Annual Charter Report

General:

Title	Description
b2 administration	USBR and FWS oversight of program

Authority:

Provision	Percentage	Comments
b2	100	

No Location IDs Listed

Watershed(s):

Watershed Name
Central Valley-Wide

Schedule:

Funding Begins	Benefits Begin	Funding Complete
10/1/2014	10/1/2014	9/30/2015

No Benefits Listed

Deliverable(s):

Date	Title
4/16/2014	Annual accomplishment report
4/16/2014	Annual Narrative Summary
4/16/2014	Annual Operations and Accounting presentation

Program Priority:

Rank	Comment
1	Priority 1 (admin) and priority 2(operations) are intertwined.

Estimated Cost(s):

Fiscal Year	Fund	Total
2015	CVPRF	$92,156
2016	CVPRF	$94,921

Final Total
$187,077

No Partners Listed

Related Programs:

Program Name
b9
b19
b3
AFRP

Narrative:

Narrative Description
This charter is the base funding for administration of the (b)(2) program. It includes both FWS and USBR staff time for program oversight and management, budget and annual work plan development, litigation support, public outreach efforts, and preparation and presentation of annual summary documents.

No Risks Listed

Data Management:

Description
The (b)(2) Program generates both monthly and annual data products. On a monthly basis, Reclamation produces 12-month operational forecasts that include estimates of water year (b)(2) fishery actions and daily accounting of both (b)(2) and non-(b)(2) fishery actions. At the end of each water year, the Program also produces summary documents that include (b)(2) daily accounting, a narrative summary, and annual accounting summary tables. All of these data products are posted on the Reclamation Central Valley Office (CVO) website at the appropriate time of year: http://www.usbr.gov/mp/cvo/

Year	Activity	Activity Description
2015	Environmental Compliance and Permitting	Legal Review and Preparation

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Program staff	FWS	Staff Position	0.06		CVPRF	Coordinate with DOI Solicitor's Office on legal review of documentation and litigation preparation

Year	Activity	Activity Description
2015	Management	Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Co-Lead	BOR	Staff Position	0.15		CVPRF	Program Co-Lead Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes.
Lead	FWS	Staff Position	0.14		CVPRF	Program Lead Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes.

Year	Activity	Activity Description
2015	Outreach	Technical Work Group Participation

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Biologist	FWS	Staff Position	0.03		CVPRF	Participate in various interagency technical and modeling work groups (which may include public participation). Conduct 2 or more public presentations per year.
Hydrologist	FWS	Staff Position	0.03		CVPRF	Participate in various interagency technical and modeling work groups (which may include public participation). Conduct 2 or more public presentations per year.

Year	Activity	Activity Description
2016	Environmental Compliance and Permitting	Legal Review and Preparation

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Program staff	FWS	Staff Position	0.06		CVPRF	Coordinate with DOI Solicitor's Office on legal review of documentation and litigation preparation

Year	Activity	Activity Description
2016	Management	Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Lead	FWS	Staff Position	0.14		CVPRF	Program Lead Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat restoration purposes.
Co-Lead	BOR	Staff Position	0.15		CVPRF	Program Co-Lead Dedicate and manage annually 800,000 acre-feet of CVP water for fish, wildlife, and habitat

Annual Charter Report

General:

Title	Description
b2 operations	Develop operational products used to make b2 management decisions

Authority:

Provision	Percentage	Comments
b2	100	

No Location IDs Listed

Watershed(s):

Watershed Name
Central Valley-Wide

Schedule:

Funding Begins	Benefits Begin	Funding Complete
10/1/2014	10/1/2014	9/30/2015

No Benefits Listed

Deliverable(s):

Date	Title
10/1/2015	Annual Accomplishment Report
10/1/2015	Annual Narrative Summary
10/1/2015	Annual Operations and Accounting Presentation

Program Priority:

Rank	Comment
2	Priority 1 (admin) and priority 2(operations) are intertwined.

Estimated Cost(s):

Fiscal Year	Fund	Total
2015	CVPRF	$353,018
2016	CVPRF	$363,609

Final Total
$716,627

No Partners Listed

Related Programs:

Program Name
AFRP
b9
b19
b3

Narrative:

Narrative Description
This charter is the base funding for implementation of the (b)(2) program. It includes both FWS and USBR staff time for interagency coordination and collaboration, technical workgroup participation, operational forecast development, hydrologic modeling support, and daily accounting procedures.

No Risks Listed

Data Management:

Description
The (b)(2) Program generates both monthly and annual data products. On a monthly basis, Reclamation produces 12-month operational forecasts that include estimates of water year (b)(2) fishery actions and daily accounting of both (b)(2) and non-(b)(2) fishery actions. At the end of each water year, the Program also produces summary documents that include (b)(2) daily accounting, a narrative summary, and annual accounting summary tables. All of these data products are posted on the Reclamation Central Valley Office (CVO) website at the appropriate time of year: http://www.usbr.gov/mp/cvo/

Year	Activity				Activity Description	
2015	Implementation				Forecast/Accounting/Modeling	
Resource	Agency	Resource Type	FTE	Total	Fund	Description
USBR Forecast/Accounting	BOR	Staff Position	0.48		CVPRF	Develop CVP monthly forecasts, daily accounting
FWS Forecast/Accounting	FWS	Staff Position	0.68		CVPRF	Develop CVP monthly forecasts, daily accounting
Operations Modeling	FWS	Staff Position	0.27		CVPRF	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.

Year	Activity				Activity Description	
2015	Planning and Analysis				Interagency Collaboration	
Resource	Agency	Resource Type	FTE	Total	Fund	Description
program staff	FWS	Staff Position	0.14		CVPRF	b2 Interagency Team meetings. Confer with project operators and biologists to determine when and where b2 water should be used.

Year	Activity				Activity Description	
2016	Implementation				Forecast/Accounting/Modeling	
Resource	Agency	Resource Type	FTE	Total	Fund	Description
USBR Forecast/Accounting	BOR	Staff Position	0.48		CVPRF	Develop CVP monthly forecasts, daily accounting
Operations modeling	FWS	Staff Position	0.27		CVPRF	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
FWS Forecast/Accounting	FWS	Staff Position	0.68		CVPRF	Develop CVP monthly forecasts, daily accounting

Year	Activity				Activity Description	
2016	Planning and Analysis				Interagency Collaboration	
Resource	Agency	Resource Type	FTE	Total	Fund	Description
program staff	FWS	Staff Position	0.14		CVPRF	b2 Interagency Team meetings. Confer with project operators and biologists to determine when and where b2 water should be used.

Annual Charter Report

General:

Title	Description
Lower American River Redd Dewatering	Estimate redd dewatering impacts

Authority:

Provision	Percentage	Comments
b2	100	

Location ID(s):

Latitude	Longitude
38.6341	121.2297

Watershed(s):

Watershed Name
American River

Schedule:

Funding Begins	Benefits Begin	Funding Complete
10/1/2014	10/1/2014	9/30/2015

No Benefits Listed

Deliverable(s):

Date	Title
4/25/2014	WSE grids
4/25/2014	Bathymetric/topographic survey data
4/25/2014	As needed - real-time model output
4/25/2014	Technical memorandum

Program Priority:

Rank	Comment
3	Other than base administration and operations costs, this is the only other b2 charter.

Estimated Cost(s):

Fiscal Year	Fund	Total
2015	CVPRF	$35,000

Final Total
$35,000

No Partners Listed

No Related Programs Listed

Narrative:

Narrative Description

During the late-fall and winter seasons, flow reductions from Folsom Dam decrease the water level in the Lower American River (LAR) from the levels occurring when fall-run Chinook salmon and Central Valley steelhead redds were initially formed. If the water level drops below a certain level, it can be considered dewatered, thereby potentially reducing egg survival and overall in-river production. With sufficiently detailed topography, a two-dimensional (2D) hydraulic model is an accurate tool for predicting water surface elevation (WSE) at a given discharge.

This project is a continuation of work conducted over the last 2 years to further refine and enhance a suite of 1D and 2D hydraulic models developed for the LAR. Utilizing annual redd survey data, WSE estimates generated by the suite of models can be used to assess potential impacts to salmonid redds under a range of flow conditions, including release reductions and fluctuations out of Nimbus Dam. Planned activities include bathymetry and WSE data collections at high use spawning sites, refining and further developing the hydraulic models, simulating river-wide WSEs, and analyzing potential impacts to salmonid redds under a set of proposed operations.

No Risks Listed

Data Management:

Description

Information developed by this project will be permanently stored at the USFWS Bay-Delta Fish and Wildlife Office. Prior to archival, the information will be used at the b2IT, ARG, and other technical workgroups to inform management decisons with regards to potential redd dewatering to to flow reductions and fluctuations on the LAR.

Year	Activity	Activity Description
2015	Monitoring	Use a suite of hydraulic models in combination with annual redd surveys to generate estimates of LAR salmonid redd dewatering and potential impacts to egg survival.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
CBEC Eco-engineering	FWS	Contracts and Agreements Contract			CVPRF	

Annual Charter Report

General:

Title	Description
b1 Sacramento River Redd & Life History Monitoring	Sacramento River Redd & Early Life History Monitoring

Authority:

Provision	Percentage	Comments
b 1	50	
b 2	50	

Location ID(s):

Latitude	Longitude
40.612094	-122.44556

Watershed(s):

Watershed Name
Sacramento River Upper Mainstem

Schedule:

Funding Begins	Benefits Begin	Funding Complete
10/1/2012	10/1/2014	9/30/2017

Benefit(s):

Metric	Value	Units	Comment
b1: # Fall-run Chinook	0	N/A	Unit = stream miles monitored, Value = 70 miles

Deliverable(s):

Date	Title
9/30/2016	2016 Annual Report
9/30/2017	2017 Annual Report
9/30/2015	2015 Annual Report

Program Priority:

Rank	Comment
8	The 4 northern Habitat Restoration Coordinators feel this project is of utmost importance to protect naturally spawning salmon.

Estimated Cost(s):

Fiscal Year	Fund	Total
2015	CVPRF	$129,000
2016	CVPRF	$129,000
2017	CVPRF	$129,000

Final Total
$387,000

Partners:

Partner Name
FWS
CDFW
Pacific States Marine Fisheries Commission

Related Programs:

Program Name
AFRP
NMFS-RP
EWP

Narrative:

Narrative Description

The purpose of this study is to better determine the present day impacts to flow reductions on seventy miles of the mainstem Sacramento River downstream of Keswick Dam. The data is relayed to managers on a relatively real time basis (weekly, or seasonal) . Real time monitoring of redd dewatering and stranding due to flow reduction is beneficial to managers to assist decision making based on actual conditions on the river. The timing of flow reductions can often be critical to the survival of large numbers of eggs or juveniles. Up-to-date information can provide fishery managers with the assurances they need to make decisions to mitigate flow changes, if the data shows that the biological consequences will be significant.

Stable and continous river flows are important to the early life history (egg incubation to emergence from the gravel) of salmonids. If redds are dewatered or exposed to warm, deoxygenated water, incubating eggs/larval fish may not survive. After emergence from their redd, juvenile salmon can become stranded in shallow isolated water and be exposed to the same poor environmental conditions as well as increased predation. For the eggs and juveniles to survive they need water, of a suitable temperature, velocity and water quality, at all times.

Data on redd dewatering and juvenile stranding is being collected to aid management of flow releases from Keswick Dam. Real time monitoring of redd dewatering and stranding due to flow reductions is beneficial to managers to assist daily decision making based on actual conditions in the river. The timing of flow reductions can often be critical to the survival of large numbers of naturally spawned eggs or juveniles. Up-to-date information can provide fishery managers with the assurances they need to make desisions to mitigate flow changes, if the data shows that the biological consequences will be significant.

The AFRP program originally funded this project for three years of pilot level monitoring. In FY12, a full scale project was funded under a five-year Cooperative Agreement with Pacific States Marine Fish Commission (PSMFC). The full scale project is funded with a combination of b (1) and b (2) funding due to the amounts available in each program's overall budget and the need to continue collection of this valuable information. Future funding could potentially come from other CVPIA programs if those are deemed a better option (i.e. after FY 17). Additionally, results of this monitoring may be used to develop b(1) appropriate projects related to juvenile habitat restoration.

This study meets the intent of Action 2 for the Upper Mainstem Sacramento River as identified in the AFRP Final Restoration Plan.

Risk Management:

Risk Description	Likelihood	Risk Impact
Monitoring in a stream that fluctuates on an annual basis based on the type of water year	1	1

Data Management:

Description

The final reports for this project will be available at:
http://www.calfish.org/Programs/ProgramIndex/CDFGUpperSacRiverBasinSalmonidMonitoring/tabid/222/Default.aspx

Year	Activity	Activity Description
2015	Monitoring	2015 Monitoring of naturally produced salmon redds and early life history in the upper 70 miles of the Sacramento River.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Cooperative Agreement	FWS	Contracts and Agreements Cooperative Agreement	1		CVPRF	

Year	Activity	Activity Description
2016	Monitoring	2016 Monitoring of naturally produced salmon redds and early life history in the upper 70 miles of the Sacramento River.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Cooperative Agreement	FWS	Contracts and Agreements Cooperative Agreement	1		CVPRF	

Year	Activity	Activity Description
2017	Monitoring	2017 Monitoring of naturally produced salmon redds and early life history in the upper 70 miles of the Sacramento River.

Resource	Agency	Resource Type	FTE	Total	Fund	Description
Cooperative Agreement	FWS	Contracts and Agreements Cooperative Agreement	1		CVPRF	

Annual Charter Report

General:

Title	Description
Delta Salmon Survival Study	Study to assess the survival of juvenile Chinook salmon through the Delta

Authority:

Provision	Percentage	Comments
16	14	Comprehensive Assessment and Monitoring Program
2	86	Dedicated Project Yield Program

Location ID(s):

Latitude	Longitude
38.1484	121.1931

Watershed(s):

Watershed Name
Sacramento River Basin

Schedule:

Funding Begins	Benefits Begin	Funding Complete
10/1/2014	9/30/2015	9/30/2015

Benefit(s):

Metric	Value	Units	Comment
b16: Annual Report	0	percentage of fish	

Deliverable(s):

Date	Title
11/30/2016	Delta Survival Study Report

Program Priority:

Rank	Comment
2	Program Priority Comments:

Estimated Cost(s):

Fiscal Year	Fund	Total
2015	CVPRF	$173,960

Final Total
$173,960

No Partners Listed

No Related Programs Listed

Narrative:

Narrative Description
Continuation of a study to assess the survival of juvenile salmon as they pass through the Delta, and how different water management actions affect juvenile salmon passage. The data from the study can be used to manage river discharges so juvenile salmon are more successful in passing through the Delta as they migrate to the Pacific Ocean. Increased juvenile salmon passage through the Delta should, in turn, lead to greater numbers of adult salmon that return to their natal watersheds when they spawn.

Risk Management:

Risk Description	Likelihood	Risk Impact
2	1	1

Data Management:

Description
Data is provided and tabulated in an annual report.

Year	Activity	Activity Description
2015	Research	

Resource	Agency	Resource Type	FTE	Total	Fund	Description
juvenile salmon	FWS	Contracts and Agreements Contract	1		CVPRF	Partial funding to conduct the Delta Survival Study led by Pat Brandes. The total project is expected to cost $400,000 in FY2015. The CAMP does not currently plan to fund this project in FY2016. The b16 program will provide $23,960 to fund the project, and the b2 program will provide $150,000.