Draft CVPIA Fiscal Year 2012 Annual Work Plan

March 6, 2012

Program Title:

Anadromous Fish Screen Program – CVPIA Section 3406 (b)(21)

Responsible Entities:

Staff Name	Agency	Role
Dan Meier	USFWS	Lead
Tim Rust	Reclamation	Co-Lead
Fred Jurick	CDFG	State Partner

The U. S. Fish and Wildlife Service (USFWS) and the Bureau of Reclamation (Reclamation) jointly implement the Anadromous Fish Screen Program (AFSP). The AFSP assists the State of California in its efforts to reduce fish losses at unscreened diversions, with the California Department of Fish and Game (CDFG) acting as the lead state partner.

Program Goals and Objectives for FY 2012

The AFSP goals are:

(A) To assess fish screen benefits and to prioritize diversions for screening.
(B) To improve fish screen effectiveness and efficiency.
(C) To coordinate and collaborate with other agencies and entities involved in fish screening.
(D) To develop and share fish screen information.
(E) To reduce fish screen project costs.

AFSP objectives are to:

(A) Provide funding and/or technical assistance for fish screen projects.
(B) Conduct and assess fish entrainment monitoring at unscreened diversions.
(C) Support and evaluate screen/diversion related research to help determine:
- Critical factors resulting in fish losses at water diversions.
- Lower cost options for minimizing fish losses at diversions such as the use of behavioral devices at small diversions rather than more expensive positive barrier screens.
- Cost-effective fish screen design improvements.

(D) Conduct post-construction monitoring of fish screens

The AFSP's key performance goal is to assist the State of California in developing and implementing measures to avoid juvenile anadromous fish losses resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin rivers, their tributaries, the Delta, and the Suisun Marsh. This goal is measured in the number of fish screens constructed, with a target of screening the priority unscreened diversions on prescribed streams. The AFSP and the State of California are currently conducting fish entrainment monitoring at representative unscreened diversions to evaluate potential fish screening benefits and to determine the highest priority diversions for screening.

All AFSP projects contribute to the primary goal of the Anadromous Fish Restoration Program's (AFRP) Final Restoration Plan (2001) to make all reasonable efforts to double natural production of anadromous fish in Central Valley streams, as defined under CVPIA Section 3406(b)(1). In addition, current AFSP fish screening project priorities are coordinated with the Ecosystem Restoration Program's (ERP) goals and objectives by working with the ERP implementing agencies (CDFG, USFWS and NMFS).

The AFSP provides up to 50% of a fish screen project's cost, pursuant to CVPIA Section 3406(b)(21). The remaining amount (50% or greater) must be from state and/or local contributions. In past years, the State of California (through the ERP) has provided the majority of non-federal cost-share funds for AFSP fish screen projects.

The AFSP "Program Description" (January 1999) outlines the AFSP's purpose, scope, organization, and prioritization guidelines. The guidelines for prioritizing AFSP funded projects include consideration of biological benefits; size and location of the diversion; project cost; and cost-share funding availability. In addition, the AFSP's "Guidelines for Developing Post-Construction Evaluation & Assessment Plans, and Operation & Maintenance Plans" (March 1999) provides guidance for: a) developing a study plan for required fish screen post-construction hydraulic evaluations, and b) developing a required fish screen operations and maintenance plan.

Status of the Program

Since 1994, the AFSP has screened 33 high priority diversions ranging from 11 cubic feet/second (cfs) up to 960 cfs. Cumulatively, the AFSP has screened over 4,800 cfs in the Central Valley of California and the Sacramento-San Joaquin Delta. The AFSP is providing technical assistance (feasibility, design, environmental, and/or permitting) to several ongoing large fish screen projects. These fish screen projects include Reclamation District 2035 (400 cfs), Natomas Mutual Water Company (Phase II and III) (210 cfs), Meridian Farms Water Company (Phase II) (135 cfs) and West Stanislaus Irrigation District (262 cfs). Currently, there are approximately 750 remaining unscreened agricultural and municipal and industrial (M & I) diversions in the Sacramento River system, 950 in the San Joaquin River system, 2,300 in the Sacramento-San Joaquin Delta, and 360 in the Suisun Marsh.

The AFSP provides assistance with fish screens to agricultural and M&I water diverters through two primary means. First, the AFSP Technical Team, comprised of federal and state agencies' experts, provides fish screen design review and technical guidance to the diverters and their consultants throughout a project. The AFSP may also provide funding support to diverters to install fish screens on their diversions. The diverter is the owner of the constructed facilities and is solely responsible for the operation and maintenance of the fish screen.

Adaptive Management

There are many small and moderate sized unscreened agricultural and M&I diversions (under 150 cfs) on the Sacramento River. However, there is a general lack of data available about the potential effects of these diversions on existing fish populations. In 2009, the AFSP and ERP initiated a four-year effort to screen 12 diversions (ranging from 9 to 128 cfs) on the Sacramento River while obtaining critical fish entrainment monitoring data at each diversion site. Fish entrainment monitoring data are being collected at each diversion site for two diversion seasons (typically April through September) prior to fish screen installation. These biological assessments will analyze the effect of site-specific physical, hydraulic, and habitat characteristics of diversions on fish entrainment. Information obtained will lead to a better understanding of the fish screen benefits, and help prioritize diversions for future screening.

At this time, current fish entrainment monitoring results are too limited to provide empirical evidence about the primary factors affecting fish entrainment. However, it is anticipated that study results, upon completion in 2012, will lead to a significantly improved understanding about fish entrainment factors, and will help the AFSP and the State of California prioritize future fish screening efforts.

Table 1. FY2012 Activities and Costs

	CVPIA Section: 3406 (b)(21)
	CVPIA Program: Anadromous Fish Screen Program

	2012 Requested Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related	Other Sources*	Total All Sources
Total Funding	$0	$13,181,571	$6,049,000	$4,300,000	$0	$23,530,571
Reclamation			$5,615,973	$4,300,000	$0	$9,915,973
Service			$433,027	$0	$0	$433,027
CA DFG	$0	$13,181,571			$0	$13,181,571
CA DWR	$0	$0			$0	$0
Other	$0	$0			$0	$0

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.1	**Program Management**												
1.1.1		1.00	Provides leadership and overall management of the Anadromous Fish Screen Program (AFSP), including oversight of the AFSP Technical Team.	FWS	I.5	-		$0	$0	$218,663	$0	$0	$218,663
1.1.2		0.40	Co-manages AFSP including oversight of program budget, contracts and environmental compliance.	BOR	I.5	-		$0	$0	$74,087	$0	$0	$74,087

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$292,750	$0	$0	$292,750
Reclamation			$74,087	$0	$0	$74,087
Service			$218,663	$0	$0	$218,663
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.2	**Program Support**												
1.2.1		1.00	Provides overall program coordination including day-to-day implementation of program budget and contracts.	BOR	I.5	-		$0	$0	$150,587	$0	$0	$150,587
1.2.2		0.25	Provides management oversight of program activities.	FWS	I.5	-		$0	$0	$54,667	$0	$0	$54,667
1.2.3		0.01	Provides regional management and administration (ARD, Fisheries Program Manager, PA and support staff).	FWS	I.5	-		$0	$0	$8,318	$0	$0	$8,318
1.2.4		0.03	Regional contracting, budget and finance support (P20).	FWS	I.5	-		$0	$0	$6,379	$0	$0	$6,379
1.2.5		0.35	Provides Regional management and administration.	BOR	I.5	-		$0	$0	$41,519	$0	$0	$41,519
1.2.6		0.17	Provides management oversight of program activities.	BOR	I.5	-		$0	$0	$31,524	$0	$0	$31,524
1.2.7		0.17	Provides administrate support for program activities.	BOR	I.5	-		$0	$0	$19,906	$0	$0	$19,906

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$312,900	$0	$0	$312,900
Reclamation			$243,536	$0	$0	$243,536
Service			$69,364	$0	$0	$69,364
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

Table 1. FY2012 Activities and Costs

	CVPIA Section: 3406 (b)(21)
	CVPIA Program: Anadromous Fish Screen Program

	2012 Requested Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related	Other Sources*	Total All Sources
Total Funding	$0	$13,181,571	$6,049,000	$4,300,000	$0	$23,530,571
Reclamation			$5,615,973	$4,300,000	$0	$9,915,973
Service			$433,027	$0	$0	$433,027
CA DFG	$0	$13,181,571			$0	$13,181,571
CA DWR	$0	$0			$0	$0
Other	$0	$0			$0	$0

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.3	**Technical Support**												
1.3.1		1.00	National Marine Fisheries Service (NMFS) staff provides	BOR	I.5	-		$0	$0	$233,187	$0	$0	$233,187
1.3.2		0.35	Provides environmental compliance support for fish screen projects.	BOR	I.5	-		$0	$0	$54,404	$0	$0	$54,404
1.3.3		0.35	Provides environmental compliance support for fish screen	BOR	I.5	-		$0	$0	$53,541	$0	$0	$53,541
1.3.4		0.03	Provides environmental compliance and modeling support for fish	BOR	I.5	-		$0	$0	$8,000	$0	$0	$8,000
1.3.5		0.08	Provides contracting support for fish screen projects.	FWS	I.5	-		$0	$0	$10,000	$0	$0	$10,000
1.3.6		0.09	Provides environmental compliance and monitoring support.	FWS	I.5	-		$0	$0	$20,000	$0	$0	$20,000
1.3.7		0.50	Provides engineering support and review for design and construction of fish screen projects.	BOR	I.5	-		$0	$0	$86,901	$0	$0	$86,901

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$466,033	$0	$0	$466,033
Reclamation			$436,033	$0	$0	$436,033
Service			$30,000	$0	$0	$30,000
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

1.5	**Research (Evaluations, Studies, Investigations)**												
1.5.1		-	Additional laboratory evaluations of hydraulics and fish behavior at unscreened diversions by U.C. Davis J. Amorocho Hydraulics Laboratory staff with a focus on refining behavioral "screening" devices based on 2011 test results.	BOR	-	-		$0	$0	$450,000	$0	$0	$450,000
1.5.2		-	Conduct field evauations of behavioral "screening" devices at existing unscreened diversions. Total estimated funding need is $350,000 with $200,000 being provided under this activity. (See Unfunded Need, Section 1.16, for identification of the unfunded need) .	BOR	-	-		$0	$0	$200,000	$0	$0	$200,000

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$650,000	$0	$0	$650,000
Reclamation			$650,000	$0	$0	$650,000
Service			$0	$0	$0	$0
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

Table 1. FY2012 Activities and Costs

	2012 Requested Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related	Other Sources*	Total All Sources
Total Funding	$0	$13,181,571	$6,049,000	$4,300,000	$0	$23,530,571
Reclamation			$5,615,973	$4,300,000	$0	$9,915,973
Service			$433,027	$0	$0	$433,027
CA DFG	$0	$13,181,571			$0	$13,181,571
CA DWR	$0	$0			$0	$0
Other	$0	$0			$0	$0

	CVPIA Section: 3406 (b)(21)
	CVPIA Program: Anadromous Fish Screen Program

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.8	**Planning**												
1.8.1	-		West Stanislaus Fish Screen; Provides State cost share for a planning activities (design, environmental compliance and permitting) for screening 347 cfs of diversions off the San Joaquin River. This will be a State in-kind contribution with work to be performed by West Stanislaus Irrigation District and subcontractors using a funding agreement between CDFG and West Stanislaus Irrigation District. The estimated cost is $2,600,000 with all of the funding to be provided by CDFG.	CDFG	-	b21: High Priority Fish Screens: Other	unspecified	$0	$2,600,000	$0	$0	$0	$2,600,000
1.8.2	-		West Stanislaus Fish Screen; Provides federal cost share for a planning activities (Supplemental Feasibility Study and DEC Review) for screening 347 cfs of diversions off the San Joaquin River. This work will be performed by West Stanislaus Irrigation District and subcontractors with the funding agreement to be managed by BOR regional.	BOR	-	b21: High Priority Fish Screens: Other	unspecified	$0	$0	$165,000	$0	$0	$165,000

	Anticipated Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$2,600,000	$165,000	$0	$0	$2,765,000
Reclamation			$165,000	$0	$0	$165,000
Service			$0	$0	$0	$0
CA DFG	$0	$2,600,000			$0	$2,600,000
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

Table 1. FY2012 Activities and Costs

	CVPIA Section: 3406 (b)(21)
	CVPIA Program: Anadromous Fish Screen Program

	2012 Requested Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related	Other Sources*	Total All Sources
Total Funding	$0	$13,181,571	$6,049,000	$4,300,000	$0	$23,530,571
Reclamation			$5,615,973	$4,300,000	$0	$9,915,973
Service			$433,027	$0	$0	$433,027
CA DFG	$0	$13,181,571			$0	$13,181,571
CA DWR	$0	$0			$0	$0
Other	$0	$0			$0	$0

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.11	**Construction**												
1.11.1		-	Sacramento River Fish Screens; Provides Federal cost share funding for fish screen projects on the Sacramento River such as RD 2035, Natomas Phase 2A (Pritchard Lake), and Meridian Farms (Phase II). construction is expected to be complete in by 2015.	BOR	I.5	b21: High Priority Fish Screens: Other	unspecified	$0	$0	$4,047,317	$4,300,000	$0	$8,347,317
1.11.2		-	Yuba City Fish Screen; Provides State cost share funding for a 74 cfs screened diversion on the Feather River. This will be a State in-kind contribution with construction work to be performed by Yuba City and subcontractors using a funding agreement between CDFG and Yuba City. The AFSP provided $900,000 from the Restoration Fund in prior years towards the estimated construction cost of $5,300,000. The total State contribution will be $500,000 with the remaining project funds to be provided by Yuba City. Construction is expected to be completed in 2013.	CDFG	-	b21: High Priority Fish Screens: Other	unspecified	$0	$500,000	$0	$0	$0	$500,000
1.11.3		-	Natomas Mutual (American Basin) Phase I Fish Screen Project This will be a State cost share for a 389 cfs screened diversion on the Sacramento River that replaces two existing diversions on the Natomas Cross Canal. The work will be performed by Natomas Mutual Water Company and subcontractors using a funding agreement between CDFG and Natomas Mutual Water Company. The estimated total project cost is $41,600,000 with 50 percent of the costs provided by the AFSP in prior years through Restoration Fund, Water and Related, and Bay-Delta funding. The State cost share is estimated to be $20,800,000 with $10,081,571 estimated for work occuring after 10-30-11. Construction is expected to be complete in 2013.	CDFG	-	b21: High Priority Fish Screens: Other	unspecified	$0	$10,081,571	$0	$0	$0	$10,081,571

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$10,581,571	$4,047,317	$4,300,000	$0	$18,928,888
Reclamation			$4,047,317	$4,300,000	$0	$8,347,317
Service			$0	$0	$0	$0
CA DFG	$0	$10,581,571			$0	$10,581,571
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

Table 1. FY2012 Activities and Costs

	CVPIA Section: 3406 (b)(21)
	CVPIA Program: Anadromous Fish Screen Program

	2012 Requested Funding					
	State Cash	State In-Kind	Restoration Fund	Water and Related	Other Sources*	Total All Sources
Total Funding	$0	$13,181,571	$6,049,000	$4,300,000	$0	$23,530,571
Reclamation			$5,615,973	$4,300,000	$0	$9,915,973
Service			$433,027	$0	$0	$433,027
CA DFG	$0	$13,181,571			$0	$13,181,571
CA DWR	$0	$0			$0	$0
Other	$0	$0			$0	$0

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.12	**Monitoring**												
1.12.1	-		Conduct predator study at existing diversions and/or fish screens to identify potential improvements to the design of new fish screens that would reduce fish predation; includes purchase of DIDSON camera.	FWS	-	-		$0	$0	$115,000	$0	$0	$115,000

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$115,000	$0	$0	$115,000
Reclamation			$0	$0	$0	$0
Service			$115,000	$0	$0	$115,000
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

AWP Activity Number	Type of Activity	# of FTE's	Activity Name & Description	Agency	NMFS OCAP RPA#	Performance Metric	Performance Target	2012 Requested Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	Other Sources*	Total All Sources
1.16	**Unfunded Needs**												
1.16.1	-		Conduct field evauations of behavioral "screening" devices at existing unscreened diversions. Total Cost is estimated at $350,000. $200,000 is proposed under Section 1.5, leaving an unfunded need of $150,000.	BOR	-	-		$0	$0	$150,000	$0	$0	$150,000

	Anticipated Funding: State Cash	State In-Kind	Restoration Fund	Water and Related Resources	State or Other Sources*	Total All Sources
Subtotal Funding	$0	$0	$150,000	$0	$0	$150,000
Reclamation			$150,000	$0	$0	$150,000
Service			$0	$0	$0	$0
CA DFG	$0	$0			$0	$0
CA DWR	$0	$0			$0	$0
Other*	$0	$0			$0	$0

*** List other funding source here:** None

Table 2. Three-Year Budget Plan FY 2013 – 2015

Table 2. Three-Year Funding Plan FY 2013 – 2015
($ amounts in thousands)

FY Year	Description of Activities	Funding Needs				
		RF	W&RR	Other	DFG	DWR
2013	1.1 Program Management 1.2 Program Support 1.3 Technical Support 1.5 Evaluations & Research. Development and testing of non-positive barrier fish screens. May include value planning and engineering studies and design support for AFSP fish screen projects. 1.11 Fish Screen Construction. Provides additional cost share funding for Sacramento and/or San Joaquin River fish screens. **Total**	$300,069 $313,821 $477,684 $100,000 $4,000,000 $5,191,574				
2014	1.1 Program Management 1.2 Program Support 1.3 Technical Support 1.5 Evaluations & Research. Development and testing of non-positive barrier fish screens. May include value planning and engineering studies and design support for AFSP fish screen projects. 1.11 Fish Screen Construction. Provides additional cost share funding for Sacramento and/or San Joaquin River fish screens. **Total**	$307,571 $321,667 $489,626 $100,00 $4,000,000 $5,218,864				
2015	1.1 Program Management 1.2 Program Support 1.3 Technical Support 1.5 Evaluations & Research. Development and testing of non-positive barrier fish screens. May include value planning and engineering studies and design support for AFSP fish screen projects. 1.11 Fish Screen Construction. Provides additional cost share funding for Sacramento and/or San Joaquin River fish screens. **Total**	$315,260 $329,708 $501,867 $100,000 $4,000,000 $5,246,835				

Note: The FY 2013 – 2015 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 when pending appropriations and annual Restoration Fund collections are realized. Projects selected for funding under Section 1.11 will be determined based on project costs and benefits, project readiness and availability of a non-federal cost share match.