

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 112 -- ROLLED UP SUMMARY																	
MILESTONE 112 -- Develop and implement a comprehensive monitoring, assessment and research program (CMARP) for terrestrial and aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all “R” and “r” covered plants and animals in the MSCS Focus Area.					PROJECTS REVIEWED - ERP-95-M08, ERP-96-M10, ERP-96-M11, ERP-96-M16, ERP-96-M26, ERP-96-M27, ERP-97-B04, ERP-97-C06, ERP-97-C08, ERP-97-C09, ERP-97-C11, ERP-97-N03A, ERP-97-N03B, ERP-97-N04, ERP-97-N05, ERP-97-N13, ERP-97-N16, ERP-98-B15, ERP-98-B16, ERP-98-B25, ERP-98-C01, ERP-98-C02, ERP-98-C07, ERP-98-C08, ERP-98-C09A/B/C, ERP-98-C10, ERP-98-C11, ERP-98-C12, ERP-98-C13, ERP-98-C14, ERP-98-C15, ERP-98-E12, ERP-98-E17, ERP-98-F22, ERP-98-F24, ERP-98-N03, ERP-99-B03, ERP-99-B08, ERP-99-B10, ERP-99-B11, ERP-99-B13, ERP-99-B18, ERP-99-N05, ERP-00-F04, ERP-01-N11, ERP-01-N31		SUMMARY -- A significant number of contracts funded by the ERP had links with monitoring, assessment, or research on terrestrial and aquatic habitats and species of interest to the ERP. Few contracts may adhere to CMARP tenets. The ERP funded development of the Comprehensive Monitoring, Assessment, and Research Plan which provided recommendations for implementation and refinement of the program. An Aquatic Monitoring Plan and Terrestrial and Amphibian Monitoring Plan were drafted (TAMP was also completed) to provide the framework for protocols developed for data collected by ERP projects and essential information on status and trends of species and habitats. CMARP, TAMP, and AMP were not utilized for most of those projects below. ERP NEEDs to engage the Science Program in invigorating the efforts accomplished to date and to refine and implement these programs so that the ERP and Science Program can meet their program responsibilities. Ecological indicators and performance measures need to be completed so that monitoring, data management, assessment, research, and reporting in a manner consistent with an adaptive management implementation strategy may							AGENCY NOTES --		NOTES CONT'D --	
ERP-99-B19, ERP-99-F07, ERP-99-F11, ERP-99-N01, ERP-99-N02, ERP-99-N03, ERP-99-N06, ERP-99-N07, ERP-99-N09, ERP-99-N10, ERP-99-N12, ERP-99-N13, ERP-99-N15, ERP-99-N21, ERP-00-B03, ERP-00-B04, ERP-00-B05, ERP-00-B06, ERP-00-E03, ERP-00-E04, ERP-00-E05, ERP-00-F08, ERP-01-C01, ERP-01-C05, ERP-01-N01, ERP-01-N08, ERP-01-N11, ERP-01-N13, ERP-01-N19, ERP-01-N22, ERP-01-N24, ERP-01-N26, ERP-01-N27, ERP-01-N28, ERP-01-N29, ERP-01-N32, ERP-01-N43, ERP-01-N44, ERP-01-N45, ERP-01-N46, ERP-01-N47, ERP-01-N48, ERP-01-N49, ERP-01-N50, ERP-01-N59, ERP-02D-P52, ERP-02D-P57, ERP-02D-P58, ERP-02D-P59, ERP-02-P14, ERP-02-P16D, ERP-02-P17, ERP-02-P18, ERP-02-P19, ERP-02-P20, ERP-02-P22, ERP-02-P29, ERP-02-P31, ERP-02-P32, ERP-02-P33, ERP-02-P34, ERP-02-P35, ERP-02-P45, ERP-02-P46, AFRP-00-22, AFRP-00-24, AFRP-00-28, AFRP-00-33, AFRP-00-35, AFRP-00-46, AFRP-01-06, AFRP-01-10, AFRP-02-06, AFRP-02-08, AFRP-03-05, CVPIA-01-F09, CVPIA-01-F10, CVPIA-01-F11, CVPIA-01-F13, IMM-02-I01																	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 112 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																	
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments	
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112	RES		Develop and implement a comprehensive monitoring, assessment and research program (CMARP) for terrestrial and aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all “R” and “r” covered plants and animals in the MSCS Focus Area.		112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all “R” and “r” covered plants and animals in the MSCS Focus Area.	ERP-96-M26	Oct-97	Sep-98	35,000	none	35,000	Department of Water Resources			Prospect Island - Develop Monitoring Plan	This is a monitoring plan will provide information on ecological processes, success of the project through use of habitat by targeted animals, and address a research question regarding the production of organic material. <i>Gina VanKlompenburg, CDFG. Planning; a Monitoring Plan was developed prior to the project being on hold. This project was supposed to restore shallow water fresh emergent wetlands by breaching levees to restore tidal action. Additionally, it was to restore/replant riparian habitat on internal islands. An unplanned and misplaced breach prior to the project getting started stalled the project. No implementation has taken place to date.</i>	
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112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N21	Apr-01	Apr-02	250,000	550,000	800,000	Sacramento City-County Office of Metropolitan Water Planning (Water Forum)	Susan Davidson		Development of a River Corridor Management Plan for the Lower American River	The project tasks are: 1) Creates a consensus building process to resolve critical scientific issues, coordinator activities and plans among various agencies and stakeholder forums, and guide broad participation in the development of the River Corridor Management Plan (RCMP); 2) Identify fisheries and aquatic habitat restoration needs and priorities; 3) involve developing an integrated riparian vegetation and preventive erosion control program, a master plan for riparian and terrestrial habitats, and an infrastructure redesign and relocation program for the LAR. John Nelson, Department of Fish and Game. Planning; project completed.
112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-C05	Oct-04	Sep-04	1,218,105	none	1,218,105	Sacramento Regional County Sanitation District and Department of Water Resources	Curt Schmutte		Feasibility Study of the Ecosystem & Water Quality Benefits Associated with Restoration of Franks Tract, Big Break, and Lower Sherman Lake	Feasibility study will evaluate the potential to create ecosystem, water quality/supply, recreational, and other benefits at lower Sherman Lake, Big Break, and Franks Tract, by modifying emergent levees to inhibit salt trapping and restoring tidal marsh habitat. The study will investigate how restoration of tidal marsh with dendritic channels and tidal flows can increase habitat values for fish and wildlife, including protect species, and inhibit invasive plants, such as Brazilian waterweed. Field and secondary data research and modeling of Delta hydrology and constituent transport will be included. Curt Schmutte, Department of Water Resources. Feasibility Study. Project not completed due to contract problems.
112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N01	Jan-02	Dec-04	2,521,236		2,521,236	University of California, Davis	Dr. James Quinn		he Influences Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic & Terrestrial Systems.	PORION OF MILESTONE ADDRESSED: Contributes to the development of the methodology for evaluating delta flow and hydrodynamic patterns. Research. Project not completed. They are 1 1/2 years into the project

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112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P18	Jun-04	May-05	327,937	none	32,937	Portland State University	Mark Systma		Life History of Egeria densa in the Delta: Factors Controlling Production and Fragment Viability	Research into the life history of <i>Egeria densa</i> , which will contribute to the control of this invasive weed in the Delta. The project area is 3,300 acres; does not eradicate any <i>Egeria densa</i> . Kim Webb. Project not completed.
112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies.	ERP-02-P20	Aug-03	Jul-06	859,405	192,500	1,051,905	San Joaquin County Resource Conservation District	John Meek	~45 acres	Restoration and Monitoring of Riparian Habitat Corridors Along the Lower Mokelumne River	Approximately 45 acres natural riparian habitat. John Brodie, Project 15% complete
112	RES				112 A Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02D-P52			357,146	none	357,146	California State Coastal Conservancy	Mary Small		Big Break and Marsh Creek Water Quality and Habitat Restoration Program	Planning for restoration of up to <30 acres of intertidal marsh in the Central and West Delta. 30 acres of various habitat types to be restored. Monitoring. Project not completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N21	Apr-01	Apr-02	250,000	550,000	800,000	Sacramento City-County Office of Metropolitan Water Planning (Water Forum)	Susan Davidson		Development of a River Corridor Management Plan for the Lower American River	The project tasks are: 1) Creates a consensus building process to resolve critical scientific issues, coordinator activities and plans among various agencies and stakeholder forums, and guide broad participation in the development of the River Corridor Management Plan (RCMP); 2) Identify fisheries and aquatic habitat restoration needs and priorities; 3) involve developing an integrated riparian vegetation and preventive erosion control program, a master plan for riparian and terrestrial habitats, and an infrastructure redesign and relocation program for the LAR. John Nelson, Department of Fish and Game. Planning; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-33						AFRP	Cesar Blanco USFWS		Continue to extend outmigrant survey and salvage at the Hallwood-Cordua Diversion in the Yuba River through the summer of 2000	Objective: The primary objective is to salvage juvenile fish at the Hallwood-Cordua fish screen and identify the general attributes of juvenile steelhead and Chinook salmon emigration in the lower Yuba River, including timing, relative abundance, fish condition, and length frequency, in order to help guide habitat restoration and management actions on the lower Yuba River. Likely for funding in FY2000.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-35						AFRP	Jeff McLain USFWS		Evaluate use of PHABSIM/2D modeling of spawning and rearing habitat to assess benefits of channel restoration on the Merced River	Objective: The primary objective of the project is to use a 2-dimensional hydraulic and topographic model to help evaluate benefits to salmon spawning and rearing habitat created by a large scale channel restoration project on the Merced River. <i>Pre-project monitoring for the PHABSIM 2-D modeling effort occurred in the summer and fall of 2000 with FY00 funds, and in 2001 with FY01 funds. Post project monitoring started in the spring of 2002.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-24						AFRP	Jeff McLain USFWS		Analyze archived San Joaquin Basin chinook salmon scale samples and develop a comprehensive database accessible to interested parties	Objective: Process and analyze the existing scale samples for the San Joaquin Basin to determine age structure of returning adult fall-run Chinook salmon. This information will provide managers with a clearer understanding of the variables that affect the ultimate production of the San Joaquin salmon. Results from this project will provide the information needed to carry out a detailed cohort analysis. <i>Detailed inventory, reabsorption assessment, and scale reading is nearly complete for all Chinook scales between 1976 and 1999.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M26	Oct-97	Sep-98	35,000	none	35,000	Department of Water Resources	none listed		Prospect Island - Develop Monitoring Plan	This is a monitoring plan will provide information on ecological processes, success of the project through use of habitat by targeted animals, and address a research question regarding the production of organic material. <i>Gina VanKlompensburg, CDFG. Planning; a Monitoring Plan was developed prior to the project being on hold. This project was supposed to restore shallow water fresh emergent wetlands by breaching levees to restore tidal action. Additionally, it was to restore/replant riparian habitat on internal islands. An unplanned and misplaced breach prior to the project getting started stalled the project. No implementation has taken place to date.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M27	Apr-97	Sep-98	24,500	none	24,500	CSU Sacramento	Amy Harris		North Delta Area - Inventory of Rearing Habitat for Juvenile Salmon	This project will provide an indication of whether restored shallow water habitats are successful in terms of fish use of the area. This was a Masters Thesis. <i>Unable to contact. Phone number disconnected. No forwarding number.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C02	Jul-98	Oct-99	194,870	none	194,870	Regents of the University of California	Dr. Joan Lindberg		Culture of Delta Smelt	This project will develop a culture system for all life stages of delta smelt, characterize parameters, and production capabilities, and initiate a supply of live material for research projects concerned with delta smelt. <i>Serge Doroshov, UC Davis. Research; project completed.</i>

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-C06	Jul-98	Jun-01	437,326	none	437,326	UCD (Bodega Bay)	William A. Bennett		Contaminant Effects on Smelt	Research and monitoring of listed species. William Bennett , UCD Bodega Bay. Research / Monitoring. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B18	none listed	Mar-03	191,799	70,541	262,340	The Department of Water Resources	Cindy Messer		Evaluation of the Potential Impacts of the Chinese Mitten Crab on the Benthic Community in the Sacramento-San Joaquin Delta and Suisun Bay	This project will provide information regarding the relationship between the Chinese mitten crab and the benthic invertebrate community with the Bay-Delta. Kim Webb, USFWS. Unknown if project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N32	Jul-01	Jul-03	126,000		126,000	NHI	John Cain		Watershed Stewardship in Marsh Creek	Baseline monitoring will be conducted on aquatic and terrestrial species. John Cain, NHI. Monitoring
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N15	May-00	Jun-02	227,000		227,000	San Joaquin County Resource Conservation District	John Meek		Continuation of the Lower Mokelumne River Watershed Stewardship Program	This project will prepare the Lower Mokelumne River Watershed Program Monitoring and Evaluation Program. John Brodie, Project complete
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C10	May-98	Dec-99	800,000	0	800,000	CDWR	Leo Winternitz		Comprehensive Monitoring Assessment and Research Program (CMARP)	Monitoring and Research; Completed. Leo Winternitz, The Water Forum

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N13	Jul-01	Jul-04	928,150	411,100	1,339,250	Association of Bay Area Governments	Marcia Brockbank	2159 LF	Demonstration Project for Delta In-Channel Islands	Project will monitor the effects biotechnical erosion control has on aquatic and terrestrial species. Marcia Brockbank, Association of Bay Area Governments. Implementation. Webb Tract #3 is not completed. They had to do an amendment since the floating log booms failed. Amendment is for 2 years.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N09	Apr-00	Mar-04 amended	653,384	0	653,384	San Francisco State University	Wim Kimmerer		Effects of Introduced Species of Zooplankton and Clams on the Bay-Delta Food Web	Kim Webb, USFWS. Unknown if project completed. The goal of the project will be to determine how food web alterations influence the key fish species that depend on that food web, and what rehabilitation efforts and actions might be effective in the context of that altered food web. Tasks include examination of gut contents and condition of fish to assess the extent to which fish prey on introduced versus native species; zooplankton experiments will be conducted to determine growth and production rates of common species of zooplankton; predation experiments will be conducted to examine selective predation by fish on alternative zooplankton prey, and predatory relationships among the zooplankton; and growth rate of key species will be measured and the degree of food limitation will be determined.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N13	Jul-98	Dec-01	889,202	none	885,202	Habitat Assessment & Restoration team, Inc.	Jeff Hart		Tyler Island Restoration	Conduct scientific monitoring and experimental program to improve habitat values as measured by increases in plant cover and general habitat heterogeneity and also the contribution of instream living cover to fish and macroinvertebrates. Jeff Hart, Hart Restoration, Inc. Implementation. Restore SRA and riparian habitat along 4,500 ft of Georgiana Slough and 3,000 ft along Mokelumne River on Tyler Island; total 7,500 ft. Also 2.3 acres of tidal emergent wetland. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-B15	Aug-98	Jun-02	697,632	0	697,632	Northwest Marine Technology, Inc.	Guy Thornburgh		Evaluation of Increasing Tagging Levels for Chinook Salmon and Steelhead and a Demonstration Project on Mass Marking	Contributes to research and monitoring salmon. This project will evaluate current tagging practices and demonstrate a technique for the mass marking of hatchery produced salmon, to support subsequent evaluating of harvest practices. Tasks include the evaluation of hatchery stocking, tagging, recovery data, alternative tagging approaches and concomitant benefits/risks, and the demonstration tagging of hatchery stock at various Central Valley hatcheries. Dave Knutson, Northwest Marine Technology. Monitoring; Tagging is complete. Data still needs to be analyzed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-E05	Feb-00	Sep-02	260,351		260,351	Stillwater Sciences	Jennifer Vick		Merced River Corridor Restoration Project Phase III	This project will develop a long-term restoration and monitoring plan. Project completed. The Merced River Corridor Restoration Plan was developed in Phase III. Jeff McLain, USFWS.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-E12	Apr-99	Apr-00	159,000	none	159,000	San Joaquin County RCD	John Meek, Jr		Develop Local Watershed Stewardship Plan for the Lower Mokelumne River	This project will monitor neotropical birds, wildlife and riparian vegetation. John Brodie. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	CVPIA-01-F11			11,000		11,000	USFWS	Mark Gard		Evaluate Use of a Two-dimensional Hydraulic and Habitat Simulation Model to Assess Benefits of Channel Restoration	This project will quantify features of fall-run chinook salmon spawning and rearing habitat, before and after restoration, in the Robinson restoration project on the Merced River.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	CVPIA-01-F13						University of California, Davis	Joseph J. Cech,		Fish Treadmill-Developed Fish Screen Criteria for Native Sacramento-San Joaquin Watershed Fishes	The Fish Treadmill project is an ongoing, multi-agency, targeted research program that addresses the uncertain impacts of water diversions and fish screens on priority fish species (e.g., delta smelt, splittail, chinook salmon, steelhead). The project objective is to provide the data necessary to evaluate and improve aspects of fish protective facility design and operation at the State Water Project (SWP), Central Valley Project (CW, including the Tracy Fish Test Facility, TFTF), and other existing and proposed fish screen facilities (e.g., Hood-Mokelumne Connection). This proposal requests next-phase funding to continue this valuable research program and to expand its scope to include other priority fish species (e.g., sturgeon) and complementary investigations on the effects of debris on fish screen function and fish-fish screen interactions.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B06	Sep-00	May-02	211,164		205,013 (reduced by modification)	University of California, Davis	Joseph J. Cech, Jr		Biological Assessment of Green Sturgeon Phase II	Monitoring and Research. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N50	Jul-01	Jun-04	576,422	none	576,422	University of California, Davis	Dr. Charles R. Goldman		Food Resources for Zooplankton in the Sacramento-San Joaquin River Delta	This project will investigate how copepods utilize the food resources available in different Delta habitats and compare the findings to those for cladocerans. Anke Muller-Solger, UC Davis Monitoring/Research. The project is 85% completed. The field component is completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P22			471,661	none	471,661	Stanford University	Stephen Monismith		Shallow Open Water Habitats: Hydrodynamics and Benthic Grazing	Project will improve scientific understanding of the linkages between populations of at-risk species and inflows, especially relative to regulatory measures like X2. Stephen Monismith, Stanford University, Department of Civil and Environmental Engineering. Monitoring/Research. Project not completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P31	Nov-03	Oct-05	400,000	none	400,000	The Regents of the University of California	Ahmad Hakim-Elahi		Delta Smelt Culture and Research Program	This project will develop methods for the successful culture of delta smelt so that a reliable supply of all life stages is available to the research community. Serge Doroshov. Project is approximately 50% complete.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P33	Jul-03	Jun-06	315,811	none	315,811	The Regents of the University of California	Ahmad Hakim-Elahi		Primary Production in the Delta: Monitoring, Design, Data Analysis and Forecasting	This project will improve the understanding of mechanisms governing phytoplankton primary production and biomass in the Delta. Allan Jassby. Project is not complete, due to contract delays. However, the project has begun.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P34	Aug-03	Jul-05	424,246	none	424,246	The Regents of the University of California	Ahmad Hakim-Elahi		Restoration of Sacramento Perch to San Francisco Estuary	The research project will develop strategies to restore Sacramento perch to self-sustaining wild populations in the San Francisco Estuary, and to assure the Sacramento perch long-term future in Central California. Peter Moyle. Project incomplete due to contracting difficulties.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P35	Jul-03	Jun-04	150,047		150,047	The Regents of the University of California	Ahmad Hakim-Elahi		Selenium Effects on Health and Reproduction of White Sturgeon, Acipenser transmontanus, in the Sacramento-San Joaquin Estuary	This project will elucidate the effects of selenium bioaccumulation on white sturgeon in the San Francisco Bay-Delta. Serge Doroshov. The project is looking at the effects of Se on white sturgeon only. The project is incomplete and has received a short extension.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-F08	May-98	Sep-03	556,200		556,200	University of California, Davis	Jeffery Mount		McCormick Williamson Tract Phase II Monitoring Program	Program to establish, restore, and maintain an unspecified amount of riparian habitat to improve floodplain habitat, salmonid shaded riverine aquatic habitat, and instream cover along the Mokelumne River. Companion proposal submitted by DWR (McCormick-Williamson Tract Restoration Planning, Design and Monitoring Program: II). (Also see ERP-99-03, ERP-99-F04, ERP-00-F07, ERP-02-P25). Planning. <i>This project is completed. It involved evaluation of the historical conditions that have lead to the current condition of the property. The pre-assessment of the conditions gave researchers a better understanding of natural processes that occurred in the past that are valuable for planning for the future. It is unclear whether or not these tools are being utilized and how valuable they might be in current planning efforts.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-01-07			314,704		314,704	Fishery Foundation of California	Patricia Duran		Lower Calaveras River Chinook Salmon and Steelhead Life History Limiting Factors Assessment	This project will provide information that can be used in the preliminary development of a technically sound and implementable, consensus-based plan to restore self-sustaining populations of chinook salmon and steelhead to the Calaveras River. Trevor Kennedy. Planning. Year 1 of project has been completed. They filed an extension on the second phase which should be completed by Dec 2005.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-03-05			158,756	158,756		California Department of Fish and Game	Kathleen Perry		Distribution and Relationship of Resident and Anadromous Central Valley Rainbow Trout	Will meet the milestone if the project was completed
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B03	Jul-00	Oct-03	559,446	431,606	991,052	University of California, Davis	Serge Doroshov		Culture of Delta Smelt Phase II and III	Research on MSCS listed species. Monitoring and Research. Project is 70 percent complete. Culture phase is done.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-E17	Apr-99	Apr-00	138,000		138,000	Contra Costa Water District	Carla Koop		Alhambra Creek Watershed CRMP Program	Project will develop a watershed management program for Alhambra Creek. Plan will address restoration of degraded aquatic and riparian communities, soil erosion, non-point pollution, and prevention of wildfire. Project complete. Planning project. Carla Koop, CCWD.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B11	Apr-00	Sep-02	1,520,000	390,000	1,910,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	Task 2.9 Monitoring and data collection. Development of a plan and ongoing monitoring. The monitoring and adaptive management plan will be provided to CALFED for approval and consistency with CMARP. Project not complete. Grants to purchase and build have been obtained, EIR has been completed, Restoration has not begun; Carl Wilcox, CDFG.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-F11	Mar-00	Dec-01	100,490		100,490	SF State University, Romberg Tiburon Center	Wim Kimmerer		Effects of Introduced Clams on the Food Supply of Bay-Delta Fish Species	Project nearly complete waiting on final deliverable. Project is foodweb focused research. Kim Webb, USFWS.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N03	Nov-99	Mar-03	1,100,000	none	1,100,000	Habitat Assessment and Restoration Team, Inc	Jeff Hart		Georgiana Slough Habitat	This project will develop a monitoring plan for aquatic and terrestrial species. Jeff Hart, HART Restoration, Inc. Implementation. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N06	Jan-00	Jan-03	1,546,016	none	1,546,016	UC Davis	Jeff Mount		Linked Hydrogeomorphic-Ecosystem Models to Support Adaptive Management: Cosumnes-Mokelumne Paired Basin Project	This project will develop a paired-basin water quality and aquatic food resource monitoring and modeling program. This project will also conduct sampling programs with emphasis on assessment of the benefits of restoration efforts within the basins. Jeff Mount, UC Davis. Research and Planning; The project is wrapping up. The final reports are being finalized and should be available soon.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N05	Mar-99	Jun-00	222,530	0	222,530	Placer County Planning Department	Loren Clark		Auburn Ravine/Coon Creek Restoration Planning	Develop a plan with major emphasis on protection and restoration of riparian and aquatic habitats. John Nelson, Department of Fish and Game. Planning; project completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N05	Mar-99	Jun-00	222,530	0	222,530	Placer County Planning Department	Loren Clark		Auburn Ravine/Coon Creek Restoration Planning	Develop a plan with major emphasis on protection and restoration of riparian and aquatic habitats. John Nelson, Department of Fish and Game. Planning; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N26	Oct-01	Oct-04	849,845	0	849,845	United States Department of Agriculture Forest Service, Lassen National Forest (LNF)	Russ Volke		Lassen National Forest Watershed Stewardship Within the Anadromous Watersheds of Butte, Deer, and Mill Creeks	The LNF watershed stewardship project includes three watershed-based restoration tasks within the anadromous watersheds of Deer, Mill, Butte Creeks. Tasks 1a and 2a include 44 extensive sediment reduction projects in Deer and Mill Creek watersheds. Additional proposed activities include Colby Creek Meadow condition survey; followed by the implementation of meadow restoration demonstration projects, installation of interpretive displays at seven recreation areas along Deer and Mill Creeks, a campground education program at Potato Patch campground, a summer patrol of the Spring-run chinook salmon spawning areas in Deer Creek, and the establishment of Watershed Stewardship education programs at Chester Elementary and High Schools. Ken Roby,USFWS. Implementation of various restoration projects on Butte, Deer, and Mill Creeks; 66 percent complete.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N07	Jan-00	Jan-04	673,684	135,994	809,678	UC Davis	Silia S. O. Hung		Chronic Toxicity in Splittail	Research and monitoring. Project 85% complete pending final reports; Silia S.O. Hung
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-E04	Jun-00	Nov-03	438,923	143,030	626,953	Southern Sonoma County RCD	Gillian Harris		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi objective program to include watershed monitoring, assessment tasks, including salmon escapement, water quality, and benthic macroinvertebrates. Specific tasks include monitoring and assessment of habitats/species through a volunteer monitoring program. (Project linked to ERP-01-N27) Implementation, monitoring, and research project; Project completed, included riparian restoration, bank stabilization, pool enhancement, and spawning and rearing habitat improvement. Chris Taylor, Southern Sonoma County RCD.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-B04	Aug-98	Mar-02	10,947,000	10,000,000	20,947,000	San Luis National Wildlife Refuge Complex	Kim Forrest, Refuge Manager		San Joaquin River National Wildlife Refuge Riparian Habitat Protection and Floodplain Restoration Project	This contract represents Phase I of an overall project to acquire lands along the San Joaquin River for the benefit of fish and wildlife. Four separate parcels will be purchased totaling 6169 acres; this acreage will become part of the SJR NWR. This phase will also include pre-restoration planning. A Baseline Biological Inventory was completed as part of this project prior to future phase restoration. Phase II of this project will entail earth-moving and restoration. This project was completed, it included planning and baseline monitoring. Kim Forrest, USFWS.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-01-06									Biological Assessment of Green sturgeon in the Sacramento-San Joaquin Watershed	Researching various biological and ecological factors of Green Sturgeon. Monitoring and Research project; 80 percent complete. Biological requirements of green sturgeon have been identified. Joe Cech Jr., UC Davis.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-01-05			400,000	0	400,000	University of California Bodega Marine Laboratory	Dennis Hedgecock		Using Molecular Techniques to Preserve Genetic Integrity of Endangered Salmon in a Supplementation Program	Propose to use molecular and population genetic techniques to evaluate hypotheses relating to the following objectives: 1) identify winter-run individuals prior to artificial propagation, 2) develop new polymorphic molecular markers for use in winter-run pedigree and linkage disequilibrium analyses, 3) genotype returning adult carcasses to obtain more precise winter-run size estimates, 4) genotype outmigrating juveniles to refine run size estimates. 5) assess the naturally spawning population of winter run in Battle Creek, and 6) investigate further, by verifying models of effective population size, the impact of the supplementation program on the naturally spawning winter run. Dennis Hedgecock, UC Davis, Planning/Research. Project is 95% complete. The final report is pending.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N27	Oct-01	Oct-05	545,170		545,170	Southern Sonoma County RCD	David Luther		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi objective program to include watershed monitoring, assessment tasks, including salmon escapement. water quality, and benthic macroinvertebrates. Specific tasks include monitoring fish passage enhancements, monitoring of pool enhancement and restoration. Implementation, Monitoring, and Research Project. Project is 70% complete; streambed restoration projects are in progress, in various stages of completion. Chris Taylor, Southern Sonoma County RCD.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N29	May-01	Jul-04	198,450	241,895	440,345	Contra Costa RCD	Laura Cossey		Kirker Creek Watershed CRMP Program	The goals of this project are to facilitate, coordinate, and support the efforts of landowners, municipalities, industry, and citizens of the Kirker Creek Watershed to develop and write a watershed management plan using the Coordinated Resource Management and Planning (CRMP) process. Task 3 includes conducting inventory and monitoring; Task 6 includes the writing of a plan. (Note: Contract amendment in place to increase the scope of work to include implementation). Planning, monitoring and education project; 90% complete with the watershed management plan completed. Carla Koop, Contra Costa RCD.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N48	Sep-01	Jul-03	210,000	none	210,000	Natural Resource Scientists, Inc.	David Vogel		Juvenile Salmon Migratory Behavior Study	This project will improve the technical understanding of juvenile salmon outmigrations behavior through the Delta. Dave Vogel, Research
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P14	Jun-03	Jun-06	3,345,000	13,814,674	17,159,674	Marin Audubon Society	Barbara Salzman		Bahia Acquisition and Tidal Wetland Restoration	Task 5.3: Monitoring. Development of a monitoring plan to evaluate the physical and biological evolution of the restored site against established performance measures.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-02-P19	Feb-04	Jul-06	509,222	none	509,222	Romberg Tiburon Center	Wim Kimmerer		Determining the Mechanisms Relating to Freshwater Flow and Abundance of Estuarine Biota (The Fish-X2 Relationships)	Determining the Mechanisms Relating to Freshwater Flow and Abundance of Estuarine Biota (The Fish-X2 Relationships). Wim Kimmerer, Romberg Tiburon Center. Monitoring/Planning.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-98-N03	Sep-99	Jun-04	120,000	180,000	300,000	Jones and Stokes Associates	William T. Mitchell		Life History and Stock Composition of Steelhead Trout	Project 20 percent complete. Needed permits to start project. Monitoring and Research. Yuba County Water Agency funded a downstream migrant steelhead study.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-98-C12	Apr-99	Sep-04	45,492	0	45,492	USFWS	Kevin Niemela		Genetic Comparison of Steelhead Stocks in Clear Creek	90 percent completed. Written report is all that remains. Monitoring and Research
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-98-C13	Apr-99	Sep-01	60,801	0	60,801	USFWS	Kurt Brown		Spawning Areas of Green Sturgeon in the Upper Sacramento River	Monitoring and Research; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-98-B25	Mar-99	Oct-04	230,255	188,255	418,510	Fishery Foundation of California	Patricia Duran		Cosumnes River Salmonid Barrier Program	The project will involve the design and construction of modifications to both of Granlees Diversion Dam fish ladders, a flow barrier wall on the left bank dam to eliminate misdirecting attraction flows that occur, and low fish passage structures on three summer dam/low flow crossings that exist in the lower river. Trevor Kennedy, Fishery Foundation of California. Implementation; project completed. No habitats. 3 small dams, a box culvert, and a fish ladder
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-98-C14	Mar-99	Aug-02	150,000	0	150,000	USFWS (Red Bluff)	James G. Smith		Monitoring Spring and Winter Run Chinook Salmon and Steelhead in Butte Creek	Monitoring; project completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	IMM-02-I01	Mar-03	?	2,206,625	0	2,206,625	The Nature Conservancy	Jake Jacobson		Battle Creek Protection and Stewardship	One of the project goes is to protect long-term sustainability of freshwater fish habitat that supports various life cycle stages of Pacific Lamprey, Chinook salmon and Steelhead trout by purchasing conservation easements on over 6,800 acres of habitat lands. Project not complete, still negotiating on properties. One property may close in fall. Acquisition
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-97-B04	Aug-98	Mar-02	10,947,000	10,000,000	20,947,000	San Luis National Wildlife Refuge Complex	Kim Forrest, Refuge Manager		San Joaquin River National Wildlife Refuge Riparian Habitat Protection and Floodplain Restoration Project	This contract represents Phase I of an overall project to acquire lands along the San Joaquin River for the benefit of fish and wildlife. Four separate parcels will be purchased totaling 6169 acres; this acreage will become part of the SJR NWR. This phase will also include pre-restoration planning. A Baseline Biological Inventory was completed as part of this project prior to future phase restoration. Phase II of this project will entail earth-moving and restoration.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-97-C09	Sep-98	Sep-01	387,003	none	387,003	CDFG	George Neillands		Developing a Genetic Baseline for San Joaquin Fall-Run Chinook Salmon	Develop genetic baseline for fall-run chinook salmon. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-01-N46	May-01	Dec-05	391,019	0	391,019	USFWS	James G. Smith or Matt Brown		Sacramento River Winter Chinook Salmon Carcass Study	Monitoring of Winter -run salmon carcasses on the Sacramento River. Monitoring; the project is ongoing. Two years completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-01-N45	Jul-01	Jun-05	1,736,073	0	1,736,073	USFWS	James G. Smith or Matt Brown		Battle Creek Anadromous Salmonid Monitoring Projects	Monitoring projects on chinook salmon in Battle Creek. Monitoring; project on-going.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area	ERP-01-N44	Oct-01	Sep-04	1,211,903	0	1,211,903	USFWS	James Smith		Estimating the Abundance of Sacramento River Juvenile Winter-run Chinook Salmon with Comparison to Adult Escapement	Monitoring downstream migrating winter-run salmonids. Monitoring; project on-going.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N59	Aug-02	Jan-05	670,000	none	670,000	Stockton East Water District	Kevin Kauffman		Stockton East Water and Calaveras County Water Districts Fish Screen Facilities	This project will develop plans to monitor existing fish populations, spawning activity, rearing, and habitat limitations to help determine the relative impact of entrainment losses to the populations. Kevin Kauffman, Planning. Project not completed: Amendment 2 weeks ago to include fish ladder.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-C11	Sep-98	Dec-01	250,975	none	250,975	CDFG	Clarence Mayott		Spawning Gravel Introduction, Tuolumne River, La Grange & Old Basin Bridge	Biological monitoring of the annual fall-run chinook salmon escapement. Project will distribute approx 12,500 cubic yards of gravel creating habitat for salmonids. Jeff McLain, USFWS. A portion of 4 river miles of instream habitat. Project completed. This was one phase of a larger project to restore the course sediment supply to the Tuolumne River by introducing clean gravels into the river between La Grange Dam and Old Basso Bridge. The overall project would distribute approximately 25-30,000 cubic yards of gravel at key sites within the upper 4 miles of anadromous salmonid habitat on the Tuolumne River. This particular phase of the project distributed 12,500 cubic yards of gravel below the La Grange Bridge.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N49	Jan-02	Dec-04	362454 amended	\$522,529 3yrs worth of work		CDFG	Paul Ward		Butte Creek Big Chico Creek and Sutter Bypass Chinook Salmon and Steelhead Evaluation	Monitoring; 60 percent complete. Project will continue.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N47	Jul-01	Jun-06	1,009,287	0	1,009,287	USFWS	James G. Smith or Matt Brown		Clear Creek Juvenile Salmonid Monitoring Project	Monitoring of Rotary Screw Trap for juvenile salmonids in Clear Creek. Monitoring; the project is ongoing. One year is completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N28	Oct-01	Oct-04	541,747	0	541,747	CDWR	Burt Bundy		Sacramento River Conservation Area Program	The project involves hiring a manager and office staff for a three-year period to assist in the development and implementation of site-specific plans for areas with in the Sacramento River Riparian Conservation Area, and to manage a new nonprofit riparian land management entity that will coordinate activities and continue the process of building broader support and understanding of the goals of the SB 1086 program. Burt Bundy, Sacramento River Conservation Area Forum. Planning; project completed. The project provided funding to continue the efforts of the Sacramento River Conservation Area Program to act as a coordinating body between local, state, and federal agencies regarding restoration activities in the Sacramento River watershed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B19	Apr-00	Jan-01	37,860	None	37,860	U.S. Fish and Wildlife Service	J. Scott Foott, PhD		Health Monitoring of Hatchery and Natural Fall-run Chinook in the San Joaquin River (USFWS)	The project characterized the health and physiological condition of both natural and hatchery juvenile chinook in the San Joaquin River. <i>Project completed. No contact, information derived from Project Reports.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B08	Dec-99	Oct-05	1,663,400	0	1,663,400	USBR	Carl Werder		Improve Upstream Ladder and Barrier Wier @ Coleman National Fish Hatchery at Battle Creek	<i>Harry Rectenwald, CDFG. Planning / Design; 70 percent complete. Planning and designs are nearly complete.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M16	Aug-97	Sep-98	1,450,200	0	1,450,200	California State University, Chico	Charles W. Nelson		Sacramento River & Major Tributaries Riparian Corridor Mapping Project	Mapping of riparian vegetation along rivers and streams in the Sacramento Valley portions of Glenn, Sutter, Colusa, Yuba, Yolo, and Sacramento Counties. Contributes to the process of restoring the Sacramento River Basin (EMZ), protecting Inner River Zone areas between Red Bluff and Colusa reaches within identified the Sacramento River Conservation, restoration and protection of riparian habitat in the Sacramento River Basin (EMZ). <i>Mapped riparian vegetation, open water, gravel bars, disturbed riparian, and invasive (Arundo, Tamarix, Rubus discolor) throughout the Sacramento River and major tributaries. Monitoring; project completed.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-E03	Oct-00	Dec-05	443,047	0	443,047	Cottonwood Creek Watershed Group	Vieva Swearingen		Cottonwood Creek Watershed Monitoring and Assessment	Continued management of the Cottonwood Creek Watershed Group (CCWG) to oversee the implementation of a watershed plan. This phase would assess current conditions in the watershed (930 sq miles), both as to the land and stream conditions to give a baseline for future projects. <i>Patricia Bratcher, CDFG. Monitoring and Assessment; project completed.</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	CVPIA-01-F09			54,555		54,555	CDFG	Tim Heyne		San Joaquin River Chinook Salmon Age Distribution	This project will provide clarification of the age of chinook salmon that have returned to the rivers in the San Joaquin Basin to spawn.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	CVPIA-01-F10			40,890		40,890	USFWS	J. Scott Foott		Health Monitoring of Hatchery and Natural Fall-run Chinook Juveniles in the San Joaquin River System and Delta, April - June 2001	This project will characterize the health and physiological condition of both natural and hatchery juvenile chinook in the San Joaquin River System and Delta. Scott Foott, USFWS. Monitoring / Research
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-02-08						AFRP	Tricia Parker, USFWS		Sex-Reversal in Central Valley Chinook Salmon: Occurrence and Population Genetic Consequences	Objective: Perform genetic and histological analyses on fish from the Sacramento and San Joaquin River basins to provide management agencies with information regarding the possible impact sex-reversed fish may have on population persistence of fall-run Chinook. The second year of this project is underway and substantial progress is being made in meeting the objectives of this project. Several hundred adult carcasses from streams in both the Sacramento and San Joaquin drainages were sampled. Fin samples were taken for later analysis for sex specific markers and gonadal samples were taken. In addition 22 crosses were made at UCDavis between 11 females and two males. Females that were normal, apparent sex-reversals, and an intermediate type were used in crosses. These crosses have resulted in juveniles that will be raised to approximately six months of age when they can be identified as to sex. Mortalities have been preserved and will be genotyped to compare departures from random death among and within the families.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N22	Sep-98	Jun-01	530,000	120,000	650,000	Central Valley Regional Water Quality Control Board	Karen Larsen		Rainbow Trout Toxicity Monitoring	Research and monitoring of rainbow trout. Karen Larsen, State Water Resource Control Board. Monitoring; There have been contract delays. The work has not yet started.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C07	Sep-98	Nov-02	400,000	0	400,000	State Water Resources Control Board	Karen Larsen		Fathead Minnow Toxicity Study in the Sacramento River	Monitoring and research of fathead minnows. Karen Larsen, State Water Resource Control Board. Monitoring; project completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C08	Jun-01	Nov-02	500,000	0	500,000	State Water Resources Control Board	Karen Larsen		Algae Toxicity Study	Monitoring and research. Karen Larsen, Monitoring; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N02	Aug-99	Oct-01	823,000	0	823,000	UCD	Joseph J. Cech Jr.		Fish Treadmill Developed Fish Screen Criteria for Native Sacramento - San Joaquin Watershed Fishes	Joseph J. Cech Jr., U.C. Davis. Monitoring and Research; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N12	Jul-99	May-03	70,636	103,622	174,258	CDFG	Dennis McEwan		Central Valley Steelhead Genetic Evaluation	Dennis McEwan, CDFG. Monitoring and Research; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N13	Oct-02	Nov-04	94,657	0	94,657	Humboldt State University, Department of Fisheries	Dr. David Hankin		Development of a Comprehensive Implementation Plan for a Statistically Designed Marking and Recovery	Contributes to research and monitoring salmon. The primary goal of the proposal was to develop a plan for marking, tagging, and recovering salmon and to detail the steps required to implement such a plan. David Hankin, Humboldt State University. Planning; The model has not been completed. Final report is about 90% completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-95-M08	Nov-97	Oct-00	598,086	0	598,086	UC Davis, Bodega Marine Laboratory	Michael Banks		Winter-run Chinook Salmon Captive Broodstock Program	The project will continue the development and refinement of molecular and statistical tools for stock discrimination among Central Valley chinook salmon. Dennis Hedgecock, University of Southern California. Research; project completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M11	Jul-96	?	750,000	250,000	1,000,000	UC Davis, Bodega Marine Laboratory	Michael Banks		Applied Research to Identify Chinook Salmon Runs via Genetics	This project will address throughput efficiency and statistical backing for run integrity, characterization, discrimination and mixed stock analysis of chinook salmon. Unable to contact. Final report in e-room. Research; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C11	Feb-99	May-01	285,000	none	285,000	CDFG	Bob Fujimura		Adult Fall-Run Chinook Salmon Movement in the Lower San Joaquin River and South Delta	This project will monitor the upstream movement of fall-run chinook salmon in the lower San Joaquin River and South Delta. Bob Fujimura, CDFG. Monitoring; project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N10	Sep-99	Jan-00	113,033	0	113,033	UC Berkeley	Vincent H. Resh		Assessing Ecological and Economic Impacts of the Chinese Mitten Crab	Kim Webb, USFWS. Project completed.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C15	Feb-99	Oct-01	241,000	0	241,000	UC Davis	Joseph Cech, Jr.		Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	This project will provide baseline information on life history parameters and physiological responses of green sturgeon. Monitoring and research project is 80% complete. Biological requirements of green sturgeon have been identified. Joseph Cech, Jr, UC Davis.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N43	Jun-01	Apr-05	827,000	0	827,000	San Francisco State University	Thomas Smith		Identification of Watershed-Dependent Species in Central Valley	This project will use two complementary molecular markers to elucidate the genetic structure of Central Valley populations and to identify corresponding management units for 8 species of conservation importance in the Central Valley. Project is 75% complete. Tom Smith, UCLA Center for Tropical Research.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B04	Feb-01	Jul-02	295,925		295,925	Natural Heritage Institute	John Cain		Focused Action to Develop Ecologically-based Hydrologic Models and Water Management Strategies in the San Joaquin Basin	Research Project. Task I: Identify the timing, frequent, magnitude, and duration of flood flows necessary to regenerate and sustain native riparian vegetation, fish, and other aquatic organisms as well as natural floodplain and alluvial river processes. Research and Monitoring project completed. John Cain, NHI.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-02-06						AFRP	Gonzalo Castillo		Comprehensive Assessment of Genetic Population Structure and Diversity for Central Valley Chinook Salmon	Objective: Describe population structure and the distribution of genetic variation for Central Valley Chinook salmon populations to help guide recovery and restoration efforts. The project is still in its earliest stages. The PIs and associated NMFS and CDFG biologists have met several times and the first year of sample collection has been proceeding as planned. Collection targets are being met in almost all cases.
112					112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B05	Sep-00	Sep-04	652,330		652,330	Grasslands Water District, (209) 826-5188	Don Marciochi, General Manager		Adaptive Real-Time Water Quality Management of Seasonal Wetlands in the Grassland Water District	Development and implementation of a program to address the thermal impacts of irrigation return flows in the San Joaquin Basin. Project includes designing and installing a monitoring system for quantity and quality of wetland drainage flow from the Grassland Water District. Don Marciochi, Grasslands Water District. Monitoring. Project Still ongoing. Extended to 9/2004.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02D-P57	Oct-03	Sep-05	998,222	85,478	1,083,700	The Regents of the University of California	Ahmad Hakim-Elahi		Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	Project will describe the biological characteristics of this species and its habitats for conservation and potential restoration. Peter Klimley, UCD. Monitoring / Research. The project is 25 percent complete. The second quarterly report was published. Sturgeon have been caught and tagged. Monitoring sturgeon movement is underway
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M10	Sep-97	Dec-99	475,000		475,000	University of Washington	Charles Simenstad		Applied Research to Predict the Evolution of Restored Diked Wetlands	Contributes to the development of a delta flow and hydrodynamic evaluation methodology that can be appropriately used in the implementation of an ecologically based plan to restore conditions in the rivers and sloughs of the Delta to support targets for restoration of aquatic resources. Project contributes to the overall knowledge of restoration of diked wetlands in the Delta. Research/Monitoring

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-F07	Nov-00	Mar-05	160,000	30,000	190,000	CDWR	Cindy Messer		Zebra Mussel Detection and Outreach Program	The project is to implement a combination of public outreach and monitoring to, first provide information to educate the public about zebra mussels and the means by which they spread and, second to set up and operate an early detection system in the Central Valley, Bay/Delta and water storage and delivery systems. Kim Webb, USFWS. Monitoring; Remaining task is the development of a Rapid Response Plan. This project conducts monitoring that will aid in the detection of zebra mussel occurrence in the Delta.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-46						AFRP	Jeff McLain USFWS		Merced River Wing-Dam Gravel Monitoring	Objective: The monitoring in this project will evaluate how spawning-sized gravel moves from wing-dam sites, comparing two techniques: painted tracer rocks and radio-tagged rocks. This information can be used to assess whether these diversions are suitable locations for gravel introductions. Data collection was completed in the fall of 2002 and draft report was distributed for review in February 2003. Final report was submitted in April 2003.
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B13	Aug-00	Jun-04	1,042,245	none	1,063,600	University of Washington	Charles Simenstad		Understanding Tidal Marsh Restoration Processes and Patterns	Researchers propose to build on and expand initial CALFED Category III-supported research in the Sacramento-San Joaquin Delta to address considerable uncertainty in predicting the outcome and ecological benefit of restoring shallow-water tidal habitat in three different regions of the Bay-Delta, Suisun Bay, and San Pablo/North Bay. Charles Simenstad, University of Washington. Research/Monitoring; 99% complete. Fieldwork and research complete. The project addresses considerable uncertainty in predicting the outcome and ecological benefit of restoring shallow-water tidal habitat in three different regions of the Bay Delta: the Delta, Suisun Bay, and San Pablo/North Bay
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N01	Jan-02	Dec-04	2,521,236		2,521,236	University of California, Davis	Dr. James Quinn		he Influences Flood Regimes, Vegetative and Geomorphic Structures on the Links between Aquatic & Terrestrial Systems.	Contributes to the development of the methodology for evaluating delta flow and hydrodynamic patterns. Research. Project not completed. They are 1 1/2 years into the project
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02D-P52			357,146	none	357,146	California State Coastal Conservancy	Mary Small		Big Break and Marsh Creek Water Quality and Habitat Restoration Program	Planning for restoration of up to <30 acres of intertidal marsh in the Central and West Delta. 30 acres of various habitat types to be restored. Monitoring, Project not completed.

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112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-22						AFRP			Genetic Maintenance of Hatchery and Natural-Origin Winter-Run Chinook Salmon	Objective: Continue on-going screening and development of nDNA markers (loci) to allow positive identification of individual salmon adults for use in the Service's winter-run Chinook salmon captive propagation and captive brood stock programs, and determine genetic impacts of the program on the wild population through genetic analysis and verification and refinement of an effective population size model. <i>The Bodega Marine Laboratory is well equipped to characterize populations of Chinook salmon using microsatellites. Screening of more than 50 microsatellite primer sets has been completed for most of the four runs. Seven loci have demonstrated marked frequency differences among the runs, and have been most useful to run discrimination work conducted thus far. Much of the work for run discrimination has been funded through a separate contract through the California Department of Water Resources for run discrimination work in the Delta. A computer program named "WHICH-RUN" has also been developed by the lab to make probability assignments for</i>
112	RES				112 B Status of the development of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-28						AFRP	Cesar Blanco USFWS		Yuba River chinook salmon and steelhead life history evaluation	Objective: The objectives of the project are to document timing of emergence, size and condition at emigration, duration of emigration, and a measure of abundance or relative abundance. <i>Remaining funds in the amount of \$7,120 were appropriated to be used for a redd survey in fall 2003.</i>
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C10	May-98	Dec-99	800,000	0	800,000	CDWR	Leo Winternitz		Comprehensive Monitoring Assessment and Research Program (CMARP)	<i>Monitoring and Research; Completed. Leo Winternitz, The Water Forum</i>
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M16	Aug-97	Sep-98	1,450,200	0	1,450,200	California State University, Chico	Charles W. Nelson		Sacramento River & Major Tributaries Riparian Corridor Mapping Project	Mapping of riparian vegetation along rivers and streams in the Sacramento Valley portions of Glenn, Sutter, Colusa, Yuba, Yolo, and Sacramento Counties. Contributes to the process of restoring the Sacramento River Basin (EMZ), protecting Inner River Zone areas between Red Bluff and Colusa reaches within identified the Sacramento River Conservation, restoration and protection of riparian habitat in the Sacramento River Basin (EMZ). <i>Mapped riparian vegetation, open water, gravel bars, disturbed riparian, and invasive (Arundo, Tamarix, Rubus discolor) throughout the Sacramento River and major tributaries. Monitoring; project completed.</i>

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112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-F22	Dec-98	Sep-02	772,667	243,812	1,016,479	CSU Hayward	C. Kitting		Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone	Project task 3 includes restoration success monitoring of at risk bird and mammal species, including clapper rail and salt marsh harvest mouse. Project complete. Restoration of 272 acres of tidal marsh habitat; Carl Wilcox, CDFG.
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N04	Feb-98	Feb-01	898,700	0	898,700	The Nature Conservancy	Meghan Mazzoni		Sacramento River Meander Restoration	Project will acquire 94.55 acres and restore 10 acres to riparian habitat. Ryan Luster, the Nature Conservancy. Implementation; 10 was restored to riparian habitat, 600 acres were reconnected to the Sacramento River Floodplain. Project completed.
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P46	Jul-03	Jun-06	400,000	0	400,000	Environmental Science Associates	Niall McCarten		At-Risk Plant Species, Habitat Restoration and Recovery, And Non-Native Invasive Species Management	Development of a cooperative program to manage and restore 17.25 acres of alkali vernal pools and ~ 250 of adjacent buffer areas in the Suisun Marsh/North San Francisco Bay EMZ. Ties in with Suisun Marsh/North San Francisco Bay EMZ by way of Crampton's tuctoria. Monitoring, Planning, and Implementation; 27% completed. 320 acres of alkali vernal pools and grassland (17.25 acres of alkali vernal pools and ~ 250 of adjacent buffer)
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-C01	Feb-01	Oct-04	1,793,661	582,840	2,367,501	SF Bay Area Conservancy	Nadine Hitchcock		Invasive Spartina Project	Project not complete. Project has conducted outreach, education, and clapper rail surveys. Actual eradication is pending environmental compliance documents. This project will undertake efforts to plan and implement control of Spartina to prevent an invasion of San Pablo and Suisun Bays and significantly reduce invasive populations bay wide. Contributes to the restoration of saline emergent wetland; Kim Webb, USFWS.
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N03A	Dec-98	Dec-01	780,000	0	780,000	The Nature Conservancy	Meghan Mazzoni		Sacramento River-Active Restoration of Riparian Forest	Will restore 200 acres of flood-prone agricultural lands to native riparian forest along the Sacramento River. Ryan Luster, the Nature Conservancy. Implementation; 204 acres were restored to riparian habitat, project completed.

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112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-N03B	Mar-99	Mar-02	512,500	0	512,500	Wildlife Conservation Board	Scott Clemons		Sacramento River-Active Restoration of Riparian Forest	This project will restore 100 acres of flood-prone agricultural lands to native riparian forest along the Sacramento River. Ryan Luster, The Nature Conservancy. Implementation; 75 acres of riparian habitat are being restored, project completed. It is 75 acres instead of 100 acres that were being restored.
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N19	Feb-01	n/a	593,931		593,931	Ducks Unlimited	Fritz Reid		Ecological Monitoring of Tolay and Cullinan Ranch Tidal Wetland Restoration	Monitoring from construction to development of tidal marsh. Monitoring project is ongoing; Carl Wilcox, CDFG.
112	Res				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02D-P59			6,427,131		6,427,131	San Luis National Wildlife Refuge Complex	Kim Forrest, Refuge Manager		Recovery Implementation for Riparian Brush Rabbit and Riparian Woodrat on the lower Stanislaus River	Project not begun yet. Proposing to establish for riparian brush rabbits a Lower Stanislaus River Riparian Preserve of 500-1,000 acres on the south bank of Stanislaus River in Stanislaus County, within an area defined by the confluence with the San Joaquin River up to river mile 9.5. Additionally, proposing expansion of the habitat at Caswell Memorial State Park, San Joaquin County, while monitoring the riparian brush rabbits response; and monitor the recently reintroduced rabbits at the San Joaquin River National Wildlife Refuge on the San Joaquin River in Stanislaus County to gain a better understanding of the reintroduction process. Kim Forrest, USFWS.
112	RES				112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-F24	Dec-98	Sep-00	76,348	0	76,348	CSU Chico	Donald Holtgrieve, Dept of Geography and Planning.		Butte Creek Riparian Restoration Demonstration	This project will establish riparian restoration (Task 2a). Paul Ward, CDFG. Close off all unauthorized vehicle access and monitor water quality, revegetation areas and wildlife populations. Implementation; project completed. The Packard Foundation funded a spring -run chinook salmon project.
112					112 C Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for terrestrial habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P17	Sep-03	Aug-06	356,876	81,363	438,239	Point Reyes Bird Observatory	Geoffrey Geupel		Songbird population responses to riparian management and restoration at multiple scales: comparative analysis, predictive modeling, and the evaluation of monitoring programs.	Geoffrey Geupel, Point Reyes Bird Observatory. Monitoring. Project 5% completed.

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112					112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C15	Feb-99	Oct-01	241,000	0	241,000	UC Davis	Joseph Cech, Jr.		Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	This project will provide baseline information on life history parameters and physiological responses of green sturgeon. Monitoring and research project is 80% complete. Biological requirements of green sturgeon have been identified. Joseph Cech, Jr, UC Davis.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C10	May-98	Dec-99	800,000	0	800,000	CDWR	Leo Winternitz		Comprehensive Monitoring Assessment and Research Program (CMARP)	Monitoring and Research; Completed. Leo Winternitz, The Water Forum
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P29	Jul-03	Jun-06	4,350,000	50000 Tuolumne River Technical Advisory Committee	4,400,000	Turlock Irrigation District	Wilton Fryer		Tuolumne River Sediment Acquisition and Spawning Gravel Transfusion Project	Project Task 10. Monitoring. This task will implement components of the monitoring plan to evaluate the performance of gravel augmentation to enhance salmonid spawning habitat. Jeff McLain, USFWS. Implementation. Project has not started, USFWS is expecting a significant change in the scope of this contract.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-00-22						AFRP			Genetic Maintenance of Hatchery and Natural-Origin Winter-Run Chinook Salmon	Objective: Continue on-going screening and development of nDNA markers (loci) to allow positive identification of individual salmon adults for use in the Service's winter-run Chinook salmon captive propagation and captive brood stock programs, and determine genetic impacts of the program on the wild population through genetic analysis and verification and refinement of an effective population size model. The Bodega Marine Laboratory is well equipped to characterize populations of Chinook salmon using microsatellites. Screening of more than 50 microsatellite primer sets has been completed for most of the four runs. Seven loci have demonstrated marked frequency differences among the runs, and have been most useful to run discrimination work conducted thus far. Much of the work for run discrimination has been funded through a separate contract through the California Department of Water Resources for run discrimination work in the Delta.

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B13	Aug-00	Jun-04	1,042,245	none	1,063,600	University of Washington	Charles Simenstad		Understanding Tidal Marsh Restoration Processes and Patterns	Researchers propose to build on and expand initial CALFED Category III-supported research in the Sacramento-San Joaquin Delta to address considerable uncertainty in predicting the outcome and ecological benefit of restoring shallow-water tidal habitat in three different regions of the Bay-Delta, Suisun Bay, and San Pablo/North Bay. Charles Simenstad, University of Washington. Research/Monitoring; 99% complete. Fieldwork and research complete. The project addresses considerable uncertainty in predicting the outcome and ecological benefit of restoring shallow-water tidal habitat in three different regions of the Bay Delta: the Delta, Suisun Bay, and San Pablo/North Bay
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-02-06						AFRP	Gonzalo Castillo USFWS		Comprehensive Assessment of Genetic Population Structure and Diversity for Central Valley Chinook Salmon	Objective: Describe population structure and the distribution of genetic variation for Central Valley Chinook salmon populations to help guide recovery and restoration efforts. The project is still in its earliest stages. The Pls and associated NMFS and CDFG biologists have met several times and the first year of sample collection has been proceeding as planned. Collection targets are being met in almost all cases.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-F07	Nov-00	Mar-05	160,000	30,000	190,000	CDWR	Cindy Messer		Zebra Mussel Detection and Outreach Program	The project is to implement a combination of public outreach and monitoring to, first provide information to educate the public about zebra mussels and the means by which they spread and, second to set up and operate an early detection system in the Central Valley, Bay/Delta and water storage and delivery systems. Kim Webb, USFWS. Monitoring; Remaining task is the development of a Rapid Response Plan. This project conducts monitoring that will aid in the detection of zebra mussel occurrence in the Delta.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N26	Oct-01	Oct-04	849,845	0	849,845	United States Department of Agriculture Forest Service, Lassen National Forest (LNF)	Russ Volke		Lassen National Forest Watershed Stewardship Within the Anadromous Watersheds of Butte, Deer, and Mill Creeks	The LNF watershed stewardship project includes three watershed-based restoration tasks within the anadromous watersheds of Deer, Mill, Butte Creeks. Tasks 1a and 2a include 44 extensive sediment reduction projects in Deer and Mill Creek watersheds. Additional proposed activities include Colby Creek Meadow condition survey; followed by the implementation of meadow restoration demonstration projects, installation of interpretive displays at seven recreation areas along Deer and Mill Creeks, a campground education program at Potato Patch campground, a summer patrol of the Spring-run chinook salmon spawning areas in Deer Creek, and the establishment of Watershed Stewardship education programs at Chester Elementary and High Schools. Ken Roby, USFWS. Implementation of various restoration projects on Butte, Deer, and Mill Creeks: 66 percent
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N44	Oct-01	Sep-04	1,211,903	0	1,211,903	USFWS	James Smith		Estimating the Abundance of Sacramento River Juvenile Winter-run Chinook Salmon with Comparison to Adult Escapement	Monitoring downstream migrating winter-run salmonids. Monitoring; project on-going.

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N10	Sep-99	Jan-00	113,033	0	113,033	UC Berkeley	Vincent H. Resh		Assessing Ecological and Economic Impacts of the Chinese Mitten Crab	<i>Kim Webb, USFWS, Project completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N12	Jul-99	May-03	70,636	103,622	174,258	CDFG	Dennis McEwan		Central Valley Steelhead Genetic Evaluation	<i>Dennis McEwen, CDFG. Monitoring and Research; project completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N02	Aug-99	Oct-01	823,000	0	823,000	UCD	Joseph J. Cech Jr.		Fish Treadmill Developed Fish Screen Criteria for Native Sacramento - San Joaquin Watershed Fishes	<i>Joseph J. Cech Jr., U.C. Davis. Monitoring and Research; project completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C08	Jun-01	Nov-02	500,000	0	500,000	State Water Resources Control Board	Karen Larsen		Algae Toxicity Study	Monitoring and research. <i>Karen Larsen, Monitoring; project completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N09	Apr-00	Mar-04 amended	653,384	0	653,384	San Francisco State University	Wim Kimmerer		Effects of Introduced Species of Zooplankton and Clams on the Bay-Delta Food Web	<i>Kim Webb, USFWS. Unknown if project completed. The goal of the project will be to determine how food web alterations influence the key fish species that depend on that food web, and what rehabilitation efforts and actions might be effective in the context of that altered food web. Tasks include examination of gut contents and condition of fish to assess the extent to which fish prey on introduced versus native species; zooplankton experiments will be conducted to determine growth and production rates of common species of zooplankton; predation experiments will be conducted to examine selective predation by fish on alternative zooplankton prey, and predatory relationships among the zooplankton; and growth rate of key species will be measured and the degree of food limitation will be determined.</i>

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N22	Sep-98	Jun-01	530,000	120,000	650,000	Central Valley Regional Water Quality Control Board	Karen Larsen		Rainbow Trout Toxicity Monitoring	Research and monitoring of rainbow trout. <i>Karen Larsen, State Water Resource Control Board. Monitoring; There have been contract delays. The work has not yet started.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C07	Sep-98	Nov-02	400,000	0	400,000	State Water Resources Control Board	Karen Larsen		Fathead Minnow Toxicity Study in the Sacramento River	Monitoring and research of fathead minnows. <i>Karen Larsen , State Water Resource Control Board. Monitoring; project completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N47	Jul-01	Jun-06	1,009,287	0	1,009,287	USFWS	James G. Smith or Matt Brown		Clear Creek Juvenile Salmonid Monitoring Project	Monitoring of Rotary Screw Trap for juvenile salmonids in Clear Creek. <i>Monitoring; the project is ongoing. One year is completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N46	May-01	Dec-05	391,019	0	391,019	USFWS	James G. Smith or Matt Brown		Sacramento River Winter Chinook Salmon Carcass Study	Monitoring of Winter -run salmon carcasses on the Sacramento River. <i>Monitoring; the project is ongoing. Two years completed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N45	Jul-01	Jun-05	1,736,073	0	1,736,073	USFWS	James G. Smith or Matt Brown		Battle Creek Anadromous Salmonid Monitoring Projects	Monitoring projects on chinook salmon in Battle Creek. <i>Monitoring; project on-going.</i>

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N07	Jan-00	Jan-04	673,684	135,994	809,678	UC Davis	Silia S. O. Hung		Chronic Toxicity in Splittail	Research and monitoring. <i>Project 85% complete pending final reports; Silia S.O. Hung</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N19	Feb-01	n/a	593,931		593,931	Ducks Unlimited	Fritz Reid		Ecological Monitoring of Tolay and Cullinan Ranch Tidal Wetland Restoration	monitoring from construction to development of tidal marsh. <i>Monitoring project is ongoing; Carl Wilcox, CDFG.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N49	Jan-02	Dec-04	362454 amended	?	\$522,529 3yrs worth of work	CDFG	Paul Ward		Butte Creek Big Chico Creek and Sutter Bypass Chinook Salmon and Steelhead Evaluation	<i>Monitoring; 60 percent complete. Project will continue. PGE funded a pre-spawning mortality study.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N28	Oct-01	Oct-04	541,747	0	541,747	CDWR	Burt Bundy		Sacramento River Conservation Area Program	The project involves hiring a manager and office staff for a three-year period to assist in the development and implementation of site-specific plans for areas with in the Sacramento River Riparian Conservation Area, and to manage a new nonprofit riparian land management entity that will coordinate activities and continue the process of building broader support and understanding of the goals of the SB 1086 program. <i>Burt Bundy, Sacramento River Conservation Area Forum. Planning; project completed. The project provided funding to continue the efforts of the Sacramento River Conservation Area Program to act as a coordinating body between local, state, and federal agencies regarding restoration activities in the Sacramento River watershed.</i>
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-F24	Dec-98	Sep-00	76,348	0	76,348	CSU Chico	Donald Holtgrieve, Dept of Geography and Planning.		Butte Creek Riparian Restoration Demonstration	This project will establish riparian restoration (Task 2a). <i>Paul Ward, CDFG. Close off all unauthorized vehicle access and monitor water quality, revegetation areas and wildlife populations. Implementation; project completed. The Packard Foundation funded a spring -run chinook salmon project.</i>

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-F22	Dec-98	Sep-02	772,667	243,812	1,016,479	CSU Hayward	C. Kitting		Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone.	Project task 3 includes restoration success monitoring of submerged vegetation habitats, fish migration and colonization, and foodweb parameters. Project complete. Restoration of 272 acres of tidal marsh habitat; Carl Wilcox, CDFG.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-C01	Feb-01	Oct-04	1,793,661	582,840	2,367,501	SF Bay Area Conservancy	Nadine Hitchcock		Invasive Spartina Project	Project not complete. Project has conducted outreach, education, and clapper rail surveys. Actual eradication is pending environmental compliance documents. This project will undertake efforts to plan and implement control of Spartina to prevent an invasion of San Pablo and Suisun Bays and significantly reduce invasive populations bay wide. Contributes to the restoration of saline emergent wetland; Kim Webb, USFWS.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-01-10	2000 ?	9/30/02 ?	299,606 ?	75,000	224,606	Battle Creek Watershed Conservancy (BCWC)	Sharon Paquin-Gilmore, Watershed Coordinator		Battle Creek Watershed Stewardship, Phase 2	BCWC proposes a project to do all of the following: 1) Complete an assessment of watershed conditions in the upper watershed and in the lands lying immediately upland of Battle Creek's Restoration Project reaches. This work will identify and prioritize high-risk erosion areas for future treatment and builds on the upper watershed processes landowner workgroup developed by BCWC in Phase 1. 2) Implement, in close cooperation with the resource agencies and local schools, a watershed information system to support Restoration Project monitoring, assessment, and adaptive management. 3) Sustain implementation of the Battle Creek Watershed Strategy, through outreach work toward the complementary objectives of safeguarding the Battle Creek watershed. Harry Rectenwald, CDFG. Planning / Implementation; 50 percent complete. Project is ongoing.Watershed strategy is complete.Conservation easement planning is complete. Implement an information system for watershed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N27	Oct-01	Oct-05	545,170		545,170	Southern Sonoma County RCD	David Luther		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi objective program to include watershed monitoring, assessment tasks, including salmon escapement, water quality, and benthic macroinvertebrates. Specific tasks include monitoring fish passage enhancements, monitoring of pool enhancement and restoration. Implementation, Monitoring, and Research Project. Project is 70% complete; streambed restoration projects are in progress, in various stages of completion. Chris Taylor, Southern Sonoma County RCD.

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-97-C06	Jul-98	Jun-01	437,326	none	437,326	UCD (Bodega Bay)	William A. Bennett		Contaminant Effects on Smelt	Research and monitoring of listed species
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-N03	Sep-99	Jun-04	120,000	180,000	300,000	Jones and Stokes Associates	William T. Mitchell		Life History and Stock Composition of Steelhead Trout	Project 20 percent complete. Needed permits to start project. Monitoring and Research. Yuba County Water Agency funded a downstream migrant steelhead study.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-N01	Jun-01	Dec-05	5,100,000	0	5,100,000	Anderson - Cottonwood Irrigation District	Dee E. Swearingen		Anderson - Cottonwood Irrigation District Fish Passage Improvement Project	Installation of fish screens and monitor how effective they are. Implementation and Monitoring, project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B03	Aug-99	Apr-01	5,100,000	5,100,000	10,200,000	Anderson Cottonwood Irrigation District	Dee E. Swearingen		Anderson - Cottonwood Irrigation District Fish Passage and Screen Phase 3	Installation of fish screens and monitor how effective they are. Implementation and Monitoring, project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C12	Apr-99	Sep-04	45,492	0	45,492	USFWS	Kevin Niemela		Genetic Comparison of Steelhead Stocks in Clear Creek	90 percent completed. Written report is all that remains. Monitoring and Research

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C13	Apr-99	Sep-01	60,801	0	60,801	USFWS	Kurt Brown		Spawning Areas of Green Sturgeon in the Upper Sacramento River	Monitoring and Research; project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C14	Mar-99	Aug-02	150,000	0	150,000	USFWS (Red Bluff)	James G. Smith		Monitoring Spring and Winter Run Chinook Salmon and Steelhead in Butte Creek	Monitoring; project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-99-B08	Dec-99	Oct-05	1,663,400	0	1,663,400	USBR	Carl Werder		Improve Upstream Ladder and Barrier Wier @ Coleman National Fish Hatchery at Battle Creek	Harry Rectenwald, CDFG. Planning / Design; 70 percent complete. Planning and designs are nearly complete.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-B16	Sep-98	Jul-04	395,000	0	395,000	U.S. Bureau of Reclamation	Carl Werder		Battle Creek Screens and Fish Passage (Reconnaissance Investigations)	Not sure but some monitoring was done. Harry Rectenwald, CDFG. Planning / Design; project complete.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-01-N59	Aug-02	Jan-05	670,000	none	670,000	Stockton East Water District	Kevin Kauffman		Stockton East Water and Calaveras County Water Districts Fish Screen Facilities	This project will develop plans to monitor existing fish populations, spawning activity, rearing, and habitat limitations to help determine the relative impact of entrainment losses to the populations. Kevin Kauffman, Planning. Project not completed: Amendment 2 weeks ago to include fish ladder.

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112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C01	May-99	Dec-03	3,886,995	none	3,886,995	Department of Water Resources	Curt Schmutte		Twitchell Island Category III Subsidence reversal Demonstration Project	Contributes to protection and enhancement of island habitat in the Delta.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02-P32	Sep-03	Aug-06	271,804		271,804	UC Davis	Peter Moyle		Distribution and Abundance of Shrimp, Plankton, and Benthos in Suisun Marsh	This project is a research project that investigates the current distribution of native and alien benthos, mysid shrimp, and plankton within the Suisun Marsh. Results will help determine the importance of tidal marsh habitat as native species refugia. Research Project not complete. Delayed one year due to contracting difficulties. Some sampling has been completed. Peter Moyle, UC Davis.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-02D-P57	Oct-03	Sep-05	998,222	85,478	1,083,700	The Regents of the University of California	Ahmad Hakim-Elahi		Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed	Project will describe the biological characteristics of this species and its habitats for conservation and potential restoration. Peter Klimley, UCD. Monitoring / Research. The project is 25 percent complete. The second quarterly report was published. Sturgeon have been caught and tagged. Monitoring sturgeon movement is underway
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-98-C11	Feb-99	May-01	285,000	none	285,000	CDFG	Bob Fujimura		Adult Fall-Run Chinook Salmon Movement in the Lower San Joaquin River and South Delta	This project will monitor the upstream movement of fall-run chinook salmon in the lower San Joaquin River and South Delta. Bob Fujimura, CDFG; Monitoring. Project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-96-M10	Sep-97	Dec-99	475,000		475,000	University of Washington	Charles Simenstad	None	Applied Research to Predict the Evolution of Restored Diked Wetlands	Contributes to the development of a delta flow and hydrodynamic evaluation methodology that can be appropriately used in the implementation of an ecologically based plan to restore conditions in the rivers and sloughs of the Delta to support targets for restoration of aquatic resources. Project contributes to the overall knowledge of restoration of diked wetlands in the Delta. Research/Monitoring

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							START DATE	END DATE								
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B03	Jul-00	Oct-03	559,446	431,606	991,052	University of California, Davis	Serge Doroshov		Culture of Delta Smelt Phase II and III	Research on MSCS listed species. Monitoring and Research. Project is 70 percent complete. Culture phase is done.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-B06	Sep-00	May-02	211,164	205,013 (reduced by mod		University of California, Davis	Joseph J. Cech, Jr		Biological Assessment of Green Sturgeon Phase II	Monitoring and Research. Project completed.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	CVPIA-01-F10			40,890		40,890	USFWS	J. Scott Foott		Health Monitoring of Hatchery and Natural Fall-run Chinook Juveniles in the San Joaquin River System and Delta, April - June 2001	This project will characterize the health and physiological condition of both natural and hatchery juvenile chinook in the San Joaquin River System and Delta. Scott Foott,USFWS. Monitoring / Research
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-01-06									Biological Assessment of Green sturgeon in the Sacramento-San Joaquin Watershed	Researching various biological and ecological factors of Green Sturgeon. Monitoring and Research project; 80 percent complete. Biological requirements of green sturgeon have been identified. Joe Cech Jr., UC Davis.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	AFRP-02-08						AFRP	Tricia Parker, USFWS		Sex-Reversal in Central Valley Chinook Salmon: Occurrence and Population Genetic Consequences	Objective: Perform genetic and histological analyses on fish from the Sacramento and San Joaquin River basins to provide management agencies with information regarding the possible impact sex-reversed fish may have on population persistence of fall-run Chinook. The second year of this project is underway and substantial progress is being made in meeting the objectives of this project. Several hundred adult carcasses from streams in both the Sacramento and San Joaquin drainages were sampled. Fin samples were taken for later analysis for sex specific markers and gonadal samples were taken. In addition 22 crosses were made at UCDavis between 11 females and two males. Females that were normal, apparent sex-reversals, and an intermediate type were used in crosses. These crosses have resulted in juveniles that will be raised to approximately six months of age when they can be identified as to sex. Mortalities have been preserved and will be genotyped to compare departures from random death among and within the families.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the MSCS Focus Area.	ERP-00-E04	Jun-00	Nov-03	438,923	143,030	626,953	Southern Sonoma County RCD	Gillian Harris		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement, water quality, and benthic macroinvertebrates. Specific tasks include monitoring and assessment of habitats/species through a volunteer monitoring program. (Project linked to ERP-01-N27). Implementation, monitoring, and research project; Project completed, included riparian restoration, bank stabilization, pool enhancement, and spawning and rearing habitat improvement. Chris Taylor, Southern Sonoma County RCD.
112	RES				112 D Status of the implementation of a comprehensive monitoring, assessment and research program (CMARP) for aquatic habitats and species populations acceptable to the fish and wildlife agencies. Conduct range wide surveys for all "R" and "r" covered plants and animals in the	ERP-97-C08	Jan-99	Dec-00	931,857			DWR	Earle Cummings		San Joaquin River Real-time Water Quality Management Program	Implementation f a comprehensive monitoring, assessment and research program for aquatic habitats. Installation of Stream stage and salinity equipment to generate continuous radio telemetered data from the field. Monitoring project, completed. Ernie Taylor, DWR.

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 113 -- ROLLED UP SUMMARY

MILESTONE 113 -- Develop and begin implementation of a study to determine appropriate conditions for the germination and establishment of riparian woody plants along the Sacramento River and San Joaquin River. Complete development of a cooperative program to plant vegetation on unvegetated rip rapped banks consistent with flood control requirements.		PROJECTS REVIEWED - ERP-00-F04, ERP-01-N01	SUMMARY -- One rather significant contract was granted for developing a methodology to evaluate Delta flow and hydrodynamic patterns and to determine the appropriate timing and conditions for optimum germination and establishment of woody riparian plants along the Cosumnes River, wider application to the Sacramento and San Joaquin River systems. Another effort utilizes pilot study results to select additional study sites for developing a conceptual model for riparian plant establishment in the San Joaquin River Basin. These studies may supply much of the foundational information to achieve the milestone, yet we NEED to develop the cooperative program to plant woody vegetation on rip rapped banks, including authorization from those authorities responsible for levee integrity.		AGENCY NOTES --	NOTES CONT'D --
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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 113 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 115 -- ROLLED UP SUMMARY

MILESTONE 115 -- Conduct instream flow studies to determine the flows necessary to support all life stages of anadromous and estuarine fish species.		PROJECTS REVIEWED - ERP-99-N02, ERP-00-B04, ERP-01-C02, AFRP-2003-02, AFRP-2003-06		SUMMARY -- Simply stated, this milestone calls for a monumental amount of knowledge in order to determine those "flows necessary to support all life stages of anadromous and estuarine fish species." We have not gained that knowledge yet, through ERP or other actions. NEED to stimulate partnerships among agencies, researchers and restoration ecologists to prepare studies that would evaluate habitats for targeted species correlated with different flow regimes, temperature, and D.O. conditions and provide feed back to optimize those parameters for maximum environmental benefit balanced with other needs. Need to define the parameters of this milestone like "support" and better define the milestone expectations. It is too open-ended, now.			AGENCY NOTES --	NOTES CONT'D --
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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 115 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
115	RES		Conduct instream flow studies to determine the flows necessary to support all life stages of anadromous and estuarine fish species.		115 A. Status of the instream flow studies conducted to determine the flows necessary to support all life stages of anadromous and estuarine fish species.	ERP-01-C02	Oct-01	Sep-04	418,700	0	418,700	CDWR	John Clements		Real-Time Flow Monitoring	Project provides for the continued operation and maintenance of 18 stream gauging stations and associated telemetry equipment over a three-year period. Paul Ward, CDFG. Install 18 flow meters on Mill, Deer, Big Chico and Butte creeks. Implementation; project completed.
115	RES				115 A. Status of the instream flow studies conducted to determine the flows necessary to support all life stages of anadromous and estuarine fish species.	AFRP-2003-02						AFRP	Jeff McLain USFWS		Up-Migration and Straying of Tuolumne River Salmonids in Response to Fall Attraction Flows and Environmental Factors	Objective: The proposed study will examine the relationship of environmental explanatory variables with: a) the annual variation in arrival timing of fall run Chinook salmon in the lower Tuolumne River, and b) the annual proportion of stray coded wire tag (CWT) from the San Joaquin basin that are recovered in Sacramento River tributaries. Environmental variables will include flow, water quality, and regional meteorology. Annual carcass surveys of the Tuolumne River will be used to indicate the upmigration timing of the San Joaquin basin at large. CWT recovery of Merced River Fish Facility (MRFF) tag codes released in the San Joaquin basin tributaries will be compared to the numbers recovered in the American, Feather and Mokelumne Rivers in the Sacramento River basin. The proposal was reviewed by AFRP staff, Tuolumne River Technical Advisory Committee, and California Bay-Delta Program ERP staff in July 2003. The proposal was revised and later accepted by the AFRP in September 2003.
115	RES				115 A. Status of the instream flow studies conducted to determine the flows necessary to support all life stages of anadromous and estuarine fish species.	ERP-00-B04	Feb-01	Jul-02	295,925		295,925	Natural Heritage Institute	John Cain		Focused Action to Develop Ecologically-based Hydrologic Models and Water Management Strategies in the San Joaquin Basin	Parsing document identifies achievement of this milestones can be met through modeling research. Project Task 1: Identify the timing, frequent, magnitude, and duration of flood flows necessary to regenerate and sustain native riparian vegetation, fish, and other aquatic organisms as well as natural floodplain and alluvial river processes. Project Task 2: Identify innovative water management strategies for modifying reservoir release operations or reconfiguring water delivery schedules and practices in the San Joaquin Basin to maximize ecological benefit. Project completed.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
115	RES				115 A. Status of the instream flow studies conducted to determine the flows necessary to support all life stages of anadromous and estuarine fish species.	AFRP-2003-06						AFRP	Cesar Blanco USFWS		Lower American River Temperature Reduction Modeling Project	Objective: To develop predictive tools that will: 1) Reduce to the extent possible the uncertainties in the performance of identified temperature control actions that could be implemented to improve the management of cold water resources in the Folsom/Natoma Reservoir system and the lower American River, and 2) Be available for daily operations, planning, and salmon and steelhead habitat studies by other project operators and other stakeholders. Ongoing
115	RES				115 A. Status of the instream flow studies conducted to determine the flows necessary to support all life stages of anadromous and estuarine fish species.	ERP-99-N02	Aug-99	Oct-01	823,000	0	823,000	UCD	Joseph J. Cech Jr.		Fish Treadmill Developed Fish Screen Criteria for Native Sacramento - San Joaquin Watershed Fishes	Joseph J. Cech Jr., U.C. Davis. Monitoring and Research; project completed.

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 116 -- ROLLED UP SUMMARY																		
MILESTONE 116 -- Conduct an investigation of in-channel structures that focuses on the following issues: (1) habitat suitability for both predator and prey fishes; (2) predator-prey interactions; and (3) recommendations for reducing predation on juvenile salmonids.					PROJECTS REVIEWED - ERP-01-N03		SUMMARY -- Some contracts were associated with this milestone and additional contracts that were specific to Milestones 23, 71, 88, and others may indirectly bear on aspects of this milestone, but no contracts specifically address the complex questions relating to predator-prey interactions, their behavior, nuances of habitat suitability, and especially those aspects that would provide for effective recommendations for reducing predation on juvenile salmonids. This milestone has not been addressed. NEED to focus actions to achieve this milestone by solicitation or directed action.								AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 116 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																		
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments		
							START DATE	END DATE										
116	RES		Conduct an investigation of in-channel structures that focuses on the following issues: (1) habitat suitability for both predator and prey fishes; (2) predator-prey interactions; and (3) recommendations for reducing predation on juvenile salmonids.		116 A Status of the investigation of in-channel structures that focuses on habitat suitability for both predator and prey fishes													
116	RES				116 B Status of the investigation of in-channel structures that focuses on predator-prey interactions													
116	RES				116 C Status of the investigation of in-channel structures that focuses on recommendations for reducing predation on juvenile salmonids.	ERP-01-N03	Nov-01	Nov-04	543,530	0	543,530	Turlock Irrigation District	Wilton Fryer		Tuolumne River Restoration: Special Run Pool 10	Project will fill in deep lake like pool areas created by past instream gravel mining thus reducing salmon fish predator habitat. Jeff McLain, USFWS. Project completed.		

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 117 -- ROLLED UP SUMMARY																		
MILESTONE 117 -- Conduct experimental introductions of Sacramento perch into nontidal perennial aquatic habitats						PROJECTS REVIEWED - ERP-02-P34		SUMMARY -- One contract addresses developing strategies to restore Sacramento Perch to self-sustaining wild populations in the San Francisco Estuary. This project is the critical first step in bridging the knowledge gap about early life history, environmental tolerance, and genetics of Sacramento perch, basic biological information crucial to a restoration plan.							AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 117 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																		
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments		
							START DATE	END DATE										
117	RES		Conduct experimental introductions of Sacramento perch into nontidal perennial aquatic habitats		117 A. Status of experimental introductions of Sacramento perch into nontidal perennial aquatic habitats	ERP-02-P34	Aug-03	Jul-05	424,246	none	424,246	The Regents of the University of California	Ahmad Hakim-Elahi		Restoration of Sacramento Perch to San Francisco Estuary	The research project will develop strategies to restore Sacramento perch to self-sustaining wild populations in the San Francisco Estuary, and to assure the Sacramento perch long-term future in Central California. <i>Peter Moyle. Project incomplete due to contracting difficulties.</i>		

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 118 -- ROLLED UP SUMMARY																
MILESTONE 118 -- Assess the impact of hatchery practices on naturally spawning populations of Chinook salmon and steelhead and operate hatcheries in a manner consistent with safe genetic practices that will maintain genetic integrity of all Central Valley anadromous salmonid populations.					PROJECTS REVIEWED - AFRP-2000-29, AFRP-2000-36		SUMMARY -- No ERP contracts specifically addressed this milestone, but some AFRP and other routine work performed by State and federal agencies indirectly bear on this milestone topic, especially agency hatchery operations. NEED to generate specific studies that have Central Valley wide application and result in systematic, scientifically based recommendations and guidance on this issue.							AGENCY NOTES --	NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 118 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
118	RES		Assess the impact of hatchery practices on naturally spawning populations of Chinook salmon and steelhead and operate hatcheries in a manner consistent with safe genetic practices that will maintain genetic integrity of all Central Valley anadromous salmonid populations.		118 A. Status of the assessment of the impact of hatchery practices on naturally spawning populations of Chinook salmon and steelhead	AFRP-2000-36						AFRP	Tricia Parker USFWS		Assist with analysis of alternative hatchery management strategies in order to integrate operations with the restoration of natural populations of chinook salmon and steelhead in Battle Creek	There are four major components or objectives of the reevaluation process: · Compilation and analysis of historical hatchery operations and evaluation work · Determine mitigation responsibilities · Conduct impact analyses of current/proposed production programs on listed stocks of anadromous salmonids · Suggest potential management alternatives where appropriate Funded through 2001
118	RES				118 A. Status of the assessment of the impact of hatchery practices on naturally spawning populations of Chinook salmon and steelhead	AFRP-2000-29						AFRP	Cesar Blanco USFWS		Winter-run carcass survey on the upper mainstem Sacramento River	Objective: To estimate escapement of hatchery-produced and wild-origin winter Chinook salmon; collect baseline information on the spawning population of winter Chinook salmon (i.e. age, sex ratio, temporal distribution of spawning); evaluate the effectiveness of the winter Chinook salmon propagation program; and collect tissue for future genetic analysis. Collected information will serve to assess AFRP restoration goals, determine the effectiveness of the hatchery supplementation program and assist in the maintaining genetic diversity in hatchery and natural stocks. Project completed in 2000.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
118	RES				118 B. Status of hatcheries operations in a manner consistent with safe genetic practices that will maintain genetic integrity of all Central Valley anadromous salmonid populations.	AFRP-2000-36						AFRP	Tricia Parker USFWS		Assist with analysis of alternative hatchery management strategies in order to integrate operations with the restoration of natural populations of chinook salmon and steelhead in Battle Creek	There are four major components or objectives of the reevaluation process: · Compilation and analysis of historical hatchery operations and evaluation work · Determine mitigation responsibilities · Conduct impact analyses of current/proposed production programs on listed stocks of anadromous salmonids · Suggest potential management alternatives where appropriate <i>Funded through 2001</i>

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 119 -- ROLLED UP SUMMARY																	
MILESTONE 119 -- Through the use of existing, expanded, and new programs, monitor adult anadromous salmonid returns to each watershed within the MSCS focus area. Monitoring techniques, data compilation and analysis, and reporting should be standardized among researchers and watersheds to the greatest extent possible.					PROJECTS REVIEWED -- ERP-98-B15, ERP-98-C11, ERP-98-C14, ERP-99-N13, ERP-00-E04, ERP-01-N27, ERP-01-N44, ERP-01-N45, ERP-01-N46, AFRP-2000-24, AFRP-2000-29, AFRP-2002-09, AFRP-2003-01, AFRP-2003-03, AFRP-2003-05, WSP-01-FP-082		SUMMARY -- Several contracts are linked to this milestone, and there may be other efforts that are existing, expanded, or new programs that monitor adult anadromous salmonid returns to each watershed within the MSCS focus area. The issue is the degree of standardization among researchers and watersheds in the areas of monitoring techniques, data compilation and analysis, and reporting. NEED to accomplish a collaborative synthesis of protocols and experimental design to be adopted by all collaborators. A small subgroup of researchers working with the Science Program could be effective in this endeavor.							AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 119 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																	
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments	
							START DATE	END DATE									
119	RES		Through the use of existing, expanded, and new programs, monitor adult anadromous salmonid returns to each watershed within the MSCS focus area. Monitoring techniques, data compilation and analysis, and reporting should be standardized among researchers and watersheds to the greatest extent possible.		119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.												
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-01-N46	May-01	Dec-05	391,019	0	391,019	USFWS	James G. Smith or Matt Brown		Sacramento River Winter Chinook Salmon Carcass Study	Monitoring of Winter -run salmon carcasses on the Sacramento River. Monitoring; the project is ongoing. Two years completed.	
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-01-N45	Jul-01	Jun-05	1,736,073	0	1,736,073	USFWS	James G. Smith or Matt Brown		Battle Creek Anadromous Salmonid Monitoring Projects	Monitoring projects on chinook salmon in Battle Creek. Monitoring; project on-going.	
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2000-24						AFRP	Jeff McLain USFWS		Analyze archived San Joaquin Basin chinook salmon scale samples and develop a comprehensive database accessible to interested parties	Objective: Process and analyze the existing scale samples for the San Joaquin Basin to determine age structure of returning adult fall-run Chinook salmon. This information will provide managers with a clearer understanding of the variables that affect the ultimate production of the San Joaquin salmon. Results from this project will provide the information needed to carry out a detailed cohort analysis. Detailed inventory, reabsorption assessment, and scale reading is nearly complete for all Chinook scales between 1976 and 1999.	

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-98-C14	Mar-99	Aug-02	150,000	0	150,000	USFWS (Red Bluff)	James G. Smith		Monitoring Spring and Winter Run Chinook Salmon and Steelhead in Butte Creek	Monitoring; project completed.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-01-N44	Oct-01	Sep-04	1,211,903	0	1,211,903	USFWS	James Smith		Estimating the Abundance of Sacramento River Juvenile Winter-run Chinook Salmon with Comparison to Adult Escapement	Monitoring downstream migrating winter-run salmonids. Monitoring; project on-going.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-99-N13	Oct-02	Nov-04	94,657	0	94,657	Humboldt State University, Department of Fisheries	Dr. David Hankin		Development of a Comprehensive Implementation Plan for a Statistically Designed Marking and Recovery	Contributes to research and monitoring salmon. The primary goal of the proposal was to develop a plan for marking, tagging, and recovering salmon and to detail the steps required to implement such a plan. David Hankin, Humboldt State University. Planning; The model has not been completed. Final report is about 90% completed.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-98-B15	Aug-98	Jun-02	697,632	0	697,632	Northwest Marine Technology, Inc.	Guy Thornburgh		Evaluation of Increasing Tagging Levels for Chinook Salmon and Steelhead and a Demonstration Project on Mass Marking	Contributes to research and monitoring salmon. This project will evaluate current tagging practices and demonstrate a technique for the mass marking of hatchery produced salmon, to support subsequent evaluating of harvest practices. Tasks include the evaluation of hatchery stocking, tagging, recovery data, alternative tagging approaches and concomitant benefits/risks, and the demonstration tagging of hatchery stock at various Central Valley hatcheries. Dave Knutson, Northwest Marine Technology. Monitoring; Tagging is complete. Data still needs to be analyzed.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	WSP-01-FP-082	Jun-01	Jun-03	270,541	319,900	590,441	Sonoma Ecology Center	Catlin Cornwall		Sonoma Creek Watershed Conservancy: Outreach and Restoration	Through the use of ...new programs, monitor adult anadromous salmonid returns to each watershed within the MSCS focus area. Task 3: Steelhead population assessment: Planning to restore a self-sustaining steelhead population requires and assessment of the locations, age distribution, and year-to-year survival rates of the existing population. There has never been a population study in the watershed.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2003-03			149,440		149,440	AFRP	Jeff McLain USFWS		Evaluating the Success of Spawning Habitat Enhancement on the Merced River, Robinson Reach	Objective: The objective of the study is to determine the location and number of redds in the Robinson Reach and to assess the suitability of spawning habitat based on level of use. This study will create a knowledge base that can be used to improve the design features of future phases of MRSHEP and that can be applied to other restoration efforts on rivers of similar scale and fluvial character. The following research hypotheses will be investigated to accomplish the objective: 1. Chinook salmon redd densities will be higher in the constructed portion of the Robinson Reach than in the adjacent upstream and downstream natural spawning sites. 2. Chinook salmon redd densities will be equal to or higher in the constructed portion of the Robinson Reach than those that occurred in the Robinson Reach prior to the reach altering flows of 1997. 3. Spawning is clustered in areas along the Robinson Reach and is not spread evenly or randomly throughout the reach. 4. The quantity of spawning is significantly different among spawning area designs.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	ERP-98-C11	Feb-99	May-01	285,000	none	285,000	CDFG	Bob Fujimura		Adult Fall-Run Chinook Salmon Movement in the Lower San Joaquin River and South Delta	This project will monitor the upstream movement of fall-run chinook salmon in the lower San Joaquin River and South Delta. Bob Fujimura, CDFG. Monitoring. Project completed.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2003-01						AFRP	Cesar Blanco USFWS		VAKI Riverwatcher Fish Monitoring System at Daguerre Point Dam	Objective: The objective is to purchase two (2) VAKI Riverwatcher fish counting systems with digital camera units in order to track and record fish movement through the fish ladders at Daguerre Point Dam. Systems were installed on the ladders at Daguerre Point Dam in July 2003. The solar systems used to power the VAKI units were not sufficient to provide reliable operation; hence PRAQUA, the sole distributor for the VAKI system in North America, provided additional solar panels at no cost in order to achieve reliable operation of the VAKI units. The additional solar panels should be in place by September 2003.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2002-09						AFRP	Cesar Blanco USFWS		Lower Yuba River Juvenile Chinook Salmon Life History Evaluation - 2002	Objective: Better understand the life history, population trends, and thermal requirements of juvenile Chinook salmon in the Yuba River, to best improve the adaptive management, including actions such as fish restoration projects and providing appropriate in-stream flow regimes. Project is entering its second year of funding.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2003-05						AFRP	JD Wikert USFWS		Distribution and Relationship of Resident and Anadromous Central Valley Rainbow Trout	Objective: To examine the occurrence and distribution of anadromous and non-anadromous rainbow trout. Otoliths of juvenile trout from many Central Valley watersheds will be analyzed to determine parental life history strategy (anadromous or resident). The determination will be based on examination of the ratio of strontium to calcium within the otolith. Otoliths are being collected (July 2003-July 2005). Collections have been made from Deer Creek, and the Calaveras, upper Sacramento and Yuba Rivers. Initial data should be available January 2004. Project in progress.
119	RES				119 A. Status of monitoring program for adult anadromous salmonid returns to each watershed within the MSCS focus area.	AFRP-2000-29						AFRP	Cesar Blanco USFWS		Winter-run carcass survey on the upper mainstem Sacramento River	Objective: To estimate escapement of hatchery-produced and wild-origin winter Chinook salmon; collect baseline information on the spawning population of winter Chinook salmon (i.e. age, sex ratio, temporal distribution of spawning); evaluate the effectiveness of the winter Chinook salmon propagation program; and collect tissue for future genetic analysis. Collected information will serve to assess AFRP restoration goals, determine the effectiveness of the hatchery supplementation program and assist in the maintaining genetic diversity in hatchery and natural stocks. Project completed in 2000.
119	RES				119 B. Status of standardization of monitoring techniques, data compilation and analysis, and reporting among researchers and watersheds to the greatest extent possible.	ERP-01-N27	Oct-01	Oct-05	545,170		545,170	Southern Sonoma County RCD	David Luther		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement, water quality, and benthic macroinvertebrates. Specific tasks include salmon escapement monitoring. (Project linked to ERP-00-E04). Implementation, Monitoring, and Research Project. Project is 70% complete; streambed restoration projects are in progress, in various stages of completion. Chris Taylor, Southern Sonoma County RCD.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
119	RES				119 B. Status of standardization of monitoring techniques, data compilation and analysis, and reporting among researchers and watersheds to the greatest extent possible.	ERP-00-E04	Jun-00	Nov-03	438,923	143,030	626,953	Southern Sonoma County RCD	Gillian Harris		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement. water quality, and benthic macroinvertebrates. Specific tasks include salmon escapement monitoring. (Project linked to ERP-01-N27). Implementation, monitoring, and research project; Project completed, included riparian restoration, bank stabilization, pool enhancement, and spawning and rearing habitat improvement. Chris Taylor, Southern Sonoma County