

Ecosystem Restoration Program Activities Report Year 13

Year 12 Accomplishments & Year 13 Proposed Work
(State FYs 2012-13; Federal FY 2013)



Implementing Agencies:
California Department of Fish & Game
United States Fish & Wildlife Service
NOAA Fisheries Service

July 1, 2012

Introduction

The Ecosystem Restoration Program Activities Report Year 13 documents all activities ongoing, initiated, and/or completed in Ecosystem Restoration Program (ERP) Year 12 and proposed to occur in Year 13 that contribute to achieving ERP Goals. This activities report represents a “snapshot-in-time” on the continuum of the restoration and environmental compliance efforts by the ERP Implementing Agencies as they carry out their respective programs.

Ecosystem Restoration Program Background

The Sacramento-San Joaquin Delta is an area of critical importance to California. It is home to more than half a million people; contains 500,000 acres of agriculture; provides drinking water for more than 25 million Californians; and serves as habitat for a diverse assortment of native plant and animal species. ERP is a multi-agency effort aimed at improving and increasing aquatic and terrestrial habitats and ecological function in the Delta and its tributaries.

ERP is designed to (1) maintain, improve, and increase aquatic and terrestrial habitats and improve ecological functions in the ERP focus area to support sustainable populations of diverse plant and animal species; (2) achieve recovery of at-risk species dependent on the Delta and Suisun Bay; and (3) support the recovery of at-risk species in San Francisco Bay and in the watershed above the estuary. ERP is guided by six strategic goals as follows: (1) recover endangered and other at-risk species and native biotic communities; (2) rehabilitate ecological processes; (3) maintain or enhance harvested species populations; (4) protect and restore habitats; (5) prevent the establishment of and reduce impacts from non-native invasive species; and (6) improve or maintain water and sediment quality.

The ERP focus area includes the Sacramento-San Joaquin Delta, Suisun Bay, the Sacramento River below Shasta Dam, the San Joaquin River below the confluence with the Merced River, and their major tributary watersheds directly connected to the Bay-Delta system below major dams and reservoirs.

Regulatory History

In 2000, the CALFED Record of Decision (ROD) was signed by 13 federal and state agencies with management and regulatory responsibilities in the Bay-Delta. Based on the analysis in the Multi-species Conservation Strategy (MSCS) and the Final Programmatic Environmental Impact Statement/Environmental Impact Report (Final PEIS/R), the CALFED Implementing Agencies fulfilled the regulatory requirement for its programmatic evaluation of the CALFED Program, under the Section 7 of the Endangered Species Act, and under the Natural Community Conservation Planning Act (NCCPA). As a result of meeting these requirements, three regulatory documents were issued concurrently with the ROD: a programmatic biological and conference opinion (1-1-00F-184) by U.S. Fish and Wildlife Service (USFWS); a programmatic biological opinion (SWR-00-SA-0110-MEA) by NOAA’s National Marine Fisheries Service (NMFS); and a programmatic Natural Community Conservation Plan (NCCP) approval by California Department of Fish and Game (DFG). These three regulatory documents

addressed CALFED implementation and regulatory compliance requirements, as described in the Final PEIS/R, technical appendices program plans, implementation plan and Phase II Report. The Description of Proposed Actions in the programmatic biological and conference opinions is based on the CALFED Program documents, provides clarifications derived from the PEIS/R, and is intended to provide a comprehensive description of the CALFED Program.

ERP is designed to uphold federal and state endangered species laws and to implement the many programs and commitments addressed in the ROD. To satisfy consultation reinitiation requirements in the programmatic biological opinions, ERP completed a mid-Stage 1 assessment (in 2004) of progress towards achieving the milestones. USFWS, NMFS, and DFG determined that ERP was making sufficient progress towards achieving the milestones and agreed to extend the programmatic biological opinions, and the Conservation agreement regarding the MSCS (CALFED 2000a). Furthermore, the implementing agencies requested that ERP report annually regarding the continued progress toward achieving ERP goals.

Purpose of the ERP Activities Report Year 13

The ERP Activities Report Year13 documents all activities ongoing, initiated, and/or completed in ERP Year 12 and proposed to occur in Year 13 that contribute to achieving ERP Goals (CALFED 2000 a-d). For specific information about any ERP project please contact ERP staff directly (see ERP contacts at ERP website: <http://www.dfg.ca.gov/erp/>).

Table 1 lists ERP's Year 12 Accomplishments and Year 13 Proposed Work. Unless otherwise indicated, ERP projects and activities listed in this report incorporate:

- **Environmental Review:** California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), California Endangered Species Act (CESA), and Federal Endangered Species Act (FESA) review and permitting.
- **Public Review:** Each project has been subjected to one or more of these public processes: the PSP, project specific environmental documentation process, and/or specific workgroup and local stakeholder group meetings (i.e., Yolo Bypass Working Group) or workshops.
- **Science Review:** ERP strongly emphasizes a science-based approach to ecosystem restoration and continues to integrate science into all program activities including: 1) collaborative actions with the Delta Science Program; 2) technical and scientific review of the project proposals; 3) support of scientific workshops and conferences; 4) monitoring implementation results from project proposals and their contributions toward achieving ERP objectives; and 5) updating conceptual models with newly developed information to be available for subsequent resource management decisions (adaptive management).

Terms Used in Table 1. One of the challenges of ERP as a cross-jurisdictional, multi-agency effort is finding and understanding terms used to describe ERP efforts; in some cases terms have a legal or regulatory meaning that is not the intended meaning by the ERP Implementing Agencies in their efforts to describe the ERP's activities. The definitions of the terms used in Table 1 are as follows:

<i>Activity:</i>	Refers to a project, program, or coordinated activity, and includes a brief description of the desired outcome.
<i>Year 12 Accomplishments:</i>	Lists the significant work or accomplishments related to the activity that happened between July 1, 2011 and June 30, 2012.
<i>Year 12 Costs:</i>	Refers to how much funding was granted, allocated, contracted, or spent between July 1, 2011 and June 30, 2012 for the activity.
<i>Year 13 Proposed Work:</i>	Refers to efforts related to the activity that are projected to take place between July 1, 2012 and June 30, 2013.
<i>Year 13 Projected Costs:</i>	Refers to the best projection of how much funding will be granted, allocated, contracted, or spent between July 1, 2012 and June 30, 2013 for the activity.
<i>Funding Source:</i>	Lists the source of funding for the activity.
<i>Agencies:</i>	Identifies the agencies or entities that will ensure that the activity is carried out.
<i>Priority/Goal Addressed:</i>	Identifies the 2010/2011 PSP Priority (DFG 2010) and/or ERP Goal (CALFED 2000 a-d) addressed
<i>Task Category:</i>	Refers to the category that the activity represents. There are seven task categories: planning, research, implementation, education, monitoring, program support, technical support.

Activity: A Socio-Economic and Behavioral Analysis of Farmers' Decisions to Adopt or Reject the CALFED Conservation Initiatives. This project will evaluate farmers/ranchers attitudes towards conservation and management changes, identify and appraise constraints, and identify the most important factors in influencing farmers' long-term commitments to conservation innovation and participation in habitat enhancement programs.

Year 12 Accomplishments: Sonoma State University (SSU) continued project management, submitted all survey questionnaires, and began conducting farmer interviews.

Year 12 Cost: Utilized existing funds (Funded \$175,228 in Year 10)

Year 13 Proposed Work: SSU will continue project management, provide a list of manuscripts titles to be submitted, continue survey interviews, and begin interview analysis.

Year 13 Projected Cost: Funded in prior years, no additional funds are requested.

Funding source: Proposition 50

Agencies: DFG and Sonoma State University

Priority/Goal Addressed: ERP Goals 4

Task Category: Research

Activity: A Systems Biology Assessment of EDCs in the Delta. The project assess the genomic and proteomic responses of *Menidia beryllina* as a surrogate for Delta smelt after exposure to pyrethroid pesticides (represented by bifenthrin) and pharmaceuticals (represented by ibuprofen) and effluent from three wastewater treatment plants in the Suisun Bay area. In addition, estrogenic and anti-estrogenic activity will be assessed in these five sample types. Reproductive behavior will be assessed after exposure to bifenthrin and ibuprofen. The goals are to develop monitoring tools that can be applied to assess site-specific reproductive fitness of wild populations in the Bay-Delta System.

Year 12 Accomplishments: UC Davis prepared a study plan outlining the full project. Silverside cultures were established at the University of North Carolina Wilmington (UNCW) Center for Marine Science, so that adults are available later this year for initial reproductive assessments and contaminant exposures. Fish were collected from various sites in the delta and sites downstream from wastewater outfalls in North Carolina.

Year 12 Cost: \$486,411 (Funding for entire project)

Year 13 Proposed Work: UC Davis will collect wild silversides, dissect tissues and store. UC Davis will perform RNA extractions as fish become available and store for future sequencing. UC Davis will conduct preliminary cell based assays.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 6

Task Category: Research and Monitoring

Activity: American Basin Fish Screen and Habitat Improvement Project. The Natomas Mutual Water Company (NMWC) is a non-profit mutual water company that controls surface water rights for over 250 landowners within the 55,000 acres known as the American Basin. The purpose of this Project is to improve fish passage conditions for at-risk species in the Sacramento River by replacing existing unscreened diversions with a consolidated fish screen and intake facility which meets or exceeds federal and state screening criteria. Components of the project include construction of a new 389 cfs screened pumping plant (Sankey Diversion) on the Sacramento River, construction of distribution facilities required to deliver water from the Sankey Diversion outfall to existing points of use, the decommissioning, demolition and site restoration of the Northern and Bennett Pumping Plants on the Natomas Cross Canal, and the decommissioning and removal of the Verona Diversion Dam. Beginning in November 2001, the Ecosystem Restoration Program provided grant funding for the planning, design, and environmental compliance phases of this project. This construction phase is expected to be complete in 2013. ERP funded American Basin projects:

- American Basin Fish Screen and Habitat Improvement Project (ERP-02-P09-D)
- American Basin Fish Screen and Habitat Improvement (Phase IV-Construction) Project (ERP-09D-S03)

Additional cost share for this project is being provided by the USBR's Anadromous Fish Screening Program.

Year 12 Accomplishments: NMWC constructed Sankey Diversion and Sankey Canal.

Year 12 Cost: Utilizing existing funds (Funded \$12,600,000 in Year 4 (ERP-02-P09-D), and additionally \$9,000,000 in Year 10 (ERP-09D-S03))

Year 13 Proposed Work: NMWC will complete construction, start-up testing and commissioning, decommissioning old diversions, site restoration, and fish screen performance testing.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Propositions 204 and 84

Agencies: DFG, NMFS, USFWS, and United States Bureau of Reclamation (USBR)

Priority/Goal Addressed: ERP Goals 1-3

Task Category: Planning and Implementation

Activity: American Basin Working Landscapes Project. This project develops a GIS-based "working landscapes" model/plan for the American basin. Also, implement voluntary practices where appropriate, including easements, riparian restoration, wetland restoration, and other on-farm, and farm edge habitat restoration practices.

Year 12 Accomplishments: A Working Landscape Strategy for the American and Sutter Basins was developed to provide a framework for the creation of wetland reserves located within a matrix of agricultural uses to benefit wildlife. Three conservation easements (totaling over 600 acres) in Yuba and Sutter counties were purchased to protect agricultural lands and wetlands from surrounding development pressures.

Year 12 Cost: Utilized existing funds (Funded \$1,860,898 in Year 10)

Year 13 Proposed Work: Riparian enhancements and floodplain wetland restoration efforts will be completed along Coon Creek.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding source: Proposition 50

Agencies: DFG and Placer County Resource Conservation District

Priority/Goal Addressed: ERP Goals 1, 3, 4, and 6

Task Category: Implementation

Activity: Anadromous Fish Restoration Program (AFRP). The objectives of the Anadromous Fish Restoration Program (AFRP) [CVPIA Section 3406 (b)(1)] are to (1) improve habitat for all life stages of anadromous fish through provision of flows of suitable quality, quantity, timing, and physical habitat; (2) improve survival rates by reducing or eliminating entrainment of juveniles at diversions; (3) improve the opportunity for adult fish to reach their spawning habitats in a timely manner; (4) collect fish population, health, and habitat data to facilitate evaluation of restoration actions; (5) integrate habitat restoration efforts with harvest and hatchery management; and (6) involve partners in the implementation and evaluation of restoration actions.

Year 12 Accomplishments: AFRP funded habitat restoration projects that improve habitat, survival, and passage of anadromous fish in Antelope Creek, Cow Creek, Cottonwood Creek, Deer Creek, Mill Creek, and the American, Cosumnes, Merced, Stanislaus, and Yuba Rivers. The program will continue to collect fish population data for Cottonwood, Cow, Deer, and Mill creeks and in the Merced, San Joaquin, Stanislaus, and Yuba rivers to facilitate evaluation of restoration actions.

Year 12 Cost: \$6,070,000

Year 13 Proposed Work: AFRP will focus on streams with the greatest potential to sustain natural production of fall-run, winter-run, and spring-run Chinook salmon, and steelhead. The streams that support these species include the Sacramento, Yuba, Feather, American, and Stanislaus rivers, and Cottonwood, Cow, Mill, Deer, Battle, and Clear creeks. The highest priority will be to complete ongoing projects. Emphasis will be on improving access for spawning adults to upstream habitat, protecting and restoring riparian and shaded riverine aquatic habitat, improving access for juvenile fish to floodplain habitats, and reducing loss of juveniles along their rearing and migratory corridors. Fish screening and fish passage project planning and permitting will be a high priority. Furthermore, AFRP will collaborate and provide technical assistance to large-scale restoration efforts on the main-stem San Joaquin River and in the Delta.

Year 13 Projected Cost: \$5,500,000

Funding Source: Federal (USBR and USFWS) Funds

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Planning and Implementation

Activity: Anadromous Fish Screen Program (AFSP). The primary objective of the AFSP is to protect juvenile Chinook salmon (all runs), steelhead trout, and green and white sturgeon from entrainment at priority diversions in California's Central Valley including the Sacramento and San Joaquin Rivers, their tributaries, the Delta, and the Suisun Marsh. Section 3406 (b)(21) of the Central Valley Project Improvement Act 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. The AFSP can provide up to fifty percent federal cost share for fish screen projects and requires a fifty percent non-federal match. The ERP contributions toward the AFSP's Year 12 Activities are shown in this table as separate State funded ERP projects.

Year 12 Accomplishments: In 2011-12, fish screens were installed at Oji Brothers (25 cfs), Windswept Land and Livestock #3 (9 cfs), Sutter Mutual Portuguese Bend (106 cfs), and Bella Vista Water District Fish Screen (85 cfs). In addition, construction was completed on the Patterson Irrigation District Fish Screen (195 cfs) on the San Joaquin River and construction continued on Phase I of Natomas Mutual Water Company's American Basin Fish Screen and Habitat Improvement Project (389 cfs) on the Sacramento River that replaces two existing diversions on the Natomas Cross Canal. In addition to preconstruction project activities for on-going AFSP projects involving feasibility studies, environmental compliance, permitting, and project design activities for the Reclamation District 2035 (RD 2035) (400 cfs), Meridian Farms Water Company (MFWC) Phase II (Meridian Diversion) (135 cfs), West Stanislaus Irrigation District (WSID) (347 cfs), and Yuba City (74 cfs) fish screen projects.

Year 12 Cost: \$6,049,000

Year 13 Proposed Work: Funds are anticipated to be used for cost share funding for environmental, design and/or construction activities for a number of fish screen projects. The selection of these projects will be made based on AFSP prioritization criteria, which include willing applicant, cost effectiveness, biological benefits, availability of non-Federal cost share, and ability to obtain preconstruction monitoring data. A number of on-going AFSP projects may need construction funding including RD 2035, West Stanislaus Irrigation District (WSID), and MFWC (Phase II).

Year 13 Projected Cost: \$3,200,000

Funding Source: Federal (USBR and USFWS) Funds

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Planning and Implementation

Activity: Battle Creek Salmon and Steelhead Restoration Project. This multi-phased project will restore approximately 42 miles of historical anadromous fish habitat in Battle Creek, and an additional 6 miles of habitat in its tributaries. Implementation includes modification of facilities at Battle Creek Hydroelectric Project diversion dam sites located on the North Fork Battle Creek, South Fork Battle Creek, and Baldwin Creek in three phases (Phases 1A, 1B and 2). Phase 1A includes installing fish screens and ladders at the North Battle Creek Feeder (NBCF) and Eagle Canyon diversion dams and removing Wildcat diversion dam and appurtenant conveyance systems on the North Fork; installing Eagle Canyon Canal pipeline; and modifying Asbury Dam on Baldwin Creek. Phase 1B includes installing an Inskip Powerhouse tailrace connector and bypass on the South Fork, and Phase 2 includes installing a fish screen and ladder on Inskip diversion dam, installing a South Powerhouse tailrace connector, and removing Lower Ripley Creek Feeder, Soap Creek Feeder, Coleman and South diversion dams, and appurtenant conveyance systems. ERP funded Battle Creek projects that currently active include:

- Anadromous Fish Habitat Monitoring for the Battle Creek Salmon and Steelhead Restoration (ERP-06D-S18)
- Battle Creek Salmon and Steelhead Restoration Project (ERP-99-B01)
- Battle Creek Salmon and Steelhead Restoration Project-Phase 1A (ERP-08D-S04)
- Outreach and Technical Services to Support Landowner and Watershed Resident's Participation in the Battle Creek Salmon and Steelhead Restoration Project (ERP-03-M10)

Year 12 Accomplishments: Phase 1A – Construction of fish screen and ladder at the Eagle Canyon and NBCF diversion dams. Wildcat Dam was removed during Phase 1A in August 2010, opening up 15 miles of upstream habitat. Monitoring surveys in the fall of 2011 indicated over four times the number of spring-run Chinook salmon redds above where Wildcat Dam once stood. Crews completed the majority of fish screen and ladder construction at the Eagle Canyon and North Fork Battle Creek Feeder diversion dams. Design specifications are being developed for the Asbury/Baldwin Creek site.

Phase 1B-Approximately 90% of the Inskip Powerhouse penstock bypass and tailrace connector was constructed. Commenced work on the Coleman National Fish Hatchery Adaptive Management Plan (CNFH AMP) which will address “scientific uncertainties” that underline aspects of Battle Creek fisheries management, including the interactions between the Battle Creek Salmon and Steelhead Restoration Project and CNFH. The Phase 1A amendment and Phase 2 funding agreement are complete and currently being reviewed by the Bureau of Reclamation.

Year 12 Cost: \$5,300,000 (Department of Water Resources (DWR) FRPA) (ERP provided \$75.1M in previous years).

Year 13 Proposed Work: Phase 1A: Complete hydraulic evaluations to test the Eagle Canyon and North Fork Battle Creek Feeder fish screens and ladders. Award the contract for the Asbury Dam/Baldwin Creek fish barrier and start construction. Complete implementation of Phase 1B. Phase 2: Execute funding agreement and select two construction contractors to carry out work on South Fork Battle Creek and its tributaries The draft CNFH AMP is anticipated to be completed in spring/summer 2013 and the final CNFH AMP is anticipated to be completed in fall 2013.

Year 13 Projected Cost: \$6,700,000 (DWR FRPA)

Funding Sources: FRPA (DWR) (FY 2012), Federal Funds, Propositions 50, 84, California Urban Water Agencies (Category III)

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Planning, Monitoring and Implementation

Activity: Bay Delta Conservation Plan (DFG). The BDCP is a (Habitat Conservation Plan (HCP) and NCCP being prepared to meet requirements of the FESA, and NCCPA for Central Valley Project (CVP)/State Water Project (SWP) water operations and management activities in the Delta. The BDCP will serve as the basis for incidental take permit applications for a new water conveyance facility around and/or through the Sacramento-San Joaquin River Delta, along with habitat restoration in the Delta, under section 10 of the ESA. The BDCP also will establish the parameters for modifications of the CVP that are subject to consultation under section 7 of the ESA. The section 10 permit issuance decisions and the associated federal actions which may be undertaken by the USBR are major Federal actions that require preparation of an EIS under the National Environmental Policy Act. Lead agencies for the EIS are Reclamation, the USFWS, and the NMFS. The BDCP also will serve as the planning and permitting document under State law for the new conveyance facility, operations, and habitat restoration, and a take permit for these activities under NCCPA administered by the DFG. CEQA requires the preparation of an EIR for the BDCP. Lead agency for the EIR is the DWR. The State and Federal lead agencies have decided to prepare a joint EIS/EIR. DWR initiated the Delta Habitat Conservation and Conveyance Program (DHCCP) to conduct engineering and environmental analysis and has engaged consultants to assist in the analysis. The DHCCP and consultants are preparing the EIS/EIR under direction and supervision of the four lead agencies. DFG is providing technical assistance for analysis of ecological and biological effects of the proposed projects. BDCP planning activities are also coordinated with related, ongoing programs including ERP, Delta Vision and Delta Vision Blue Ribbon Task Force, Delta Risk Management Strategy, Delta Science Program, Flood Safe, IEP, and California Water Plan Update.

Year 12 Accomplishments: DFG staff provided BDCP technical assistance including the development of biological goals and objectives, identifying potential conservation actions, developing operational parameters for water export, evaluation of potential project effects, selecting appropriate methods for scientific analysis, development of an adaptive management and monitoring program, and conducting data analysis, peer review, habitat mapping, and other activities necessary for development of a NCCP.

Year 12 Cost: \$917,709.00

Year 13 Proposed Work: DFG will continue to provide technical assistance to BDCP.

Year 13 Projected Cost: \$1,064,226

Funding Sources: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning

Activity: Bay Delta Conservation Plan (Federal). The BDCP is a HCP and NCCP being prepared to meet requirements of the FESA, and NCCPA for Central Valley Project (CVP)/State Water Project (SWP) water operations and management activities in the Delta. The BDCP will serve as the basis for incidental take permit applications for a new water conveyance facility around and/or through the Sacramento-San Joaquin River Delta, along with habitat restoration in the Delta, under section 10 of the ESA. The BDCP also will establish the parameters for modifications of the CVP that are subject to consultation under section 7 of the ESA. The section 10 permit issuance decisions and the associated federal actions which may be undertaken by the USBR are major Federal actions that require preparation of an EIS under the National Environmental Policy Act. Lead agencies for the EIS are Reclamation, the USFWS, and the NMFS. The BDCP also will serve as the planning and permitting document under State law for the new conveyance facility, operations, and habitat restoration, and a take permit for these activities under NCCPA administered by the DFG. CEQA requires the preparation of an EIR for the BDCP. Lead agency for the EIR is the DWR. The State and Federal lead agencies have decided to prepare a joint EIS/EIR. DWR initiated the Delta Habitat Conservation and Conveyance Program (DHCCP) to conduct engineering and environmental analysis and has engaged consultants to assist in the analysis. The DHCCP and consultants are preparing the EIS/EIR under direction and supervision of the four lead agencies. USFWS and NMFS are providing technical assistance on development and analysis of the BDCP.

Year 12 Accomplishments: BDCP is currently investigating water conveyance alternatives to move CVP and SWP water either through or around the Delta while restoring the Delta ecosystem. The ultimate goal is to identify a water conveyance system that will likely minimize the effects of project pumping while maximizing beneficial changes to the Delta ecosystem and provide flexibility to operation of the CVP and SWP. The BDCP will address water conveyance and project operations, habitat restoration, and other threats to the environment. Options currently being considered include:

- Water exports via dual conveyance facilities (using existing south Delta intakes and new intake facilities in the north Delta),
- Large restoration of tidal marsh habitat, and
- Measures to address other stressors such as pollutants, introduced species, predation, and hatcheries management.

Year 12 Cost: \$7,000,000

Year 13 Proposed Work: Funding for FY 2013 continues support of the development of the EIR/EIS. The BDCP EIR/EIS is scheduled for completion in FY 2013.

Year 13 Projected Cost: \$6,793,000

Funding Sources: Federal (USBR)

Agencies: DFG, DWR, NMFS, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning

Activity: Blacklock Mercury Monitoring. The San Francisco Bay RWQCB required mercury and methylmercury monitoring as part of the provisions in the Blacklock Restoration Project Monitoring Plan. Mercury concentrations were monitored in the Blacklock Wetland pre and post breach to determine if there are changes in concentrations. There is concern that creation of wetlands such as Blacklock will contaminate the fish and sediments within Blacklock and the adjacent Nurse Slough. Samples were collected for fish, water, and sediment and analyzed for total and methylmercury in Blacklock and Nurse Slough over a three-year period to evaluate whether total and methylmercury levels increased or decreased because of the restoration. This project conducts final analysis of the data generated.

Year 12 Accomplishments: DFG conducted analyses of the mercury data.

Year 12 Cost: Utilized existing funds (Funded \$91,276 in Year 11)

Year 13 Proposed Work: Complete final analyses, and report findings.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goal 6

Task Category: Monitoring

Activity: Blacklock Restoration Project Monitoring. The 70-acre Blacklock property is being restored to a self-sustaining functioning brackish tidal marsh by restoring tidal action, reversing subsidence, and promoting establishment of native vegetation and a tidal marsh channel network appropriate to this location within the San Francisco Estuary. The Blacklock Restoration Project Monitoring will collect bathymetry, vegetation, channel morphology, water quality and sedimentation data following the restoration of tidal flow to the Blacklock parcel. This information is required by Bay Conservation and Development Commission as a condition of the restoration and will provide information on restoration trajectory that may be applicable to future tidal marsh restoration in the region.

Year 12 Accomplishments: None. Funded but not executed.

Year 12 Projected Cost: Utilized existing funds (Funded \$382,250 in Year 8)

Year 13 Proposed Work: Execute agreement and begin monitoring of levee breach geometry, inundation regime, surface elevation, changes in sedimentation, slough network evolution, native marsh vegetation

Year 14 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and DWR

Priority/Goal Addressed: ERP Goals 1, 2, 4, and 6

Task Category: Monitoring

Activity: BREACH III: Evaluating and Predicting 'Restoration Thresholds' in Evolving Freshwater-Tidal Marshes. "BREACH III" Project activities involve Lower Yolo Bypass technical site evaluation, monitoring, research, and feasibility assessment. Several issues need to be addressed to assess long-term restoration potential, and management of publicly owned properties in the Lower Yolo Bypass. The combined approaches of the BREACH III and COYOTE proposals will address both the physical and environmental processes occurring on the sites, and greatly improve our understanding of the aquatic species response to tidal wetland restoration. The BREACH III will assess project performance and the impacts of seasonal and interannual hydrologic variability.

The results should be a comprehensive monitoring and research approach. A key component of the project is the development of hydrodynamically driven models, which may be run with restoration and management practitioner input. The technical approach should greatly improve decision making capacity in regards to future management, restoration potential, and evolving ecosystem and hydrodynamic conditions in the lower bypass.

Year 12 Accomplishments: Years 10 and 11 saw the bulk of the biological and hydrodynamic modeling take place on Liberty Island. Component models such as hydrodynamic and wave modules were developed. Modeling teams discussed how component modules will link to landscape scale predictive models. Breach III researchers conducted monitoring and collected data that the models will use to provide a predictive level of understanding about (1) how biotic factors in a restoring (levee breach) wetland, Liberty Island, control vegetation colonization and expansion and subsequent responses by native fish and wildlife; and, (2) the dynamic interaction of local hydrodynamics, sedimentation, wave dynamics and erosion and the evolving ecosystem.

Year 12 Cost: Utilized existing funds (Funded \$2,447,998 in Year 8)

Year 13 Proposed Work: Monitoring of the sediment, vegetation, biologic and trophic character of the evolving tidal marsh and upland ecotones on Liberty Island will be completed. The development and validation of quantitative landscape models of marsh evolution will be finalized. Links between the quantitative model(s) and conceptual models will be established that will be used to interpret the biotic and trophic character of model run scenarios. Restoration and management practitioner input to predict ecological responses to change in habitat structure will be used. Alternative flow and marsh configuration scenarios will be interpreted.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG, NMFS, and USFWS

Priority/Goal Addressed: ERP Goals 1, 2, 4, and 6

Task Category: Monitoring and Research

Activity: Butte Creek Spring-run Chinook Salmon Life History Investigation. A partnership between California State University (CSU), Chico Research Foundation and the California Department of Fish and Game, will continue the Butte Creek spring-run Chinook salmon (SRCS) life history investigation. This project is located on Butte Creek, in Butte County, California near Chico. The objective is to continue development of an SRCS adult escapement estimate that will serve as a reliable and more precise "recovery-metric" providing a measure of overall restoration effectiveness and as a measure of recovery for the listed SRCS.

Year 12 Accomplishments: Annual Butte Creek spring-run Chinook salmon spawning escapement survey and annual Butte Creek spring-run Chinook salmon pre-spawn mortality evaluation were conducted. Grant agreement term was extended to June 2015 with no additional funding to continue monitoring activities.

Year 12 Cost: Utilized existing funds (Funded in Year 7, reduced to \$291,661 in Year 11)

Year 13 Proposed Work: Escapement survey and pre-spawn mortality monitoring activities will continue.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Agencies: DFG and CSU Chico Research Foundation

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Monitoring and Research

Activity: CALFED Coordination. The California Bay Delta is an ecosystem of national significance, and the U.S. Army Corps of Engineers (USACE) is participating with other agencies in addressing the goals in the Interim Federal Action Plan for the Bay Delta. CALFED Coordination allows the Corps to participate in planning activities, interagency meetings and projects. Other coordination activities include watershed based planning and collaboration efforts along the Yuba River to help integrate Delta sustainability goals, as well as in southern California to advance statewide planning activities related to Delta sustainability. Interagency coordination includes the prioritization and implementation of existing projects benefiting the Bay Delta, by developing innovative ways to streamline the planning and implementation process of Bay Delta projects.

Year 12 Accomplishments: Attended interagency meetings and coordinated with applicants on processing Section 408 and 404 requests. Coordination with State of California DWR and Delta Stewardship Council will continue.

Year 12 Cost: \$100,000

Year 13 Proposed Work: Attending interagency meetings and coordinating with applicants on processing Section 408 and 404 requests. Continue coordination with State of California DWR and Delta Stewardship Council.

Year 13 Projected Cost: \$100,000

Funding Source: Federal

Agencies: USACE

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Program Support

Activity: CALFED Non-Native Invasive Species (NIS) Program (DFG). DFG provides support for various efforts with an overall goal to manage and reduce the spread of existing non-native invasive species (NIS) in the CALFED-ERP focus area and statewide. DFG also supports research regarding potentially invasive species and coordinates with other agencies and entities to prevent the introduction and establishment of additional invasive species into California and the ERP focus area.

Year 12 Accomplishments: The DFG NIS program staff:

- Provided input for the development of two conservation measures in the BDCP that address: 1) controlling the introduction and spread of invasive aquatic plant species within BDCP aquatic restoration areas within the Delta Region, and 2) preventing the introduction of new and reducing the spread of existing aquatic invasive species via recreational watercraft, trailers, and other equipment within the Delta Region.
- Provided input to the DSC's Delta Plan and ERP's Conservation Strategy (2011) regarding proposed actions to prevent the establishment of additional NIS and reduce the negative ecological and economic impacts of established NIS in the Bay-Delta ecosystem.
- Continued to conduct actions to control existing harmful invasive species and minimize or preclude introductions and colonization of Delta restoration areas by new invasive species in an effort to meet Goal 3 of the Delta Vision Strategic Plan.
- Assisted in the preparation of the *Bay Delta Rapid Response Plan for Dreissenid Mussels*.
- Participated in the technical advisory team to develop and publish the report: *Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers*.
- Continued ongoing implementation of the *California Aquatic Invasive Species Management Plan*, which is California's statewide action plan for managing aquatic invasive species.
- Continued ongoing implementation of the *Quagga-Zebra Mussel Action Plan for Western Waters of the U.S.*, which is a plan that summarizes current strategies to address the invasion of zebra and quagga mussels in the West, and identifies and prioritizes the specific actions that are needed to comprehensively prevent the further spread of these mussels, respond to new infestations, and manage existing infestations.
- Managed statewide distribution of education and outreach materials for quagga and zebra mussels and New Zealand mudsnails.
- Attended several conferences and workshops to gain and increased understanding of NIS, their impacts, and prevention, control, and management strategies.
- Created fact sheets for existing NIS in California and those species that have the potential to be introduced and become invasive.

Year 12 Cost: \$113,298

Year 13 Proposed Work: The DFG NIS program will continue to: provide input to *BDCP, ERP, and DSC* regarding proposed actions to manage and reduce the spread of existing and prevent the introduction and establishment of new NIS in the Bay-Delta ecosystem; conduct prevention and management actions for invasive species in an effort to meet Goal 3 of the Delta Vision Strategic Plan; coordinate with CDFA to identify the extent of existing invasive plants and identify new invasive plants in the Delta Watershed; coordinate with FWS to prevent the introduction of quagga and zebra mussels; attend conferences, trainings, and workshops to gain and increased understanding of NIS, their impacts, and prevention, control, and management strategies; create fact sheets for existing NIS in California and those species that have the potential to be introduced and become invasive; create and distribute new outreach and education materials for Delta specific invasive species; and coordinate with other DFG programs to integrate invasive species' location information into existing databases such as BIOS or create a new database.

Year 13 Projected Cost: \$113,298

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goal 5

Task Category: Planning and Implementation

Activity: CALFED Program Management, Oversight, and Coordination. Activities include Program support; program-wide tracking of schedules, finances, and performance; agency oversight and coordination of Program activities to ensure program balance and integration; development of interagency crosscut budgets; coordination of public outreach and involvement, including tribal, environmental justice, and public advisory activities; development of Annual Reports; and Reclamation's administration of the storage, conveyance, water use efficiency, environmental water account, ecosystem restoration, science, and water transfer programs.

Year 12 Accomplishments: Provided management, oversight, and coordinated CALFED activities.

Year 12 Cost: \$2,000,000

Year 13 Proposed Work: USBR will continue to provide management, oversight, and coordinate with CALFED activities.

Year 13 Projected Cost: \$1,900,000

Funding Source: Federal

Agencies: USBR

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Program Support

Activity: Central Valley Project Improvement Act (CVPIA) Contribution. According to the ROD, approximately \$15 million of CVPIA restoration funds will be used for the purpose of protecting, restoring, and enhancing special-status species and their habitats in areas directly or indirectly affected by the Central Valley Project. CVPIA programs that contribute to ERP goals and objectives include AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Spawning Gravel/Riparian Habitat, and Water Acquisition programs. More information CVPIA accomplishments and activities can be found at <http://www.usbr.gov/mp/cvpia/>.

Year 12 Accomplishments: See Year 12 Activities for AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Riparian Habitat/Spawning Gravel, and Water Acquisition programs.

Year 12 Cost: \$15,000,000 (Funds included in Year 12 AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Spawning Gravel/Riparian Habitat, and Water Acquisition programs).

Year 13 Proposed Work: See Year 13 Proposed Work for AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Spawning Gravel/Riparian Habitat, and Water Acquisition programs.

Year 13 Projected Cost: \$15,000,000 (Funds included in Year 13 AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Spawning Gravel/Riparian Habitat, and Water Acquisition programs).

Funding Source: CVPIA Restoration Fund

Agencies: USFWS and USBR

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Planning, Monitoring, and Implementation

Activity: Clear Creek Anadromous Salmonid Monitoring Program. This program is a comprehensive salmonid monitoring program that provided feedback for the adaptive management and evaluation of restoration actions of the Clear Creek Restoration Program and Central Valley Project Improvement Act B2 Water Program.

Year 12 Accomplishments: Salmonid habitat use, reproduction, and escapement monitoring were completed.

Year 12 Cost: Utilized existing funds (Funded \$1,974,068 in Year 6)

Year 13 Proposed Work: USFWS will complete and submit final reports.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Monitoring

Activity: Clear Creek Environmental Water Program. This project will develop a written on-the-ground in-season operational plan for the recommended Environmental Water Program (EWP) Whiskeytown Dam re-operation acceptable to Central Valley Operators, produce a companion core geomorphic and biological effectiveness-monitoring plan, and perform one EWP re-operation/release in 2013 or 2014 on Clear Creek. The monitored test of a planned mid-level flow is expected to have great geomorphic and ecological significance. The overall vision for pilot EWP flow augmentation on Clear Creek is to release discharges of sufficient magnitude, duration and frequency to reactivate a more natural fluvial geomorphic processes. These processes are fundamental for creating and maintaining the diverse template of habitats required in the Clear Creek ecosystem to recover and sustain aquatic and riparian species, particularly anadromous salmonids and native floodplain and riparian vegetation. The project is the fourth step in a directed action process for pilot flow augmentation under the existing Environmental Water Program in Clear Creek.

Year 12 Accomplishments: Two workshops were held; a 3-day "EWP Flow Feasibility and Dam Safety Review Workshop," and a 2 ½ -day "Core Monitoring and Adaptive Management Plan Review Workshop." A draft "Core Monitoring and Adaptive Management Plan" currently in review was produced.

Year 12 Cost: Utilized existing funds (Funded \$813,745 in Year 10)

Year 13 Proposed Work: Complete the seven Technical Briefs due as a result of the "EWP Flow Feasibility and Dam Safety Review Workshop," and start the NEPA/CEQA compliance document.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Planning and Implementation

Activity: Clear Creek Restoration. The purpose of the Clear Creek Restoration Program is to: (1) restore stream channel form and function necessary to optimize habitat for salmon and steelhead and the aquatic and terrestrial communities on which they depend; (2) determine long-term flow needs for spawning, incubation and rearing by conducting an Instream Flow Incremental Methodology study as mandated in Section 3406 (b)(12); (3) provide flows of adequate quality and quantity to meet the requirements of all life stages of Chinook salmon and steelhead trout known to use Clear Creek; (4) provide spawning gravel to replace supply blocked by Whiskeytown Dam; and (5) monitor project results.

Year 12 Accomplishments: The Clear Creek Restoration project focused on providing flows, restoring stream channel and instream habitat, and conduct monitoring to determine impacts of restoration actions. Releases from Whiskeytown Dam will provide downstream fish habitat that is at least 90 percent of the maximum possible weighted usable area, will allow water temperatures to comply with the National Marine Fisheries Service's biological opinion, and allow passage of adult anadromous fish at the former McCormick-Saeltzer Dam location. Stream channel and instream habitat restoration will include placing about 15,000 tons of spawning gravel, continue design and permitting for using abandoned dredger mine tailings as an inexpensive source of spawning gravel for future placements, and continue preparing long-term programmatic environmental permits for various restoration actions. Monitoring activities will include work to ascertain impacts of restoration actions on fishery and geomorphic resources and determine the amount of spawning gravel needed to maximize the amount of spawning habitat.

Year 12 Cost: \$905,000

Year 13 Proposed Work: Continue to implement Chinook salmon and steelhead habitat enhancement projects through partnerships with local landowners, public and private agencies, and universities. Projects are currently emphasizing restoration actions that will increase populations of spring-run Chinook salmon and steelhead, both listed as threatened under the Federal Endangered Species Act. Restoration activities will focus on implementing the Cloverview long-term Gravel Supply Project. The program will continue monitoring juvenile habitat use, spawning area mapping, juvenile habitat suitability indices, gravel quality, survival-to-emergence, fish rescue, benthic macro invertebrate sampling, water quality, and water temperature. The program will also implement several in-stream spawning gravel placement projects. In addition, the Environmental Water Program is scheduled to implement its first discharge of 3,250 cfs, which will help promote proper functioning of more natural fluvial geomorphic processes in Clear Creek.

Year 13 Projected Cost: \$555,000

Funding Source: Federal (USBR and USFWS)

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Planning and Implementation

Activity: Complementing Water Planning Efforts for the Delta and Sacramento River: Application of the Ecological Flows Tool. The project leverages recently completed efforts, the Sacramento River Ecological Flows Study, by expanding the capability of the developed Sacramento River Ecological Flows Tool (SacEFT) for application to the Delta. This project will conduct a set of refinements to increase the SacEFT's utility, and constructs a new Delta ecological flows tool (DeltaEFT) branch of the software. The DeltaEFT will have the ability to link explicitly upstream (Sacramento River) ecological responses evaluated with SacEFT to ecosystem responses in the Delta evaluated with DeltaEFT.

Year 12 Accomplishments: The Nature Conservancy (TNC) completed the SacEFT model and application was completed, and continued development of the DeltaEFT model.

Year 12 Cost: Utilized existing funds (Funded \$1,715,533 in Year 8)

Year 13 Proposed Work: TNC will complete development and make enhancements to the DeltaEFT model and application, and provide support to the ERP and the BDCP efforts.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning

Activity: Corona and Twin Peaks Mine Drainage Treatment Project. The purpose of this project is to develop and demonstrate an effective approach for mine cleanup involving private landowners, non-profit organizations, regulators, and interested stakeholders. The project will need to address legal liability issues prior to initiation of large-scale mine remediation work efforts. The project addresses Ecosystem Restoration Program Goal 6 (Water and Sediment Quality), Objective 1 to "Improve and/or maintain water and sediment quality conditions that fully support healthy and diverse aquatic ecosystems in the Bay-Delta estuary and watershed; and eliminate, to the extent possible, toxic impacts to aquatic organisms, wildlife, and people."

Year 12 Accomplishments: 2010/2011 PSP selection. Agreement was executed and implementation of project began.

Year 12 Cost: \$1,530,550 (Funding for entire project)

Year 13 Proposed Work: Tuleyome, Inc. will complete CEQA documentation, develop a USEPA action memo, make an assessment of liability issues, begin baseline water quality and biosentinel monitoring, and begin benchtop studies to determine proper scale of treatment project.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 13

Agencies: DFG

Priority/Goal Addressed: PSP Priority 3/ERP Goal 6

Task Category: Implementation

Activity: Cow Creek Fish Passage and Flow Improvement Project, Phase 1. The Cow Creek Fish Passage and Flow Improvement Project-Modification of the Millville Diversion Dam will remove fish passage barriers associated with the Millville Diversion Dam on Clover Creek, tributary of Cow Creek in Shasta County. Once these barriers are removed, approximately ten miles of spawning habitat will be available to anadromous salmonids.

Year 12 Accomplishments: N/A

Year 12 Cost: N/A

Year 13 Proposed Work: Implement project, begin construction on fish ladders at the Millville Diversion Dam and siphon structure, opening up ten miles of potential habitat for anadromous salmonids and, in the process, be an outreach and educational tool to work with other landowners and encourage their participation in removing and/or modifying other diversion dams in the Cow Creek watershed.

Year 13 Projected Cost: \$2,000,000

Funding Source: Proposition 84

Agencies: Western Shasta Resource Conservation District (WSRCD) and DFG

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Implementation

Activity: Dedicated Project Yield. The Department of the Interior has the responsibility to dedicate and manage annually 800,000 acre-feet of CVP water (b)(2) water for fish, wildlife, and habitat restoration purposes and assist the State of California in its efforts to protect the waters of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The program objectives are to: (1) improve habitat conditions for anadromous fish in CVP controlled rivers and streams and the Bay-Delta to help meet the AFRP doubling goals; (2) increase survival of out migrant juvenile anadromous fish, especially in the Bay-Delta; (3) enhance recovery of listed threatened and endangered fish species; and (4) monitor and evaluate to assess the effectiveness of (b)(2) measures.

Year 12 Accomplishments: Continued efforts associated with the annual dedication and management of 800,000 acre-feet of CVP yield for the primary purpose of anadromous fish restoration. Upstream actions were implemented; and monitoring and evaluation to assess the effectiveness of (b)(2) environmental measures continued. A portion of the funds will be used for litigation costs.

Year 12 Cost: \$800,000

Year 13 Proposed Work: Implemented for the tenth year in 2013, funding will be used to continue efforts associated with the annual dedication and management of 800,000 acre-feet of CVP yield for the primary purpose of anadromous fish restoration as directed by the CVPIA. Upstream actions will be implemented; and monitoring and evaluation to assess the effectiveness of (b)(2) environmental measures will continue.

Year 13 Projected Cost: \$600,000

Funding Source: Federal (USBR and USFWS)

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Implementation and Monitoring

Activity: Delta Working Landscapes. This project provides support for local farmers to implement demonstration projects that improve habitat values while improving water quality, sediment transport, and levee stabilization. Evaluates operations of agriculture practices in the Delta that could be implemented elsewhere. This project will provide an educational and outreach festival to inform the public on the values of the Delta.

Year 12 Accomplishments: Two Ducks Unlimited (DU) wetland projects were constructed, in combination with Hart Restoration and the Monitoring Year 2 Report was submitted.

Year 12 Cost: Utilized existing funds (Funded \$800,000 in Year 10)

Year 13 Proposed Work: Usland Project (DU wetland project) to be implemented; Wetlands and Buffer Habitats and Maintenance Guide, and Information Packet for Farmers to be completed; Wildlife Friendly manuscript to be submitted to peer reviewed journal; project end date March 2013.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding source: Proposition 50

Agencies: DFG and Delta Protection Commission

Priority/Goal Addressed: ERP Goals 1, 4, and 6

Task Category: Implementation

Activity: Development Of A Spatially Explicit Ecosystem Model To Explore Physicochemical Drivers of Step Changes in POD Species And Distribution In The Sacramento-San Joaquin Delta And Suisun Bay.

The purpose of this project is to improve a dynamic food web model of the Sacramento-San Joaquin Delta and Suisun Bay, so that U.S. Geological Survey (USGS) can move from using it as a hypothesis-exploration tool toward using it as a decision-support tool. This model can be used in conjunction with Monte Carlo simulations of the time-dynamic module as a tool for exploring the impacts of resource management decisions, and help to optimize the utility and effects of such decisions.

Year 12 Accomplishments: Project awarded off 2010/2011 PSP. Grant agreement drafted and is in process of execution at the end of Year 12.

Year 12 Cost: \$356,483 (Funding for entire project).

Year 13 Proposed Work: Grant agreement will be executed and project activities will be initiated.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and USGS

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1-4

Task Category: Research

Activity: Development of Best Management Practices to Reduce Methyl Mercury Exports and Concentrations from Seasonal Wetlands in the Yolo Wildlife Area (DFG). This agreement supports DFG staff at Moss Landing Marine Lab for the project. These pilot and demonstration projects will develop Best Management Practices (BMPs) to reduce Methyl Mercury (MMHg) concentrations and exports from wetlands. These projects will test whether physical modifications of the fields as well as modifications of methods employed in managing wetlands can reduce MMHg loads. The primary focus of this proposal is to construct a Pilot Project that consists of a 50-acre pond that will treat and remove MMHg from water and includes installations of small settling basins to catch particles.

Year 12 Accomplishments: Commenced project; formed Science Advisory Panel to provide guidance to Project Investigators and inform development of experimental ponds; constructed experimental ponds; monitored permanent ponds (through which water from seasonal ponds was moved). Monitoring is focused on evaluating removal of MMHg in permanent ponds and determining the effect of size, depth, hydraulic residence time and age of permanent ponds on MMHg removal. The project aims to identify the main MMHg removal mechanisms in the permanent ponds to aid in final pond design.

Year 12 Cost: \$35,000 in addition to utilizing existing funds (Funded \$133,509 in Year 11)

Year 13 Proposed Work: Continue with Year 12 activities, modifying them in response to recommendations from Science Advisory Panel.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 13

Agencies: DFG

Priority/Goal Addressed: ERP Goal 4 and 6

Task Category: Research, Implementation

Activity: Development of Best Management Practices to Reduce Methyl Mercury Exports and Concentrations from Seasonal Wetlands in the Yolo Wildlife Area (SJSURF). The pilot and demonstration projects will develop BMPs to reduce methylmercury concentrations and exports from wetlands. These projects will test whether physical modifications of the fields as well as modifications of methods employed in managing wetlands can reduce MMHg loads. Following investigation of the various management measures, a final structure will be constructed to remove MMHg from water and reduce exports from the Yolo Wildlife Area.

Year 12 Accomplishments: Commenced project; formed Science Advisory Panel to provide guidance to Project Investigators and inform development of experimental ponds; constructed experimental ponds; monitored permanent ponds (through which water from seasonal ponds was moved). Monitoring is focused on evaluating removal of MMHg in permanent ponds and determining the effect of size, depth, hydraulic residence time and age of permanent ponds on MMHg removal. The project aims to identify the main MMHg removal mechanisms in the permanent ponds to aid in final pond design. Amendment for \$466,000 was approved to continue monitoring of several parameters recommended by the Science Advisory Panel.

Year 12 Cost: \$466,000 in addition to existing funds (Funded \$1,166,491 in Year 11); total cost for project at 1,632,491.

Year 13 Proposed Work: Continue with Year 12 activities, modifying them in response to recommendations from Science Advisory Panel.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 13

Agencies: San Jose State University Research Foundation

Priority/Goal Addressed: ERP Goal 6

Task Category: Research, Implementation

Activity: Dutch Slough Restoration Project. The purpose of this project is to provide permitting, designs and environmental compliance documentation prior to restoration of a 1,166 acre site in Oakley, CA. Project site is adjacent to Dutch Slough and the mouth of Marsh Creek in the western Delta. Current plans do not include construction of perimeter flood protection levees, only restoration of tidal influence on two-thirds of the site.

Year 12 Accomplishments: Final engineering design and permitting documents were completed. The Final Environmental Impact Report was certified and approved by DWR.

Year 12 Cost: Utilized existing funds (Funded \$1,500,000 in Year 4)

Year 13 Proposed Work: Additional permitting and design work will be completed.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DWR

Priority/Goal Addressed: ERP Goals 1,2, and 4

Task Category: Planning

Activity: Ecological Performance of Fishes in an Ever-changing Estuary: The Effects of Nutritional Status on Environmental Stress Tolerance in Sturgeon. The purpose of the project is to do a systematic study designed to establish the relationship between nutritional status, an indicator of dietary quality and quantity, and physiological performance of green and white sturgeon when faced with key environmental stressors. This project is a 2010/2011 Directed Action.

Year 12 Accomplishments: Grant agreement executed.

Year 12 Cost: No funds expended in Year 11.

Year 13 Proposed Work: Project implementation initiated.

Year 13 Projected Cost: \$472,991 (Funding for entire project).

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1

Task Category: Research

Activity: Ecosystem Restoration Program (ERP) Oversight & Coordination. As an ERP implementing agency, the NMFS will continue ERP planning efforts in collaboration with USFWS, DFG, and DSC. Activities include program planning and implementation, tracking schedules, finances, and performance; coordination of Program activities to ensure Program balance and integration with other CALFED Programs; coordination of public outreach and involvement, including tribal, environmental justice, and public advisory activities in accordance with the Federal Advisory Committee Act. NMFS, through an interagency process, is also involved in planning in order to meet the requirement of FESA, CESA, and NCCPA.

Year 12 Accomplishments: NMFS provided oversight and coordination on ERP planning and implementation efforts, included: 1) ERP Conservation Strategy (DFG 2011); 2) ERP performance measures; 3) ERPP; 4) environmental compliance needs; 5) ERP project review; 6) species and habitat modeling.

Year 12 Cost: \$150,000

Year 13 Proposed Work: NMFS Staff and Management will assist coordination of implementation and integration of the ERP program overall in meeting ERP goals and objectives. Oversight and coordination will continue with ERP planning efforts, included: 1) ERP Conservation Strategy; 2) ERP performance measures; 3) ERPP; 4) environmental compliance needs; 5) ERP project review; 6) species and habitat modeling.

Year 13 Projected Cost: \$140,000

Funding Source: Federal

Agencies: NMFS

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Program Support

Activity: Ecosystem Restoration Program Grant Management Services. Provides administrative grant and contract management services to ERP projects.

Year 12 Accomplishments: GCAP provided overall contract management and administrative oversight services to grant recipients of Propositions 13, 204, 50, and 84 funds for ERP. GCAP insured that individual recipient agreements and deliverables are successfully completed consistent with the scope of work, project schedule, and budget as approved by the ERP.

Year 12 Cost: Utilized existing funds (Funded \$1,511,494.00 n Year 10)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 50, and General Fund

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Program support

Activity: Ecosystem Restoration Program Implementation Staff. In support of the 30-year CALFED ROD, DFG staff manage ERP and BDCP grants, support ERP planning at program-wide and regional levels, support ongoing implementation activities, coordinate with DSC, USFWS, NMFS, and other DFG staff, as well as coordinate with other planning efforts that contribute or may affect CALFED, such as CVPIA, BDCP, and CVFPP.

Year 12 Accomplishments: The Draft ERP Conservation Strategy was circulated for public comment. ERP staff incorporated changes to the Conservation Strategy, where appropriate. ERP continued to implemented projects that selected through the ERP's 2010-2011 PSP, which focused on priority restoration activities identified in the ERP draft Conservation Strategy (i.e., the Delta and at-risk native species that use the Delta). ERP continued to manage existing ERP projects. ERP continued to participate, coordinate, report, and provide input to various Bay-Delta Ecosystem associated planning and monitoring efforts.

Year 12 Cost: \$3,506,549

Year 13 Proposed Work: Finalize ERP Conservation Strategy. ERP will continue to implement projects that selected through the ERP's 2010-2011 PSP, as well as manage existing ERP projects. ERP will continue to participate, coordinate, report, and provide input to various Bay-Delta Ecosystem associated planning and monitoring efforts.

Year 13 Projected Cost: \$3,506,549

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Planning and Implementation

Activity: Ecosystem Restoration Program Performance Measures Staff. DFG staff support to comply with increased accountability requirements of bond-funded activities. This fulfills the requirement to follow an adaptive management process, and to monitor and evaluate ERP program performance by developing indicators and performance measures.

Year 12 Accomplishments: In Coordination with Delta Science Program staff, ERP Performance Measures staff revised the ERP adaptive management framework and are developing biological performance measures to evaluate the success of ERP actions.

Performance measure staff contributed to the development of the DSC's Delta Plan including performance measures contained therein. Staff coordinated DFG's input on progress towards meeting Delta Vision actions for ecosystem restoration for the 2012 Delta Vision Report Card.

Staff contributed to development of the adaptive management and monitoring program for BDCP. Staff developed, revised, and published species life history and ecosystem conceptual models to contribute to improved understanding and improved planning for ecosystem restoration and other actions in the Delta.

Year 12 Cost: \$453,192

Year 13 Proposed Work: Continue to develop and refine biological performance measures to evaluate the success of ERP actions and support adaptive management. Continue to coordinate with DSC, DSP, FRPA, BDCP, CWQMC, SWRCB, Delta Conservancy, BDCP, California Water Monitoring Council, and other agencies and programs to develop and refine adaptive management processes and performance measures for ecosystem protection, enhancement, and restoration. Continue to develop, revise, and publish conceptual models of the Delta ecosystem to contribute to improved understanding and improved planning for ecosystem restoration and other actions

Year 13 Projected Cost: \$453,192

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Monitoring

Activity: Estimating the Abundance of Sacramento River Juvenile Winter Chinook Salmon with Comparisons to Adult Escapement. The primary goals of this project were to sample year round with rotary-screw traps in order to: (1) generate juvenile winter-run Chinook salmon production indices (JPI); (2) correlate these indices with estimated escapement from adult counts at Red Bluff Diversion Dam (RBDD) and the winter-run Chinook carcass survey; and (3) define seasonal and temporal patterns of abundance of winter-run Chinook salmon passing RBDD.

Year 12 Accomplishments: With the remaining funds, the project collected samples from July 1 through September 30, 2011. Data collected by this project was entered into IEP databases and exported regularly to the IEP server in Sacramento. Additionally, data collected from this project was summarized into weekly and biweekly reports that were disseminated via email to fishery and water operations managers.

Year 12 Cost: Utilized existing funds (Funded \$2,282,630 in Year 7)

Year 13 Proposed Work: ERP funded project complete, however the project continues to operate using an alternate funding source.

Year 13 Projected Cost: No additional ERP funds will be used. USBR funding started 10/1/2011.

Funding Source: Proposition 50

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Monitoring

Activity: Evaluation of Floodplain Rearing and Migration in the Yolo Bypass. This project directly address restoration actions currently being considered to improve passage for upstream-migrating fish such as salmon and sturgeon, and by using telemetry to document specific areas in the Bypass that present passage barriers to adult Chinook salmon and sturgeon under different hydrological conditions. It also collects information on juvenile salmon residence time and survival in the Bypass, using telemetry. Specific thresholds (flow and inundation criteria) for enhanced lower trophic productivity have not yet been identified in the Bypass. The project will analyze an existing 12-year database to identify these thresholds. In addition, the project will collect new data on chlorophyll and densities of zooplankton and drift invertebrates in summer and fall months, as these months are not represented in the current long-term dataset.

Year 12 Accomplishments: The project was executed March 2012.

Year 12 Cost: \$878,020 (Funding for entire project)

Year 13 Proposed Work: Implement project.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and DWR

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1, 2, and 4

Task Category: Research

Activity: Expanding Fish Tracking Array with Real-Time Monitoring of Tagged Sturgeon and Salmonids.

The purpose of the project is twofold and includes upgrades to an array of 300 fish detecting monitors, situated in the Sacramento River, Delta, and Suisun, Grizzly, San Pablo, and San Francisco Bays. The first upgrade includes replacing older, obsolete monitors in the array and creating a new database using 'Hydra' software, and the second supplement to the project includes adding a real-time capability to the array.

Year 12 Accomplishments: Grant executed.

Year 12 Cost: \$690,593 (Funding for entire project)

Year 13 Proposed Work: UC Davis will conduct yearly adult and juvenile Chinook salmon telemetry surveys and reports; Food Web data collection for summer and fall months within the Yolo Bypass; fish collection for genetic analysis of run type for juveniles and adult Chinook salmon will be conducted.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: ERP Goals 1 and 2

Task Category: Research and Monitoring

Activity: Fall X2 Fish Sampling: Contrasts in Health Indices, Growth and Reproductive Fitness of Delta Smelt and Other Pelagic Fishes Rearing in the Low Salinity Zone and Cache Slough Region. This project addresses a critical need for information on the impacts of recurring multiple stressors in the Delta - notably contaminants, disease, environmental stress, and the underlying role of nutrition - on delta smelt and three other pelagic fish. It responds to recommendations from scientific review of the Adaptive Management Plan for Delta Fall Outflow, a scientifically based adaptive management plan to investigate the relationship between the fall habitat quality index and delta smelt stock-recruit. This relationship is the biological underpinning for the USFWS Delta Smelt Biological Opinion Reasonable and Prudent Action Component 3 or Fall X2 Action. This project is a 2010/2011 Directed Action.

Year 12 Accomplishments: Agreement was executed and work began.

Year 12 Cost: \$2,980,196 (Funding for entire project).

Year 13 Proposed Work: Project implementation continued.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 2

Task Category: Research

Activity: Fish Friendly Farming Environmental Certification Program. This project expands the Fish Friendly Farming program in the Napa River watershed. The program assesses the site conditions on Napa Valley farms, develops plans for the application of BMPs (by private landowners) to improve water quality and associated salmonid habitat. Certification, planning and on the ground restoration activities will be confined to on streams in Napa River Watershed.

Year 12 Accomplishments: The Carneros Creek Watershed Plan, Cost Analysis was completed. The Draft Gravel Augmentation plan was produced. On the ground projects were identified. Arundo eradication on the Napa River was on going. Fish Barrier and wetland projects are in permitting phase.

Year 12 Cost: Utilized existing funds (Funded \$1,000,243 in Year 8)

Year 13 Proposed Work: Finalize Gravel augmentation Plan. Complete on stream work.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested

Funding source: Proposition 50

Agencies: DFG, U.S. Environmental Protection Agency, and Napa County Resource Conservation District

Priority/Goal Addressed: ERP Goals 1, 4, 5, and 6

Task Category: Implementation

Activity: Fish Passage Improvement Program. The Fish Passage Improvement Program (FPIP) team studies and evaluates constructed structures that impede anadromous fish migration and assists with engineering and environmental evaluations for migration barrier structure removal or modification within the ERP focus area. The FPIP team is guided by an annual work plan developed by an Interagency Review Team (IRT) that includes representatives from the ERP Implementing Agencies and FPIP and approved by the ERP Implementing Agency managers. The work plan identifies and addresses high priority fish passage issues and other engineering support requirements for ecosystem restoration that may be highlighted in ERP regional restoration plans.

Year 12 Accomplishments: FPIP staff completed habitat assessment and structural analysis for Millville Diversion Dam. FPIP staff conducted studies including Bear Creek Fish Passage Surveys, Deer Creek Fish Passage, Fish Passage at Daguerre Point Dam, and Calaveras River Fish Passage.

Year 12 Cost: \$1,307,000

Year 13 Proposed Work: Complete Bear Creek Fish Passage analysis. Complete designs for Millville Diversion Dam fish passage. Continue studies including Deer Creek Fish Passage, Fish Passage at Daguerre Point Dam, and Calaveras River Fish Passage.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DWR and DFG

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Planning

Activity: Fish Restoration Program Agreement (FRPA). FRPA is an agreement between DFG and DWR that will address some of the requirements of the USFWS, NMFS Biological Opinions and DFG Incidental Take Permit (ITP). Pursuant to FRPA, DFG commits to work cooperatively with and assist DWR in establishing the management and financial framework necessary to implement a fish restoration program that will meet the federal Biological Opinions and the DFG ITP. DFG assists DWR to implement actions, including aquatic habitat restoration, for winter-run Chinook salmon, spring-run Chinook salmon, green sturgeon, delta smelt, and longfin smelt to mitigate impacts to these species caused by the SWP Delta Pumping Facilities. Measures provided under the FRPA would likely benefit non-target fish species as well. Specifically, these actions include:

- Delta Smelt Biological Opinion Reasonable and Prudent Alternative (RPA) Component 4 (“DWR to restore a minimum of 8,000 acres of intertidal and associated subtidal habitat in the Delta and Suisun Marsh”);
- Biological Opinion RPA Actions 1.2.6 (participate in the restoration of Battle Creek);
- Biological Opinion RPA Action Suite 1.6 and 1.7. (funding and technical assistance for Yolo Bypass, Liberty Island and Lower Cache Slough fish passage improvement);
- Longfin Smelt ITP Condition 7 (800 acres and associated subtidal wetland habitat in the mesohaline part of the Delta estuary).

Year 12 Accomplishments:

- Completed FRPA Implementation Strategy - describes process by which DWR and DFG will implement the FRPA and provides a schedule that identifies restoration actions, estimated costs, targeted acreage and a timeline for restoration implementation that satisfies obligations under the BiOps and ITP that pertain to the program.
- FRPA hired new branch and region staff, realigned duties of region staff and recruited retired staff to coordinate and carry out the program.
- Began planning and design of Prospect Island Restoration Project.
- Prepared Cache Slough Complex Conservation Strategy Work Plan - identifies where to focus ecosystem restoration activities and how to approach formulating restoration projects based on a scientific foundation through landscape-scale conceptual models.
- Contributed \$12 million to Battle Creek restoration and enhancement Battle Creek restoration and enhancement was granted a one-time \$12 million contribution for the improvement of Battle Creek for winter-run, spring-run, and Central Valley steelhead for the improvement of Battle Creek for winter-run, spring-run, and Central Valley steelhead.

Year 12 Cost: \$3,459,216 (Funding for 10 years) funding for program staff.

Year 13 Work Proposed: DFG will assist in the identification of additional projects, final design selection and environmental documentation for Prospect Island Restoration

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: State Water Contractors

Agencies: DFG, DWR, and NMFS

Priority/Goal Addressed: ERP Goals 1 - 4

Task Category: Planning and Implementation

Activity: FloodSAFE California Initiative (FloodSAFE). Funding for DFG to provide DWR with data support, document review, and policy and technical advice related to the development and updating the Central Valley Flood Protection Plan (CVFPP) and its Conservation Strategy (CS). FloodSAFE is intended to be an integrated, system-wide approach for sustainable flood risk management in California. The overall vision of FloodSAFE is to improve public safety, protect and enhance environmental and cultural resources, and support economic growth by reducing the probability of destructive floods, promoting beneficial floodplain processes, and lowering the damages caused by flooding. DFG participated in the development of the 2012 Central Valley Flood Protection Plan (CVFPP), including its accompanying Conservation Framework (CF), with the goal of providing input making it consistent with the ERP Conservation Strategy (DFG 2011). The 2012 CVFPP and CF were adopted by the Central Valley Flood Protection Board on June 29, 2012. The CVFPP must now be revised and adopted every 5 years, the next revision will be due in 2017. ERP and regional DFG staff will continue to provide DWR with data support, document review, as well as policy and technical advice related to the development of the first revision due in 2017 for the CVFPP and its accompanying Conservation Strategy, which will be developed from the 2012 Conservation Framework. The CVFPP was a legislatively mandated action by the Central Valley Flood Protection Act to plan the long-term improvement of the flood management system in California's Central Valley. The CVFPP is required to describe how DWR and other partners, will protect, enhance, and improve the status and trends of ecosystem processes, habitats, and species associated with this flood management system.

Year 12 Accomplishments: DFG participated in the development of the 2012 CVFPP, including its accompanying Conservation Framework (CF), with the goal of providing input making it consistent with the ERP Conservation Strategy. The 2012 CVFPP and CF were adopted by the Central Valley Flood Protection Board on June 29, 2012.

Year 12 Cost: Utilized existing funds (Funded \$3,220,262 in Year 11)

Year 13 Proposed Work: The CVFPP must be revised and adopted every 5 years after this initial adoption. ERP and regional DFG staff will continue to provide DWR with data support, document review, as well as policy and technical advice related to the development of the first revision due in 2017 for the CVFPP and its accompanying CS, which is being developed from the 2012 Conservation Framework.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 13

Agencies: DFG and DWR

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Implementation

Activity: Groundwater Monitoring Plan for the Lake Davis Pike Eradication Project. DFG will conduct well monitoring in the Lake Davis Vicinity, a requirement of the 2007 Lake Davis Northern Pike Eradication Project EIR. DFG will implement the remaining years of the seven well ten-year monitoring program that began in 2008. DFG will analyze samples for CFT formulation chemicals used in the 2007 Lake Davis treatment. DFG will review and interpret sample results, maintain a data tracking system, conduct repeat sampling as necessary, and consult with owners and local agencies as necessary depending on contaminants detected. DFG will provide updates and conducts informational presentations in coordination with Plumas County Environmental Health, and Lake Davis Steering Committee, and prepare yearly Project Performance Status Reports.

Year 12 Accomplishments: Ground water monitoring and reporting activities were conducted.

Year 12 Cost: \$49,000 (Funding for entire project)

Year 13 Proposed Work: Continue ground water monitoring and reporting activities.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goal 5

Task Category: Monitoring

Activity: Habitat Creation on Working Landscapes. Yolo County RCD that will complete activities started under the Yolo-Solano Conservation Partnership AFI grant. This project includes riparian habitat enhancements, irrigation canal re-vegetation, farm pond habitats, and wildlife and vegetation monitoring along with studies on ecosystem services, outreach, and education. Conservation strategies successful in Yolo County will be transferred to Solano county.

Year 12 Accomplishments: None

Year 12 Cost: None

Year 13 Proposed Work: The Yolo County Resource Conservation District will implement the Habitat Creation on Working Landscapes in order to contribute to the conservation of Giant Garter Snake, Swainson's Hawk, Sacramento Perch and other species. Building upon prior success expanding habitat creation and conservation capacity, the grantee will extend conservation partnerships begun in Yolo and Solano counties.

Year 13 Projected Cost: \$643,000 (Funding for entire project)

Funding Source: Proposition 50

Agencies: DFG and Yolo County RCD

Priority/Goal Addressed: ERP Goal 1-4

Task Category: Implementation

Activity: Habitat Restoration. USFWS is leading habitat restoration activities within the Bay-Delta Estuary. This includes working with other Federal, State, and local agencies to plan and implement numerous programs, including the CALFED Ecosystem Restoration Program, CVPIA, portions of the Interim Federal Action Plan, the Central Valley Joint Venture, the Cooperative Endangered Species Conservation Fund, Endangered Species Recovery Program, Partners for Fish and Wildlife Program, Land Acquisition Program, the North American Wetlands Conservation Fund, and the Interagency Ecological Program. This overall effort so far has resulted in thousands of acres of restored and conserved habitats, providing benefits to numerous fish and wildlife species and the American public.

Year 12 Accomplishments: USFWS will continue to assist implementing Ecosystem Restoration Program restoration grants and to work to approve additional projects as funding and authorization allow.

USFWS will reinforce cross-agency collaboration in its Bay-Delta Non-Native Invasive Species (NIS) program. The program will focus on preventing the introduction of new invasive species (ex., quagga mussels), limiting or eradicating existing invasive species (ex., *Egeria densa*), and reducing adverse impacts from infestations.

USFWS's work on the BDCP will assist that effort to identify and evaluate a range of water flow and habitat restoration actions to contribute to recovery of endangered and sensitive species and their habitats in the Bay-Delta Estuary.

USFWS will continue in the Federal, State, and City partnership, led by the Service, that supports development of a facility designed to support the propagation and restoration of Delta native fish species.

USFWS will participate in habitat restoration efforts such as restoration of flows on the San Joaquin River from Friant Dam to the confluence of the Merced River, and in efforts to restore self-sustaining habitat in Battle Creek, Cache Slough, and the Yolo Bypass Floodplain.

USFWS estimates it will restore, enhance, and protect thousands of acres of Delta and Delta watershed wetland and waterfowl-friendly agricultural habitats and will secure full water supplies for Central Valley State and Federal refuges.

USFWS will award Cooperative Endangered Species Conservation Fund grants as appropriate, based on regional and national competitions and program criteria.

USFWS will seek to publish the Draft Delta Native Fishes Recovery Plan in 2013.

USFWS, working with numerous landowners, estimates it will restore thousands of acres of Delta and Delta watershed wetland, riparian, and instream habitat for numerous fish and wildlife species and will provide extensive technical assistance.

Year 12 Cost: \$3,625,000

Year 13 Proposed Work: Continue with Year 12 activities.

Year 13 Projected Cost: \$3,363,000

Funding Source: Federal

Agencies: USFWS

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning, Research, and Implementation

Activity: Hamilton Airfield Wetlands Restoration. The project site is located on San Pablo Bay, four miles east of the city of Novato, Marin County, California. The project includes a 988-acre parcel with a former military airfield, adjacent California State Lands Commission areas, and the 1,612-acre Bel Marin Key Unit V (BMKV) parcel. The levee-protected site has subsided below the elevation of the surrounding properties, including the tidal wetlands immediately adjacent to San Pablo Bay. This project allows for the beneficial reuse of 24.4 million cubic yards of dredged material, including 3.5 million cubic yards from the Port of Oakland 50' Deepening Project. This wetlands-restoration project would advance the beneficial use of dredge material from San Francisco Bay as part of the Long Term Management Strategy (LTMS). The California State Coastal Conservancy is the non-Federal sponsor.

Year 12 Accomplishments: Levee raising and seasonal wetland shaping were completed. USACE continued to work on plans & specifications for Hamilton Airfield completion and breach, and for Bay Trail. Nursery management and planting were initiated. Hamilton Airfield completion and breach construction and Bay Trail construction completed.

Year 12 Cost: \$8,250,000 (Total Federal cost through FY12 \$81,234,000)

Year 13 Proposed Work: USACE will continue on-going construction contract management and administration, monitoring and adaptive management of the site, nursery management and planting, and site water management if breach is delayed

Year 13 Projected Cost: \$2,200,000

Funding Source: Federal

Agencies: USACE

Priority/Goal Addressed: ERP Goal 4

Task Category: Task Category: Implementation

Activity: Hamilton City, CA. The project area includes Hamilton City and the surrounding rural area. The boundaries are the Sacramento River to the east, the Glenn Colusa Canal to the west and extend about two miles north and six miles south of Hamilton City. The project area lies just north of the existing Sacramento River Flood Control project levees and within the area of extent of the Chico Landing to Red Bluff bank protection project. The project will construct a setback levee, degrade an existing levee and revegetate the setback area to restore 1,145 acres of riparian woodland, 261 acres of riparian shrub, and 70 acres of floodplain meadow. The project will also reduce flood risk for Hamilton City and adjacent agricultural lands, and improve fish passage through the delta.

Year 12 Accomplishments: The design agreement was executed in 2005 and 90% of the designs were completed in FY 2010. With carryover funds, a Limited Reevaluation Report was finalized in September 2011, which evaluated some of the design refinements focused on updating costs and benefits. Findings show that there are some minor scope refinements resulting in cost savings. This project is in the FY 2012 President's Budget as a new start construction, however, it is not in the House or Senate reports. Pending enactment of the FY 2012 appropriations bill, the schedule below assumes initiation in FY 2013.

Year 12 Cost: \$0

Year 13 Proposed Work: Execute Project Partnership Agreement (Dec 2012). Award contract for Valley Elderberry Longhorn Beetle plantings and stream gauge (Aug 2013). Contracts for acquisition and propagation of plants and installation of half of the restoration area will be awarded (Aug 2013). USACE will initiate removal of existing levee and construction of setback levee in southern portion of Dunning Slough (Aug 2013).

Year 13 Projected Cost: \$7,500,000

Funding Source: Federal

Agencies: USACE

Priority/Goal Addressed: ERP Goals 1, 2, and 5

Task Category: Planning and Implementation

Activity: Hill Slough West Restoration Project, Phase I-Preliminary Restoration Design, Environmental Documentation and Permitting. The purpose of the overall project is to restore brackish tidal marsh and associated upland ecotone at the northern Suisun Marsh near the corner of Highway 12 and Grizzly Island Road to benefit endangered as well as migratory and resident species. The funding under this Grant will support Phase 1, design, permitting and environmental compliance.

Year 12 Accomplishments: Preliminary restoration design and plan, management plan, final environmental documents, and permit preparation were conducted.

Year 12 Cost: Utilized existing funds (Funded \$646,642 in Year 9)

Year 13 Proposed Work: Finish permitting, environmental compliance and management plan.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Task Category: Planning and Research

Activity: Identifying habitat characteristics that support native fish in the Delta and Suisun Marsh. The purpose of this research is to develop a better understanding of how physical habitat, flow, and other factors interact to maintain assemblages of native and non-native species in an environmental gradient that supports populations of most of the native fishes in the upper estuary. By documenting how native and alien fishes use habitat around Suisun Marsh, Sherman Island, and the Cache Slough complex, insights can be gained and hypotheses tested that will aid the recovery of at-risk native species, inform flow and habitat management decisions, and allow for better adaptation to climate change.

Year 12 Accomplishments: Executed and initiated work.

Year 12 Cost: \$1,152,195 (Funding for entire project).

Year 13 Proposed Work: Obtain necessary permits from USFWS and NMFS. Commence fish and environmental surveys. Researchers will utilize otoliths to determine natal origin of adult Sacramento splittail and measurements of strontium isotopes to identify juvenile Sacramento splittail nursery areas.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: UC Davis and DFG

Priority/Goal Addressed: PSP Priority 2/ERP Goal 1-4

Task Category: Research and Monitoring

Activity: Instream Flow Recommendations. USFWS will provide DFG technical assistance, support, and training necessary to develop stream flow recommendations for Sacramento-San Joaquin Delta tributaries pursuant to SBX7 1 and necessary to identify streamflows on other priority streams to ensure the continued viability of stream-related fish and wildlife resources pursuant to PRC sections 10000 to 10005.

Year 12 Accomplishments: USFWS provided technical services to DFG by identifying instream flow needs and developing flow recommendations for priority streams and Sacramento-San Joaquin Delta tributaries on up to two priority streams or rivers. USFWS also conduct field studies on priority streams as well as data analyses and model construction on selected streams.

Year 12 Cost: \$437,326

Year 13 Proposed Work: USFWS will continue to provide technical services to DFG by identifying instream flow needs and developing flow recommendations for priority streams and Sacramento-San Joaquin Delta tributaries. USFWS will also conduct field studies on priority streams as well as data analyses and model construction on selected streams.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goal 6

Task Category: Task Category: Research

Activity: Integrated Regional Wetland Monitoring / Petaluma Marsh Expansion Project. This project will supplement funding to monitor and evaluate the Petaluma Marsh Expansion Project (PMEP). This project will also monitor the marsh as a secondary site within the Integrated Regional Wetland Monitoring Project (IRWM) to determine whether the predictive metrics developed under IRWM are effective. This project will: 1) evaluate the underlying management question, how are ecosystem restoration efforts throughout the region affecting ecosystem processes at different scales; and (2) through application of adaptive monitoring strategy concepts, prepare for subsequent longer-term monitoring.

Year 12 Accomplishments: The final report was completed in November 2011.

Year 12 Cost: Utilized existing funds (Funded \$235,000 in Year 7)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Task Category: Research and Monitoring

Activity: IRWM Fish and Productivity Data Analysis and Interpretation. This project will analyze fish and food web data collected under a previous grant funded by the CALFED Science Program. The overall goal is to gain as much insight as possible from the IRWM field data on the nature and extent to which tidal marsh restoration contributes to ecological support for native resident and migratory fishes through direct provision of habitats and high quality productivity.

Year 12 Accomplishments: Data analysis of fish and productivity data collected by IRWM.

Year 12 Cost: Utilized existing funds (Funded \$420,000 in Year 11)

Year 13 Proposed Work: Complete site characterization report, continue data analysis of fish and productivity data collected by IRWM and begin preparation of journal manuscripts. Provide poster cluster at the Bay-Delta Science Conference that describe ongoing activities and current findings.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: Association of Bay Area Governments (ABAG) and DFG

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Task Category: Research and Monitoring

Activity: Lake Davis Pike Eradication Project-Implementation Phase. This project is designed to eradicate northern pike (*Esox lucius*) from Lake Davis and its tributaries, minimizing the chance of further expansion downstream of Lake Davis or to other watersheds.

Year 12 Accomplishments: DFG conducted presence/absence surveys for Northern Pike. Lake Davis has remained free of northern pike since the 2007 eradication treatment. The project has been determined to be a success. The project is complete.

Year 12 Cost: Utilized existing funds (Funded \$11,470,742 in Year 8)

Year 13 Proposed Work: None, the project is complete. However, DFG will continue monitoring on annual bases utilizing other funds (General Funds). Water Quality monitoring continues under another ERP project (i.e., Groundwater Monitoring Plan for the Lake Davis Pike Eradication Project).

Year 13 Projected Cost: None

Funding Source: Proposition 84

Agencies: United State Forest Service and DFG

Priority/Goal Addressed: ERP Goal 5

Task Category: Task Category: Implementation and Monitoring

Activity: Linking Habitat and Spatial Variability to Native Fish Predation. This research project uses genetic assays to identify the presence of Chinook salmon, steelhead trout, Delta and longfin smelt, white and green sturgeon, and Sacramento splittail in the stomachs of predatory fishes (striped bass and largemouth bass) as well as the native piscivore, Sacramento pikeminnow (*Ptychocheilus grandis*), across migration corridors and habitats of the north Delta. Subsidiary studies of evacuation rates will contribute to estimating predation rates. Results are combined with bioenergetic models to investigate population impacts.

Year 12 Accomplishments: The agreement was executed June 2012.

Year 12 Cost: \$730,307 (Funding for entire project).

Year 13 Proposed Work: Begin project implantation; first yearly predator fish sampling effort to be conducted; development of 8 genetic assays of native and predator fishes; feeding trial to be conducted to determine the maximum length of time of digestion to still detect individual fish DNA; and bioenergetics modeling to begin.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1-3

Task Category: Research

Activity: Lower Clear Creek Aquatic Habitat and Mercury Abatement Project. The objective of the Lower Clear Creek Aquatic Habitat and Mercury Abatement Project is to remove the long-term impacts of mercury contamination in the project area, while creating a cost-effective 20-year supply of spawning gravel from dredger tailings for use in Lower Clear Creek to enhance listed salmon/steelhead species populations, and to create 5.72 acres of new wetlands.

Year 12 Accomplishments: 2010/2011 PSP selection.

Year 12 Cost: No funds expended in Year 12.

Year 13 Proposed Work: Execute agreement and begin project implementation.

Year 13 Projected Cost: \$4,539,015 (Funding for entire project).

Funding Source: Proposition 13

Agencies: DFG and WSRCD

Priority/Goal Addressed: PSP Priority 1 and 3/ERP Goals 1 - 4

Task Category: Implementation

Activity: Lower Clear Creek Floodway Rehabilitation Project (Phase 3B). This project completed the Lower Clear Creek Floodway Rehabilitation Project. Phase 3B reconstructed the bankfull channel and portions of floodplain along 0.9 miles in the center of the restoration project area in one construction season, as well as monitored project implementation for three years. The reconstructed bankfull channel is designed to function geomorphically within newly constructed floodplain surfaces completed in Phases 2A and 2B of the Lower Clear Creek Floodway Rehabilitation Project, which are immediately adjacent to Phase 3B. The work also addressed a headcut that has continued to migrate and is threatening the channel and riparian habitat created in previous project phases.

Year 12 Accomplishments: Continued to implement Chinook salmon and steelhead habitat enhancement projects through partnerships with local landowners, public and private agencies, and universities. Projects are currently emphasizing restoration actions that will increase populations of spring-run Chinook salmon and steelhead, both listed as threatened under the Federal Endangered Species Act. Restoration activities focused on implementing the Cloverview long-term Gravel Supply Project. The program continued monitoring juvenile habitat use, spawning area mapping, juvenile habitat suitability indices, gravel quality, survival-to-emergence, fish rescue, benthic macro invertebrate sampling, water quality, and water temperature. The program also implemented several in-stream spawning gravel placement projects.

Year 12 Cost: Utilized existing funds (Funded \$3,482,000 in Year 7)

Year 13 Proposed Work: Amendment 4 executed on 6/19/12 extended the grant until 12/31/15 in order to complete three additional projects using the remaining money in Task 6. Project #1 will rip and replant a road to connect two large riparian areas. Project #2 will lower a scour channel and replant it with wetland vegetation. Project #3 will decommission a series of unnecessary road segments and replant and irrigate approximately 2.5 acres.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: DFG and WSRCD

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Implementation and Monitoring

Activity: Lower Cosumnes River Floodplain Restoration Project. The purpose of this project is to restore 154 acres of historic floodplain in the Cougar Wetlands Unit of the Cosumnes River Preserve for the purpose of reconnecting historic tidal sloughs to the mainstem Cosumnes River and providing tidal wetland habitat for juvenile Chinook salmon, steelhead, and other native fish species. Consistent with Proposition 204 and ERP goals and objectives, this project will address the need for restoration of functioning riparian floodplains in the Sacramento-San Joaquin Delta ecosystem.

Year 12 Accomplishments: 2010/2011 PSP selection.

Year 12 Cost: No funds expended in Year 11.

Year 13 Proposed Work: Complete agreement and implement project.

Year 13 Projected Cost: \$1,244,017 (Funding for entire project)

Funding Source: Proposition 204

Agencies: DFG, BLM, USFWS, DWR, and National Fish and Wildlife Foundation

Priority/Goal Addressed: PSP Priority 1/ERP Goals 1, 2, and 4

Task Category: Implementation

Activity: Lower Deer Creek Restoration and Flood Management: Feasibility Study and Conceptual Design.

The project will evaluate the feasibility of setting back levees on Deer Creek and investigate the feasibility of allowing flood flows to access the natural floodplain in a controlled manner to improve habitat and flood control.

Year 12 Accomplishments: Completed products include:

A feasibility study with a recommended alternative for implementation;

A conceptual design (30% design level) of the selected alternative(s);

Baseline monitoring records to serve as the foundation of a long-term monitoring and adaptive management program; and

Clearly documentation of the process and outcome that can feed back to the overall ERP strategy and provide a successful model for other similar projects within the CALFED program area and elsewhere.

Year 12 Cost: Utilized existing funds (Funded \$1,519,200 in Year 4)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 204

Agencies: DFG and Deer Creek Watershed Conservancy

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Planning

Activity: Lower Putah Creek Restoration from Toe Drain to Monticello Dam: Project Description Development, CEQA Compliance, Permits, Selected Final Design. The purpose of this project is to create the planning and designs needed to construct the Lower Putah Creek Channel and Tidal Marsh Restoration as described herein. Environmental documentation, designs and permitting prerequisite to construction will be provided by this grant.

Year 12 Accomplishments: 2010/2011 PSP selection.

Year 12 Cost: No funds expended in Year 12.

Year 13 Proposed Work: Implement environmental documentation, begin project design and permitting.

Year 13 Projected Cost: \$2,260,313 (Funding for entire project)

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: PSP Priority 1/ERP Goals 1, 2, 5, and 6

Task Category: Planning

Activity: Lower Yolo Bypass Collaborative Process Project. The Lower Yolo Bypass Collaborative Process Project is expected to be a multi-stakeholder negotiation focused on developing a set of management recommendations for the Lower Yolo Basin (LYB). The working assumption is that these recommendations will be presented in the form of a comprehensive management plan for the LYB. The plan is expected to be provided to organizations and agencies that can effectively and legally implement these recommendations.

Year 12 Accomplishments: Last public forum meeting conducted Feb 2011.

Year 12 Cost: Utilized existing funds (Funded \$300,000 in Year 9)

Year 13 Proposed Work: Liberty Island Management Plan (LIMP) is to be prepared within Year 13. The Grantee will conduct all public outreach meetings held for the LIMP. It is likely that at least three meetings will be needed.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Planning and Technical Support

Activity: M&T/Llano Seco Fish Screen Facility Long-Term Protection Project (Phase IV). Phase IV of this multi-phased project will prepare the environmental compliance documentation required under NEPA, CEQA, ESA, and CESA, for the M&T Chico Ranch/Llano Seco Rancho Fish Screen Facility Long-Term Protection Project, and obtain necessary permits required for implementation of the alternative selected at the conclusion of the environmental review process. Consistent with Proposition 84 and ERP goals and objectives, this project will provide an overall net benefit to Central Valley fisheries subjected to impacts from river diversions by ensuring project compliance with State and federal fish screen criteria, and maintenance of agreements not to divert 40 cfs of a water right from Butte Creek which currently serves to protect Spring-run Chinook salmon during critically dry years.

Year 12 Accomplishments: Agreement executed and subcontracts developed.

Year 12 Cost: Funded in Year 12 for \$2,480,610

Year 13 Proposed Work: Develop an Administrative Draft Project EIS/EIR and work on Project Permitting

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Planning

Activity: M&T/Llano Seco Fish Screen Facility Short-Term Protection Project-Environmental Compliance.

The purpose of this project is to support the short-term protection of the existing M&T / Llano Seco Fish Screen Facility on the Sacramento River from being compromised by river sedimentation until a long-term solution for facility protection is implemented. This project will result in all environmental compliance documents and permits required to implement an instream dredge to protect the fish screen facility and extend the rock toe revetment protection on the opposite side of the River. This project will prepare the permits and environmental compliance documentation required under NEPA, CEQA, ESA, CESA, and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) required for short-term protections for the M&T Chico Ranch/Llano Seco Rancho Fish Screen Facility Short-Term Protection Project.

Year 12 Accomplishments: Complete agreement.

Year 12 Cost: \$542,640 (Funding for entire project)

Year 13 Proposed Work: Begin preparation of environmental documents

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goals 1-4

Task Category: Planning

Activity: M&T/Llano Seco Fish Screen Facility Short-Term/Long-Term Protection Project. The objective of this project is to protect the existing M&T/Llano Seco fish-screen facility and its beneficiaries while investigating and identifying a technically and economically feasible long-term solution to adapt the fish-friendly pumping facility to the lateral migration of the Sacramento River.

Year 12 Accomplishments: Environmental documentation preparation, monitoring and reporting.

Year 12 Cost: Utilized existing funds (Funded \$4,390,087 in previous years)

Year 13 Proposed Work: Project to close July 1, 2012

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Sources: Propositions 50 and 204

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goal 3

Task Category: Task Category: Planning

Activity: Management Tools for Landscape-Scale Restoration of Ecological Functions in the Delta.

Develops a set of tools facilitating landscape-scale restoration of the Sacramento-San Joaquin Delta ecosystem. The historical perspective will be compared to the present-day Delta to identify opportunities to restore ecological functions, not necessarily by replicating the historical Delta but by recreating viable habitat mosaics with the vision of how they connect at the landscape scale. Conceptual models will be developed to help practitioners identify these landscape level opportunities along with assistance given to develop appropriate metrics to assess individual projects.

Year 12 Accomplishments: The Aquatic Science Center (ASC), with support from the Landscape Interpretation Team (LIT), initiated development of a matrix that links key support functions (e.g., primary-production, predator refugia, and breeding sites) of species or communities of concern to historical and contemporary habitats and landscape variables.

Year 12 Cost: \$875,000 (Funding for entire project).

Year 13 Proposed Work: ASC will complete the historical and contemporary landscape analysis, partial complete the description and comparison of past and present ecological function, and will initiate public participation. A technical memo describing landscape units and a brochure describing the project and project goals will be completed.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: PSP Priority 2/ERP Goal 1, 2, and 4

Task Category: Research

Activity: Managing Natural Resources for Adaptive Capacity: the Central Valley Chinook Salmon Portfolio.

The purpose of this project is to explore a variance-buffering “portfolio effect “(PE) in Central Valley fall-run Chinook by examining tradeoffs between multiple anthropogenic activities, including flow modification, hatcheries, and fisheries, by investigating 1) the role of phenotype diversity in contributing to PE, 2) effects of anthropogenic activities on PE, and 3) incorporating PE into management.

Year 12 Accomplishments: 2010/2011 PSP selection.

Year 12 Cost: No funds expended in Year 12.

Year 13 Proposed Work: Complete agreement and implement project.

Year 13 Projected Cost: \$489,343 (Funding for entire project)

Funding Source: Proposition 84

Agencies: DFG and UC Berkeley

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 3

Task Category: Research

Activity: McCormack-Williamson Tract Flood Control and Ecosystem Restoration Project. The project will implement flood control improvements in a manner that benefits aquatic and terrestrial habitats, species and ecological processes. McCormack-Williamson plays a key role in north Delta hydraulics. The project is intended to allow passing of flood flows through the tract, in a way that minimizes flood impacts to the system. Because the tract's topography varies from roughly plus five feet above sea-level to minus four feet, the tract provides an ideal landscape gradient for a continuum of habitat types that provides for ecosystem benefits. This grant would be used to cover the 7% cost share of the 35% local match for project design and construction (\$1.365 million) not being provided by DWR. In addition, this application seeks \$1.95 million (10% of project design and construction cost) for pre and post construction monitoring and focused research. There will also be administrative and contingency costs associated with the project. Expected habitat outcomes with project implementation:

Floodplain: 400 acres

Riparian: 250 acres

Scrub-shrub: 100 acres

Channel aquatic: 200 acres

Dendritic intertidal: 100 acres

Shallow-water habitat: 500 acres

Emergency Marsh: 250 acres

Mudflat: 50 acres

Grassland: 150 acres

Year 12 Accomplishments: 2010/2011 PSP selection.

Year 12 Cost: No funds expended in Year 12.

Year 13 Proposed Work: Complete agreement and implement project.

Year 13 Projected Cost: \$3,314,300 (Funding for entire project)

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: PSP Priority 1/ERP Goal 2

Task Category: Implementation and Monitoring

Activity: Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction.

The primary project goal is to use an integrated field and laboratory approach to evaluate the risks of mercury (Hg) exposure to avian reproduction in the Bay and the Delta. This study will investigate three guilds of birds: recuivirostrids, terns, and diving ducks. This project will integrate a field assessment of exposure and effects with a laboratory assessment of the variation in sensitivity of avian embryos to methylmercury. The field approach will evaluate the relative hazard of Hg to three foraging guilds of marine-dependent birds and evaluate whether some species are experiencing adverse effects in the field that may be linked with Hg exposure. This project will also evaluate the potential influence of other contaminants of concern (COC's), primarily selenium (Se), polychlorinated biphenyls (PCB's) and polybrominated diphenyl ether (PBDE), which co-occur with Hg in some areas of the Bay-Delta.

Year 12 Accomplishments: Research, monitoring, and reporting activities were delayed due to grant freeze and accounting issues.

Year 12 Cost: Utilized existing funds (Funded \$5,823,262 in Year 5)

Year 13 Proposed Work: Amendment extending the work effort through June 2014 was signed and work will continue on remaining tasks and study synthesis.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: USFWS and DFG

Priority/Goal Addressed: ERP Goals 1, 3, and 6

Task Category: Task Category: Research and monitoring

Activity: Mill and Deer Creeks Protection and Stewardship. This project helped address water quality and quantity, salmon habitat and existing wildlife-friendly agriculture on Mill Creek and Deer Creek. This project will obtain conservation easements on Mill Creek (Pfendler Ranch - 26,000 acres; Droz Ranch - 470 acres; Schnapp Property - 19 acres) and Deer Creek (Tod and Elizabeth Leininger Ranch - 10,000 acres; Lazy Y Ranch - 370 acres) watersheds in eastern Tehama County. Tasks included: acquisition, field characterization of property, development of stewardship plan to preserve and enhance ecological values in compatibility with ranching operations, and monitoring for compliance with stewardship conditions. Employed riparian fencing where appropriate to help preclude livestock access to streamside areas, invasive weed control, restoration of natural plant communities, and ongoing monitoring of all of the above.

Year 12 Accomplishments: Final conservation easements were completed. TNC ultimately acquired 33,226 acres in conservation easements in the Mill Creek and Deer Creek watersheds.

Year 12 Cost: Utilized existing funds (Funded \$4,700,000 in Year 9)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Priorities 1, 4, 5, and 6

Task Category: Planning, monitoring and implementation

Activity: Monitoring for Invasive Spartina Control in the San Francisco Estuary. This monitoring project provided timely, high quality data regarding the location and extent of invasive Spartina to the San Francisco Estuary Invasive Spartina Project, so that it may plan and rapidly implement cost-effective weed control measures and determines when site-specific and regional control objectives have been met. In addition, the Monitoring Program provided accurate data on the status of endangered California Clapper Rails at the Spartina treatment sites, to allow Spartina control to be implemented with minimum adverse effects on rails.

Year 12 Accomplishments: Grant closed 9/30/11.

Year 12 Cost: Utilized existing funds (Funded \$1,234,396 in Year 7)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 50

Agencies: DFG and State Coastal Conservancy

Priority/Goal Addressed: ERP Goal 5

Task Category: Task Category: Monitoring

Activity: Monitoring Responses of the Delta Smelt Population to Multiple Restoration Actions in the San Francisco Estuary. This project implements a state-of-the-art monitoring program to link key vital parameters for individual delta smelt with survival to adulthood at the population level. Measures five vital parameters for fish collected by the IEP, including growth and body condition, exposure to toxic chemicals, survival to the adult stage, spawning success, and feeding and food selectivity.

Year 12 Accomplishments: Final Reporting and Final data results to be submitted.

Year 12 Cost: Utilized existing funds (Funded \$1,499,181 in Year 7)

Year 13 Proposed Work: Final Reporting and Final data results to be submitted.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Sources: Propositions 50 and 84

Agencies: DFG

Priority/Goal Addressed: ERP Goal 1

Task Category: Task Category: Monitoring and Research

Activity: Other CVP Impacts. Habitat Restoration Program 3406 (b)(1) Other, protects and restores native habitats and species impacted by the CVP that are not specifically addressed in the Fish and Wildlife Restoration activities section of CVPIA. The focus is on habitats known to have experienced the greatest percentage decline in habitat quantity and quality since construction of the CVP, where such decline could be attributed to the CVP (based on direct and indirect loss of habitat from CVP facilities and use of CVP water). These include rare serpentine soil habitat, alkali scrub and associated grasslands, vernal pools, Central Valley wetlands, riverine dunes, and riparian habitats.

Year 12 Accomplishments: In FY 2012 the program provided funding for protection and/or restoration of at least 2,000 acres of CVP impacted habitats, captive breeding and reintroduction of federally listed species, and targeted research on CVP impacted species and habitats.

Year 12 Cost: \$1,500,000

Year 13 Proposed Work: Funding will be used for protection of habitats through purchase of fee title or conservation easements, restoration and management of habitats, and surveys and studies for federally listed species impacted by the CVP. The program will focus on protecting and restoring threatened serpentine soil habitats in Santa Clara County, vernal pool wetlands in the Sacramento Valley, grassland and alkali scrub habitats in the San Joaquin Valley, San Joaquin River dune habitats, and aquatic/riparian habitats throughout the Central Valley. The program will also solicit for targeted research and planning actions that coincide with high priority species and habitats. Proposals will be solicited on www.grants.gov, with the selection of new projects each year being dependent on the most current species and habitat priorities. It is anticipated that funds will be committed to the following types of projects: 50% for land acquisition; 20% for habitat restoration; 20% for research; and 10% for other activities such as captive breeding and reintroduction of federally listed species, public outreach, and land management planning. The activities of the (b)(1) "Other" program are required as part of the Programmatic Section 7 Consultation for CVPIA and other Biological Opinions related to CVP operations. All projects will focus on improving conditions for CVP impacted species.

Year 13 Projected Cost: \$1,500,000

Funding Source: Federal

Agencies: USBR

Priority/Goal Addressed: ERP Goals 1, 2, 3, and 4

Task Category: Planning, Implementation, and Research

Activity: Pacific Flyway Center Initial Planning Project. Funding for the initial planning phase of the Pacific Flyway Center (PFC), an educational facility and a site intended to serve the public.

Year 12 Accomplishments: Negotiations with landowner for purchase of new PFC site were terminated by the Yolo Basin Foundation Board of Directors. Yolo Basin Foundation began discussions with the California Natural Resources Agency on a new concept for the PFC.

Year 12 Cost: Utilized existing funds (Funded \$334,021 in Year 5)

Year 13 Proposed Work: Continue discussions with the California Natural Resources Agency and the Department of Fish and Game on the new concept for the PFC.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 2, and 4

Task Category: Task Category: Planning

Activity: Patterson Irrigation District Fish Screen Construction Project. This project replaced the Patterson Irrigation District's 195 cubic foot per second (cfs) unscreened pumped water diversion intake system on the San Joaquin River with a new more efficient facility at the current site. The Patterson Irrigation District Main Pumping Plant is located on the banks of the San Joaquin River, approximately 3.5 miles east of the city of Patterson, in the CALFED Vernalis to Merced River Ecological Management Unit of the San Joaquin River Ecological Management Zone. The new facility has equivalent diversion capacity and consists of a new wedge-wire plate fish screen designed to meet State and Federal protection criteria for anadromous salmonids. Fifty percent cost share funding for this project is provided by USBR's AFSP

Year 12 Accomplishments: New screened pumping facility with 195 cfs diversion capacity completed in September 2011.

Year 12 Cost: Utilized existing funds (Funded \$4,565,725 in Year 10) (State Match to AFSP)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Task Category: Implementation

Activity: Providing Landowner Incentives to Encourage Riparian Restoration and Natural River Processes on Working Landscapes. This project encourages and facilitates the stewardship and restoration of riparian habitat on agricultural lands within the Sacramento River Conservation Area. This is accomplished through the initiation of a Coordinated Conservation Effort that provides landowners the incentives and assurances needed to incorporate habitat restoration into their agricultural activities.

Year 12 Accomplishments: The Sacramento River Conservation Area Forum developed a draft Programmatic Safe Harbor Agreement and Voluntary Local Program (SHA/VLP) to be offered to private landowners within the Sacramento River Conservation Area to reduce the uncertainty of future land management options for private landowners with existing or potential endangered species habitat.

Year 12 Cost: Utilized existing funds (Funded \$599,821 in Year 7)

Year 13 Proposed Work: CSU Chico Research Foundation will work towards finalizing the Safe Harbor Agreement. Continue adding documents and content to the Sacramento River Library, work on expanding the Landowner Incentives Library website, update and improve usability of Project Tracker, and continue public outreach of resources available on the website.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding source: Proposition 50

Agencies: DFG and CSU Chico Research Foundation

Priority/Goal Addressed: ERP Goals 4 and 5

Task Category: Planning

Activity: Quality Assurance Consulting Services. San Jose State University Research Foundation (SJSURF) will provide general programmatic and technical assistance to the Department of Fish and Game's Instream Flow program staff on the development and implementation of a Quality Assurance/Quality Control Program.

Year 12 Accomplishments: N/A

Year 12 Cost: N/A

Year 13 Proposed Work: SJSURF will provide general programmatic and technical assistance to the Department of Fish and Game's Instream Flow program staff on the development and implementation of a Quality Assurance/Quality Control Program.

Year 13 Projected Cost: \$143,674 (Funding for entire project)

Funding Source: Proposition 84

Agencies: DFG and SJSURF

Priority/Goal Addressed: ERP Goal 2

Task Category: Task Category: Planning

Activity: Real-Time Flow Monitoring. This project will operate and maintain 13 flow monitoring stations with temperature sensors. The stations will monitor dedicated instream base flows for spring-run Chinook salmon and steelhead in four eastside Sacramento River tributaries (Big Chico, Butte, Deer and Mill creeks) and provide a basis for additional future dedicated instream flow acquisitions.

Year 12 Accomplishments: Project completed. DWR found alternative funding sources to continue operating ten of the 13 gaging stations.

Year 12 Cost: Utilized existing funds (Funded \$473,000 in Year 6)

Year 13 Proposed Work: ERP funded project complete, however the project continues to operate using an alternate funding source.

Year 13 Projected Cost: No additional ERP funds. DWR now funds.

Funding Source: Proposition 50

Agencies: DFG and DWR

Priority/Goal Addressed: ERP Goal 1, 2, and 4

Task Category: Task Category: Monitoring

Activity: Recovery Implementation for Riparian Brush Rabbit and Riparian Woodrat on the Lower Stanislaus River.

This project restores riparian habitats along the lower Stanislaus and San Joaquin Rivers adjacent to the Caswell State Park and the San Joaquin River National Wildlife Refuge.

Year 12 Accomplishments: In progress on tasks that include, biological assessment and permitting, riparian brush rabbit reintroduction, and restoration of 50 acres of riparian habitat. Reproductive assessment trapping and translocation of suitable offspring to San Joaquin River NWR – West Unit, San Joaquin River NWR – East/Bufington Unit, and Faith Ranch was conducted. Enclosure vegetation was maintained. Survival and movements of radio-collared rabbits was monitored. Rabbits were trapped to remove or replace radio-collars as needed. Riparian restoration sites were maintained.

Year 12 Cost: Utilized existing funds (Funded \$5,465,944 in Year 7)

Year 13 Proposed Work: Complete riparian brush rabbit reintroduction and translocation.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DFG and USFWS

Priority/Goal Addressed: ERP Goals 1, 2, 3 and 5

Task Category: Task Category: Implementation

Activity: Refine the Fall-run Chinook Salmon Population Model. The project will provide structural, statistical and computer-processing refinements to the fall-run Chinook salmon population model, which will allow for a much broader suite of management action probability questions to determine instream flow level recommendations for fall-run Chinook salmon in the San Joaquin River. The refined model will provide the ability to focus future restoration water releases toward the most limiting salmon life stages and processes, and will assist State/federal agencies in developing a conceptual and operational understanding of these life processes and needs to restore fall-run Chinook salmon in the San Joaquin River.

Year 12 Accomplishments: California State University (CSU), Fresno Foundation developed the coding for the new version of the fall-run Chinook salmon population model. Provided model documentation and user's guide.

Year 12 Cost: \$200,000 in addition to prior funds (Funded \$350,000 in Year 10 & \$450,000 in Year 11)

Year 13 Proposed Work: Complete fall-run Chinook salmon model.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Sources: General Fund, Propositions 13 and 84, and Federal

Agencies: DFG and CSU Fresno Foundation

Priority/Goal Addressed: ERP Goals 1-3

Task Category: Task Category: Planning

Activity: Renewed Federal State Partnership. USFWS is working to renew Federal and State partnerships that are invested in restoring the Bay-Delta. With support from our partners, the USFWS will identify water flow and habitat restoration actions to recover endangered and sensitive species and their habitats as well as address long-term critical water issues facing California. These efforts support the BDCP and the Administration's Interim Federal Action Plan (IFAP).

Year 12 Accomplishments: USFWS will work to better align and function with new California State legislation focused on efforts to restore the Bay-Delta ecosystem and better meet the State's water needs. Continue to assist implementation of the existing ERP restoration grants and to work to approve additional projects as funding and authorization allow. ERP planning and implementation efforts, included: 1) ERP Conservation Strategy Implementation; 2) ERP performance measures; 3) environmental compliance needs; 4) ERP project review; 5) species and habitat modeling.

Year 12 Cost: \$793,000

Year 13 Proposed Work: A public draft BDCP is expected to be completed and available for public review in 2012. Following a public review period, a final BDCP is expected to be completed before the end of 2013.

Associated with the IFAP, the Service will work to align and function with new California State legislation focused on efforts to restore the Bay-Delta Estuary and better meet the State's water needs. USFWS will continue to work with State and local interests to plan and implement activities under the IFAP.

Year 13 Projected Cost: \$793,000

Funding Source: Federal

Agencies: USFWS

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Program Support

Activity: Restoration of the Confluence Area of the Sacramento River, Big Chico and Mud Creeks. This project completes phase II of a four-phase project to protect and restore 311 acres of flood prone, ecologically significant land located within the Sacramento River Conservation Area at the confluence of the Sac. R, Big Chico and Mud Creeks at river miles 194-195. The goal of this project is to protect and complete restoration and management planning for three properties located in Butte County; the Nicolaus, Nock and Singh properties. The objectives are to improve the viability of at-risk species by protecting and restoring riparian habitat and rehabilitating floodplain processes, increasing the knowledge of ecosystem function, reducing flood damage to important human infrastructure by increasing floodwater storage in project area, and improving water quality.

Year 12 Accomplishments: California State Parks and TNC worked with the Central Valley Flood Protection Board (CVFPB) to obtain encroachment permit for Singh Restoration.

Year 12 Cost: Utilized existing funds (Funded \$2,603,377 in Year 4)

Year 13 Proposed Work: The Nature Conservancy has requested a Level 2 Amendment to extend the term of the grant agreement from January 31, 2013 to January 31, 2015 (an additional 24 months). In addition, the Schedule and List of deliverables would be revised to reflect the new term end date. TNC and State Parks continue to work with CVFPB to secure a floodplain encroachment permit, which is required to implement the Singh native habitat restoration portion of the project. TNC is confident that the permit will be secured by the end of 2011, which will allow restoration to proceed in early 2012. A 24-month term extension is necessary to allow sufficient time after restoration is completed to carry out post-restoration monitoring which is included in the agreement.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 2, 4, and 6

Task Category: Task Category: Planning and Implementation

Activity: Restoring Ecosystem Integrity in the Northwest Delta: Phase II. Acquires conservation easements within the Cache Slough complex, along the Barker, Lindsey and Calhoun Sloughs, north Delta tidal channels located west of the Yolo Bypass. Note: Project was split into two parts, both bare the same name. (Part 1 of 2)

Year 12 Accomplishments: Draft Restoration Plan 30% designs submitted early July 2011, prepare 90% designs, bid package and permit preparation.

Year 12 Cost: Utilized existing funds (\$1,781,658 in Year 4)

Year 13 Proposed Work: Complete 90% designs, complete all permits necessary to conduct implementation of restoration plan.

Year 13 Projected Cost: No additional funds requested.

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1-5

Task Category: Task Category: Acquisition

Activity: Restoring Ecosystem Integrity in the Northwest Delta: PHASE II. Manages and restores up to 1,300 acres of perennial grassland/vernal pool complex in Solano County, CA, and develops a management plan for the Pembco property or other acquisitions within the Jepson Prairie-Prospect Island Corridor. Note: Project was split into two parts, both bare the same name. (Part 2 of 2)

Year 12 Accomplishments: Grant closed February 2012.

Year 12 Cost: Utilized existing funds (\$246,370 in Year 4)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Goal 1-5

Task Category: Task Category: Planning

Activity: Rice-Cover Crop Rotation Pilot Program. This project seeks to implement an incentive-based 3-year pilot project to benefit ground nesting birds, giant garter snakes, and other wetland dependent species through altered crop rotations and semi-permanent wetlands.

Year 12 Accomplishments: During Year 12, the project boundary was expanded and the term of the agreement was extended allowing the grantee to increase field enrollments to a satisfactory level expending the majority of project funding budgeted for cover crop incentives. The cover crop acreage objective for this program was set at 3,000 acres for complete subscription, and by late 2012, the grantee had enrolled 2,660 acres of planted cover crops in the program. Upon soliciting cover crop field enrollments in early 2012 to expend the remaining incentive monies, an additional 780 acres were identified and the grant was amended to transfer existing funds within the grant to allow enrollment of the additional acres in the program.

Year 12 Cost: Utilized existing funds (Funded \$1,649,051 in Year 8)

Year 13 Proposed Work: During Year 13, the grantee will analyze monitoring data collected over the course of the project and prepare a comprehensive final program report. In addition, an economic analysis will be prepared utilizing a budgeting framework adopted by the University of California Cooperative Extension Service. The economic analysis will include 1) a bidding system for determining future participation in a cost effective cover crop program, and 2) theories on how reduced rice production resulting from these types of incentive programs impact overall rice market futures.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 3, and 4

Task Category: Implementation

Activity: Riparian Sanctuary (Phase II) – Bringing Agricultural and Ecological Interests Together for Pumping Plant Protection and Riparian Restoration (Sacramento River Mile 178) - Design Development and Environmental Compliance. This project supports planning and design efforts to develop second phase of multi-phase process to protect PCGID-PID's pumping plant and fish screen facility and to meet Sacramento River National Wildlife Refuge habitat goals for the Riparian Sanctuary.

Year 12 Accomplishments: During Year 12 work continued on environmental compliance and permitting, project design, and biological monitoring and surveys. The agencies determined that an Action Specific Implementation Plan (ASIP) would not be required for the project and additional required permits were identified. The grant agreement was amended to reflect the changed permitting requirements and to extend the grant term by 12 months. The wetland delineation and sediment transport reports were completed, and the Draft EIS/EIR was released for public review.

Year 12 Cost: Utilized existing funds (Funded \$683,698 in Year 8)

Year 13 Proposed Work: Comments received on the Draft EIS/EIR will be compiled and incorporated into the Final EIS/EIR. Project design will be completed and all required permits will be obtained.

Year 13 Projected Cost: Funded in prior years, no additional funds are requested.

Funding source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 2, 4, and 5

Task Category: Planning

Activity: Sacramento – San Joaquin Delta Tributary Instream Flow Program. The objective of the DFG's Sacramento – San Joaquin Delta Tributary (Delta) Instream Flow Program (IFP) is to collect scientifically based defensible data on the relationships between flow and available stream habitat. The DFG's instream flow studies use a multi-disciplinary approach including hydrology, open-channel flow hydraulics, geomorphology, biology, water quality and connectivity. Study results establish flow needs, timing, and duration for maintaining the natural function of stream channels that provide critical habitat for different life stages of stream fishes. The IFP works to recommend flow regimes that will improve ecosystem health and meet species critical life stage requirements. The DFG must conduct and provide oversight on new flow studies in Delta tributaries as necessary to fulfill the mandates of SBX7 1 over the next ten years (FY 10/11 through FY 20/21) and make flow recommendations to be provided to the SWRCB. Flow habitat relationships for critical aquatic species' life stages will be developed on selected priority streams. Anticipated projects may include relationships of flow to aquatic habitat, aquatic habitat suitability, stream temperature, channel geomorphology, riparian habitat and restoration activities; the temporal and spatial hydrologic characteristics of flow regimes; fish population abundance, distribution and dynamics; and aquatic invertebrate production. The DFG's instream flow efforts may also include performance review of studies and development of flows by the DFG or its contractors; consultation regarding study plans with individuals, agencies or corporations performing studies; review of instream flow studies not performed by the DFG itself; and development of associated recommendations from studies not performed by the DFG.

Year 12 Accomplishments: The IFP began work on Delta tributary instream flow studies. Lower Butte Creek was selected from the Department's priority stream list for the first Delta tributary instream flow study. The IFP is working with Region 2 staff and the U.S. Fish and Wildlife Service to develop a study plan for the Lower Butte Creek instream flow study. Work has also begun on development of a Quality Assurance (QA) program for the IFP under a contract with San Jose State University (SJSU). The DFG is committed to perform studies using repeatable methods, ensure study execution is transparent, and resulting recommendations are defensible. Goals of the QA program are to develop protocols for study design, standard operating procedures (SOPs) for instream flow studies, and data control measures.

Year 12 Cost: \$349,642

Year 13 Proposed Work: The IFP will continue collect scientifically based defensible data on the relationships between flow and available stream habitat on priority streams such as the Lower Butte Creek and work on development of a QA program for the IFP with SJSU.

Year 13 Projected Cost: \$349,642

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1 and 2

Task Category: Task Category: Planning

Activity: Sacramento River Conservation Area Forum (SRCAF). This grant provides funding to continue the efforts of the Sacramento River Conservation Area Forum to act as a coordinating body between local, state, and federal agencies regarding restoration activities in the Sacramento River watershed.

Year 12 Accomplishments: Support stakeholder involvement and staff activities in planning restoration activities in Sacramento River Conservation Area. Provide support for base operating costs.

Year 12 Cost: Utilized existing funds (Funded \$656,277 in Year 7)

Year 13 Proposed Work: Continue Forum coordination and outreach activities

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: DFG, California State University, and Chico Research Foundation

Priority/Goal Addressed: ERP Goal 4

Task Category: Task Category: Planning

Activity: Sacramento Valley/Delta Fish Screen Program. This project will monitor and screen up to fifteen small diversions in the Sacramento River. There will be two years of data collection prior to screening each diversion. Fifty percent cost share funding for this project is provided by USBR's AFSP.

Year 12 Accomplishments: Completed construction of Stage 2 fish screen projects: Oji Brothers (25 cfs), Windswept Land and Livestock #3 (9 cfs), Sutter Mutual Portuguese Bend (106 cfs). Negotiation and execution of Stage 3 landowner agreements was initiated. Biological assessments at Stage 2 and 3 sites and submitted 2011 Annual Technical Report on Stage 1 and 2 Biological Assessments were completed. Biological assessments for 2012 at Stage 3 diversion sites were initiated.

Year 12 Cost: Utilized existing funds (Funded \$4,525,636 in Year 9) (State Match to AFSP)

Year 13 Proposed Work: Complete landowner contracts, designs, and permits for Stage 3 diversion sites. Continue biological assessments at all Stage 3 diversion sites and submit 2012 Annual Technical Report for Stage 3 Biological Assessments. Begin construction of Stage 3 screens: Alamo Farms #1 (35 cfs); River Garden Farms #3 Townsite (62 cfs); Tisdale Irrigation District #2 (27 cfs), Cranmore Farms #1 (18 cfs), and Sanchez Farms (25 cfs).

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and USBR

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Task Category: Planning and Implementation

Activity: Sacramento-Central Valley Fish Screen Program. This program reduces entrainment mortality of juvenile fish species from Delta and river diversions by installing state-of-the-art self-cleaning fish screens. Fifty percent cost share funding for this project is provided by USBR's AFSP.

Year 12 Accomplishments: Family Water Alliance began negotiating and entering into landowner contracts for screening the four diversions selected during Year 11. Design, permitting, and construction of the new Bella Vista Water District Fish Screen (85 cfs) were completed. The design and environmental compliance/permit process for the remaining three diversions began.

Year 12 Cost: Utilized existing funds (Funded \$1,500,000 in Year 10) (State Match to AFSP)

Year 13 Proposed Work: Complete landowner contracts, designs, and environmental compliance/permits for the fish screen projects. Begin construction at the remaining diversions that are to be screened under the project (Feather Water District - North (78 cfs), Feather Water District - South (40 cfs), and South Sutter Water District Pleasant Grove Canal Diversion (80 cfs)).

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and USBR

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Task Category: Implementation and Monitoring

Activity: Salinity effects on native and introduced SAV of Suisun Bay and the Delta. This research project will evaluate the role of increased salinity on native versus introduced submerged aquatic vegetation beds in an effort to predict how native *Stuckenia spp.* beds might contribute to restoration of native communities and functions in the Delta region. The project is a companion to recently funded projects (NMFS and Delta Science) mapping *Stuckenia* distribution and characterizing *Stuckenia* beds as habitat for epifaunal invertebrates and fish.

Year 12 Accomplishments: San Francisco State University (SFSU) prepared water quality instruments and moorings to begin sampling, and installed instruments in the field. SFSU initiated studies to characterize salinity and other abiotic factors in and outside native *Stuckenia pectinata* beds with comparisons to four invasive *Egeria densa* beds, and use mesocosm experiments to evaluate and predict the effects of increased salinity on *Stuckenia* and *Egeria*, and their invertebrate assemblages.

Year 12 Cost: \$412,410 (Funding for entire project)

Year 13 Proposed Work: Continue with research started in Year 12.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and California State University, San Francisco

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1, 2, 4, and 5

Task Category: Research

Activity: San Joaquin River Dissolved Oxygen/Oxygen-consuming materials in San Joaquin River. The purpose of this project is to collect and analyze data on the sources of nutrients, phytoplankton, and oxygen-consuming materials in the San Joaquin River estuary to support the development of an estuary model. This model is needed by the Central Valley Regional Water Quality Control Board to complete the SJR Dissolved Oxygen Total Maximum Daily Load development and allocation process.

Year 12 Accomplishments: Work was initiated.

Year 12 Cost: Utilized existing funds (Funded \$2,992,933 in Year 9)

Year 13 Proposed Work: Collect and analyze data on the sources of nutrients, phytoplankton and oxygen-consuming materials in the San Joaquin River estuary to support the development of an estuary model and finish QA of model data, calibration, sensitivity analysis, and model simulations.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: University of the Pacific

Priority/Goal Addressed: ERP Goals 1 and 6

Task Category: Task Category: Research

Activity: San Pablo Bay Watershed and Suisun Marsh Ecosystem Restoration, CA. The San Pablo Bay Watershed is the northern arm of San Francisco Bay drainage basin, within the boundaries of Marin, Sonoma, Napa, Solano and Contra Costa Counties, California. Within the watershed, there are opportunities to increase the states' wetland acreage by over five percent. Suisun Marsh is located in southern Solano County, California about 35 miles northeast of San Francisco. The watershed study identifies and implements Federal participation for restoration projects and resource protection opportunities of these areas. Additionally, it may look at levee stability in the Suisun Marsh. As the largest contiguous brackish water marsh remaining on the west coast of North America, the Marsh is a critical part of the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) estuary ecosystem.

Year 12 Accomplishments: Continued coordination and outreach activities including public involvement and education. Geographical Information System/mapping efforts, improvements in media communication, web and networking for program were carried out.

Year 12 Cost: \$478,000

Year 13 Proposed Work: Develop the Final Watershed Management Report that incorporates and responds to Public and Agency comments. The plan describes activities that would restore critical habitat throughout the watershed. The Watershed Management Plan will identify high priority project proposals and management measures, rank the watershed's critical habitats, and set priorities for restoration. In accordance with Section 5053(c), prioritizing projects for implementation, USACE will be able to consult with and consider the priorities of public private entities that are active in the San Pablo Bay and Suisun marsh areas. \$40M is authorized to implement restoration projects in accordance with general procedures for Section 206 Continuing Authorities Program. FY 2013 Key Milestones: Complete the feasibility and design phases of two restoration projects and submit for approval the Final San Pablo Bay Watershed Management Report.

Year 13 Projected Cost: \$216,000

Funding Source: Federal

Agencies: USACE

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Implementation

Activity: Sandhill Crane Use of Agricultural Lands in the Sacramento-San Joaquin Delta Region. This project evaluated past ERP investments in relation to their objectives to meet the needs of MSCS species such as the Greater Sandhill Crane in order to develop recommendations to assist private farmers in contributing towards their recovery.

Year 12 Accomplishments: Project successfully completed in Year 11 and closed out in Year 12.

Year 12 Cost: Utilized existing funds (Funded \$493,033 Year 8)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding source: Proposition 50

Agencies: DFG and USGS

Priority/Goal Addressed: ERP Goals 1 and 4

Task Category: Research

Activity: Screen Engineering and Review. NMFS staff provide technical review and comment of proposed projects under the AFSP.

Year 12 Accomplishments: Staff reviewed ERP-funded fish screens and improvement projects as they develop for compliance with section 7 FESA and existing biological opinions. Specific issues for program staff included reviewing the SWP and CVP Fish Collection Facilities in the Delta. Staff participation on the Tracy Technical Advisory Team, South Delta Fish Facility Forum, and Central Valley Fish Facility Team, all of which are involved in developing new ways to salvage fish from water and debris and return them unharmed to the Delta. Staff reviewed and commented on fish studies, research projects, facility evaluations, and operations and maintenance of the Delta fish facilities for compliance with current biological opinions.

Year 12 Cost: \$75,000

Year 13 Proposed Work: NMFS staff will continue to provide technical assistance to AFSP as described in Year 12.

Year 13 Projected Cost: \$70,000

Funding Source: Federal

Agencies: NMFS

Task Category: Planning

Activity: Selby Creek Stream Habitat Restoration and Riparian Revegetation Project. This project continues support for restoration efforts based on the Selby Creek Project (watershed plan) on Selby Creek in the Napa watershed.

Year 12 Accomplishments: Continued project management; completed vegetation management – vegetation maintaining a 90% survival rate (2+ year old plants and trees); Annual Monitoring completed.

Year 12 Cost: Utilized existing funds (Funded \$475,000 in Year 11)

Year 13 Proposed Work: Continue project management, Bioengineered Construction of step pool below possible fish barrier (Silverado Trail culvert), and Vegetation Monitoring; Public participation by students and landowners are to increase this year.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding source: Proposition 50

Agencies: DFG and USGS

Priority/Goal Addressed: ERP Goals 4

Task Category: Implementation

Activity: Spawning Gravel/Riparian Habitat. The purpose of the Spawning Gravel/Riparian Habitat Program is to increase the availability of spawning gravel and rearing habitat, and subsequently monitor the results of these actions, for: (1) Sacramento River Basin Chinook salmon and steelhead trout in the reach of the mainstem Upper Sacramento River from Keswick Dam downriver to Red Bluff Diversion Dam; (2) American River Basin Chinook salmon and steelhead trout in the reach of the American River downriver from Nimbus Dam; and (3) Stanislaus River Chinook salmon and steelhead trout in the reach of the Stanislaus River downriver from Goodwin Dam.

Year 12 Accomplishments: Gravel placement occurs each year in the upper Sacramento River downstream from Keswick Dam. Gravel is replenished at existing augmentation sites as the placed gravel is washed downstream. New placement sites are being scoped and new projects addressing rearing and spawning habitat limitations are being considered. Monitoring of past projects is ongoing and a sediment budget is being developed. The American River gravel placement program has identified specific project sites as part of a multi-year series of projects, beginning in 2008, between Nimbus Dam and River Bend Park to address spawning habitat and rearing habitat limitations. Projects include mainstem gravel placement and side channel creation for spawning and rearing habitat targeting steelhead. Evaluating the effectiveness of past projects is ongoing.

The Stanislaus River program has identified rearing habitat as a key limitation to Chinook salmon so projects will target gravel placement to enhance rearing and spawning habitat. The NMFS Reasonable and Prudent Alternative for operations of the CVP and SWP included an action to place 50,000 cubic yards of gravel in the Stanislaus by 2014 and 8,000 cubic yards per year thereafter (for steelhead). Stanislaus projects will strive to meet this action. Evaluating the effectiveness of past projects is ongoing.

Year 12 Cost: \$1,000,000

Year 13 Proposed Work: Funding will be used for gravel restoration and rearing habitat projects on the Upper Sacramento, American, and Stanislaus rivers immediately downstream from Keswick, Nimbus, and Goodwin dams, respectively. Species to benefit include Sacramento, American and Stanislaus River Basin Chinook salmon and steelhead trout. The public involvement and permitting phases of project planning will determine final site selection in all three rivers. Monitoring will be incorporated into all projects to determine the effectiveness of projects at maintaining salmonid habitat. Specific gravel placement activities each year are dependent on watershed hydrology, which modifies instream habitat.

Year 13 Projected Cost: \$903,000

Funding Source: Federal (USBR and USFWS)

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Planning and Implementation

Activity: Suisun Marsh Implementation Plan (Jones & Stokes). This project completed the Programmatic EIR/EIS for the Suisun Marsh Plan the Ecosystem Restoration Program's regional implementation plan for the Suisun Marsh. Note that Jones & Stokes is now ICF International.

Year 12 Accomplishments: Complete Programmatic EIR/EIS for the Suisun Marsh Plan.

Year 12 Cost: Utilized existing funds (Funded \$1,050,000 in Year 6)

Year 13 Proposed Work: Complete final documents associated with the Programmatic EIR/EIS for the Suisun Marsh Plan.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested

Funding Source: Proposition 50

Agencies: DFG

Priority/Goal Addressed: ERP Goal 4

Task Category: Task Category: Planning

Activity: Suisun Marsh Implementation Plan (SRCD). This agreement allows SRCD to assist DFG by providing oversight & coordination functions to ensure that all participants involved with the development & preparation of implementation plans for the Suisun Marsh Implementation Plan perform & complete their tasks and deliverables. SRCD will conduct work to ensure NEPA/CEQA compliance. Initial phase of an EIS/EIR impact analysis will be conducted. The database system will be modified to ensure compatibility with other database systems used for the Ecosystem Restoration Program.

Year 12 Accomplishments: SRCD provided oversight and coordination of Suisun Marsh Implementation Plan activities. Project complete.

Year 12 Cost: Utilized existing funds (Funded \$310,000 in Year7)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 50

Agencies: DFG and Suisun Resource Conservation District

Priority/Goal Addressed: ERP Goal 4

Task Category: Task Category: Technical Support

Activity: Suisun Marsh Land Acquisition and Tidal Marsh Restoration-Elevation and Contaminant Surveys, Review of Land Acquisition Package, and Review of Property Appraisal.

ERP will acquire, by either fee title and/or conservation easement, up to 500 acres of land in northern or western Suisun Marsh with the exact location dependent upon willing sellers. The choice of this area for restoration was based upon the high potential benefit for native and at-risk species, contiguity with non-urban or similarly managed lands, the low potential for conflict with neighboring land use, the low risk of downstream flooding, and the low risk of negative salinity changes. The established Environmental Coordination Advisory Team list of selection criteria, in accordance with the Suisun Charter Implementation Plan, will be used to identify parcel(s) that are appropriate for tidal marsh restoration. Parcels must have the potential to include all features of a fully functional, self-sustaining tidal marsh including tidal sloughs and low, middle, and high marsh zones.

Year 12 Accomplishments: Identified parcels for acquisition. Resolved CEQA issue and acquired property. Conservation easement on Denverton parcel was completed.

Year 12 Cost: Utilized existing funds (Funded \$926,869.64 in Year 10)

Year 13 Proposed Work: Additional acquisition opportunities will be sought.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and Wildlife Conservation Board

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Implementation

Activity: Suisun Marsh Land Acquisition and Tidal Marsh Restoration - Public Notification and Site Selection.

This grant supports the public notification and site selection component of the Suisun Marsh Land Acquisition and Tidal Marsh Restoration project, by conducting public notifications, property owner contacts, compiling information, ensuring the project location is consistent with local general plans and has all necessary environmental documentation and permitting necessary to acquire the acreage identified.

Year 12 Accomplishments: On stand by to provide public notification, environmental compliance, and permitting for parcels belonging to willing sellers.

Year 12 Cost: Utilized existing funds (Funded \$16,500 in Year 9)

Year 13 Proposed Work: Continue on stand by awaiting willing sellers.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: Suisun Resource Conservation District and DFG

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Implementation

Activity: Suisun Marsh Protection. The Suisun Marsh Preservation Agreement (SMPA) was executed on March 2, 1987, among USBR, DWR, DFG, and Suisun Resource Conservation District. The revised SMPA was executed on June 20, 2005, to reflect significant events and changed conditions that had occurred since the original SMPA was signed. The objective of the SMPA is to assure that a dependable water supply is maintained to mitigate the adverse effects on the Marsh from CVP and SWP and a portion of the adverse effects of the other upstream diversions. USBR (CVP) is responsible for 40 percent of the construction and annual operation and maintenance costs associated with implementation of the SMPA; the State (SWP) is responsible for 60 percent of the implementation costs.

Year 12 Accomplishments: Reclamation is a principal participant with the other SMPA signatories and other interested agencies in developing a regional plan that balances implementation of the ERP Program, SMPA and other management and restoration programs within Suisun Marsh in a manner responsive to the concerns of stakeholders and based upon voluntary participation by private landowners. Reclamation is currently participating in development of an EIS/EIR for the Suisun Marsh Plan, which includes environmental compliance documentation for implementation of the proposed amendment to the Revised SMPA. A final draft of the EIS/EIR was released on December 6, 2011, and the proposed amendment to the revised SMPA would be implemented following completion of decision documents, anticipated in FY 2012.

Year 12 Cost: \$1,392,000

Year 13 Proposed Work: Funding will continue Federal participation with the State of California to identify structural and nonstructural actions for the protection and preservation of Suisun Marsh to improve water quality, while preserving the CVP storage yield. Funding will support Reclamation's participation with the California Department of Water Resources to ensure dependable water supply of adequate quantity and quality to protect wildlife habitat in the Marsh for the protection and preservation of fish and wildlife, including continued funding of operation and maintenance costs of the SMPA facilities and the anticipated implementation of the proposed amendment to the revised SMPA upon finalization of the SMP decision documents.

Year 13 Projected Cost: \$1,432,000

Funding Source: Federal

Agencies: USBR

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Planning and Implementation

Activity: Survival and Migratory Patterns of Juvenile Spring and Fall Run Chinook Salmon in the Sacramento River and Delta. This research project provides resource managers in California with a more comprehensive understanding of the response of juvenile salmon outmigration under a wide variety of flow conditions and Delta water management practices. Acoustic transmitters will be implant in critical life stages of Chinook salmon (*Oncorhynchus tshawytscha*) to track hatchery-raised and wild fall and spring smolts released annually over a period of three years. The effects of natural and anthropogenic changes in flow and related water project operations on their survival and movement patterns within the Sacramento River and Delta will be evaluated.

Year 12 Accomplishments: Project executed.

Year 12 Cost: No funds expended in Year 12.

Year 13 Proposed Work: Will place new monitors into the field, conduct physiological testing of juvenile salmonid response to tags, and conduct tag and release experiments with juvenile salmon.

Year 13 Projected Cost: \$1,746,955 (Funding for entire project)

Funding Source: Proposition 84

Agencies: DFG and UC Davis

Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 3

Task Category: Research

Activity: Terrestrial Weed Eradication Monitoring Protocol. This project assisted weed managers in conducting monitoring that effectively tracks the spread and control of invasive upland, wetland and riparian plant populations. Mapping and monitoring protocols track incidence and eradication of invasive weeds and provides data of a quality that can be shared and used in analysis.

Year 12 Accomplishments: Worked with partners on the data model and training materials, looking for ways to test the data model on early detection data and incorporation into CalFlora. Continue to develop the training web pages and materials and talk to Cal-IPC about reviewing and possibly using them in their training program. The Garmin toolkit prototype was documented. Develop presentation for the Weed Mapping Committee and a poster for the Cal-IPC Symposium.

Year 12 Cost: Utilized existing funds (Funded \$111,000 in Year 10)

Year 13 Proposed Work: None, project complete.

Year 13 Projected Cost: None

Funding Source: Proposition 204

Agencies: DFG

Priority/Goal Addressed: ERP Goal 5

Task Category: Task Category: Monitoring

Activity: UCD Project Review Office Services. This agreement is for UC Davis support in technical and peer reviews, workshops, training, and other relevant ERP activities.

Year 12 Accomplishments: Provided: 1) management of technical peer reviews of ERP projects, proposals (including 2010-2011 PSP), reports, conceptual models, and other work products; 2) coordination and facilitation of meetings, workshops, conferences, and related events; 3) development of training courses to address specific needs of the ERP; 4) technical writing and editing; 5) development and maintenance of data management and web-based information systems.

Year 12 Cost: Utilized existing funds (Funded \$3,999,997 in Year 10)

Year 13 Proposed Work: Continue to provide technical support as described in Year 12 activities.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: UC Davis

Priority/Goal Addressed: ERP Goals 1-6

Task Category: Task Category: Planning and Implementation

Activity: Upper Sacramento River Basin Chinook Salmon Escapement Monitoring Program (USFWS). The Upper Sacramento River Winter Chinook Carcass Survey monitors the annual abundance, migration timing, spawning distribution, and several life history characteristics of hatchery and natural winter-run Chinook salmon during the 2006-2012 spawning seasons.

Year 12 Activities: Spawner escapement surveys for winter-run Chinook salmon using carcass mark-recapture techniques were conducted. Data was collected on age, gender, body size, spawning success and spatial and temporal distribution of hatchery and natural origin winter-run Chinook salmon. Data analysis and report writing continued.

Year 12 Cost: Utilized existing funds (Funded \$496,210 in Year 7)

Year 13 Activities: Field activities will continue. Laboratory analysis to recover any coded-wire tags will be conducted. USFWS will finalize data entry, data proofing, and initiate data analyses.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 50

Agencies: USFWS and DFG

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Task Category: Monitoring

Activity: Water Acquisition. The two key objectives of the Water Acquisition Program (WAP) are to: (1) Provide supplemental water supplies for refuges, referred to as Incremental Level 4, for critical wetland habitat supporting resident and migratory waterfowl, threatened and endangered species, and wetland dependent aquatic biota [CVPIA Sections 3406 (b)(3) and (d)(2)]. (2) Acquire, land, water, and conveyance to improve spawning and rearing habitat and increase migration instream flows for fall, winter and spring run Chinook salmon and steelhead in support of the Anadromous Fish Restoration Plan [CVPIA Section 3406 (b)(3)].

Year 12 Accomplishments: In FY 2012, the WAP acquired approximately 56,130 af of Incremental Level 4 water supplies. In addition to the water acquisition cost, there are delivery costs to get the water to the refuges. Funding is provided under the Refuge Wheeling Conveyance Program. In FY 2012, \$2.5 million was used by the program to acquire water to supplement the quantity of water dedicated under (b)(2) for fish, wildlife and habitat restoration purposes.

Year 12 Cost: \$19,850,000

Year 13 Proposed Work: CVPIA required the acquisition of 100% of Incremental Level 4 refuge water supplies, approximately 160,000 acre-feet (af), by 2002, for various wetland habitat areas within the Central Valley of California. However, the WAP has not yet achieved this goal due to a variety of factors including water availability, water pricing, and funding. In FY 2013, the WAP plans to acquire approximately 56,000 af of Incremental Level 4 water supplies. Reclamation may acquire water supplies through short-term purchase agreements, purchase options, long-term water purchase agreements that require annual payments, and participation in groundwater banking. A large percentage of this water will be acquired within the San Joaquin Valley where most of the wetlands are located. Sources of water may include reservoir storage transfers, groundwater pumping, banked groundwater, and temporary or permanent transfers of surface supplies by water right holders or project contractors. Some water supplies may be transferred through the Delta for use on the San Joaquin Valley refuges. In addition to the water acquisition cost, there are delivery costs to get the water to the refuges. Funding is provided under the Refuge Wheeling Conveyance Program. Funds will also be used by the WAP to acquire water to supplement the quantity of water dedicated under (b)(2) for fish, wildlife and habitat restoration purposes. Acquisitions will focus on flows to support the Central Valley wide fish doubling goal as described in (b)(1).

Year 13 Projected Cost: \$19,600,000

Funding Source: Federal Funds (USBR and USFWS)

Agencies: DFG, USBR, and USFWS

Priority/Goal Addressed: 1 and 3

Task Category: Implementation

Activity: Water Quality Effects on Survival, Growth, and Feeding Performance in Larval Delta Smelt (*Hypomesus transpacificus*) from the Sacramento-San Joaquin Delta. The primary objective of this investigation is to assess the impacts of waterborne contaminants found in Delta water on larval delta smelt. The project team proposes to investigate the sub-lethal physiological stresses imposed on Delta smelt by utilizing excess larvae from the USFWS Livingston Stone National Fish Hatchery refugial population. Assessing these sub-lethal effects will lead to a better understanding of the role contaminants play in recent population collapses. To reach this objective the project team will: 1) Determine if exposure of delta smelt yolk-sac larvae to Delta water impairs 6-day post-hatch survival, growth rate, or ability to feed; 2) Assess any temporal influences, between April and July, on survival or feeding; and 3) Assess correlations between organophosphate, organochlorine, pyrethroid, or fungicide concentrations in Delta water with 6-day post-hatch survival, growth, or ability to feed.

Year 12 Accomplishments: Began collection of water and larval samples.

Year 12 Cost: \$224,760 (Funding for entire project)

Year 13 Proposed Work: Continue the collection of water and larval samples and begin initial analysis.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG and USFWS

Priority/Goal Addressed: PSP Priority 2/ERP Goal 6

Task Category: Research

Activity: West Coast Ballast Outreach Project. The goal is to reduce the number of aquatic nuisance species (ANS) that are introduced to the west coast of the U.S.A. via ballast water discharges from merchant vessels. This project will continue to improve knowledge and understanding of current ballast water management (BWM) strategies and ANS issues; to coordinate BWM activities along the west coast, and with Federal and international programs; to maintain open communication and promote cooperation between private industry, regulators, and researchers; and to bolster industry interest and participation in BWM issues. This training includes the distribution of educational materials, a website, and ballast water management practices. The project has been amended to encompass the most pressing aquatic invasive species (Eurasian mussels).

Year 12 Accomplishments: Workshop materials were adapted based on observation of workshops and 3 additional workshops were held for water and irrigation managers. The project website, which will be continually updated, went online.

Year 12 Cost: Utilized existing funds (Funded \$478,395 in Year 5)

Year 13 Proposed Work: Continue to provide education and outreach regarding ANS with focus on quagga/zebra mussels, includes updating educational material and holding and/or participating in workshops.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 204

Agencies: UC Davis and DFG

Priority/Goal Addressed: ERP Goal 5

Task Category: Education

Activity: West Stanislaus Irrigation District Fish Screen Intake Final Design Planning, Environmental Compliance and Permitting Project. West Stanislaus Irrigation District (WSID) will complete the final planning designs, environmental compliance and permitting of a new fish screen on their 347 cubic foot per second year-around diversion from the lower San Joaquin River, Stanislaus County. This is Phase II of the Project which includes detailed final engineering, refined construction cost estimates of a preferred alternative, bid specifications, necessary State and Federal environmental compliance and the necessary permits required to later construct (Phase III). Fifty percent cost share funding for this project is provided by USBR's AFSP.

Year 12 Accomplishments: N/A

Year 12 Cost: N/A

Year 13 Proposed Work: Complete agreement, implement project.

Year 13 Projected Cost: \$2,600,000 (Funding for entire project) (State Match to AFSP)

Funding Source: Proposition 50

Agencies: DFG, USBR, and WSID

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Task Category: Planning

Activity: Wetland and Rice Management to Limit Methylmercury Production and Export. This project undertakes measurements of labile carbon, as well as a suite of measurements of factors that are likely to affect mercury methylation activities, including the quality of organic carbon, total mercury, pH, etc. Porewater methylmercury will be measured to give site specific (within each type of pilot manipulation) information on the effects of the treatments. Builds upon an existing grant that tests whether changes in rice harvesting methods, or control of water levels in wetlands, will lower the rates of microbial methylmercury production (from inorganic mercury).

Year 12 Accomplishments: 2010/2011 PSP selection. Agreement executed and work began.

Year 12 Cost: \$197,416 (Funding for entire project)

Year 13 Proposed Work: USGS will continue project implementation.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: USGS

Priority/Goal Addressed: PSP Priority 3/ERP Goal 6

Task Category: Task Category: Planning

Activity: Wildlife and Vegetation Response to Experimental and Restoration of Flooded Riparian Forest Habitat for The Cosumnes River Preserve. This project includes the following long-term goals: 1) use engineered levee breaches and grading to restore an active and regular flooding regime to the Oneto Horseshoe and Denier II properties (owned and managed by DFG and TNC) within the Cosumnes River Preserve; 2) restore approximately 600 acres of flooded riparian forest habitat using a combination of horticultural restoration and natural process restoration techniques where possible, each carried out in a controlled experimental context; 3) measure wildlife and plant community response to the habitat restoration treatments; 4) monitor changes in surface and ground water hydrology; and 5) monitor geomorphic changes occurring throughout the restored site using remote sensing techniques. Moreover, this restoration and monitoring project will be one of the first such projects to enumerate changes in Bay-Delta ecosystem services, specifically groundwater recharge, soil carbon storage, and flood abatement, from floodplain reconnection.

Year 12 Accomplishments: The project was initiated during Year 12 and activities included execution of subcontracts, baseline data collection and preliminary data analyses for the biophysical monitoring component, completion of the vegetation-monitoring plan, and research group coordination.

Year 12 Cost: \$2,055,022 (Funding for entire project)

Year 13 Proposed Work: Continue avian, biophysical, and vegetation monitoring activities.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1, 3, and 4

Task Category: Monitoring

Activity: Yolo-Solano Conservation Partnership. Project includes riparian habitat enhancements, irrigation canal re-vegetation, farm pond habitats, and wildlife and vegetation monitoring along with studies on ecosystem services, outreach, and education. Conservation strategies successful in Yolo County will be transferred to Solano county.

Year 12 Accomplishments: Stocking of Sacramento Perch in Farm Ponds. Ten ponds were created. Extensive riparian and upland plantings of high quality habitat for wildlife on working landscapes were completed.

Year 12 Cost: Utilized existing funds (Funded \$2,257,973 in Year 8)

Year 13 Proposed Work: Complete

Year 13 Projected Cost: None

Funding source: Proposition 50

Agencies: DFG and Yolo County Resource Conservation District

Priority/Goal Addressed: ERP Goals 1, and 4

Task Category: Implementation

Activity: Yuba City Fish Screen Project. The purpose of this project is to provide cost share funding for construction of a new 74 cfs intake structure for the City of Yuba City that includes a fish screen and increased diversion capacity. The new facility has been designed to meet the State and Federal protection criteria for anadromous salmonids. The project will be located on the Feather River in Sutter County just upstream of the City's current intake location. Fifty percent cost share funding for this project is provided by USBR's AFSP.

Year 12 Accomplishments: The City of Yuba City completed all required permits, the construction bid process, and awarded the construction contract.

Year 12 Cost: Utilized existing funds (Funded \$500,000 in Year 10) (State Match to AFSP)

Year 13 Proposed Work: The City of Yuba City is expected to begin construction on the new intake facility in July 2012.

Year 13 Projected Cost: Utilizing existing funds, no additional funds requested.

Funding Source: Proposition 84

Agencies: DFG

Priority/Goal Addressed: ERP Goals 1 and 3

Task Category: Implementation

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