

Work Plan for Fiscal Year 2007

I. Program Date: April 5, 2007

II. Program Title. Anadromous Fish Screen Program CVPIA Section 3406 (b)(21)

III. Responsible Entities

	Agency	Staff Name	Role
Lead	USFWS	Dale Garrison	Acting Division Chief
Co-lead	USBR	Dan Meier	Project Manager

IV. Program Objectives for FY 2006

The primary objective of the Anadromous Fish Screen Program (AFSP) is to protect juvenile chinook salmon (all runs), steelhead trout, green and white sturgeon, striped bass and American shad from entrainment at priority diversions throughout the Central Valley. Section 3406(b)(21) of the Central Valley Project Improvement Act (CVPIA) requires the Secretary of the Interior to assist the State of California in developing and implementing measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin Rivers, their tributaries, the Delta, and the Suisun Marsh. All AFSP projects also contribute to the primary goal stated in the Anadromous Fish Restoration Plan (AFRP), as defined under Section 3406(b)(1), which requires Interior to make all reasonable efforts to double natural production of anadromous fish in Central Valley streams.

Additionally, all AFSP projects meet Goal 3 of the CALFED Ecosystem Restoration Program's (ERP) Draft Stage 1 Implementation Plan (8/1/01, Page 22) which states that...the goal is to maintain and/or enhance populations of selected species for sustainable commercial and recreational harvest, consistent with the other ERP Strategic Goals".

Currently, there are approximately 2,200 unscreened agricultural diversions in the Sacramento-San Joaquin Delta, 740 in the Sacramento River system, 150 with the San Joaquin River system, and 370 in the Suisun Marsh basin. The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) has estimated that up to 10,000,000 anadromous salmonid fish fry are lost annually to diversions from the Sacramento River alone. The AFSP contributes to the overall restoration of anadromous fisheries within the Sacramento and San Joaquin River systems, and the Delta by protecting juvenile fish from entrainment at these diversions. By protecting fish from entrainment, the AFSP enhances anadromous fish outmigrant success, thereby indirectly enhancing the commercial and recreational harvest of these species, which meets ERP Draft Stage 1 Implementation Plan Strategic Goals.

V. Status of the Program

The AFSP has assisted irrigation districts, water companies, and municipalities with the screening of many diversions ranging from 17 cubic feet/second (cfs) up to 1,000 cfs since the mid 1990's. Since 1994, 21 fish screen projects have been completed with cost share funds from the AFSP. Currently, the AFSP is involved with nine applicants pursuing various phases of their projects.

The AFSP functions through two primary means. First, the AFSP provides funds to diverters who apply to the program to install fish screens on their diversions. Second, the AFSP Technical Team, comprised of experts from federal and State agencies, provides fish screen design review and technical guidance to the diverter and their consultants throughout project phases.

Funding for fish screen projects is prioritized as discussed in the AFSP Program Description (January 1999). The Program Description outlines the program purpose, scope, organization, and project priority guidelines for the AFSP. In addition, current AFSP fish screening project priorities are coordinated with CALFED to ensure consistency of the goals and objectives of the AFSP and with the goals and priorities of the CALFED Strategic Plan for Ecosystem Restoration and the ERP Draft Stage 1 Implementation Plan.

The AFSP future fish screen priorities are also being coordinated through a Fish Screen Evaluation Committee (FSEC). The FSEC was convened in 2004 by the USFWS to identify criteria for whether a diversion should be screened, and based on these criteria, to refine common interagency goals for future fish screen projects. The committee is formed of members representing NOAA Fisheries, CDFG, USFWS, DWR, Bureau of Reclamation, and the University of California, Davis.

The FSEC has assisted the AFSP in developing a field monitoring and assessment plan and existing literature search and data analysis of fish losses at unscreened diversions. This information will be used to assess and quantify the benefits of fish screen projects to overall fisheries restoration. In the interim, while obtaining and interpreting field monitoring results, the AFSP, with assistance from the FSEC, has developed new draft interim fish screen prioritization guidelines based on current knowledge of the size and locations of unscreened diversions, fish entrainment at diversions, and population and life history information for anadromous salmonids. These prioritization guidelines are more quantitative than those previously provided in the AFSP Program Description.

The AFSP is also coordinated with other programs such as the AFRP and the Comprehensive Assessment and Monitoring Program (CAMP). A Restoration Plan for the AFRP identifies restoration actions, including fish protective measures at water diversions, throughout the Central Valley/Bay Delta to help double populations of naturally produced anadromous fish. CAMP provides funding for assessing the effectiveness of various restoration activities.

The AFSP provides significant funding and technical resources that are essential in implementing fish screen projects. Lack of adequate funding is often an impediment to diverters in constructing a fish screen for their unscreened diversion(s). Fish screen projects are typically complex projects that are constructed in phases over several years. The key project phases are a feasibility study, preliminary design, final design, and construction. There are also significant permitting and environmental compliance requirements that must be met. Upon completion of the project, the diverter becomes the owner of the constructed facilities and is solely responsible for the operation and maintenance of the fish screen.

The AFSP provided federal funding of about \$12.5 million in FY05 and \$11.5 million in FY06 for ongoing fish screen projects, and anticipates receiving \$2.87 million in FY07. CALFED has provided non-federal fish screen project funding of \$6.8 million in 2005 and is currently processing an award of about \$14.2 million expected to be provided in calendar year 2006.

Thus far, the CALFED ERP Program has provided the majority of non-federal cost-share funds for the current AFSP fish screen project participants. All current and proposed AFSP projects mentioned in this work plan (with the exception of RD 999, City of Yuba City and Family Water Alliance) are currently funded by both CVPIA and CALFED sources and are all identified in the CALFED Strategic Plan for Ecosystem Restoration and the ERP Draft Stage 1 Implementation Plan as high priority projects. The CALFED funds are non-federal and contribute to the required 50 percent minimum non-federal cost share for AFSP funded fish screen projects. Representatives of the CALFED ERP have recently indicated that future CALFED funding for fish screen projects is likely to be less than in the past. Consequently, it is essential that fish screen project applicants explore other possible non-federal sources to meet the non-federal cost share requirement. Funding all the fish screen project needs identified in this FY07 work plan would greatly exceed the available \$2.87 million in funding. That is, the current need for AFSP funding in FY07 based on current project schedules (and assuming additional non-federal funds become available) substantially exceeds the proposed FY07 President's Budget for the AFSP.

VI. FY 2006 Accomplishments

Accomplishments in FY 2006 include the following:

1. Continued construction of the Sutter Mutual Water Company (SMWC) Tisdale Positive Barrier Fish Screen project in Sutter County, a facility designed to screen a 960 cfs diversion on the Sacramento River.
2. Initiated construction of the RD 108 Fish Screen consolidation project to screen diversions totaling 377 cfs on the Sacramento River.
3. Initiated construction of the RD 999 Fish Screen project in Sacramento county, a cylindrical fish screen for a 100 cfs diversion on the Sacramento River.

4. Continued to support screen design and environmental compliance activities for the Natomas Mutual Water Company Fish Screen consolidation project located in Sacramento County to screen diversions totaling approximately 630 cfs on the Sacramento River.
5. Continued to support screen design and environmental compliance activities for the Meridian Farms Water Company (MFW) Fish Screen consolidation project in Sutter County for existing diversions totaling 165 cfs on the Sacramento River.
6. Continued to support screen design and environmental compliance activities for the Reclamation District 2035 Fish Screen project located north of the City of Sacramento to screen a 300 cfs diversion on the Sacramento River.
7. Continued to support screen design and environmental compliance activities for the Patterson Irrigation District Fish Screen to a 190 cfs diversion on the San Joaquin River.
8. Initiated support for screen design, and environmental compliance activities for the City of Yuba City Fish Screen project in Yuba County for a 61 cfs municipal diversion on the Feather River.

The RD 999 Fish Screen project was completed in October 2006. This diversion at 100 cfs is the largest cylindrical screen installation of its kind in the Central Valley using the latest in state-of-art cleaning and screen retrieval systems. The AFSP strongly supports use of this very cost effective screening technology, where appropriate. Cylindrical screens are being applied to increasingly larger sized diversions as this screening technology is being further developed and refined.

Construction of the fish screen at the 960 cfs SMWC Tisdale Pumping Plant will be completed in May 2007. Completion of this project will result in screening the largest unscreened diversion on the Sacramento River. This fish screen project, when completed, will protect outmigrating spring, fall, and winter-run Chinook salmon and Central Valley steelhead as well as resident game and non-game fish from entrainment.

In 2006, the AFSP finalized a field monitoring and assessment proposal to quantitatively assess benefits of fish screen projects on Central Valley fisheries. Field monitoring is anticipated to start in the Spring of 2007. In 2005, the AFSP also initiated a literature search and data analysis of fisheries losses at unscreened diversions within California and the Pacific Northwest. The results of this effort will be completed by December 2006. The results of the literature search will be used, in conjunction with the field monitoring results, to develop revised AFSP fish screen prioritization guidelines. This reprioritization effort will be conducted with input from the FSEC.

VII. Tasks, Costs, Schedules, and Deliverables

A. Narrative Explanation of Tasks.

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1. AFSP Program

The AFSP will continue work on current fish screen projects and will conduct studies and assessments to improve knowledge of the benefits of fish screens. To date, \$2,873,282 has been identified for the AFSP from the CVPIA Restoration Fund in FY07. Of this total, approximately \$1,204,291 will go to the Family Water Alliance towards construction of cylindrical screen projects, \$250,000 for the Yuba City Fish Screen, \$256,000 for completion of the Sutter Mutual Water District Fish Screen, \$250,000 for monitoring and assessment efforts, and the remainder is for USFWS and Reclamation program management and hired engineering expertise.

1.1. Family Water Alliance

The AFSP is providing funding to the Family Water Alliance to construct cost effective cylindrical screens on unscreened diversions within the Sacramento River watershed. Screening sites will be selected by the AFSP based on cost considerations, biological benefits and ability to obtain pre-construction monitoring data.

Estimated Cost = \$1,204,291

1.2 Yuba City

Yuba City has an existing municipal intake on the Feather River just upstream of the confluence with the Yuba River. The existing maximum diversion from this unscreened intake is approximately 70 cfs. CDFG and NOAA Fisheries have identified the Feather River as an important contributor to anadromous fisheries production, particularly spring-run Chinook salmon and Central Valley steelhead. Screening this intake would be consistent with anadromous fisheries restoration goals and objectives identified by the CALFED ERP and the CDFG Screen Action Plan. This project has relatively low costs with high biological benefits. The total project cost is currently estimated to be about \$2 million. The FY07 funds will be for the construction phase of the project.

Estimated Cost = \$250,000

1.3 Sutter Mutual Water District

This funding is provided to complete construction of the Sutter Mutual Fish Screen. The need for this funding was identified through approved change orders during project construction. **Estimated Cost = \$256,000**

1.4 Program Management

Costs for the AFSP involves salaries and benefits for Program Manager, technical support, administrative support, engineers, biologists, and overhead costs (Table D). Program tasks for the AFSP include design review, contract administration, developing and tracking budgets, reviewing invoices, coordinating Technical Team actions, preparing cooperative agreements and grants, and coordinating environmental compliance. Additional tasks conducted by the AFSP will involve coordination with the FSEC to evaluate the contribution of fish screen projects on overall fisheries restoration and prioritize future screening efforts.

Estimated Cost=\$ 741,591

1.5 Monitoring and Assessment

The AFSP and the Fish Screen Evaluation Committee have identified the need to monitor

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and assess fish losses of unscreened diversions in the Sacramento River watershed. In FY06, a monitoring and assessment program was initiated and is anticipated to continue through FY08. This effort consists of an evaluation of existing diversions on the Sacramento River mainstem from Red Bluff diversion Dam to the Feather River confluence based on site-specific physical, hydraulic and biological characteristics. The monitoring and assessment program will include quantifying fish entrainment at up to seven diversions in the Sacramento River watershed. The purpose is to quantify site-specific characteristics of diversions that may affect fish entrainment.

Estimated Cost =\$250,000

1.6 Engineering Expertise

Engineering services are provided to the AFSP by NOAA Fisheries. Engineering services include technical design assistance and review of project deliverables, dive inspections of existing and newly constructed facilities, and post-construction hydraulic and other field evaluations. Engineering services will also include technical input and involvement in the FSEC and the monitoring and assessment program.

Estimated Cost =\$171,400

Total CVPIA Estimated Cost=\$2,873,282

New Funding Requests

While new project applicants may request participation in the AFSP, funding from the AFSP is unlikely at this time due to the funding needs of current AFSP projects. However, the AFSP does consider cost effective projects with high biological benefits where the funding need is a relative small portion of the annual AFSP budget. Any new project would need to be consistent with the current AFSP Interim Prioritization Guidelines.

Recent new projects brought to the attention of the AFSP include the Coleman National Fish Hatchery unscreened diversions on Battle Creek, unscreened diversions covered under the Family Water Alliance Sacramento River Small Diversion Fish Screen Program on the Sacramento River and Delta, and unscreened diversions on the San Joaquin River such as the San Luis National Wildlife Refuge Complex, the West Stanislaus Irrigation District, the Feather Water District on the Feather River, and RD 833 in the Butte Sink area. The AFSP has not committed to funding any of these fish screen projects.

Unforeseen immediate funding needs may occur on some on-going AFSP projects, and the AFSP may agree to assist the project applicant with cost share funding to assure that project implementation is moving forward as efficiently as possible.

B. Schedule and Deliverables

#	Task	Dates		Deliverabl
		Start	Complete	
1.1	Family Water Alliance	10/01/06	9/30/07	Cooperative Agreement for Design and C
1.2	Yuba City	10/01/06	9/30/07	Cooperative Agreement for Construction Environmental Documents
1.3	Sutter Mutual Water Co.	10/01/06	9/30/07	Completion of Project Construction
1.4	Program Management	10/01/06	9/30/07	Cooperative agreements, grants, budget r approval of environmental documents, pr construction documents.
1.5	Monitoring and Assessment	10/01/06	9/30/07	Monitoring and Assessment Program Del Reports
1.6	Engineering Expertise	10/01/06	9/30/07	Design review, construction/dive inspecti assistance

C. Summary of Program Costs and Funding Sources.

#	Task	Total Cost	Fund Source RF
1.1	Family Water Alliance	\$1,204,291	\$1,204,291
1.2	Yuba City	\$250,000	\$250,000
1.3	Sutter Mutual Water Company	\$256,000	\$256,000
1.4	Program Management	\$741,591	\$741,591
1.5	Monitoring and Assessment	\$250,000	\$250,000
1.6	Engineering Expertise	\$171,400	\$171,400
Total Program Budget		\$2,873,282	\$2,873,282

D . CVPIA Program Budget

Comment: Reorder item sequentially
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#	Task	FTE	Direct Salary and Benefits Costs	Contracts Costs	Miscellaneous Costs	Ad Cc	
1.4	Program Management	-----					
	Fish & Wildlife Service	1.0	\$153,290	\$0	\$0	\$30	
	Bureau of Reclamation	2.97	\$386,401	\$0	\$10,176	\$15	
1.5	Monitoring and Assessment			\$250,000			
1.6	Engineering Expertise			\$171,400			
1.1	Family Water Alliance			\$1,204,291			
1.2	Yuba City			\$250,000			
1.3	Sutter mutual Water Company			\$256,000			
Total by Category		3.97	\$539,691	\$2,131,691	\$10,176	\$19	

Explanatory Notes: * NOAA Fisheries Services

E. Five Year Total Budget Planning FY2008-2012 (\$ in Millions)

		FY08	FY09	FY10	FY11	FY12	Total
Anadromous Fish Screen Program Section 3406(b)(21)							
	W&RR						
	RF	3.0	3.0	3.0	3.0	3.0	15.0
	State						
	Other¹	3.0	3.0	3.0	3.0	3.0	15.0
Total:		6.0	6.0	6.0	6.0	6.0	30.0

Table E provides desired out-year funding for AFSP fish screen projects and does not represent any future federal or non-federal funding commitments for AFSP fish screen projects. Budget information in Table E assumes a 50/50 split of federal funds and non-federal funds. However, the final split of federal and non-federal funds will be determined by availability of funds by funding sources. CVPIA authorizes federal funding for fish screens of up to 50%.