Ecosystem Restoration Program Plan
Year 12 Annual Report

(State FYs 2011-12; Federal FY 2012)

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

Introduction

Ecosystem Restoration Program Plan (ERPP) Year 12 identifies activities that are scheduled to be accomplished during State Fiscal Year 2011-2012 and for Federal Fiscal Year 2012. California Department of Fish and Game fulfills its role as the State's Implementing Agency for the Ecosystem Restoration Program (ERP), and is currently managing 74 previously funded projects and approximately 18 newly funded projects totaling $23.9 million. These projects are designed to meet the goals and objectives of the ERP. The ERPP also describes progress made to date. Public review for this ERPP is provided through the ERP website (http://www.dfg.ca.gov/erp/).

Background

To reduce conflicts between interest groups and move toward the vision for a restored Sacramento-San Joaquin Delta (Delta) ecosystem, the ERP was created in 2000. In a collaborative effort between the California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries Service), collectively referred to as the ERP Implementing Agencies, ERP continues to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species.

In 2009, the legislature approved a series of bills commonly known as the Delta Reform Act (Act) which created a new Delta governance structure including the Delta Stewardship Council (DSC), to develop a comprehensive Delta Plan, focused on achieving the "coequal goals" of providing a more reliable water supply and protecting, restoring and enhancing the Delta ecosystem. The Act also created the Sacramento-San Joaquin Delta Conservancy (Conservancy) as a primary Delta ecosystem restoration entity. The ERP continues to function with guidance from the DSC and the Delta Plan, and in coordination with the Conservancy. Other provisions of the Act require the development of instream flow criteria and biological objectives for aquatic and terrestrial species dependent on flow for the Delta in 2010 (complete). The current draft Delta Plan requires the State Water Board to develop flow criteria for other streams in the watershed by 2018. Additionally, the Bay Delta Conservation Plan (BDCP) is being developed under the Natural Communities Conservation Plan Act (NCCPA) and the Federal Endangered Species Act to:

- Provide for the conservation and management of Covered Species within the Planning Area;
- Preserve, restore and enhance aquatic, riparian and associated terrestrial natural communities and ecosystems that support Covered Species within the Planning Area through conservation partnerships;
- Allow for projects to proceed that restore and protect water supply, water quality, and ecosystem health within a stable regulatory framework;
- Provide a means to implement Covered Activities in a manner that complies with applicable State and federal fish and wildlife protection laws, including California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA), and other environmental laws, including California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA);
- Provide a basis for permits necessary to lawfully take Covered Species;

- Provide a comprehensive means to coordinate and standardize mitigation and compensation requirements for Covered Activities within the Planning Area;
- Provide a less costly, more efficient project review process which results in greater conservation values than project-by-project, species-by-species review; and
- Provide clear expectations and regulatory assurances regarding Covered Activities occurring within the Planning Area.

If BDCP is approved as a Natural Communities Conservation Plan (NCCP) and a Habitat Conservation Plan (HCP), it will be implemented under its own governance structure, conservation strategy, implementing agreement, monitoring program and success criteria. In addition, if approved as a NCCP and HCP, BDCP would be included in the Conservancy's Comprehensive Delta Plan.

As a result of the Delta Reform Act, BDCP, the continuing critical decline in fisheries populations, the release of the Central Valley Salmon and Steelhead Draft Recovery Plan (NMFS 2009), the issuance of new Biological Opinions for spring and winter run salmon, Central Valley steelhead, green sturgeon and Delta smelt related to operation of the state and federal water projects, as well as recommendations from the Pelagic Organism Decline (POD) working group, the Year 12 focus of the ERP is on the Delta and the following issues:

Better understanding of the Delta system and impact of management actions: The Delta ecosystem will continue to be intensively managed into the future. Management actions coupled with targeted research have considerably improved our understanding of the Delta as a dynamic system. Over the last few decades, our knowledge about the interacting effects of Delta inflows and outflows, water diversions, toxic chemicals, invasive species and Delta hydrology on sensitive aquatic species has been improved. However, it is still necessary to continue restoration activities, within an adaptive management strategy that seeks to find a sustainable balance between human and environmental needs for water. Research to address the uncertainties identified in the Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) remains necessary to increase the effectiveness of future actions and to guide adaptive management.

Better understanding of linkages – restoration, species, and water quality: At the beginning of Stage 1, increasing the amount of shallow water habitat in the Delta was a preferred restoration action. However, through pilot projects and research conducted in Stage 1, we now have a better understanding of the linkages between shallow water habitat restoration and its effect on target species, nonnative aquatic vegetation, predation and water quality. For example, research and pilot projects are providing insight on how methylmercury enters the Bay-Delta system, affects the environment, and risks to human health. It is now recognized that actions taken to improve or increase shallow water habitat in the Delta may cause significant adverse impacts related to the methylization of mercury and an increase in organic carbon. Therefore, while seasonally- or tidally-flooded habitats are believed to provide high quality feeding and growing areas for a number of native species, these intermittently flooded habitats present problems with mercury mobilization. This demonstrates that there are no simple fixes for the Delta. For mercury, implementing best management practices to manage seasonally flooded wetlands, while sequestering mercury, is an area where additional work is needed.

Importance of invasive species: During Stage 1, it became apparent that invasive species were a more serious problem to restoration than had been previously identified. A much more aggressive program of prevention, early detection, eradication, and intensive management will be needed in the future. Information that is more recent indicates that variation in habitat characteristics over time and space, similar to what existed historically, may favor native species over exotic species that have invaded the estuary.

Climate change: Over the last 100 years, sea level at California's Golden Gate Bridge has been rising and now sits about seven inches higher than it did in 1920. Recent scientific evidence predicts the trend to warmer global temperatures will accelerate melting of glaciers, which will release more water into the oceans. Climate change predictions of a decreasing world snowpack means that sea level rise would have permanent and far-reaching impacts in the Delta. Scientists who are studying these effects predict up to a 6° Celsius temperature increase by 2100, a loss of one-third of the world's snowpack by 2050, and up to three feet rise in sea level by 2100. Warmer temperatures and a higher sea level would also have important implications for species and ecosystems. Saltwater would intrude further into the Delta, possibly reducing low salinity habitats preferred by some species to narrow zones within leveed channels. Higher water temperatures may make the Delta intolerable to some native species, while becoming more attractive to some non-native invaders. These are serious issues for the Delta, most of which has subsided between 5-25 feet below sea level. Given the time necessary to secure and restore habitats, methods to provide corridors, linkages and maintaining habitat within this dynamic system is of immediate importance.

In addition, flooding from heavy winter rains and spring run-off poses an ongoing threat in the Delta. High flows can cause levee over-topping or acceleration of levee erosion that can lead to instability, seepage and levee breaks. Storm runoff is likely to become more intense with more winter precipitation falling in the mountains as rain rather than snow. Average winter flows and flood events are likely to become larger in the future, which could increase the threat of levee failure and flooding of Delta islands. An important priority for the Delta Region is to synthesize hydrodynamic and hydraulic modeling information to guide preparation of ecologically based plans for restoring aquatic resources.

Adaptive management: Continued planning and subsequent implementation of several large-scale restoration and resource management projects within an adaptive management context will help to fulfill remaining habitat and process-related Multi-Species Conservation Strategy (MSCS) goals. Specific species may require particular restoration actions to provide essential life history requirements. All continuing and newly implemented projects should be monitored to assess performance and to inform other efforts. ERP has dedicated resources to develop performance measures and utilizing an adaptive management framework. The performance measures will be designed to asses how new restoration projects and related resource management activities support and fulfill ERP goals and objectives. The process of refining the measures will include scientific peer review and coordination with other restoration plans, including the forthcoming Delta Plan and BDCP, so as to maximize regional effectiveness.

Federal Funding. Federal Bay-Delta funding for Federal fiscal year 2012 is $387.91 million. Approximately $60 million contributes to ecosystem restoration through various agencies, programs, partnerships, operations, and direct habitat restoration projects.

State Funding. The primary sources of funding for ERP projects include the following:

- Proposition 204-Safe, Clean, Reliable Water Supply Act (1996)
- Proposition 13-Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act (2000)
- Proposition 50-Water Quality, Supply and Safe Drinking Water Projects Act (2002)
- Proposition 84-Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006

Beginning with Year 8, projects were funded under The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84). One hundred fifteen million dollars ($115 million) of Proposition 84 funding is designated towards expenditures or grants for ERP implementation.

For Year 12, the ERP is requesting $27.3 million for program implementation (a combination of newly encumbered funds and reappropriated funds from previous years). Approximately $23.9 million will be used to fund 18 new projects. Approximately $3.4 million supports staff that will manage these new projects in addition to the 74 projects funded from prior years, as well as supporting staff that participate in various planning and monitoring efforts that affect the Delta ecosystem.

Year 11 Accomplishments and Continuing Activities

The following is a brief list of ERP activities and some of the major accomplishments in Year 11; more detail is provided in Appendix A.

Anadromous Fish Restoration and Fish Screen Programs. ERP continued its contribution to the Anadromous Fish Restoration (AFRP) and Anadromous Fish Screen Programs (AFSP). In the Sacramento Valley, ERP directly supported priority fish screen projects such as the American Basin, Battle Creek, M&T/Llano Seco, Meridian Farms Water Company, the Sacramento Valley/Delta Fish Screen Program, Sacramento-Central Valley Fish Screen Program, and the Yuba City Fish Screen Project. In the San Joaquin Valley, ERP supported fish screen projects such as the Patterson Irrigation District and the West Stanislaus Irrigation District. AFRP works with local watershed groups and other local partners to carry out locally developed and supported watershed restoration plans, giving priority to actions that restore natural channel and riparian habitat values. The AFSP is in the process of screening the largest diversions on the Sacramento River as diverters volunteer and funds become available. The AFSP can also provide up to 50 percent cost share funding for a fish screen project. The AFSP also works to optimize fish screen funds with partnership-based funding from sources such as the Wildlife Conservation Board (WCB), other DFG sources, and local sources. The AFSP oversees a technical team, comprised of experts from federal and State agencies, that provides fish screen design review and technical guidance to water diverters. AFSP screens are important to protect listed and candidate species such as the winter-run and spring-run Chinook salmon, and Central Valley steelhead.

Battle Creek Salmon and Steelhead Restoration Project. Through Year 11, ERP contributed more than $60 million to the Battle Creek Salmon and Steelhead Restoration Project, and continued its involvement in planning and implementation. The Battle Creek Salmon and Steelhead Restoration Project is among the largest cold-water anadromous fish restoration efforts in North America and will restore approximately 42 miles of habitat in Battle Creek, and an additional six miles of habitat in its tributaries. It will also help restore critically imperiled winter-run and spring-run Chinook salmon and Central Valley steelhead. Partners include the Battle Creek Working Group, the Battle Creek Watershed Conservancy, U.S. Bureau of Reclamation (USBR), USFWS, NOAA Fisheries Service, and DFG.

***Bay Delta Conservation Plan*.** ERP continues to provide BDCP with technical assistance including the development of biological goals and objectives, identifying baseline ecological conditions, identifying potential conservation actions, analyzing different water conveyance approaches, selecting appropriate methods for scientific analysis, development of an adaptive management and monitoring program, conducting data analysis, peer review, habitat mapping, and other activities necessary for development of a NCCP and HCP. The BDCP Conservation Strategy is designed to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework (BDCP Chapter 1, pg. 1-1) Federal and State agencies, environmental organizations, fishery agencies, water agencies and other organizations are working together on the plan. ERP Implementing Agencies will coordinate with the BDCP process to assure consistency with a final ERP Conservation Strategy. If adopted and approved by the federal and state agencies, the BDCP will result in the issuance of long-term permits for those activities that support Delta ecosystem restoration, water supply and power generation, such as water conveyance and facility maintenance and improvements.

California Central Valley Flood Protection Plan (FloodSafe) and the California Water Plan. DFG will strive to assure that the Central Valley Flood Protection Plan (CVFPP), including its accompanying Conservation Strategy, is consistent with the ERP Conservation Strategy when finalized. ERP will continue to provide DWR with data support, document review, as well as policy and technical advice related to the development of both the CVFPP and the California Water Plan (CWP). The CVFPP is legislatively mandated 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. The first public draft of the CVFPP was released in December of 2011 and is due to be adopted by the California Central Valley Flood Protection Board by July 1, 2012. The CVFPP will be revised and adopted every 5 years after its initial adoption. The CWP provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The CWP is updated every five years (next update due in 2013) and presents basic data and information on California's water resources including water supply evaluations and assessments of agricultural, urban, and environmental water uses to quantify the gap between water supplies and uses. The CWP also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs, and projects to address the State's water needs.

Contaminants and Water Quality. ERP's Water Quality Program (WQP) goal is to improve Delta water quality for all uses including in-Delta agricultural use, drinking water, and

environmental water uses. The ERP has primarily focused on the use of Delta water for drinking and, to some degree, for agricultural use. ERP's WQP has a broader focus on environmental water quality, primarily the needs of Central Valley fish and wildlife species. ERP has funded efforts to increase dissolved oxygen in the Stockton Deepwater Ship Channel, and in Year 11 continued research on mercury cycling and transport (particularly in managed wetlands), and projects related to pesticides and legacy contaminants.

ERP Conservation Strategy. In July 2011, the DFG completed a draft for public review of the "Conservation Strategy for Restoration of the Sacramento-San Joaquin Delta Ecological Management Zone and the Sacramento and San Joaquin Valley Regions" (ERP Conservation Strategy) (DFG 2011). The Draft ERP Conservation Strategy responds to analysis of Stage 1 research, restoration, and monitoring activities that determined the CALFED through-Delta conveyance alternative did not achieve sufficient progress in sustaining viable populations of endangered and threatened aquatic species. ERP coordinated with the pelagic organism decline (POD) working group, Delta Vision, Delta Risk Management Strategy (DRMS), and the DSC when considering developing current ecosystem restoration goals, objectives, and priorities. The current draft strategy also follows the principle of a single blueprint for ecosystem restoration and species recovery in the Delta in accordance with the principles of ecosystem-based management. The ERP Implementing Agencies will encourage all agencies, groups, or individuals interested in resource conservation and management in the Delta to use the final strategy document as a shared vision to coordinate and integrate actions. It will serve as a key reference document for the Delta Plan to guide ecosystem restoration and other actions. The final ERP Conservation Strategy will be recommended for inclusion into the Central Valley Flood Protection Plan.

ERP Grant Management. During Year 11, the ERP managed 86 grants, which includes twelve that were completed, eight projects that initiated work in Year 11, and six more that will be executed in Year 12 (Appendix A). Considering the critical decline in fisheries populations, the release of federal recovery plans for anadromous and other native Delta fish species, recommendations from the POD working group, and results and recommendations from the Stage 1 project monitoring and research, the ERP implemented a focused 2010/2011 Project Solicitation Package (PSP) to address priority restoration activities identified in the Draft ERP Conservation Strategy. The focus of this PSP was on the Delta and at-risk native species that use the Delta, particularly POD species. Proposals were submitted in March of 2011. ERP Implementing Agency Managers, in coordination with the DSC, recommended 18 projects to the Director of DFG and twelve projects were selected for execution in FY 2011-2012.

Table 1 lists the types and number of projects funded by the ERP through Year 11. Note that most of the projects provide multiple benefits; the table below merely lists them by the primary type of work being done. Specific information about any specific project may be found at the ERP website: http://nrm.dfg.ca.gov/ERP/projects.aspx

Table 1. Types and Number of Restoration Projects Funded by ERP Through Year 11

Type of Restoration Project	Amount Approved	Project Count
Riparian Habitat	$156,701,611	79
Fish Screens	$128,257,893	68
Ecosystem Water and Sediment Quality	$96,409,601	100
Hydrodynamics, Sediment Transport, and Flow Regimes	$71,975,234	47
Upland Habitat and Wildlife Friendly Agriculture	$39,019,142	6
Fish Passage	$38,802,842	10
Local Watershed Stewardship	$34,900,850	78
Shallow Water and Marsh Habitat	$28,918,552	41
At-Risk Species Assessment	$26,533,160	33
Non-Native Invasive Species	$24,933,914	18
Administrative or Program Support	$23,480,651	21
Harvestable Species Assessment	$17,958,478	28
Technical Support	$10,185,984	8
Environmental Water Management	$5,491,182	6
Environmental Education	$5,363,590	28
Lowland Floodplains and Bypasses	$4,796,428	4
River Channel Restoration	$3,473,610	2
Estuary Foodweb Productivity	$1,239,240	2
Total	**$718,441,963**	**579**

Note: Changes in numbers reflect projects that are in progress or have been completed. Projects previously reported that have been withdrawn, canceled, or combined with others have been removed. A projects type may have been changed to a project type that is a better match to its primary function.

Fish Passage Improvement Program. ERP continued its partnership in the Fish Passage Improvement Program (FPIP), an interdisciplinary team of biologists and engineers, which identifies and evaluates the potential to modify or remove structures that impede the migration of anadromous fish within the Central Valley. FPIP is an element of the ERP and is housed in the Department of Water Resources (DWR). FPIP works in partnerships with the CALFISH program, DFG, Fish Passage Forum, local agencies, landowners, NOAA Fisheries Service, and the USFWS.

Fish Restoration Program Agreement. Fish Restoration Program Agreement (FRPA) is an agreement between DFG and the DWR that addresses satisfying the requirements of the USFWS, NOAA Fisheries Service Biological Opinions and DFG Incidental Take Permit (ITP) to mitigate the ongoing State Water Project (SWP) Delta Pumping Facilities impacts on CESA covered fish species. This agreement commits DFG 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 will work cooperatively with and assist DWR in establishing the management and financial framework necessary to implement the FRPA program. DWR, with assistance from DFG, will begin a process to fund, plan, and implement actions, including aquatic habitat restoration, for

delta smelt, longfin smelt, winter-run and spring-run Chinook salmon, Central Valley steelhead, Central Coast steelhead and green sturgeon to mitigate impacts to these species caused by the SWP Delta Pumping Facilities. 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");
- NOAA Fisheries Service Biological Opinion RPA Actions 1.2.6 (participate in the restoration of Battle Creek);
- NOAA Fisheries Service 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).

Prior to implementing specific projects, DWR, with DFG's assistance, will obtain any necessary permits and complete environmental compliance, such as preparing documents required pursuant to CEQA, NEPA and ESA.

FRPA is consistent with the BDCP Planning Agreement, DWR and DFG agree that the mitigation actions pursuant to the FRPA could also be considered BDCP Early Implementation Actions intended to mitigate ongoing SWP Delta Pumping Facilities impacts on covered fish species. The locations and general nature of the mitigation actions proposed by the FRPA are consistent with the preliminary discussions of conservation areas and actions for the BDCP and the draft ERP Conservation Strategy.

Non-Native Invasive Species Program. The three goals of the Non-native Invasive Species Program (NIS Program) are 1) preventing new introductions; 2) limiting the spread or eliminating populations of NIS; and 3) reducing the harmful ecological, economical, social and public health impacts resulting from infestations of NIS. As part of the Bay-Delta (formerly CALFED) NIS Program, a Strategic Plan and an Implementation Plan were developed, and the Non-Native Invasive Species Advisory Council (NISAC) was established. The NISAC no longer meets; however, the USFWS, DFG, and other stakeholders continue to coordinate and implement activities and projects that address NIS issues in the Bay-Delta area of concern. ERP continues its support for the NIS program, through program funding and directly through NIS targeted project grants.

***Performance Measures and Conceptual Models*.** Performance measures are used to assess the progress of program goals and objectives using quantifiable indicators. They are a vital part of an adaptive management approach, providing useful information about areas of success as well as weakness, to assist in identifying critical areas needing adjustment. Successful performance measurement promotes expenditures of limited resources to the highest program priorities, maximizing progress and minimizing waste, and ultimately helping to ensure that outcomes meet expectations. ERP is in the process of developing performance measures to assess how new restoration projects and related resource management activities support and fulfill the ERP goals and objectives, and include those compiled during earlier ERP phases and for Delta Vision. The process of refining the performance measures will include scientific peer review and coordination with other restoration plans in the region, including the Delta Plan and BDCP, to maximize regional effectiveness.

Conceptual models are part of a suite of analytical tools that came out of the DRERIP effort. These DRERIP conceptual models capture the most recent understanding of ecological processes, habitats, stressors, and species interactions within the system. The associated evaluation protocol allows for transparency, standardization, and documentation of conservation decisions. The model outputs are useful for identifying the range of effects – positive and negative, intended and unintended – and gauging the magnitude, predictability, and reversibility of those anticipated effects. These tools also set the foundation for adaptive management by identifying science needs and actions suitable for hypothesis testing. In keeping with the use of "best available science", these models have undergone peer review by independent scientists and have been reviewed by the Delta Independent Science Board. Several DRERIP species and ecosystem conceptual models have been completed and are being used to review conservation actions proposed for the BDCP. ERP continues to work with the Delta Independent Science Board to refine and further develop the DRERIP conceptual models for important Delta fish species and critical habitats. Currently, efforts are under way to better define the attributes of physical habitats that are desired in each area, and refine habitat targets for the Ecological Management Units (EMUs) to better align with the resources and other considerations of feasibility (e.g., land elevations).

New Activities for Year 12

The 2010/2011 PSP selection panel, comprised of the ERP Implementing Agencies, as well as representatives from other state and federal agencies that work closely with the ERP, including the Delta Science Program and the Interagency Ecological Program (IEP), assessed the scientific merit of eligible proposals and their relevance to the PSP priorities. The selection panel recommended funding 15 projects for approximately $20.1 million. Three of the 15 were proposals that the panel would reconsider if revised, which means the applicant would need to make changes based on the panel recommendations in order to receive an award. Approximately 30 percent of the total amount awarded is for on-the-ground restoration/remediation projects. In addition to these 15 projects, three new projects for approximately $3.7 million have been chosen through the Directed Actions process. The Directed Actions process allows additional projects to be identified and implemented during Year 12, which address an urgent or timely issue or unique opportunity in response to immediate ERP priorities. The Directed Action proposal review process evaluates potential ecosystem restoration projects that meet the priorities of CALFED planning documents.

References

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NMFS (National Marine Fisheries Service). 2009. Public Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter‐run Chinook Salmon and Central Valley Spring‐run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead. Sacramento Protected Resources Division. October 2009. (http://swr.nmfs.noaa.gov/recovery/cent_val/Public_Draft_Recovery_Plan.pdf)

Appendix A. Year 11 and Year 12 Activities

Appendix A lists ERP's Year 11 activities and Year 12 projected activities. Unless otherwise indicated, the ERP projects and activities listed in Appendix A 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.** The 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 the ERP objectives, including the ERP Conservation Strategy; and 5) updating conceptual models with newly developed information to be available for subsequent resource management decisions (adaptive management).

Terms Used in the Table. One of the challenges of the 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 Appendix A are as follows:

Activity:	Refers to the project title and includes a brief description of the desired outcome from the project.
Year 11 Activities:	Lists the significant accomplishments related to the activity that happened between July 1, 2010 and June 30, 2011.
Year 11 Costs:	Refers to how much funding was granted, allocated, contracted, or spent and staff resources allocated between July 1, 2010 and June 30, 2011 for the activity.
Year 12 Activities:	Refers to efforts related to the Activity that are projected to take place between July 1, 2011 and June 30, 2012.
Year 12 Projected Costs:	Refers to the best projection of how much funding will be granted, allocated, contracted, or spent and staff resources allocated between July 1, 2011 and June 30, 2012 for the activity.
Funding Source:	Lists the source of funding for the activity.
Agencies:	Agencies or entities that will ensure that the activity is carried out.
Priority/Goal Addressed:	2010/2011 PSP Priority (DFG 2010) or ERP Goal (CALFED 2000 a-d)
Task Category:	Refers to the category that the activity represents. There are seven task categories: planning, research, implementation, education, monitoring, program support, technical support.

Appendix A. Year 11 and Year 12 Activities

Activity: <u>A Systems Biology Assessment of EDCs in the Delta</u>. Assessment of 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, assesses estrogenic and anti-estrogenic activity in these five sample types. Assesses reproductive behavior after exposure to bifenthrin and ibuprofen. Develops monitoring tools that can be applied to assess site-specific reproductive fitness of wild populations in the Bay-Delta System.
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $486,411
Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 6
Task Category: Research and Monitoring

Activity: <u>American Basin (Natomas Mutual) Fish Screen and Habitat Improvement (Phase IV-Construction) Project</u>. Improves fish passage conditions, aquatic and riparian habitats, and prevents possible straying and entrainment of at-risk species on the Sacramento River and the Natomas Cross Canal. Consolidates diversions and installs a positive barrier fish screen on a newly constructed intake facility on the Sacramento River. The project will include construction of a 434 cfs Sankey Diversion with a state of the art fish screen and conveyance improvements, and the demolition and site restoration associated with decommissioning the Northern and Bennett Pumping Plants, and the Verona Dam on the Natomas Cross Canal. The U.S. Bureau of Reclamation, through the Central Valley Project Improvement Act's Anadromous Fish Screen Program has committed 50 percent cost share to this Project.
Year 11 Activities: Prepared CEQA/NEPA document and obtained permits, commenced construction.
Year 11 Cost: Funded in Year 10 at $9,000,000
Year 12 Activities: Continue construction.
Year 12 Projected Cost: No additional funds.
Funding Source: Proposition 204
Agencies: DFG, NOAA Fisheries Service, USFWS and USBR
Priority/Goal Addressed: ERP Goal 1
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: American Basin (Natomas Mutual) Fish Screen and Habitat Improvement Project. Removes a diversion dam, consolidates diversions and adds a state-of-the-art fish screens to Natomas Mutual Water Company's diversion on the Sacramento River, between Verona and the American River, and on the Cross Canal.
Year 11 Activities: Construction: Installed H-piles, completed tremie pour for the pump station foundation. Worked on training wall anchorage, on access bridge piers and abutments, and the first portion of the canal. Right-of-Way Acquisition: Ongoing to complete all acquisitions for the Sankey Diversion.
Year 11 Cost: Funded in Year 4 at $12,600,000
Year 12 Activities: Continue construction work.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG, NOAA Fisheries Service, USFWS and USBR
Priority/Goal Addressed: ERP Goals 1-3
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 11 Activities: Funded habitat restoration projects that improve habitat, survival, and passage of anadromous fish in Antelope Creek, Cottonwood Creek, Mill Creek, and the American, Cosumnes, Merced, Mokelumne, Sacramento, Stanislaus, Tuolumne, and Yuba rivers. The program will continue to collect fish population data for Bear, Cottonwood, and Cow creeks and in the San Joaquin, Stanislaus, and Yuba rivers to facilitate evaluation of restoration actions.
Year 11 Cost: $6,070,000
Year 12 Activities: 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 12 Projected Cost: $6,075,000
Funding Source: Federal (USBR and USFWS) Funds
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

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.
Year 11 Activities: In 2010, fish screens were installed at Sutter Mutual State Ranch (128 cfs), Davis Ranch (Sycamore Mutual) Site #2 (65, cfs), River Garden Farms #2 (32 cfs) and Lake California (11 cfs). In addition, in 2010 construction was initiated on the Patterson Irrigation District Fish Screen (195 cfs) on the San Joaquin River and the project completed in 2011, and the Phase I Natomas Mutual) Fish Screen Project (389 cfs) on the Sacramento River that replaces two existing diversions on the Natomas Cross Canal.
Year 11 Cost: $5,712,000
Year 12 Activities: 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 are expected to need construction funding in FY 2012 including Natomas Mutual Water Company and RD 2035.
Year 12 Projected Cost: $6,049,000
Funding Source: Federal (USBR and USFWS) Funds
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Planning and Implementation

Activity: Arundo Eradication and Coordination, Phase II. Phase II of the *Arundo donax* eradication and coordination project. Provided funding for ongoing monitoring and follow-up treatments for 5 Phase I projects, and adds 5 new partners. Treated 1,059 *Arundo* clumps; treated 31 acres of *Arundo*; with nearly 100 percent of treated *Arundo* under control; 37 percent is considered eradicated; Information gained has been published and/or posted on the TAdN website. Surveyed 315 miles of stream.
Year 11 Activities: Closed out completed work as described above.
Year 11 Cost: Funded in previous years starting in Year 3 for a total of $2,033,859.
Year 12 Activities: Project completed Year 11.
Year 12 Projected Cost: None
Funding Source: Proposition 50
Agencies: DFG
Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Assistance to Farmers in Integrating Agricultural Activities with Ecosystem Restoration (AFI).</u> ERP's Draft Stage 1 Implementation Plan (CALFED 2001a) established multi-regional priorities for a coordinated ERP effort to support "wildlife friendly agriculture." Chapter 7 of Proposition 50, which provided funds to the ERP, states, "not less than $20 million shall be allocated for projects that assist farmers in integrating agricultural activities with ecosystem restoration." Funds in this category have been dedicated to focused solicitation and directed actions to implement projects that benefit native fish, giant garter snakes and other MSCS species on agricultural lands. In addition, a portion of the funds in this category have been allocated to support technical assistance partnerships to assist landowners in implementing agricultural activities benefiting MSCS wildlife and fish, and provide a linkage between State and federal programs to benefit farmers and wildlife. Funds were awarded to the following:

- A Socio-Economic and Behavioral Analysis of Farmers' Decisions to Adopt or Reject the CALFED Conservation Initiatives
- American Basin Working Landscapes Project
- Delta Working Landscapes
- Evaluation of Giant Garter Snake Response to CALFED's Environmental Water Account Program: Adaptive Management for Wildlife Friendly Farming (Closed Year 11)
- Farmer and Rancher Assisted Ecosystem Restoration and Watershed Stewardship Projects (Closed Year 11)
- Fish Friendly Farming Environmental Certification Program
- Providing Landowner Incentives to Encourage Riparian Restoration and Natural River Processes on Working Landscapes
- Rice-Cover Crop Rotation Pilot Program
- 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
- Sandhill Crane Use Of Agricultural Lands In The Sacramento-San Joaquin Delta Region
- Selby Creek Stream Habitat Restoration and Riparian Revegetation Project (Started Year 11).
- Yolo-Solano Conservation Partnership for Habitat on Working Lands

Year 11 Activities: Two of the 12 projects were completed, executed Selby Creek Stream Habitat Restoration and Riparian Revegetation Project.

Year 11 Cost: $475,000 additional funds were provided in previous years.
Year 12 Activities: Continue implementation the ten projects remaining.
Year 12 Projected Cost: Funded in prior years, no additional funds are requested.
Funding source: Proposition 50 AFI
Agencies: California Department of Food and Agriculture, DFG, Department of Conservation, Natural Resources Conservation Service, USFWS, U.S. Geological Survey
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Battle Creek Salmon and Steelhead Restoration Project.</u> Restores 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 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:

- Anadromous Fish Habitat Monitoring for the Battle Creek Salmon and Steelhead Restoration
- Battle Creek Salmon and Steelhead Restoration Project
- Battle Creek Salmon and Steelhead Restoration Project-Phase 1A
- Outreach and Technical Services to Support Landowner and Watershed Resident's Participation in the Battle Creek Salmon and Steelhead Restoration Project

Year 11 Activities: Phase 1A-The majority of fish screen and ladder construction at the Eagle Canyon and North Battle Creek Feeder (NBCF) sites occurred in 2010. At the NBCF site, the contractor applied hydro seeding to the construction uses areas and performed site restorations. They worked on installing conduits for final permanent electrical power and extending gratings at the fish screen to canal flume transition. The contractor also provided supports for the Government to perform rock scaling on the new access road cutslopes. At the Eagle Canyon site, completed the fish ladder baffle wall remediation works, installation of the fish screen structure, and performed the dry testing of the screen and louvers. Continued installing grating supports and beams, the primary and secondary trash racks, guard railings, access platform and stairs to the trail. Worked on installing electrical conduits, conductors and equipment enclosure for the control boxes.

Phase 1B-A contract was awarded in June 2010 for construction of the Inskip Powerhouse bypass and tailrace connector on South Fork Battle Creek near Coleman Diversion Dam. Commenced excavation, placement, and backfill of the 66-inch penstock bypass pipe, completing approximately another 514 linear feet of pipeline. Lined Eagle Canyon Canal Diversion with 4 to 8-inch cobbles; performed concrete work at the penstock bypass chute, lower jump basin and upper jump basin; and finished excavating the tailrace connector outlets.

Year 11 Cost: $57,672,500 in previous years.
Year 12 Activities: Complete Phase 1A, complete fish screen and ladder construction at the Eagle Canyon and NBCF sites occurred in 2010; fish screen and ladder metalwork will be completed late 2011. For the Asbury/Baldwin Creek site, develop design specifications and award contract. Phase 1B, complete implementation of Phase 1B. Phase 2 complete funding agreements, and select two construction contractors to carry out work on South Fork Battle Creek and its tributaries.
Year 12 Projected Cost: $5,300,000
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

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Bay Delta Conservation Plan (DFG).</u> The BDCP is a HCP and NCCP being prepared to meet requirements of the FESA, CESA, 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 NOAA Fisheries Service. 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 11 Activities: Funded eight positions which provided BDCP technical assistance including the development of biological goals and objectives, identifying baseline ecological conditions, identifying potential conservation actions, analyzing different water conveyance approaches, 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 11 Cost: $917,709.00
Year 12 Activities: Seven staff will continue to provide technical assistance to BDCP.
Year 12 Projected Cost: $919,678.00
Funding Sources: Proposition 84.
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Bay Delta Conservation Plan (Federal).</u> The BDCP is a HCP and NCCP being prepared to meet requirements of the FESA, CESA, 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 NOAA Fisheries Service. 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. FWS and NOAA Fisheries Service are providing technical assistance on development and analysis of the BDCP.
Year 11 Activities: BDCP investigated water conveyance alternatives to move CVP and SWP water either through or around the Delta while restoring the Delta ecosystem. BDCP addressed water conveyance and project operations, habitat restoration, and other stressors to covered species. Options currently being considered include a wide range of actions found in 10 alternatives identified in the administrative draft EIS/R documentation.
Year 11 Cost: $6,500,000
Year 12 Activities: FWS and NOAA Fisheries Service continue providing technical assistance for analysis of ecological and biological effects of the proposed projects
Year 12 Projected Cost: $7,000,000
Funding Sources: Federal (USBR).
Agencies: DFG, DWR, NOAA Fisheries Service, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1-6.
Task Category: Planning

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Blacklock Mercury Monitoring.</u> The San Francisco Bay RWQCB required mercury and methyl mercury monitoring as part of the provisions in the Blacklock Restoration Project Monitoring Plan. Mercury concentrations were monitored in 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 monitored for total and methyl mercury in Blacklock and Nurse Slough over a three-year period to evaluate whether total and methyl mercury levels increased or decreased because of the restoration. This project conducts final analysis of the data generated.
Year 11 Activities: Funded DFG to conduct final analyses and analysis of the data generated.
Year 11 Cost: $91,276
Year 12 Activities: Complete final analyses and analysis of the data generated.
Year 12 Projected Cost: $82,911
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goal 6
Task Category: Monitoring

Activity: <u>Blacklock Restoration Project Monitoring.</u> 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 11 Activities: N/A
Year 11 Projected Cost: N/A
Year 12 Activities: Begin monitoring of levee breach geometry, inundation regime, surface elevation, changes in sedimentation, slough network evolution, native marsh vegetation
Year 12 Projected Cost: $382,250
Funding Source: Proposition 84
Agencies: DFG, DWR
Priority/Goal Addressed: ERP Goals 1, 2, 4, and 6
Task Category: Monitoring

Activity: <u>BREACH III: Evaluating and Predicting 'Restoration Thresholds' in Evolving Freshwater-Tidal Marshes.</u> This consolidated project includes the Cosumnes-Yolo Terrestrial-Aquatic Ecotone Project ("COYOTE Project") and “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 ownership, 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 proposal, which was recommended for funding with future funds by the Science Program PSP Selection Panel, may be considered for achieving the physical and geomorphic processes evaluation. The COYOTE project ; A Unified Approach to Monitoring Floodplain and Freshwater Tidal Marsh Restoration in the Cosumnes River Preserve and Yolo Bypass (2004 Monitoring PSP)" will monitor connectivity and key ecological variables within the Yolo Bypass and the Cosumnes River Preserve. The program will compare similar ecosystems in the Yolo Bypass and Cosumnes River systems to assess project performance and the impacts of seasonal and interannual hydrologic variability. The results should be a comprehensive monitoring and research approach that is closely coordinated with the stakeholder planning process. The technical approach should also greatly improve abilities to make sound decisions in regards to future management, restoration potential, and its relationship to flood control needs in the lower bypass.
Year 11 Activities: Continue to conduct work that will provided a predictive level of understanding about (1) how abiotic and 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) how restoration processes influence local flooding and levee erosion over the course of the restoration. Continued development with a quantitative approach models to predict ecological responses to change in habitat structure to interpret alternative restoration and flood conveyance scenarios.

Year 11 Projected Cost: Funded in Year 8 at $2,447,998
Year 12 Activities: Continuation of Year 11 activities.

Year 12 Projected Cost: Funded in Year 11, no additional funds requested.
Funding Source: Proposition 84
Agencies: DFG, NOAA Fisheries Service, USFWS
Priority/Goal Addressed: ERP Goals 1, 2, 4, and 6
Task Category: Monitoring and Research

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Butte Creek Spring-run Chinook Salmon Life History Investigation.</u> A partnership between California State University, Chico Research Foundation and the California Department of Fish and Game, will continue the Butte Creek spring-run Chinook salmon (SRCS) life history investigation for an additional three years. 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 11 Activities: Continued salmon escapement monitoring.

Year 11 Projected Cost: Funded in previous years, total project funding reduced to $291,661 in Year 11.
Year 12 Activities: Continuation of Year 11 activities.

Year 12 Projected Cost: Funded in Year 11, no additional funds requested.
Funding Source: Proposition 50
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Monitoring and Research

Activity: <u>CALFED Coordination.</u> 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 11 Activities: Attended interagency meetings and coordinated with applicants on processing Section 408 and 404 requests. Continued coordination with State of California DWR and Delta Stewardship Council.

Year 11 Projected Cost: $100,000
Year 12 Activities: 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 12 Projected Cost: $100,000
Funding Source: Federal
Agencies: USACE
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Program Support

Appendix A. Year 11 and Year 12 Activities

Activity: CALFED NIS Program (USFWS). The Stockton USFWS office provides coordination and leadership to the CALFED ERP Non-native Invasive Species (NIS) Program (NISP). USFWS Supported the objectives of CALFED ERP Strategic Goal (1) through the implementation of three identified elements focusing on nonindigenous species (NIS) management, coordination, and prevention. 1) Coordinated with NIS agency and stakeholder teams to implement and administer the NIS Programs. 2) Targeted pathways for zebra mussels by surveying tailored boats and enhance traveler awareness by expanding these surveys as well as implementing Traveler Information Systems in California. 3) Developed "The Bay Delta Rapid Response Plan for Dreissenid Mussels," and technical assistance working group for response to zebra mussel infestations. Developed an economic analysis for a California Aquatic Invasive Species (AIS) Rapid Response Fund (RRF) that addresses the economic and institutional aspects of establishing a RRF for AIS in California.
Year 11 Activities: Facilitated six workshops to water-based groups throughout the State on the prevention and early detection of aquatic invasive species using the training module developed by UC Extension-Sea Grant. Prepared Final Zebra Mussel Rapid Response Plan. Conduct an economic analysis to provide narrative and quantitative information on the costs, potential funding sources, and administration scenarios for a dedicated California Aquatic Invasive Species (AIS) Rapid Response Fund.
Year 11 Cost: ERP funded in Year 7 at $749,283.
Year 12 Activities: The Service will reinforce cross-agency collaboration in its Bay-Delta Non-Native Invasive Species Program (NISP). The program will focus on preventing the introduction of new invasives (ex., quagga mussels), limiting or eradicating existing invasives (ex., *Egeria densa*), and reducing adverse impacts from infestations.
Year 12 Projected Cost: ERP Project completed in Year 11. Federal funds continue to support the NISP.
Funding Sources: Proposition 50 and 84
Agencies: USFWS
Priority/Goal Addressed: ERP Goal 5
Task Category: Planning and Implementation

Activity: CALFED Non-Native Invasive Species (NIS) Program (DFG). DFG will work with the USFWS Non-Native Invasive Species (NIS) Program and Stakeholder Teams to implement and administer the NIS program, as developed and documented in the NIS Strategic and Implementation Plans.

Year 11 Activities: Provided funding for DFG Staff to continue coordination with USFWS NIS Program, implementation of actions described in the State Aquatic Invasive Species Plan, and work on priority terrestrial weed actions in the CALFED area, and regulations for restricting the importation of invasive species.
Year 11 Cost: $100,000
Year 12 Activities: Continue and build on Year 11 activities.
Year 12 Projected Cost: $100,000
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>CALFED Program Management, Oversight, and Coordination.</u> 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 11 Activities: Management, oversight, and coordination of CALFED activities.
Year 11 Projected Cost: $2,000,000
Year 12 Activities: Management, oversight, and coordination of CALFED activities.
Year 12 Projected Cost: $2,000,000
Funding Source: Federal
Agencies: USBR
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Program Support

Activity: <u>Central Valley Project Improvement Act (CVPIA) Contribution.</u> 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, Riparian Habitat/Spawning Gravel, and Water Acquisition programs. More information CVPIA accomplishments and activities can be found at http://www.usbr.gov/mp/cvpia/.
Year 11 Activities: See Year 11 Activities for AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Riparian Habitat/Spawning Gravel, and Water Acquisition programs.
Year 11 Cost: $15,000,000 (Funds included in Year 11 AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Riparian Habitat /Spawning Gravel, and Water Acquisition programs).
Year 12 Activities: 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 Projected Cost: $15,000,000 (Funds included in Year 12 AFRP, AFSP, Battle Creek Restoration, Clear Creek Restoration, Dedicated Project Yield, Riparian Habitat /Spawning Gravel, 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: <u>Clear Creek Anadromous Salmonid Monitoring Program.</u> A comprehensive salmonid monitoring program that provides 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 11 Activities: Results from the monitoring program were presented in presentations at the Bay Delta Science Conference, San Joaquin River Conference, meetings of the Clear Creek Technical Team, the Annual CVP OCAP Biological Opinions Review by the Delta Science Council, and a Salmon Escapement Project Workteam meeting. Posters of this work were presented at the Salmonfest at Coleman National Fish Hatchery and the Bay Delta Science Conference, Endangered Species Fair in Chico and the Red Bluff Discovery Center Watershed Celebration.
Year 11 Cost: Funded in Year 6 ($1,974,068.00)
Year 12 Activities: Development of full reports.
Year 12 Projected Cost: No additional funds.

Funding Source: Proposition 50
Agencies: DFG, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Monitoring

Activity: <u>Clear Creek Environmental Water Program.</u> This project will develop a written on-the-ground in-season operational plan for the recommended Environmental Water Program (EWP) 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 2012 or 2013 on Clear Creek. The monitored test of a planned mid-level flow is expected to have great geomorphic and ecological significance. It will provide critical experience and date to form the foundations of discussions that could lead to the adoption of a new operational plan that would produce regular enhanced flows that are fundamental to significant improvements and maintenance in the downstream ecosystem of Clear Creek. The overall vision for pilot EWP flow augmentation on Clear Creek is to release discharges of sufficient magnitude, duration and frequency to reactivate 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 11 Activities: No activity due to USBR reconsideration of whether or not to move forward with the project.
Year 11 Cost: Funded in Year 10 at $813,745.00
Year 12 Activities: Develop a written on-the-ground in-season operational plan for the recommended EWP 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 2012 or 2013.
Year 12 Projected Cost: Funded in Year 10
Funding Source: Proposition 84
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Planning and Implementation

Activity: <u>Clear Creek Restoration.</u> 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 11 Activities: 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 11 Cost: $1,051,000
Year 12 Activities: 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.
Year 12 Projected Cost: $905,000
Funding Source: Federal (USBR and USFWS)
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1-4
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Complementing Water Planning Efforts for the Delta and Sacramento River: Application of the Ecological Flows Tool.</u> 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. Conducts a set of refinements to increase the SacEFT's utility, and constructs a new Delta ecological flows tool (DeltaEFT) branch of the software. Provides the ability to link explicitly upstream (Sacramento River) ecological responses evaluated with SacEFT to ecosystem responses in the Delta evaluated with DeltaEFT.
Year 11 Activities: Continued refinements to the SacEFT model and application, and development of the DeltaEFT model.
Year 11 Cost: Funded in Year 8 at $1,715,533
Year 12 Activities: Complete revisions to the North of Delta off Stream Storage analysis and submit to DWR. Continue working towards completing DeltaEFT Database and Software.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning

Activity: <u>Corona and Twin Peaks Mine Drainage Treatment Project.</u> Clean up of drainage from three mine sites on private property using semi-passive techniques, serving as a model for successfully cleaning up abandoned mines for public benefit. Documents the effectiveness of semi-passive biogeochemical treatment technology to remediate the impacts of discharge from remote inactive legacy mercury mine sites. The project area is in the James Creek sub-watershed, tributary to Pope Creek, a major tributary to Lake Berryessa, Putah Creek and finally the Yolo Bypass.
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $1,530,550
Funding Source: Proposition 13
Agencies: DFG
Priority/Goal Addressed: PSP Priority 3/ERP Goal 6
Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Cosumnes River Preserve Perennial Pepperweed Control Project.</u> Based on inventory and continued monitoring of existing Lepidium populations at the Cosumnes River Preserve, this project develops targeted research about control of Lepidium focused on physical and chemical aspects of the soil and on the response of surrounding vegetation to Lepidium populations.
Year 11 Activities: Completed monitoring perennial pepperweed biology and invasion, which included mapping, investigating growth patterns and new patch establishment, and gathering background datasets (including LiDAR, and Virtual Herbarium data). Completed eradication and ecological monitoring, including monitoring the effects of proposed eradication treatments on non‐target species, soil chemical and physical properties, potential pre‐emergent effects of the herbicide chlorsulfuron, soil seed bank to establish herbicide effects and the active restoration potential for experimental eradication treatments. Designed an adaptive management framework for weed management. Created a perennial pepperweed growth and new patch establishment model.

Year 11 Cost: Funded in Year 6 at $ 481,634
Year 12 Activities: Project completed in Year 11.
Year 11 Projected Cost: None
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Research

Activity: <u>Cow Creek Fish Passage and Flow Improvement Project.</u> 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 removed, approximately ten miles of spawning habitat to anadromous salmonids will be made available.
Year 11 Activities: N/A
Year 11 Cost: N/A
Year 12 Activities: Remove the dam and siphon structure, opening up ten miles of potential habitat for anadromous salmonids and, in the process, be an outreach and education tool to work with other landowners and encourage their participation in removing and/or modifying other diversion dams in the Cow Creek watershed.
Year 12 Projected Cost: $2,000,000
Funding Source: Proposition 84
Agencies: Western Shasta RCD, DFG
Priority/Goal Addressed: ERP Goals 1-4
Task Category: Implementation

Activity: <u>Dedicated Project Yield.</u> 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 11 Activities: Funding was 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.

Year 11 Cost: $800,000
Year 12 Activities: 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. The May 2003 Decision on Implementation of Section 3406(b)(2), will be implemented for the eighth year in 2011; upstream actions will be implemented; and monitoring and evaluation to assess the effectiveness of (b)(2) environmental measures will continue. A portion of the funds will be used for litigation costs.
Year 12 Projected Cost: $800,000
Funding Source: Federal (USBR and USFWS)
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Implementation and Monitoring

Activity: <u>Delta Water Legislation-Instream Flow Guidelines.</u> Provides staff for DFG's Instream Flow Program that will enable the DFG to meet its obligations under SBX7 1 and Public Resources Code 10000-10005. The DFG will develop and recommend to the Delta Independent Science Board flow criteria and quantifiable biological objectives for aquatic and terrestrial species of concern dependent on the Delta. The primary objective of flow studies is to develop scientific information on indicators of ecosystem health. Information on relationships between streamflow and physical stream habitat for critical aquatic species' lifestages would be developed on selected priority streams. Anticipated projects may include the study of the following information: relationships of flow to aquatic habitat, 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.
Year 11 Activities: Coordinated internally with DFG staff, and externally with NOAA Fisheries Service and USFWS. Assemble a team to prepare biological objectives and recommendations for flow criteria. Assemble various documents supporting biological objectives and flow recommendations (those that are based on scientific understanding). Hold orientation meeting with the Department's Water Branch, Fisheries Branch, and Regions 1 through 4. Set Priorities for establishing flow criteria and biological objectives. Develop draft flow recommendations. Incorporate comments from NOAA Fisheries Service, USFWS, and others. Prepare final flow recommendations report for the State Water Board.

Year 11 Cost: $478,138
Year 12 Activities: Continue instream flow work on priority streams.
Year 12 Projected Cost: $244,524
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed:
Task Category: Task Category: Planning

Activity: <u>Development of a Comprehensive Central Valley Adult Chinook Salmon Escapement Monitoring Plan.</u> The Central Valley Chinook Salmon Escapement Monitoring Plan will be a long-term comprehensive plan designed to estimate population status and trends in abundance of adult Central Valley salmon in a statistically valid manner. Development of the plan will include review of existing monitoring programs, and development of revised programs including escapement estimation, coded-wire tag recovery, aging programs, and a coordinated data management and reporting system.
Year 11 Activities: Completed the Central Valley Chinook Salmon Escapement Monitoring Plan.
Year 11 Cost: Funded in Year 7 at $373,351
Year 12 Activities: None, project complete.
Year 11 Projected Cost: None
Funding Source: Propositions 50 and 84
Agencies: DFG, USFWS, NOAA Fisheries Service
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Monitoring and Research

Appendix A. Year 11 and Year 12 Activities

Activity: <u>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.</u> Improves 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 will 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 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $356,483
Funding Source: Proposition 84
Agencies: DFG, USGS
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1-4
Task Category: Research

Activity: <u>Development of best management practices to reduce methyl mercury exports and concentrations from seasonal wetlands in the Yolo Wildlife Area.</u> The pilot and demonstration projects will develop Best Management Practices (BMP) to reduce monomethylmercury (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 11 Activities: 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. Other tasks include : evaluating management measures associated with summer grazing and evaluating plant species to determine which minimize MMHg production after flooding and develop into BMP
Year 11 Cost: $1,300,000
Year 12 Activities: Continue with Year 11 activities.
Year 12 Projected Cost: Amendment for $501,000 was approved to continue monitoring of several parameters recommended by the Science Advisory Panel.
Funding Source: Proposition 13
Agencies: DFG
Priority/Goal Addressed: ERP Goal 6
Task Category: Research, Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Dutch Slough Tidal Marsh Restoration Project-Dutch Slough Phase I Implementation.</u> The purpose of this project is to restore 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 11 Activities: Final Environmental Impact Report certified and approved by DWR.
Year 11 Cost: Funded in Year 4 at $1,500,000
Year 11 Activities: Negotiations/collaboration with adjacent property owners and other stakeholders continue. Final engineering design and permitting.
Year 11 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DWR
Priority/Goal Addressed: ERP Goals 1-4
Task Category: Planning

Activity: <u>Ecological Performance of Fishes in an Ever-changing Estuary: The Effects of Nutritional Status on Environmental Stress Tolerance in Sturgeon.</u> 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.
Year 11 Activities: 2010/2011 Directed Action.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $472,991
Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1
Task Category: Research

Activity: <u>Ecosystem Restoration Program (ERP) Oversight & Coordination.</u> As an ERP implementing agency, the NOAA Fisheries Service 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. NOAA Fisheries Service, through an interagency process, is also involved in planning in order to meet the requirement of FESA, CESA, and NCCPA.
Year 11 Activities: ERP planning and implementation 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 11 Cost: $150,000
Year 12 Activities: NOAA Fisheries Service will continue with ERP planning efforts.
Year 12 Projected Cost: $150,000
Funding Source: Federal
Agencies: NOAA Fisheries Service
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Program Support

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Ecosystem Restoration Program Database Development, Management and Integration.</u> This agreement allowed the Contractor to assist the DFG, NOAA Fisheries Service, USFWS, and ERP with effectively monitoring restoration projects, conducting research associated with implementation to support the adaptive management process, tracking the success of approved restoration projects, and assisted with the financial review by the Department of Finance.
Year 11 Activities: Database application development, data support, data delivery, management, administration and coordination.
Year 11 Cost: Funded in previous years at $406,884
Year 12 Activities: Project complete.

Year 12 Projected Cost: N/A
Funding Source: Propositions 50 and 84
Agencies: DFG, Pacific States Marine Fisheries Commission
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Program Support

Activity: <u>Ecosystem Restoration Program Grant Management Services.</u> Provides administrative grant and contract management services to ERP projects.
Year 11 Activities: 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 11 Cost: Funded in Year 10 at $1,511,494.00
Year 12 Activities: Continue on going activities through 2011.

Year 12 Projected Cost: Funded in Year 10
Funding Source: Proposition 50, and General Fund
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Program support

Activity: <u>Ecosystem Restoration Program Implementation Staff.</u> 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, NOAA Fisheries Service, 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 11 Activities: Released draft ERP Conservation Strategy. Implemented 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). Staff continued with planning, coordination, and grant management activities.
Year 11 Cost: $2,695,614
Year 12 Activities: Respond to comments and completion of ERP Conservation Strategy. Continue ERP planning, coordination, and grant management.

Year 12 Projected Cost: $2,169,936
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Planning and Implementation

Activity: <u>Ecosystem Restoration Program Performance Measures Staff.</u> DFG staff support to comply with increased accountability requirements of bond-funded activities and fulfills the legal mandate to monitor and evaluate program performance by developing ERP indicators and performance measures, including methods to meet regulatory compliance mandates for managed and restored wetlands.
Year 11 Activities: Performance measure staff worked on developing biological performance measures to judge the success of ERP actions and support adaptive management. Performance measure staff also drafted performance measure for the DSC's Delta Plan.
Year 11 Cost: $373,100
Year 12 Activities: Continue to develop and refine biological performance measures to judge the success of ERP actions and support adaptive management.

Year 12 Projected Cost: $292,962
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Monitoring

Activity: <u>Estimating the Abundance of Sacramento River Juvenile Winter Chinook Salmon with Comparisons to Adult Escapement.</u> The primary goals of this project are to sample year round with rotary-screw traps in order to: (1) generate juvenile winter Chinook production indices (JPI); (2) to correlate these indices with estimated escapement from adult counts at RBDD and the winter Chinook carcass survey; and (3) define seasonal and temporal patterns of abundance of winter Chinook passing RBDD.
Year 11 Activities: Continued sampling at rotary trap at Red Bluff Diversion Dam. Throughout the period, 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. Produced annual report production
Year 11 Cost: Funded in Year 7 at $2,282,630
Year 12 Activities: With the remaining funds, the project will collect samples from July 1 through September 30, 2011. The project is continuing to operate using an alternate funding source. Throughout the period, 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 Projected Cost: No additional ERP funds. USBR will fund work starting 10/1/2011.
Funding Source: Proposition 50
Agencies: DFG, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Monitoring

Activity: Evaluation of Floodplain Rearing and Migration in the Yolo Bypass. Examines restoration actions considered to improve passage for upstream-migrating fish such as salmon and sturgeon, and documents specific areas in the Bypass that present passage barriers under different hydrological conditions. Collects information on juvenile salmon residence time and survival in the Bypass. Analyzes an existing 12-year database to identify specific thresholds (e.g., flow and inundation criteria) for enhanced lower trophic productivity in the Bypass. Collects new data and analyzes existing data regarding environmental factors favoring rearing habitat and survival for native fishes in the Yolo Bypass to develop performance criteria for management. Evaluates the use of sulfur isotopes as a chemical "fingerprint" of floodplain use on otoliths. To determine if this tool would allow broad-scale, retrospective analyses on all fish species of interest to evaluate use of the Yolo Bypass, as well as determine age and growth during floodplain residency.
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $878,020
Funding Source: Proposition 84
Agencies: DFG, DWR
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1-4
Task Category: Research

Activity: Evaluation of Giant Garter Snake Response to CALFED's Environmental Water Account Program: Adaptive Management for Wildlife Friendly Farming. Evaluate the potential effects of rice field fallowing on giant garter snakes to meet information needed to establish valid regulatory guidelines for the CALFED EWA program. In addition, assess giant garter snake habitat use in selected habitat restoration projects using the techniques USGS developed at Colusa National Wildlife Refuge so that these habitats can be adaptively managed in their agricultural setting.
Year 11 Activities: ERP planning and implementation efforts, included: 1) ERP Conservation Strategy Implementation; 2) ERP performance measures; 3) ERPP; 4) environmental compliance needs; 5) ERP project review; 6) species and habitat modeling. Completed final report.
Year 11 Cost: Funded in Year 8 at $1,187,367.18
Year 12 Activities: Project complete.
Year 11 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: DFG, USGS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Research

Appendix A. Year 11 and Year 12 Activities

Activity: <u>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.</u> This proposed 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.
Year 11 Activities: 2010/2011 Directed Action.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $2,980,196
Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 2
Task Category: Research

Activity: <u>Fish Passage Improvement Program.</u> 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 11 Activities: Supported FPIP staff conducting FPIP studies. Projects include: Modification of the Millville Dam, Bear Creek Fish Passage Surveys, Deer Creek Fish Passage, Fish Passage at Daguerre Point Dam, Weir No. 2 and Willow Slough Fish Passage (Completed in Year 11), and Calaveras River Fish Passage.
Year 11 Cost: $1,307,000
Year 12 Activities: Continue engineering and design of fish passage improvements in watersheds critical for meeting recovery goals for listed salmonids.
Year 11 Projected Cost: Funded in Year 11.
Funding Source: Proposition 84
Agencies: DWR, DFG
Priority/Goal Addressed: ERP Goals 1, and 3
Task Category: Planning

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Fish Restoration Program Agreement (FRPA).</u> FRPA is an agreement between DFG and DWR that will address satisfying the requirements of the USFWS, NOAA Fisheries Service 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.
Year 11 Activities: N/A
Year 11 Cost: N/A
Year 12 Activities: DFG assistance to 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 Projected Cost: $1,150,000
Funding Source: State Water Contractors
Agencies: DFG, DWR, NOAA Fisheries Service
Priority/Goal Addressed: ERP Goals 1 - 4
Task Category: Planning and Implementation

Activity: <u>FloodSafe.</u> DFG will provide DWR with data support, document review, and policy and technical advice related to the development and updating the CVFPP and the CWP. The CVFPP is for the long-term improvement of the flood management system in California's Central Valley. The CWP provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The CWP, which is updated every five years, presents basic data and information on California's water resources including water supply evaluations and assessments of agricultural, urban, and environmental water uses to quantify the gap between water supplies and uses. The CWP also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the State's water needs.

Year 11 Activities: Improve data to support the CVFPP and associated Conservation Strategy. Provide ecological and conservation planning support for the CVFPP and associated Conservation Strategy. Provide technical and policy advice to the CWP.

Year 11 Cost: $3,220,262
Year 12 Activities: Continue activities listed above.
Year 12 Projected Cost: Funded in Year 11.
Funding Source: Proposition 13
Agencies: DFG, DWR
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Gasburg Creek Revegetation Project.</u> Revegetation and maintenance for the ERP-01-N09 Tuolumne River fine Sediment Management project (Gasburg Creek Project).
Year 11 Activities: Work complete except for Final Reports (water quality and revegetation).
Year 11 Cost: Funded in Year 9 at $79,838
Year 12 Activities: Complete Final Reports (water quality and revegetation).
Year 12 Projected Cost: Funded in previous years.
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goal 2
Task Category: Implementation

Activity: <u>Groundwater Monitoring Plan for the Lake Davis Pike Eradication Project.</u> 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 11 Activities: N/A
Year 11 Cost: N/A
Year 12 Activities: Begin ground water monitoring and reporting activities.
Year 12 Projected Cost: $49,000
Funding Source: Proposition 50
Agencies: DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Monitoring

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 11 Activities: The Service will continue to assist implementing Ecosystem Restoration Program restoration grants and to work to approve additional projects as funding and authorization allow.

The Service 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 invasives (ex., quagga mussels), limiting or eradicating existing invasives (ex., Egeria densa), and reducing adverse impacts from infestations.

The Service'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.

The Service 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.

The Service 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.

The Service 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.

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

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

The Service, 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 11 Cost: $4,000,000
Year 12 Activities: Continue with Year 11 activities.
Year 12 Projected Cost: $4,306,000
Funding Source: Federal
Agencies: USFWS
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning, Research, and Implementation

Activity: <u>Hamilton Airfield Wetlands Restoration.</u> The project includes 988 acres of a former military airfield and adjacent California State Lands Commission areas. The site is located on San Pablo Bay, 4 miles east of the city of Novato, in Marin County, California. The levee-protected site has subsided below the elevation of surrounding properties, including the tidal wetlands immediately adjacent to San Pablo Bay. This wetlands restoration project would advance the beneficial reuse of dredged 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 11 Activities: The final placement of operations and maintenance dredged material completed the Hamilton Airfield wetland shaping continue with a completion date expected in the first quarter FY12. Contracts for long-term site water management, levee raising, site security, and an architectural and engineering task order for breach and completion plan design will be awarded this fiscal year.
Year 11 Cost: $11,750,000
Year 12 Activities: Continue restoration activities including shaping the seasonal portion of the wetland, raise several levees 1-2 feet, the planting of native plants, and architectural and engineering for breach and completion plan design.
Year 12 Projected Cost: $8,250,000
Funding Source: Federal
Agencies: USACE
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Implementation

Activity: <u>Hamilton City, CA.</u> 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 11 Activities: The design agreement was executed in 2005 and 90% of the designs were completed in FY 2010. With carryover funds, a Limited Reevaluation Report is being finalized in June 2011, which evaluated some of the design refinements.
Year 11 Cost: Funded in Year 10 at $400,000
Year 12 Activities: Execute Project Partnership Agreement (Dec 2011). Award contract for Valley Elderberry Longhorn Beetle plantings and stream gauge (Aug 2012). Award contracts for acquisition and propagation of plants and installation of half of the restoration area (Aug 2012).
Year 12 Projected Cost: $8,000,000
Funding Source: Federal
Agencies: USACE
Priority/Goal Addressed: ERP Goals 1, 2, and 5
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Hill Slough West Restoration Project, Phase I-Preliminary Restoration Design, Environmental Documentation and Permitting.</u> 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 of this three-phase project.

Year 11 Activities: Phase 1. Preliminary Restoration Design, Environmental Documentation, and Permitting. This phase includes preparation of the preliminary restoration design and plan, as well as an interpretive program, environmental documents, and permits.
Year 11 Cost: Additional $93,500 to the Year 9 funds for a total of at $646,642.
Year 12 Activities: Continue with ongoing activities.
Year 12 Projected Cost: Funded in previous years.
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Planning and Research

Activity: <u>Historical Ecology for the Sacramento-San Joaquin Delta.</u> Documents the ecological and hydrogeomorphic characteristics of Sacramento-San Joaquin Delta prior to significant Euro-American modification. The effort will use well-developed methods for the synthesis of historical data through Geographic Information System (GIS) development and analysis. This historical reconstruction will illustrate, to the extent possible, patterns of variation and extent of habitats throughout the Delta to understand better species support functions and controlling physical processes within the native landscape. Such information will provide a basis for identifying target locations and physical conditions necessary to restore functional habitat mosaics within the projected future Delta landscape.
Year 11 Activities: Continued restoration activities including deliverables: GIS of historical conditions documenting target habitat types (e.g. tidal channels, riparian forest, ponds and lakes, tidal marsh-upland ecotone, etc.) and a final report describing the methodology, results, and management implications.
Year 11 Costs: Funded in Year 9 ($350,000).
Year 12Activities: Continue with final data compilation, organizational, and georeferencing-associated tasks. Work with technical advisors and seek their review our draft GIS and findings. Make final revisions to GIS, analyses, and conceptual models of process and function in the historical Delta landscape. Produce final report and graphics.
Year 12 Projected Costs: Funded in Year 9
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Research

Appendix A. Year 11 and Year 12 Activities

Activity: Identifying habitat characteristics that support native fish in the Delta and Suisun Marsh. Researches 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 11 Activities: 2010/2011 PSP selection**.**
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $1,152,195
Funding Source: Proposition 84
Agencies: UC Davis, 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 11 Activities: USFWS will provide 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. Conduct field studies on priority streams as well as data analyses and model construction on selected streams
Year 11 Cost: $303,552
Year 12 Activities: Continue with Year 11 activities.
Year 12 Projected Cost: $437,326
Funding Source: Proposition 84
Agencies: DFG, USFWS
Priority/Goal Addressed: ERP Goal 6
Task Category: Task Category: Research

Activity: Integrated Regional Wetland Monitoring / Petaluma Marsh Expansion Project. This project will monitor and evaluate the Petaluma Marsh Expansion Project as a secondary site within the Integrated Regional Wetland Monitoring Project (IRWM).
Year 11 Activities: Completed fieldwork and worked on final report.
Year 11 Cost: Funded in Year 7 at $235,000
Year 12 Activities: Complete final report.
Year 12 Projected Costs: Funded in Year 7
Funding Source: Proposition 50
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1, 2, and 4
Task Category: Task Category: Research and Monitoring

Activity: <u>IRWM Fish and Productivity Data Analysis and Interpretation.</u> 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 11 Activities: Data analysis of fish and productivity data collected by IRWM.
Year 11 Cost: $420,000
Year 12 Activities: Continue data analysis of fish and productivity data collected by IRWM.
Year 12 Projected Costs: Funded in Year 11.
Funding Source: Proposition 84
Agencies: Association of Bay Area Governments (ABAG), DFG
Priority/Goal Addressed: ERP Goals 1, 2, and 4
Task Category: Task Category: Research and Monitoring

Activity: <u>Lake Davis Pike Eradication Project-Implementation Phase.</u> The 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 11 Cost: Funded in Year 8 at $11,470,742.
Year 11 Activities: Monitoring.
Year 12 Projected Cost: Funded in Year 8,
Funding Source: Proposition 84
Agencies: USFS, DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Task Category: Implementation and Monitoring

Activity: <u>Linking Habitat and Spatial Variability to Native Fish Predation.</u> 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 grandi*s)), 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 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $730,307
Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1-4
Task Category: Research

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Lower Clear Creek Aquatic Habitat and Waste Discharge Improvement Project.</u> The objectives of the Lower Clear Creek Aquatic Habitat and Waste Discharge Improvement Project are 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. Note: This project is a reconsider if revised project and the details are still in development.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project in Year 13 (July 1, 2012).
Year 12 Projected Cost: $4,500,000
Funding Source: Proposition 13 and/or 84
Agencies: DFG, Western Shasta Resource Conservation District, Bureau of Land Management (BLM)
Priority/Goal Addressed: PSP Priority 1 and 3/ERP Goals 1 - 4
Task Category: Implementation

Activity: <u>Lower Clear Creek Floodway Rehabilitation Project (Phase 3B).</u> Phase 3B will reconstruct 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 monitor 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 addresses a headcut that has continued to migrate and is threatening the channel and riparian habitat created in previous project phases. .
Year 11 Activities: Revegetation and monitoring.
Year 11 Cost: Funded in Year 7 at $3,482,000
Year 12 Activities: Complete revegetation and monitoring, and produce Final Report.
Year 12 Projected Cost: Funded in Year 7.
Funding Source: Proposition 50
Agencies: DFG, Western Shasta Resource Conservation District
Priority/Goal Addressed: ERP Goals 1-4
Task Category: Implementation and Monitoring

Activity: <u>Lower Clear Creek Monitoring Program.</u> The Lower Clear Creek Floodway Restoration Project is a CALFED funded three-phase project. This project will include the following: (1) Avian Monitoring, which will use five metrics to monitor essential avian populations, including the collection of data on an established set of riparian focal species; (2) Geomorphic Monitoring, which will include the measurement of geomorphic changes at both the project scale and on the entire watershed; (3) Riparian Habitat Monitoring, which will measure eight elements of vegetation survival and productivity, wetland creation, and the success of exotic species control efforts.

Year 11 Activities: Project completed.
Year 11 Cost: Funded in Year 6 at $1,308,448
Year 12 Activities: N/A
Year 12 Projected Cost: N/A
Funding Source: Proposition 50
Agencies: DFG, Western Shasta Resource Conservation District
Priority/Goal Addressed: ERP Goals 1 and 5
Task Category: 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 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $1,244,017
Funding Source: Proposition 204
Agencies: DFG, BLM
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 11 Activities: 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
Clear 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 11 Cost: Funded in Year 4 at $1,519,200
Year 12 Activities: Project complete.
Year 12 Projected Cost: N/A
Funding Source: Proposition 204
Agencies: DFG, 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 and permitting prerequisite to construction will also be provided by this grant.
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $2,260,313
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: PSP Priority 1/ERP Goals 1, 2, 5, and 6
Task Category: Implementation

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 11 Activities: Conducted outreach, held stakeholder meetings, developed draft management plan.
Year 11 Cost: Funded in Year 9 at $300,000
Year 12 Activities: Potential development of the comprehensive Plan is no longer deemed possible by Center for Collaborative Policy, DFG, and the YBF as a co-sponsor of the project, but all decisions to date will be included in final compilation of materials developed to date. The Plan includes all consensus-driven projects developed by the LYB Stakeholder Group, initial management strategies, and final recommendations. Draft and Final Project Report will be completed.
Year 12 Projected Cost: Funded in Year 9.
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). 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. The EIS/EIR will evaluate the following alternatives: 1) No-Action alternative, 2) Nine spur dike/groins alternative, 3) Two pump relocation alternatives, and 4) Long-term dredging alternative with modified fish screen criteria. Additionally, necessary permits required for implementation of the alternative selected at the conclusion of the environmental review process will be obtained. 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 11 Activities: N/A, scheduled to begin Year 12.
Year 11 Cost: N/A
Year 12 Activities: Initiate preparation of environmental compliance documents.
Year 12 Projected Cost: $2,480,610
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1, 2 and 4
Task Category: Planning

Activity: M&T/Llano Seco Fish Screen Facility-Short Term Protection Project. The project is to maintain pumping capacity at the M&T/Llano Seco Fish Screen Facility Short Term Protection Project which requires continual periodic dredging until a long-term permanent solution is identified to protect the operational capacity of the pumping intake and fish screens. Excess dredge materials have been stockpiled on 12 acres of land on the M&T Chico Ranch leaving no additional capacity for expansion of the stockpiled site with future excavated materials. An environmental documentation (Initial Study/Mitigated Negative Declaration) will be prepared of the removal of existing stockpiled material, and preparation for the next in-stream gravel bar excavation.
Year 11 Activities: Environmental documentation preparation, monitoring and reporting.
Year 11 Cost: Funded in previous years $4,584,069.
Year 12 Activities: Continue Year 11 activities.
Year 12 Projected Cost: TBD
Funding Sources: Propositions 84 and 204
Agencies: DFG
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 11 Activities: 2010/2011 PSP selection**.**
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $875,000
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: PSP Priority 2/ERP Goal 1-4
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 (CVC) 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 11 Activities: 2010/2011 PSP selection**.**
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $489,343
Funding Source: Proposition 84
Agencies: DFG, UC Berkeley
Priority/Goal Addressed: PSP Priority 2/ERP Goal 1-4
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 proposal solicitation package 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 11 Activities: 2010/2011 PSP selection**.**
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $,3,314,300
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: PSP Priority 1/ERP Goal 2
Task Category: Implementation and Monitoring

Activity: <u>Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction.</u> 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: recuvirostrids, 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 11 Activities: Continued research, monitoring, and reporting.
Year 11 Cost: Funded in Year 5 at $5,823,262
Year 12 Activities: Continue risk to avian reproduction study.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: USFWS, DFG
Priority/Goal Addressed: ERP Goals 1, 3, and 6
Task Category: Task Category: Research and monitoring

Activity: <u>Meridian Farms Water Company Fish Screen Project-Construction Phase 1.</u> Construction of the Meridian Farms Water Company (MFWC) Fish Screen project on the Sacramento River. The primary purpose of the project is to prevent entrainment of at-risk native fish species by installing a positive barrier fish screen at one of MFWC's existing intake facilities. The existing diversion at Grimes would be removed, repositioned, and rebuilt with the addition of state of the art fish screens and conveyance system improvements. The USBR's AFSP is funding this project at 50% cost-share ($2.5 million).
Year 11 Activities: Continue Year 9 activities. Completed Phase I which consisted of the following components:
Grimes Diversion/Pumping Plant: Constructed one (1) 30 cfs diversion with fish screen and pumping plant located north of the existing Grimes Diversion and abandoned existing diversion.
Grimes Pipeline/Canal: Constructed approximately 650 lineal feet of 36-inch diameter pipeline, modified approximately 3,800 lineal feet of existing earthen canal embankment, and associated work.

Drexler Pipeline: Constructed approximately 5,800 lineal feet of 36-inch diameter pipeline.

Year 11 Cost: Funded in Year 9 at $2,500,000
Year 12 Activities: Project completed in Year 11.
Year 12 Projected Cost: N/A
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-3
Task Category: Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Mill and Deer Creeks Protection and Stewardship.</u> Addresses water quality and quantity, salmon habitat, and existing wildlife-friendly agriculture on Mill Creek and Deer Creek through conservation easements and active land stewardship.
Year 11 Activities: Continue staff support for development and review of work products.
Year 11 Cost: Funded $4,700,000 in Year 9
Year 12 Activities: The Nature Conservancy will continue to work to complete the 8,400-acre Gaumer Ranch conservation easement on Deer Creek. Easement compliance monitoring will commence.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Priorities 1, 4, 5, and 6
Task Category: Planning, monitoring and implementation

Activity: <u>Monitoring for Invasive Spartina Control in the San Francisco Estuary.</u> Provides 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 provides 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 11 Activities: Continue eradication and success measurements.
Year 11 Cost: Funded in Year 7 at $1,234,396
Year 12 Activities: Complete eradication and success measurements.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: DFG, State Coastal Conservancy
Priority/Goal Addressed: ERP Goal 5
Task Category: Task Category: Monitoring

Activity: <u>Monitoring Responses of the Delta Smelt Population to Multiple Restoration Actions in the San Francisco Estuary.</u> 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 11 Activities: Fish Sampling, growth analysis, histopathology, otolith analysis, bioassays, plankton sampling, gut analysis, reporting.
Year 11 Cost: Funded Year 7 at $1,499,181
Year 12 Activities: Complete analysis and reporting.
Year 12 Projected Cost: 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: National Marine Fisheries Service (NMFS) Staff Participation in the Bay Delta Conservation Plan (BDCP). Funding of NOAA Fisheries Service (previously known as NMFS) staff for their participation in the development of the BDCP. Several Potentially Regulated Entities are preparing a BDCP for existing and new water operations in the Sacramento-San Joaquin Delta. The BDCP is intended to satisfy the requirements of a Federal Habitat Conservation Plan, resulting in permits under Section 1 0(a)(1)(B) of the Endangered Species Act and is also intended to satisfy the requirements of a Natural Community Conservation Plan, resulting in take authorization under Section 2835 of the Fish and Game Code (or to meet the requirements of incidental take permits under Section 2081). This effort requires extensive staff participation from State and Federal fish and wildlife management agencies to ensure the BDCP meets regulatory requirements of DFG, USFWS, and NOAA Fisheries Service; this agreement funds participation of NOAA Fisheries Service staff.
Year 11 Activities: Continue staff support for development and review of work products.
Year 11 Cost: Funded $4,918,987.39 in Year 9
Year 12 Activities: Continue staff support for development and review of work products.
Year 12 Projected Cost: $150,000 (Federal)
Funding Sources: Proposition 84, Federal
Agencies: DFG, NOAA Fisheries Service
Priority/Goal Addressed: ERP Priorities 1-6
Task Category: Planning

Activity: <u>Other CVP Impacts.</u> 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 11 Activities: Funded protection of habitats through purchase of fee title or conservation easements; restoration and management of habitats as well as 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, Gabbro soils in El Dorado County, 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 grant.gov with new projects being selected each year dependent on species and habitat priorities. It is anticipated that the 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 outreach and land management planning. The restoration activities of the (b)(1) "Other" Program is 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 11 Cost: $1,700,00
Year 12 Activities: 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 12 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: <u>Pacific Flyway Center Initial Planning Project.</u> Initial planning phase of the Pacific Flyway Center (PFC), an educational facility and a site intended to serve the public.
Year 11 Activities: Negotiations with landowner to purchase property.
Year 11 Cost: Funded in Year 5 at $334,021
Year 12 Activities: Meet with property owner to determine his interest in selling at the appraised value. The goal is to have the purchase approved by the end of 2011. Once the purchase is confirmed, the planning steps outlined in the grant SOW will commence.
Year 12 Projected Cost: 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: <u>Patterson Irrigation District Fish Screen Construction Project.</u> Replaces 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 will have equivalent diversion capacity and consist of a new wedge-wire plate fish screen designed to meet State and Federal protection criteria for anadromous salmonids. Cost share funding for this project was provided by USBR's AFSP ($6,901,711) and Patterson Irrigation District ($1,521,286).

Year 11 Activities: Implement construction of Patterson Irrigation District's new 195 cubic foot per second (cfs) screened pumped water diversion intake system on the San Joaquin River.
Year 11 Cost: Funded in Year 10 at $4,565,725
Year 12 Activities: Project completed in 2011.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Task Category: Implementation

Activity: <u>Performance Measures and Monitoring Staff.</u> Provides four permanent positions to comply with increased accountability requirements of bond funded activities and fulfills the legal mandate to monitor and evaluate program performance by developing ERP indicators and performance measures, including methods to meet regulatory compliance mandates for managed and restored wetlands.
Year 11 Activities: Performance measure development in coordination with the Delta Science Program to integrate performance measures with a broad-based monitoring program for CALFED objectives.
Year 11 Cost: $373,100
Year 12 Activities: Continue development of performance measures for assessing success of restoration activities.
Year 12 Projected Cost: $292,962
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Monitoring and Research

Activity: <u>Population Biology, Life History, Distribution, and Environmental Optima of Green Sturgeon.</u> Conducts telemetric, physiological, reproductive, and genetic studies to provide state and federal agencies such as NMFS and DFG with information on the size of the population and its critical habitat within the Sacramento-San Joaquin watershed to inform the development of a recovery plan for the species. The distribution of spawning adults and juveniles are being continuously monitored using automated listening stations situated throughout the Sacramento River, Delta, and San Francisco Bay Estuary. Also characterizing the environment where adult green sturgeon are found to spawn.
Year 11 Activities: The distribution of spawning adults and juveniles will be continuously monitored using automated listening stations situated throughout the Sacramento River, Delta, and San Francisco Bay Estuary. The environment where adult green sturgeon are found to spawn will be characterized.
Year 11 Cost: Funded in Year 8 at $696,071
Year 12 Activities: Completed Year 11.
Year 12 Projected Cost: No additional funds requested.

Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: ERP Goal 1 and 3
Task Category: Task Category: Research and Monitoring

Activity: <u>Quality Assurance Consulting Services.</u> Provides 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 11 Activities: N/A
Year 11 Cost: N/A
Year 12 Activities: San Jose State University 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 Projected Cost: $143,674
Funding Source: Proposition 84
Agencies: DFG, San Jose State University Foundation
Priority/Goal Addressed: ERP Goal 2
Task Category: Task Category: Planning

Activity: <u>Real-Time Flow Monitoring.</u> 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 11 Activities: Operate and maintain 13 flow monitoring stations with temperature sensors.
Year 11 Cost: Funded in Year 6 at $473,000
Year 12 Activities: Continued Year 11 activities.
Year 12 Projected Cost: No additional funds requested.

Funding Source: Proposition 50
Agencies: DFG, and DWR
Priority/Goal Addressed: ERP Goal 2
Task Category: Task Category: Monitoring

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Recovery Implementation for Riparian Brush Rabbit and Riparian Woodrat on the Lower Stanislaus River.</u> Restore 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 11 Activities: In progress on tasks that include the acquisition of land or easements, biological assessment and permitting, and riparian brush rabbit reintroduction, and restoration of 50 acres of riparian habitat.
Year 11 Cost: Funded in Year 7 at $5,465,944
Year 12 Activities: Continue Year 11 activities.
Year 12 Projected Cost: No additional funds are requested.

Funding Source: Proposition 50
Agencies: DFG, USFWS
Priority/Goal Addressed: ERP Goals 1 and 2
Task Category: Task Category: Implementation

Activity: <u>Refine the Fall-run Chinook Salmon Population Model.</u> 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 11 Activities:. Develop the coding for the new version of the fall-run chinook salmon population model. Provide model documentation and user's guide.
Year 11 Cost: Funded in Year 10 at $350,000
Year 12 Activities: Complete fall-run Chinook salmon model.
Year 12 Projected Cost: No additional funds requested.

Funding Sources: General Fund, Propositions 13 and 84, and Federal
Agencies: DFG
Priority/Goal Addressed:
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 11 Activities: 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 11 Cost: $1,229,637
Year 12 Activities: 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. The USFWS will continue to work with State and local interests to plan and implement activities under the IFAP.
Year 12 Projected Cost: $951,000
Funding Source: Federal
Agencies: USFWS.

Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Program Support

Activity: <u>Restoration of the Confluence Area of the Sacramento River, Big Chico and Mud Creeks.</u> Complete 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 y increasing floodwater storage in project area, and improving water quality.
Year 11 Activities: California State Parks and The Nature Conservancy (TNC) worked with the Central Valley Flood Protection Board (CVFPB) to obtain encroachment permit for Singh Restoration.
Year 11 Cost: Funded in Year 4 at $2,603,377
Year 12 Activities: 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 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goals1, 2, 4, and 6
Task Category: Task Category: Planning and Implementation

Activity: <u>Restoring Ecosystem Integrity in the Northwest Delta: Phase II.</u> 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.
Year 11 Activities: Solano Land Trust (SLT) completed the 146 acre conservation easement on Thomas Ranch South. Jurisdictional wetland delineation was approved by the ACOE. Lindsey Slough Project Implementation Plan and Feasibility Analysis are complete. Draft Restoration Plan 30% designs will be submitted early July 2011.
Year 11 Cost: Funded in Year 4 at $1,781,658
Year 12 Activities: Will concentrate acquisition efforts on 3 specific properties:
1) "Thompson" property: ~145 acres - foreclosure property
2) In-holding property: ~5 acres - bordering Barker Slough/Calhoun Cut
3) In-holding property: ~2.5 acres abandoned house
Year 11 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: <u>Restoring Ecosystem Integrity in the Northwest Delta: PHASE II.</u> 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.
Year 11 Activities: Greater Jepson Management Plan, grazing study, and vernal pool restoration are complete. Thomas Ranch conservation easement baseline & biological baseline are complete.
Year 11 Cost: Funded in Year 4 at $246,370
Year 12 Activities: Remaining tasks include baseline monitoring for new acquisitions (if applicable) and project closure.
Year 11 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goal 1-5
Task Category: Task Category: Planning

Activity: <u>Sacramento River Conservation Area Forum (SRCAF).</u> 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 11 Activities: Support stakeholder involvement and staff activities in planning restoration activities in Sacramento River Conservation Area. Provide support for base operating costs.
Year 11 Cost: Funded in Year 7 at $656,277
Year 12 Activities: Coordinate and provide technical assistance for the Bank Swallow Technical Advisory Committee (TAC) meetings to work on a conservation strategy/plan, continue public outreach, and facilitate conservation efforts. Meet with project partners and stakeholders regarding the challenges associated with the continued function of the M&T/Llano Seco Wildlife Refuge Pumping Plant Fish Screens, and the short and long-term resolution of the gravel bar to both the Public Plant and City of Chico Sewer Plant Outfall. Work and discuss the interest of the City of Red Bluff, County of Tehama and Shasta College, Tehama Campus in the possibility of a regional Sacramento River Parkway. Meet with a newly forming multi-agency, multi-county group to assist with ideas to lessen the public safety and ecological river impacts of large, non-sponsored tubing events near Irvine Finch. Assist landowners with access to incentive programs. The TAC and Board will review projects and provide suggestions to project proponents. Specific project meetings for State Parks & Recreation projects, Kopta Slough/Woodson Bridge and others may be organized as appropriate. Investigate ways to update and achieve a “user-friendly” Project Tracker. Coordinate with conservation organizations on information of restoration management and monitoring.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: DFG, California State University, Chico Research Foundation
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Planning

Activity: <u>Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206).</u> Will conduct restoration planning and research on three sites within the Chico Landing Sub-reach (RM 178-206) in preparation for future restoration, and in a set of reference sites that were previously restored by a contractor 5-13 years ago. All sites are located within a portion of the Sacramento River Conservation Area.
Year 11 Activities: TNC continued to maintain the restoration sites with herbicide application. TNC submitted the Final Restoration Monitoring Report and the Project Summary Closeout Report. This project is now 100% complete.
Year 11 Cost: Funded in Year 5 and 6 for a total of $3,961,131
Year 12 Activities: Project completed in Year 11.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Research, Planning, and Monitoring

Activity: <u>Sacramento River Riparian Monitoring and Assessment Consolidated Projects.</u> The purpose of this project is to address Sacramento River corridor riparian vegetation restoration effectiveness and biological response as a function of time, location, restoration technique, river channel migration, and other natural processes. This project will quantitatively assess the extent to which past ERP funded restoration projects have achieved their stated goals, and through a scorecard approach will provide a means to track ERP project changes over time.
Year 11 Activities: Prepared a draft final report during this reporting period based on the principal investigators' summary reports. The final report was reviewed and edited by the principle investigators and included a synthesis section. Coordinated outreach and logistics for the draft Scorecard and Monitoring Plan workshop. Presented the results of work on the monitoring plan and scorecard.
Year 11 Cost: Funded in Year 7 at $1,261,057
Year 12 Activities: Project complete.
Year 12 Projected Cost: N/A
Funding Source: Proposition 50
Agencies: DFG, California State University, Chico
Priority/Goal Addressed: ERP Goals 2 and 4
Task Category: Task Category: Monitoring

Activity: <u>Sacramento Valley/Delta Fish Screen Program.</u> 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 11 Activities: Completed construction of Stage 1 fish screen projects: Sutter Mutual Water Company State Ranch (128 cfs), Sycamore Mutual Water Company Davis Ranches #2 (65 cfs), River Garden Farms #2 Missouri Bend (32 cfs). Stage 2 construction landowner agreements completed. Completed biological assessments at Stage 1 and 2 sites and submitted 2010 Annual Technical Report on Stage 1 and 2 Biological Assessments. Began 2011 biological assessments at Stage 2 and 3 diversion sites.

Year 11 Cost: Funded in Year 9 at $4,525,636
Year 12 Activities: Construct Stage 2 screens: Sutter Mutual Water Company Portuguese Bend (106 cfs); Windswept Land & Livestock #2 (9 cfs); Oji Bros. Farms Kirkville Diversion (25 cfs), RD 108 South Steiner Diversion (30 cfs). Complete Stage 2 designs and obtain permits for Stage 2 construction. Draft designs for Stage 3 sites and submit Stage 3 Landowner contracts. Continue biological assessments at all Stage 2 and Stage 3 diversion sites and submit 2011 Annual Technical Report for Stage 2 and 3 Biological Assessments. Begin 2012 biological assessments at Stage 3 diversion sites.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG, USBR
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Task Category: Planning and Implementation

Activity: <u>Sacramento-Central Valley Fish Screen Program.</u> Reduces entrainment mortality of juvenile fish species from Delta and river diversions by installing state-of-the-art self-cleaning fish screens, and simultaneously initiating a pilot biological assessment that will help develop criteria for prioritizing future fish screening efforts and project funding.
Year 11 Activities: Completed site selection for the fish screens: Feather Water District - North (78 cfs), Feather Water District - South (40 cfs), Bella Vista Water District (85 cfs), and South Sutter Water District Pleasant Grove Canal Diversion (80 cfs).
Year 11 Cost: Funded in Year 10 at $1,500,000
Year 12 Activities: Complete landowner contracts, designs, and environmental compliance/permits for the fish screen projects. Work on designs and formulate bid packages for berm work on for the Feather Water District's North and south diversions. Conduct a biological survey of the Bella vista pumping station to support CEQA Compliance. Construct new fish screen at Bella Vista Water District (85 cfs) diversion.

Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG, USBR
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Task Category: Implementation and Monitoring

Activity: <u>Salinity effects on native and introduced SAV of Suisun Bay and the Delta.</u>
Evaluates the role of increased salinity on native versus introduced submerged aquatic vegetation beds in an effort to predict how native Stuckenia pectinata beds might contribute to restoration of native communities and functions in the Delta region. The project is a companion to recently funded projects (NOAA and Delta Science) mapping Stuckenia distribution and characterizing Stuckenia beds as habitat for epifaunal invertebrates and fish.
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $412,410
Funding Source: Proposition 84
Agencies: DFG, California State University, San Francisco
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1, 2, 4, and 5
Task Category: Research

Activity: <u>San Joaquin River Dissolved Oxygen/Oxygen-consuming materials in San Joaquin River.</u> 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 (Regional Board) to complete the SJR Dissolved Oxygen Total Maximum Daily Load development and allocation process.
Year 11 Activities: Work was initiated.
Year 11 Cost: Funded in Year 10 at $2,992,933
Year 12 Activities: 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.

Year 12 Projected Cost: Funded in Year 11
Funding Source: Proposition 84
Agencies: University of the Pacific
Priority/Goal Addressed: ERP Goals 1 and 4
Task Category: Task Category: Research

Activity: <u>San Pablo Bay Watershed and Suisun Marsh Ecosystem Restoration, CA.</u> 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. 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. The draft San Pablo Watershed Management Plan, completed in FY 2010, describes activities that would restore critical habitat throughout the watershed. The final plan would 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.
Year 11 Activities: Continued coordination and outreach activities including public involvement and education. Conducted Geographical Information System/mapping efforts, improving media, web and networking for program.
Year 11 Cost: No additional funds.
Year 12 Activities: Continue coordination and outreach activities including public involvement and education. Conduct Geographical Information System/mapping efforts, improving media, web and networking for program.
Year 12 Projected Cost: $500,000
Funding Source: Federal
Agencies: USACE
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Implementation

Activity: <u>Screen Engineering and Review.</u> NOAA Fisheries Staff support for AFSP. Funds one engineer part-time in support of this program element. In the future, there are studies and screen improvements that will have to be evaluated and commented on with respect to listed fish concerns.
Year 11 Activities: Planning support for AFSP.
Year 11 Cost: $75,000
Year 12 Activities: Planning support for AFSP.
Year 12 Projected Cost: $75,000
Funding Source: Federal
Agencies: NOAA Fisheries Service
Task Category: Planning

Activity: <u>Spawning Gravel/Riparian Habitat.</u> 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 11 Activities: 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 National Oceanic and Atmospheric Administration 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 11 Cost: $700,000
Year 12 Activities: 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 12 Projected Cost: $1.000,000
Funding Source: Federal (USBR and USFWS)
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Planning and Implementation

Activity: <u>Suisun Marsh Implementation Plan (Jones & Stokes).</u> Completes 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 11 Activities: Produced draft Programmatic EIR/EIS for the Suisun Marsh Plan.

Year 11 Cost: Funded in Year 6 at $1,050,000
Year 12 Activities: Complete Programmatic EIR/EIS for the Suisun Marsh Plan.

Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: DFG
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Planning

Activity: <u>Suisun Marsh Implementation Plan (SRCD).</u> 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. NEPA/CEQA compliance provided by SRCD. Conducts initial phase of an EIS/EIR impact analysis. Modifies the database system to ensure compatibility with other database systems used for the Ecosystem Restoration Program.
Year 11 Activities: Supported development of draft Programmatic EIR/EIS for the Suisun Marsh Plan as well as provided 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.

Year 11 Cost: Funded in Year 7 at $310,000
Year 12 Activities: Continue oversight and coordination of Suisun Marsh Implementation Plan activities.

Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: DFG, and Suisun Resource Conservation District
Priority/Goal Addressed: ERP Goal 4
Task Category: Task Category: Technical Support

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Suisun Marsh Land Acquisition and Tidal Marsh Restoration-Elevation and Contaminant Surveys, Review of Land Acquisition Package, and Review of Property Appraisal.</u> 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 11 Activities: Identified parcels for acquisition. Project delayed due to need for CEQA compliance. Worked on conservation easement on a parcel southwest of Denverton, where restoration is anticipated to take place on the southern portion.
Year 11 Cost: Funded in Year 10 at $926,869.64
Year 12 Activities: Resolve CEQA issue and acquire property. Complete conservation easement on Denverton parcel.

Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG, WCB
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Implementation

Activity: <u>Suisun Marsh Land Acquisition and Tidal Marsh Restoration - Public Notification and Site Selection.</u> This grant will support 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 11 Activities: Identified willing sellers.
Year 11 Cost: Funded in Year 9 at $16,500
Year 12 Activities: Provided public notification, environmental compliance, and permitting for parcels belonging to willing sellers.

Year 12 Projected Cost: No addition funds requested.
Funding Source: Proposition 84
Agencies: Suisun Resource Conservation District, DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Implementation

Activity: <u>Suisun Marsh Land Acquisition.</u> Provides funding for DFG staff overseeing a land acquisition project in Suisun Marsh to acquire up to 500 acres of land in Suisun Bay in either fee title or conservation easement for restoration to self-sustaining tidal marsh.
Year 11 Activities: Identified parcels for acquisition. Project delayed due to need for CEQA compliance. Worked on conservation easement on a parcel southwest of Denverton, where restoration is anticipated to take place on the southern portion.
Year 11 Cost: Funded in Year 10 at $37,995
Year 12 Activities: Resolve CEQA issue and acquire property. Complete conservation easement on Denverton parcel.

Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Task Category: Implementation

Activity: <u>Suisun Marsh Protection.</u> 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 11 Activities: Continued Federal participation with the State 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 the USBR participation with the DWR 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 the anticipated implementation of the previously described proposed amendment to the revised SMPA upon finalization of the Suisun Marsh Plan EIS/EIR.
Year 11 Cost: $1,569,000
Year 12 Activities: Funding will continue Federal participation with the State 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 USBR's participation with the DWR 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 the anticipated implementation of the previously described proposed amendment to the revised SMPA upon finalization of the Suisun Marsh Plan EIS/EIR.
Year 12 Projected Cost: $1,392,000
Funding Source: Federal
Agencies: USBR
Priority/Goal Addressed: ERP Goals 1-6
Task Category: Planning and Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Survival and Migratory Patterns of Juvenile Spring and Fall Run Chinook Salmon in Sacramento River and Delta.</u> 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 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $1,746,955
Funding Source: Proposition 84
Agencies: DFG, UC Davis
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1 and 3
Task Category: Research

Activity: <u>Terrestrial Weed Eradication Monitoring Protocol.</u> Assists 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 11 Activities: Developed and deepened collaborations among various organizations and individuals in the weed-mapping community. Held meeting at Sonoma Ecology Center with BAEDN, CAL-Flora, CAL-IPC. These groups will be collaborating on implementation of the common weed monitoring data model with the goal of exchanging data between efforts and improving support to California weed managers. Agreed to present together at the CAL-IPC symposium in the fall, and are seeking funding together. Submitted abstract for presentation at the CAL-IPC Symposium. Continued to refine website.

Year 11 Cost: Funded in Year 10 at $111, 000
Year 12 Activities: Work 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. Document the Garmin toolkit prototype. Investigate whether we can upgrade GeoWeed to work on the latest versions of ArcPad and Microsoft software. Develop presentation for the Weed Mapping Committee and a poster for the Cal-IPC Symposium.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Task Category: Monitoring

Appendix A. Year 11 and Year 12 Activities

Activity: <u>UCD Project Review Office Services.</u> Agreement with UC Davis to provide support in technical and peer reviews, workshops, training, and other relevant activities.
Year 11 Activities: 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 11 Cost: Funded in Year 10 at $3,999,997
Year 12 Activities: Continue to provide technical support as described in Year 11 activities.
Year 12 Projected Cost: 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: <u>Upper Sacramento River Basin Chinook Salmon Escapement Monitoring Program (USFWS).</u> 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 Chinook salmon during 2006-2008 spawning seasons.
Year 11 Activities: Conducted spawner escapement surveys for winter Chinook salmon in using carcass mark-recapture techniques. Data was collected on age, gender, body size, spawning success and spatial and temporal distribution of hatchery and natural origin winter Chinook salmon. Data analysis and report writing
Year 11 Cost: Funded in Year 7 at $496,210
Year 12 Activities: Field activities will continue. Laboratory analysis of heads to recover any coded-wire tags. Finalize data entry, data proofing, and initiate data analyzes.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 50
Agencies: USFWS, 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 11 Activities: $8 million was used to acquire approximately 46,000 af of Incremental Level 4 water supplies. This only represents the cost to acquire the water as the delivery of Level 4 water from its sources to the wetlands boundary is dependent upon funding requested in the Refuge Wheeling Conveyance Program. $5.7 million was used by the program to acquire water on the San Joaquin River from tributary water rights holders to provide additional flows in support of the San Joaquin River Agreement to meet instream and Delta flow objectives.
Year 11 Cost: $13,700,000
Year 12 Activities: 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 2012, the WAP plans to acquire approximately 56,130 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 will 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. In FY 2012, $2.5 million will be used by the program 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 12 Projected Cost: $19,850,000
Funding Source: Federal Funds (USBR and USFWS)
Agencies: DFG, USBR, USFWS
Priority/Goal Addressed: 1 and 3
Task Category: Implementation

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Water Quality Effects on Survival, Growth, and Feeding Performance in Larval Delta Smelt (Hypomesus transpacificus) from the Sacramento-San Joaquin Delta.</u> 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 11 Activities: 2010/2011 Directed Action.
Year 11 Cost: No funds expended in Year 11.
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $224,760
Funding Source: Proposition 84
Agencies: DFG, USFWS
Priority/Goal Addressed: PSP Priority 2/ERP Goals 1
Task Category: Research

Activity: <u>West Coast Ballast Outreach Project.</u> Reduces 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. Training includes the distribution of educational materials, a website, and ballast water management practices.
Year 11 Activities: co-host a major summit focusing on Eurasian mussels in October 2010.
Year 11 Cost: Funded in Year 5 at $478,395
Year 12 Activities: Continue to provide education and outreach regarding ANS with additional focus on quagga/zebra mussels, includes updating educational material and holding and/or participating in workshops.
Year 12 Projected Cost: No additional funds requested.
Funding Source: Proposition 204
Agencies: UC Davis, DFG
Priority/Goal Addressed: ERP Goal 5
Task Category: Education

Activity: <u>West Stanislaus Irrigation District Fish Screen Intake Final Design Planning, Environmental Compliance and Permitting Project.</u> 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).
Year 11 Activities: N/A
Year 11 Cost: N/A
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $2,600,000
Funding Source: Proposition 50
Agencies: DFG, USBR, WSID
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Task Category: Planning

Activity: <u>Wetland and Rice Management to Limit Methylmercury Production and Export.</u> 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 methyl mercury production (from inorganic mercury).
Year 11 Activities: 2010/2011 PSP selection.
Year 11 Cost: N/A
Year 12 Activities: Complete agreement, implement project.
Year 12 Projected Cost: $197,416
Funding Source: Proposition 84
Agencies: USGS
Priority/Goal Addressed: PSP Priority 3/ERP Goal 6
Task Category: Task Category: Planning

Activity: <u>Wildlife and Vegetation Response to Experimental and Restoration of Flooded Riparian Forest Habitat for The Cosumnes River Preserve.</u> The Wildlife and Vegetation Response to Experimental and Restoration of Flooded Riparian Forest Habitat for the Cosumnes River Preserve 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 11 Activities: Project start in Year 12.
Year 11 Cost: N/A
Year 12 Activities: Initiate project including biophysical monitoring and baseline avian monitoring surveys. Finalize the horticultural planting experimental design, complete the vegetation-monitoring plan, and initiate monitoring.

Year 12 Projected Cost: $2,055,022
Funding Source: Prop 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1, 3, and 4
Task Category: Implementation

Activity: <u>Yolo Heritage Program.</u> Funds the completion of the Yolo County HCP/NCCP is commonly known as the Yolo Natural Heritage Program. The completed Yolo Heritage Program Plan will be integrated with the BDCP currently under development.
Year 11 Activities: Conduct public outreach and planning coordination. Collect data and update GIS. Continue with preparation on HCP/NCCP.
Year 11 Cost: $500,000
Year 12 Activities: Complete the Yolo Heritage Program Plan and integrate it with the BDCP.

Year 12 Projected Cost: Funded in Year 11.
Funding Source: Proposition 84
Agencies: DFG, Yolo County
Priority/Goal Addressed: ERP Goals 1, 3, and 4
Task Category: Task Category: Planning

Appendix A. Year 11 and Year 12 Activities

Activity: <u>Yuba City Fish Screen Project.</u> 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 will be 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. Cost share partners include City of Yuba City ($5,160,000) and USBR's AFSP ($900,000).
Year 11 Activities: City of Yuba City worked on pre-project permitting requirements.

Year 11 Cost: $500,000
Year 12 Activities: City of Yuba City to complete pre-project permitting and bidding activities. Project construction to begin Year 13.
Year 12 Projected Cost: Funded in Year 11
Funding Source: Proposition 84
Agencies: DFG
Priority/Goal Addressed: ERP Goals 1 and 3
Task Category: Planning and Implementation