CVPIA Fiscal Year 2014 Annual Work Plan

April 29, 2013

Program Title:

Dedicated Project Yield CVPIA Section (b)(2)

Responsible Entities:

Staff Name	Agency	Role
Craig Anderson	*Service*	*Lead*
Liz Kiteck	*Reclamation*	*Co-Lead*

Program Goals and Objectives for FY 2014

The Department of the Interior (Interior) has the responsibility to dedicate and manage annually up to 800,000 acre-feet of Central Valley Project (CVP) water (commonly referred to as (b)(2) water) for fish, wildlife, and habitat restoration purposes. In dry and critical years, the shortage criteria specified in the Dept. of Interior May 9, 2003 Decision on Implementation of Section 3406 (b)(2) applies when deliveries to CVP agricultural water service contractors north of the Delta are reduced because of hydrologic circumstances. In dry years the amount of (b)(2) water available may be reduced by up to 100,000 acre-feet, and in critical years the amount of (b)(2) water may be reduced by up to 200,000 acre-feet. At this point in time the hydrology, and therefore the (b)(2) allocation, in FY 2014 are unknown. See the Process and Accounting section for additional detail on implementation procedures.

The program objectives are enumerated below. The source documents for these objectives include the CVPIA Programmatic Record of Decision (ROD), Final Restoration Plan for the Anadromous Fish Restoration Program (AFRP), CALFED Programmatic ROD, and Interior's May 9, 2003 Decision on Implementation of Section 3406 (b)(2) of the CVPIA.

a. Improve habitat conditions for anadromous fish in CVP controlled rivers and streams and the Bay-Delta to help meet the AFRP doubling goals
b. Increase survival of out migrant juvenile anadromous fish, especially in the Bay-Delta.
c. Contribute to recovery of listed threatened and endangered fish species, including delta smelt.
d. Assist the State in its efforts to protect the Delta.
e. Monitor and evaluate to guide the (b)(2) management decisions and assess the effectiveness of (b)(2) measures.

Status of the Program

On May 9, 2003, Interior released a revised Final Decision on Implementation of Section 3406 (b)(2), in response to a ruling by the federal District Court in March, 2002. The revised Final Decision set out a calculation of CVP yield, the method of accounting for use of the dedicated CVP yield, and procedures for management of the yield.

On June 3, 2003 and again on January 23, 2004, the U.S. Court of Appeals for the Ninth Circuit ruled that the District Court erred in concluding that Interior lacks discretion to specify what portion of the 800,000 acre feet is set aside for water quality and Endangered Species Act purposes. Section 3406 (b)(2) provides that the "primary purpose" to which the 800,000 acre feet should be dedicated is the implementation of "fish, wildlife, and habitat restoration purposes authorized by this title…" (i.e., CVPIA). The language of the statute gives Interior discretion to allocate the 800,000 acre feet among fish and wildlife, water quality, and endangered species obligations, as long as Interior's allocation gives effect to the hierarchy of purposes established in Section 3406 (b)(2).

In September 2008, the Federal District Court issued a memorandum opinion in San Luis & Delta Mendota Water Authority v. Department of Interior, 1:97-cv-6140, 1:98-cv-5261 OWW DLB (E.D.Cal. Sept. 19, 2008), concerning Interior's (b)(2) accounting for the 2004 water year[1]. In March 2012, the U.S. Court of Appeals for the Ninth Circuit affirmed the District Court's 2008 opinion and ruled that Interior's accounting with respect to the latter June 2004 releases was not "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." (No. 09-17594, D.C. No. CV 97-06140-OWW Opinion). Thus, Interior accounted for fishery actions, including Endangered Species Act (ESA) and water quality control plan (WQCP) actions during the 2012 water year consistent with that opinion, as well as, the Ninth Circuit's decision in Bay Inst. of San Francisco, Interior's 2003 (b)(2) Policy, and 2003 (b)(2) Guidance.

Process and Accounting

The accounting methods and procedures set out below generally describe how Interior manages and accounts for annually dedicated (b)(2) water. A more comprehensive description of the current policy and procedures is provided in the Dept. of Interior May 9, 2003 Decision on Implementation of Section 3406 (b)(2) of the Central Valley Project Improvement Act.

The (b)(2) program is jointly managed by the U.S. Bureau of Reclamation (Reclamation) and the U.S. Fish and Wildlife Service (FWS) primarily through the (b)(2) Interagency Team ((b)(2)IT), which typically convenes on a weekly basis throughout the water year. This interagency team of project operators and resource agency biologists currently consists of representatives from the California Department of Water Resources (DWR), the California Department of Fish and Game (DFG), Reclamation, the FWS, and the National Marine Fisheries Service (NOAA). Both prior to and during these weekly meetings, the (b)(2)IT evaluate seasonal precipitation and runoff forecasts, current state and federal regulatory requirements, fisheries monitoring data, and year-

1 In that opinion, Judge Wanger stated that the "primary purpose" of CVPIA Section 3406(b)(2) "includes all those fish and wildlife restoration activities specifically described in section 3406(b)," including "water dedicated to accomplish the anadromous fish doubling goal set forth in section 3406(b)(1)" and "water needed to accomplish any of the other specifically enumerated programs listed in section 3406(b)(2). SLDMWA, at 43 (underline in original). Thus, "if an action taken under the WQCP and/or ESA predominantly contributes to one of the primary purpose programs (e.g., fish doubling), it must be counted toward the 800,000 AF limit." Id. at 48. In so doing, Judge Wanger recognized that there may be some "primacy" to section 3406(b)(1) in relation to other stated purposes of section 3406(b), but he did not rule on that question. Id. at 45.

to-date (b)(2) accounting to inform collaborative decisions about when and where (b)(2) actions should be taken on the following CVP streams (Clear Creek, Sacramento, American, or Stanislaus Rivers) or in the Delta.

Accounting Period

The accounting period for determining the use of the annual (b)(2) allocation is October 1 through September 30. The water year October 1 through September 30 begins with the onset of the yearly precipitation season. The flow-related fishery actions specified by the Service pursuant to Section 3406(b)(2)(B) in the fall and early winter target the spawning period for salmon and steelhead. The fishery actions target the rearing habitat for the juvenile life stage during the winter and early spring. Finally, during April through June, the fishery actions target the emigration habitat for juvenile salmon as they migrate downstream, through the Delta and to the ocean. The spring fishery actions also benefit resident estuarine fish. In order to ensure that sufficient (b)(2) water is maintained throughout the accounting period, Interior targets using approximately 200,000 acre feet of (b)(2) water in October through January for fishery purposes.

Accounting Methodology

The appropriate accounting methodology for the dedication and management of (b)(2) water is based upon how and where the water is used. Interior's methodology for accounting for (b)(2) water involves two measurement metrics: upstream releases and Delta exports. Interior generally accounts for the costs of meeting the CVP's ESA obligations that have been or may be legally imposed after enactment of CVPIA against the annual (b)(2) allocation remaining at the time the cost is incurred.

Upstream fishery actions from October 1 through September 30 are accounted as the increase in releases from upstream reservoirs with the fishery actions, compared to releases from the reservoirs that would have resulted from baseline CVP operations during the same period without the fishery actions. The calculation of increase in release with the fishery measures will be based on daily changes in releases resulting from the (b)(2) measures prescribed by Interior, accumulated over the period. If specified by Interior, based on a written assessment of biological benefits to the fishery from the FWS, steps will be pursued under California law to allow upstream releases to flow through the Delta. Upstream releases specified to flow through the Delta would be accounted for solely under this provision, and not as Delta actions.

Delta actions that affect exports are accounted throughout the water year as the reduction in exports from the Delta resulting from the prescribed fishery actions. Any export reductions prescribed by Interior below the baseline operation are accounted as (b)(2) actions. The calculation of decrease in Delta exports with the fishery measures are based on daily changes in Delta exports resulting from the (b)(2) measures prescribed by Interior, accumulated over the period.

Accounting Process

The process for accounting is as follows:

- Reclamation provides the FWS a preliminary 12-month baseline forecast of operations each month, beginning in October. Reclamation's objective is to develop each forecast by mid-month. The forecast is based on the applicable CVP Operations Criteria and Plan (OCAP).

- Each month, beginning in October, the FWS submits to Reclamation an updated 12-month schedule for the proposed prescribed fishery measures. These measures are adjusted at least monthly, as the season's hydrology evolves and CVP operations respond, and preliminary (b)(2) accounting becomes available, to stay within the target and retain sufficient (b)(2) water to implement desired measures, both in the Delta and upstream.

Adaptive Management

The program will continue to manage (b)(2) water based on real-time project operations and fishery needs. As a matter of standard practice we confer with fishery biologists and project operators on a weekly basis in order to determine where and when to apply (b)(2) water. Although a formal adaptive management plan has not been adopted, the (b)(2) program has funded monitoring studies to identify the best uses for the (b)(2) water, including ongoing redd dewatering surveys on the Sacramento River, Clear Creek, and the American River. These efforts have already been used to guide (b)(2) management decisions and will further inform us in the future.

Table 1. FY2014 Proposed Activities and Costs

CVPIA Section 3406 (b)(2), Dedicated Project Yield

	3406 (b)(2) Requested Funding for Fiscal Year 2014				
	Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
Total Funding	$600,000	$0	$0	$0	$600,000
Reclamation	$139,666	$0			$139,666
Service	$460,334	$0			$460,334
CA DFG			$0	$0	$0
CA DWR			$0	$0	$0

1.1	Program Management										
AWP Activity Number	Activity Name	Activity Description	Agency Name	Agency Fractional FTE	Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014 Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
1.1.1	Lead	Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes. (FRFR4833-0832PY0) (NMFS OCAP RPA and AFRP Final Restoration Plan actions apply to the entire program and are not repeated in remaining sections.)	FWS	0.14			$31,225				$31,225
1.1.2	Co-Lead	Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes. (0214-2000)	BOR	0.15			$33,254				$33,254

	Sub-Total for Program Management, FY2014				
	Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
Subtotal Funding	$64,479	$0	$0	$0	$64,479
Reclamation	$33,254	$0			$33,254
Service	$31,225	$0			$31,225
CA DFG			$0	$0	$0
CA DWR			$0	$0	$0

1.2	Program Support										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
1.2.1	Interagency Collaboration	b2 Interagency Team meetings. Confer with project operators and biologists to determine when and where b2 water should be used. (FRFR4833-0832PYO)	FWS	0.07			$15,613				$15,613
1.2.2	Interagency Collaboration	b2 Interagency Team meetings. Confer with project operators and biologists to determine when and where b2 water should be used. (FRFR4833-0832PYO)	FWS	0.07			$15,519				$15,519
							Sub-Total for Program Support, FY2014				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
						Subtotal Funding	$31,132	$0	$0	$0	$31,132
						Reclamation	$0	$0			$0
						Service	$31,132	$0			$31,132
						CA DFG			$0	$0	$0
						CA DWR			$0	$0	$0

1.3	Technical Support										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
1.3.1	FWS Forecast/ Accounting	Coordination and budget prep, develop CVP monthly forecasts, daily accounting (FRFR4833-0832PYO)	FWS	0.34			$75,833				$75,833
1.3.2	FWS Tech Lead	Coordinate, budget prep, develop CVP monthly forecasts, daily acct (FRFR4833-0832PYO)	FWS	0.34			$75,833				$75,833
1.3.3	BOR Tech Lead	Coordinate, budget prep, develop CVP monthly forecasts, daily acct (0214-2000)	BOR	0.12			$26,603				$26,603
1.3.4	BOR Forecast/ Accounting	Develop CVP monthly forecasts, daily accounting (0214-2000)	BOR	0.12			$26,603				$26,603
1.3.5	BOR Forecast/ Accounting	Develop CVP monthly forecasts, daily accounting (0214-2000)	BOR	0.12			$26,603				$26,603
1.3.6	BOR Forecast/ Accounting	Develop CVP monthly forecasts, daily accounting (0214-2000)	BOR	0.12			$26,603				$26,603
							Sub-Total for Technical Support, FY2014				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
						Subtotal Funding	$258,078	$0	$0	$0	$258,078
						Reclamation	$106,412	$0			$106,412
						Service	$151,666	$0			$151,666
						CA DFG			$0	$0	$0
						CA DWR			$0	$0	$0

2.3	Outreach and Public Involvement										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
2.3.1	Technical Work Groups	Participate in various interagency technical and modeling work groups (which may include public participation) including Calfed Ops, American River Operations, Delta Operations for Salmonids and Sturgeon, Sacramento River Temperature Task Group, Stanislaus Operations Group, Clear Creek Technical Working Group, and Water Operations and Managment Team. Conduct two or more public presentations each year. (FRFR4833-0832PY0)	FWS	0.03	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$6,691				$6,691
2.3.2	Technical Work Groups	Participate in various interagency technical and modeling work groups (which may include public participation) including Calfed Ops, American River Operations, Delta Operations for Salmonids and Sturgeon, Sacramento River Temperature Task Group, Stanislaus Operations Group, Clear Creek Technical Working Group, and Water Operations and Managment Team. Conduct two or more public presentations each year. (FRFR4833-0832PY0)	FWS	0.03	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$6,691				$6,691
							Sub-Total for Outreach and Public Involvement, FY2014				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
						Subtotal Funding	$13,382	$0	$0	$0	$13,382
						Reclamation	$0	$0			$0
						Service	$13,382	$0			$13,382
						CA DFG			$0	$0	$0
						CA DWR			$0	$0	$0

4.1	Monitoring (Programmatic)											
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
4.1.1	Sacramento River Redd Dewatering	Monitoring of fall- and late-fall run Chinook salmon redd locations and physical data (Oct-Apr) on the Sacramento River between Keswick and Red Bluff Diversion Dams. This information will be used to make real-time Keswick release decisions to benefit spawning, egg incubation, and fry emergence as well as contribute to long-term flow related management decisions.	FWS	0.00			$99,675				$99,675
4.1.2	San Joaquin River and Sac-SJ Delta Juvenille Outmigration	This study focuses on estimating juvenille Chinook salmon survival through the San Joaquin River and Delta and relating it to temperature, flow, exports, and the Old River barrier. The survival estimates will be compared between the two fish releases and identify proportional cuases of mortality hypothesized to be related to operational changes in hydrology and other project and non-project effects on outmigrating juvenile salmon smolts.	FWS	0.00			$46,951				$46,951
4.1.3	Lower American River Redd Dewatering	The objective is to estimate and describe the timing, location, and extent of salmonid redd dewatering on the Lower American River. This inofrmation will also be used to inform (b)(2) management decisions on the Lower American River.	FWS	0.00			$10,000				$10,000
							Sub-Total for Monitoring (Programmatic), FY2014				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
						Subtotal Funding	$156,626	$0	$0	$0	$156,626
						Reclamation	$0	$0			$0
						Service	$156,626	$0			$156,626
						CA DFG			$0	$0	$0
						CA DWR			$0	$0	$0

4.3	Modeling										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
4.3.1	Operations Modeling	Hydrologic computer model simulations will be conducted on a monthly basis (CVP forecast model) to assess various (b)(2) implementation scenarios, and CALSIM II and ECOSYM modeling will be done on an as-needed basis. (FRFR4833-0832PY0)	FWS	0.27	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$62,920				$62,920
							Sub-Total for Modeling, FY2014				
							Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
						Subtotal Funding	$62,920	$0	$0	$0	$62,920
						Reclamation	$0	$0			$0
						Service	$62,920	$0			$62,920
						CA DFG			$0	$0	$0
						CA DWR			$0	$0	$0

5.1	Other										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2014 Projected Performance	3406 (b)(2) Requested Funding for Fiscal Year 2014				
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
5.1.1	Legal Review and Preparation	Coordinate with DOI Solicitor's Office on legal review of documentation and litigation preparation (FRFR4833-0832PY0)	FWS	0.02	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$4,461				$4,461
5.1.2	Legal Review and Preparation	Coordinate with DOI Solicitor's Office on legal review of documentation and litigation preparation (FRFR4833-0832PY0)	FWS	0.02	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$4,461				$4,461
5.1.3	Legal Review and Preparation	Coordinate with DOI Solicitor's Office on legal review of documentation and litigation preparation (FRFR4833-0832PY0)	FWS	0.02	Instream Flow 800,000 AF (Normal Year)	800,000 acre-feet	$4,461				$4,461

	Sub-Total for Other, FY2014				
	Restoration Fund	Water and Related Resources	State Cash	State In-Kind	Total All Sources
Subtotal Funding	$13,383	$0	$0	$0	$13,383
Reclamation	$0	$0			$0
Service	$13,383	$0			$13,383
CA DFG			$0	$0	$0
CA DWR			$0	$0	$0

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Table 2. FY2015 Proposed Activities and Costs
CVPIA Section 3406 (b)(2), Dedicated Project Yield

	3406 (b)(2) Requested Funding For Fiscal Year 2015			
	Restoration Fund	Water and Related Resources	State Cash	Total All Sources
Total	$850,000	$0	$0	$850,000
US Bureau of Reclamation	$140,000	$0		$140,000
US Fish and Wildlife Service	$710,000	$0		$710,000
California Dept of Fish and Wildlife			$0	$0
California Dept of Water Resources			$0	$0

			Federal Costs($)				State Cost Share ($)		
Task	**Project Name**	**Project Description**	**BOR Restoration Fund**	**BOR W&RR Fund**	**FWS Restoration Fund**	**FWS W&RR Fund**	**CA DFW**	**CA DWR**	**Total Costs ($)**
Program Mgmt & Support			$140,000		$310,000				$450,000
Project 1	Juvenille outmigration	This study focuses on estimating juvenille Chinook salmon survival through the San Joaquin River and Delta and relating it to temperature, flow, exports, and the Old River barrier. The survival estimates will be compared between the two fish releases and identify proportional cuases of mortality hypothesized to be related to operational changes in hydrology and other project and non-project effects on outmigrating juvenile salmon smolts.			$150,000				$150,000

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

			Federal Costs($)				State Cost Share ($)		
Task	**Project Name**	**Project Description**	**BOR Restoration Fund**	**BOR W&RR Fund**	**FWS Restoration Fund**	**FWS W&RR Fund**	**CA DFW**	**CA DWR**	**Total Costs ($)**
Project 2	Sac River Redd Dewatering	Monitoring of fall- and late-fall run Chinook salmon redd locations and physical data (Oct-Apr) on the Sacramento River between Keswick and Red Bluff Diversion Dams. This information will be used to make real-time Keswick release decisions to benefit spawning, egg incubation, and fry emergence as well as contribute to long-term flow related management decisions.			$150,000				$150,000
Project 3	Lower American River Redd Dewatering	The objective is to estimate and describe the timing, location, and extent of redd dewatering on the Lower American River.			$100,000				$100,000

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

Table 2. FY2016 Proposed Activities and Costs
CVPIA Section 3406 (b)(2), Dedicated Project Yield

	3406 (b)(2) Requested Funding For Fiscal Year 2016			
	Restoration Fund	Water and Related Resources	State Cash	Total All Sources
Total	$700,000	$0	$0	$700,000
US Bureau of Reclamation	$140,000	$0		$140,000
US Fish and Wildlife Service	$560,000	$0		$560,000
California Dept of Fish and Wildlife			$0	$0
California Dept of Water Resources			$0	$0

			Federal Costs($)				State Cost Share ($)		
Task	**Project Name**	**Project Description**	**BOR Restoration Fund**	**BOR W&RR Fund**	**FWS Restoration Fund**	**FWS W&RR Fund**	**CA DFW**	**CA DWR**	**Total Costs ($)**
Program Mgmt & Support			$140,000		$310,000				$450,000
Project 1	Juvenille outmigration	This study focuses on estimating juvenille Chinook salmon survival through the San Joaquin River and Delta and relating it to temperature, flow, exports, and the Old River barrier. The survival estimates will be compared between the two fish releases and identify proportional cuases of mortality hypothesized to be related to operational changes in hydrology and other project and non-project effects on outmigrating juvenile salmon smolts.			$100,000				$100,000

Outyear activities are estimates of funding capability only and do not reflect the future Congressional Appropriations process.

			Federal Costs($)				State Cost Share ($)		
Task	**Project Name**	**Project Description**	**BOR Restoration Fund**	**BOR W&RR Fund**	**FWS Restoration Fund**	**FWS W&RR Fund**	**CA DFW**	**CA DWR**	**Total Costs ($)**
Project 2	Sac River Redd Dewatering	Monitoring of fall- and late-fall run Chinook salmon redd locations and physical data (Oct-Apr) on the Sacramento River between Keswick and Red Bluff Diversion Dams. This information will be used to make real-time Keswick release decisions to benefit spawning, egg incubation, and fry emergence as well as contribute to long-term flow related management decisions.			$100,000				$100,000
Project 3	Lower American River Redd Dewatering	The objective is to estimate and describe the timing, location, and extent of redd dewatering on the Lower American River.			$50,000				$50,000

Table 3 – Proposed Monitoring Activity	
Project Description:	**Sacramento River Redd Dewatering** - Field surveys and spawning habitat monitoring and mapping on the Sacramento River between Keswick Dam and the Red Bluff Diversion Dam. Target species are fall-run and late fall-run Chinook salmon.
FY 2013 Project Complete?	FY 2011 and 2012 were funded as pilot projects by AFRP. FY 2013 funds will be used to allow the project to expand in FY 2014. FY 2014 funds will be used to continue the project in FY 2015.
CVPIA annual work plan subtask number:	4.1.1
Scope of the monitoring effort:	Sacramento River – Keswick Dam to Red Bluff Diversion Dam
Product/deliverable:	Weekly monitoring updates, Annual Report
Cost:	$99,675
Questions posed:	How do October-March Keswick Dam releases affect Chinook redd dewatering, egg incubation, and fry emergence in the Sacramento River?
Objectives:	The objective is to measure and describe the timing, location, frequency, and extent of redd dewatering on the mainstem Sacramento River. This information will also be used to inform (b)(2) management decisions on the Sacramento River.
Results – expected or actual:	Digital files, final report September 2014.
Data collection methods:	Redd surveys and habitat mapping in all or attainable portion of the approximately 60 river miles between Keswick and Red Bluff Diversion Dams
Data management:	Final report documenting results will be archived by Tricia Parker Hamelberg (FWS Red Bluff)
Assessment:	New project utilizing b2 funding.
Use of information in future decision making:	To inform flow related management decisions on the Sacramento River during the October-March period.

Table 3 – Proposed Monitoring Activity	
Project Description:	**Lower San Joaquin River Chinook Salmon Outmigration** - Participate in acoustic tag studies for San Joaquin Chinook outmigration (tagging, receiver download, coordination, data analysis, report prep) - Pat Brandes FWS Stockton.
FY 2013 Project Complete?	Field work completed successfully. Annual report in prep.
CVPIA annual work plan subtask number:	4.1.2
Scope of the monitoring effort:	Lower San Joaquin River, Delta, export facilities
Product/deliverable:	Digital database, annual report due February 2015
Cost:	$50,000
Questions posed:	Monitor juvenile Chinook salmon outmigration and survival in the lower San Joaquin River, and how flows and Delta exports affect survival.
Objectives:	Determine salmon route selection and survival rates of juvenile salmon in the lower San Joaquin River.
Results – expected or actual:	Digital files, annual report in prep (due February 2014)
Data collection methods:	Salmon smolts implanted with hydroacoustic tags and released in San Joaquin River. Use stationary and mobile receivers to track route selection and estimate survival rates.
Data management:	Digital files and final report documenting results will be archived by Pat Brandes (FWS Stockton)
Assessment:	Continue evaluation of flows, export rates, salmon smolt route selection and survival rates
Use of information in future decision making:	This effort is intended to provide insights regarding flows, export rates, and survival rates of San Joaquin basin juvenile salmon. The information may be used to identify the primary mortality factors and help inform management decisions, especially related to water acquisitions from the San Joaquin River tributaries (Stanislaus, Tuolumne, and Merced Rivers).

Table 3 – Proposed Monitoring Activity	
Project Description:	Provide quasi real-time water surface elevation (WSE) modeling and salmonid redd dewatering analyses on the Lower American River.
FY 2014 Project Complete?	New Project.
CVPIA annual work plan subtask number:	4.1.3
Scope of the monitoring effort:	Lower American River – Nimbus Dam to Watt Ave
Product/deliverable:	Model results and summary reports as requested
Cost:	$10,000
Questions posed:	How do October-March Nimbus Dam releases affect steelhead and Chinook redd dewatering, egg incubation, and fry emergence?
Objectives:	The objective is to estimate and describe the timing, location, and extent of redd dewatering on the Lower American River. This information will also be used to inform (b)(2) management decisions on the American River.
Results – expected or actual:	Digital files, summary analyses
Data collection methods:	Estimate water surface elevations with a suite of hydrologic models utilizing spatio-temporal salmonid redd data collected by USBR (and others).
Data management:	Digital files and final report documenting results will be archived by Craig Anderson (FWS Bay-Delta)
Assessment:	New project utilizing b2 funding.
Use of information in future decision making:	To inform flow related (b)(2) management decisions on the Lower American River.