATFC). The RBFWO collected genetic tissue samples during CY 2007, with AFTC personnel conducting on-going genetic analyses during CY 2007. The RBFWO will conduct a second field season of tissue sampling and subsequent laboratory genetic analyses.

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

The RBFWO and Sacramento FWO (SACFWO) 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 were mutually derived between RBFWO, SACFWO and BOR personnel as work proceeds, as the ultimate outcome of this project is difficult to predict in advance

Task 1.3.3. Green Sturgeon Population Assessment –

This cooperative project, will involve the FWS, the Bureau of Reclamation, and U.C. in radio tagging studies designed to give a usable level of resolution regarding the movements of green sturgeon in the upper Sacramento River as a first step toward ascertaining the movement patterns of these fish and the

location of their spawning activity.

Task 1.6 Land, Water and Conveyance Acquisitions-

Acquisition of the site needed for construction of a pumping facility of up to 2500 cfs capacity is anticipated.

Task 1.7 Outreach and Public Involvement

Coordination with local government and conduct of public informational meetings will continue as needed to address the deep concerns of local residents.

Task 1.8 Planning

A Planning Document to meet otherwise unmet requirements of the Principles and Guidelines will be prepared by MP-700.

Task 1. Environmental Compliance

The final EIS/EIR will be prepared and supplemental environmental documentation and permit acquisition, and on-going work in support of continued water deliveries, will occur as necessary.

Task 1.10 Design

A pumping plant will be designed, probably by Reclamation's TSC.

Goal B - Maintain reliable water deliveries to existing users while improving fish passage.
Objectives: Complete the NEPA compliance and initiate design of any new facilities.

Goal C- Maintain consistency with the North of Delta Storage program.
Objectives: Complete the NEPA compliance and initiate design of any new facilities.

Supporting documents include: 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 at Red Bluff 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 successful. Evaluations of helical and screw pumps as means of pumping water while using the existing screens have demonstrated the biological efficacy of such pumps, but using those research pumps in a demonstration mode did not gain the water user confidence in their economic efficacy, leaving only new ladders or conventional pumping plants as viable alternatives. Questions of funding such an effort in the face of massive demands for funding for competing fishery problems have left the outlook unclear. However, Reclamation anticipates a Record of Decision by early 2008, with further development of designs in the latter half of FY08, assuming budgetary constraints allow it.

The passage issues of 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 roughly half of the upstream migrating adult green sturgeon are currently blocked upon gate closures each year, and it appears that adults migrating downstream are at risk, in at least some years, when the gates are closed. While absolute statements on this matter are not yet possible, it appears as if this problem is essentially removed so long as 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 sturgeon since suitable spawning habitat appears to occur downstream of the Red Bluff diversion Dam. 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 few remaining adult spring run Chinook attempting to migrate upstream past Red Bluff are delayed by the current pattern of gate closures. Moreover, some fraction of these fish, especially the later arriving ones, 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. Only 10% of the Sacramento River Basin's spring run population appears to use the Upper Sacramento River, it is unclear whether those fish are truly spring run or not. Indeed, the population in the Upper Sacramento River appeared to crash in the early 90's as the criteria for counting fish as late arriving spring run versus early arriving fall run were adjusted. This "crash" is consequently an artifact of how the fish were labeled, and there is no evidence that the population has either been helped or hurt by operations at Red Bluff. 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 SWP operations. The responsible response therefore is to evaluate the genetic composition of the "spring run" Chinook passing Red bluff to ascertain if they are indeed spring run, and if so, how distinct and how pure they are.

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 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 be likely be limited since the water warms early in the Spring. Successful spawning could occur in some, but not most years.)

Consistency with NODOS

The current proposals are expected to be fully consistent with operation of a reservoir at Sites, extensions of the TC Canal to service the 1-80 urban corridor, and water management in portions of Suisan Bay should that be desired. A purely ladder based solution would not accomplish this goal as fully as a new pumping plant 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 2007 Accomplishments

Fish Passage

The significant fish passage event of the year was the unprecedented loss of at least ten adult green sturgeon at or below the dam. Measures 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 these sturgeon are presumed to have been impinged on the smaller gate openings and two are known to have been trapped under the gates, although it is unknown if they were alive or dead when that happened. Operations were changed to keep the gates open at least one foot or wholly closed and no further fatalities were observed, so the problem appears to have been the result of an usual behavior pattern of the sturgeon coupled with a gate operations pattern that lead to sturgeon deaths when sturgeon came too close to the gates.

In addition, ESA consultation was begun with NMFS and FWS for construction of a new pumping plant sized for diversions of up to 2500 cfs. Consultation with the FWS concerning upland species was completed, and consultation with NMFS concerning anadromous fish is nearing completion.

Responses to comments concerning the Draft EIS/EIR which was released a second time in December 2006, were completed and completion of the EIS and the signing of a ROD are expected in late 2007 or early 2008.

Water deliveries

Once again water deliveries were made without interruption, but that required an emergency gate closure. The reliability of the improvised water delivery system for the period April to May 15 remains unsatisfactory.

Consistency with NODOS

Coordination with the NODOS effort continued via Reclamation's representative in the NODOS planning effort. Also the TCCA explored concepts for construction of authorized, but un-built portions of the TC canal to increase delivery options for the cities of the I-80 Corridor in exchange for help funding a pumping plant.

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source RF	Funding Source WRR
1.1	**Program Management**						
			There are four Program Management funding requirements. USBR, as the lead Federal agency; the USFWS, as a co-lead Federal agency; the Tehama-Colusa Canal authority (TCCA), as lead state agency, and CH2M Hill, the consultant.	9/30/2008			
1.1.1		0.25	(USBR)	9/30/2008	50,000.00	0.00	50,000.00
1.1.2		0.1	(USBR	9/30/2008	50,000.00	0.00	50,000.00
	Subtotal Costs				**100,000.00**	**0.00**	**100,000.00**
1.2	**Program Support**						
1.2.1			(TCCA)		0.00	0.00	0.00
	Subtotal Costs				**0.00**	**0.00**	**0.00**
1.3	**Technical Support**						
1.3.1			CH2M Hill consultant (Completeing tasks funded in 2007)	9/30/2008	0.00	0.00	0.00
1.3.2		0.75	Green sturgeon study. (USBR)	9/30/2008	190,807.00	0.00	190,807.00
1.3.3		0.1	Fish and Wildlife Service, Sacramento-	9/30/2008	29,625.00		29,625.00
1.3.4		1.2	Fish and Wildlife Service, Red Bluff - staff and Abernathy Fish Technology Ctr	9/30/2008	279,568.00	0.00	279,568.00
	Subtotal Costs				**500,000.00**	**0.00**	**500,000.00**
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1.4	**Restoration Actions**						
1.4.1			Improve fish passage at Red Bluff diversion dam.	9/30/2008	0.00	0.00	0.00
1.4.2			Improve fish passage of juveniles migrating down stream, particularly Chinook salmon - (fall, late fall, winter and spring runs). (Source document, CVPIA)	9/30/2008	0.00	0.00	0.00
1.4.3			Improve upstream passage of adults. (Particularly Chinook Salmon - fall, late fall, winter and spring runs, and Steelhead). (Source document, CVPIA)	9/30/2008	0.00	0.00	0.00
1.4.4			Provide water to users (farmers, and wildlife refuges) served by the Tehama-Colusa and Corning Canals. (Source document, CALFED)	9/30/2008	0.00	0.00	0.00
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.	9/30/2008	0.00	0.00	0.00

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source RF	Funding Source WRR
1.4.6			Select and implement further actions to minimize fish passage problems at Red Bluff Diversion Dam (RBDD). (Source document, CVPIA).	9/30/2008	0.00	0.00	0.00
1.4.7			Complete EIS/EIR to ROD.	9/30/2008	0.00	0.00	0.00
	Subtotal Costs				**0.00**	**0.00**	**0.00**
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.	9/30/2008	1,100,000.00	0.00	1,100,000.00
	Subtotal Costs				**1,100,000.00**	**0.00**	**1,100,000.00**
1.7	**Outreach and Public Involvement**						
1.7.1		0.15	May be required when ROD is issued.	9/30/2008	50,000.00	0.00	50,000.00
	Subtotal Costs				**50,000.00**	**0.00**	**50,000.00**
1.8	**Planning**						
1.8.1		0.2	Planning document to OMB and congress.	9/30/2008	50,000.00	0.00	100,000.00
	Subtotal Costs			0	**50,000.00**	**0.00**	**50,000.00**
1.9	**Environmental Compliance**						
1.9.1		0.2	Completing ROD and EIS.	10/31/2008	50,000.00	0.00	0.00
	Subtotal Costs				**50,000.00**	**0.00**	**50,000.00**
1.10	**Design**						
			Additional funds will be needed in FY09 to continue final design and construction specification drawings depending on Record of Decision (ROD).	9/30/2008	0.00	0.00	0.00
1.10.1		12	Work assignments not known at this time	9/30/2008	0.00	0.00	0.00
1.10.2			Sacramento TSC Denver.	9/30/2008	3,650,000.00	0.00	3,650,000.00
	Subtotal Costs				**3,650,000.00**	**0.00**	**3,650,000.00**
1.11	**Construction**						
1.11.1		0	Construction cannot start until ROD is issued, design and land acquisition is complete.	9/30/2008	0.00	0.00	0.00

Task or Subtask Number	Name of Activity	FTE's	Description of Activity	Completion Date	Total Cost	Funding Source RF	Funding Source WRR
	Subtotal Costs				**0.00**	**0.00**	**0.00**
1.12	**Monitoring**						
1.12.1		0	Upon completion of construction. Depends on solution.	9/30/2008	0.00	0.00	0.00
	Subtotal Costs				**0.00**	**0.00**	**0.00**
1.13	**Modeling**						
1.13.1		0	Not expected.	9/30/2008	0.00	0.00	0.00
	Subtotal Costs				**0.00**	**0.00**	**0.00**
	-	-					
	Total Costs	**15.25**			**5,500,000.00**	**0.00**	**5,500,000.00**
	Service total cost	**1.3**			**309,193.00**		**309,193.00**
	Reclamation total cost	**13.95**			**5,200,807.00**		**5,200,807.00**
			This budget is tentative and has not been reviewed by the FWS co-lead. However, the major elements have been discussed by Reclamation and the Service. The majority of the money is expected to go to design, land acquisition and some biological work by FWS & BOR.				

CVPIA Budget Breakdown

Task	Agency	FTE	Direct Salary and Benefits Costs	Contract Costs	Misc. Costs	Admin Costs	Total Costs
1.1 Program Management	FWS		0	0	0	0	0
	BOR	0.35	75,967	543	700	22790.04	100,000
1.3 Technical Support	FWS	1.3 FTE or 339 Biologist days					309,193
	BOR	0.75	145568.3	0	1,568	43670.48	190,807
1.6 Land, Water and Conveyance Acquisitions	FWS		0	0	0	0	0
	BOR	0.3	68871	10,468	1,000,000	20661.3	1,100,000
1.7 Outreach and Public Involvement	FWS		0	0	0	0	0
	BOR	0.15	37566	680	484	11269.8	50,000
1.8 Planning	FWS		0	0	0	0	0
	BOR	0.2	37566	600	564	11269.8	50,000
1.9 Environmental Compliance	FWS		0	0	0	0	0
	BOR	0.2	37566	600	564	11269.8	50,000
1.1 Design	FWS		0	0	0	0	0
	BOR	12	2804928	500	3094	841478.4	3,650,000
FWS Total Costs							309,193
BOR Total Costs							5,190,807
Total							5,500,000

Five Year Budget Plan
DRAFT CVPIA 5-Year Budget Plan 2009-2013
($ thousands)

Funding Source	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Total
W&RR	1,000	5,000	10,000	20,000	40,000	76,000
RF	0	0	0	0	0	0
State	0	0	0	0	0	0
Other (identify)	0	0	0	0	0	0
Total	1,000	5,000	10,000	20,000	40,000	76,000

The 5-year projections are place-holders in an era of considerable uncertainty. They assume a decision will be made to construct a pumping plant at Red Bluff, that the President's budget for 2008 is adopted and that the $5,000,000 in the 2008 budget will be used to begin design of the pumping plant and site acquisition. These projections also assume funding will be found for construction despite substantial demands for funding for programs in the Delta and the San Joaquin Valley. Given those assumptions, the anticipated activities are:

2009 - Approximately $300,000 will be used for ongoing fishery studies funding to guide operational decisions upon completion of the pumping plant, and $100,000 will be used for the project management and coordination with other programs, including, but not limited to, the Sites Reservoir program. The balance will be used to complete the final design and initiate the bid process.

D2010 - Again, approximately $300,000 will be used for ongoing fishery studies funding to guide operational decisions upon completion of the pumping plant, and $100,000 to program management and coordination. The remaining $4.6 million will be devoted to site preparation and early phases of construction.

D2011 - Approximately $300,000 will be used for ongoing fishery studies funding to guide operational decisions upon completion of the pumping plant, and $100,000 to program management and coordination. The remaining $9.6 million will be devoted construction of the screens and forebay.

2012 - Approximately $300,000 will be used for ongoing fishery studies funding to guide operational decisions upon completion of the pumping plant, and $100,000 to program management and coordination. The remaining $19.6 million will be devoted construction of the pumping plant itself and the siphon under Red Bank Creek.

2013 - Approximately $300,000 will be used for ongoing fishery studies funding to guide operational decisions upon completion of the pumping plant, and $100,000 to program management and coordination. The remaining $29.6 million will be devoted completion of the plant and, to the extent possible, the acquisition of the pumps.