MULTI SPECIES CONSERVATION STRATEGY MILESTONE 69 -- ROLLED UP SUMMARY

MILESTONE 69 -- Develop and implement a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	**PROJECTS REVIEWED -** ERP-96-M12, ERP-96-M25, ERP-97-M02, ERP-98-B16, ERP-99-B08, IMM-02-I01	**SUMMARY --** Three of these contracts directly address the planning, design, and reconnaissance for fish ladders, screens, and barrier weir, although no construction was implemented for adult upstream and juvenile downstream migrant passage. The other contracts provide for stewardship planning and design of riparian, streamside, and in channel aquatic habitats for Chinook salmon, steelhead trout, and Pacific lamprey. Acquisition of conservation easements is being negotiated. Educational benefits are associated with some of the stewardship projects.		**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 69 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
69	SAC	SR	Develop and implement a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.		69 A. Status of the development of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	ERP-96-M25	May-97	Oct-99	50,000	50,000	100,000	Western Shasta Resource Conservation District	Richard Baumann		Battle Creek Watershed Management Strategy Project	***Planning / Education; project completed. Harry Rectenwald, DFG.***
69	SAC	SR			69 A. Status of the development of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	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)	***Harry Rectenwald, DFG. Planning / Design; project completed. Non-CALFED funded projects contributing to milestones; a list will be generated later.***
69	SAC	SR			69 A. Status of the development of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	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 goals 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 completed, still negotiating on properties. One property may close in fall. Acquisition. Jake Jacobson, TNC***
69	SAC	SR			69 B. Status of the implementation of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	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 goals 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. ***Acquisition project not completed, still negotiating on properties. One property may close in fall.***
69	SAC	SR			69 B. Status of the implementation of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	ERP-96-M12	Jul-97	Apr-99	306,000	reduced 76,000	230,000	CDFG	Harry Rectenwald		Battle Creek Chinook Salmon and Steelhead Restoration Study	***Project completed; planning for restoration and maintenance of riparian habitat. Harry Rectenwald, DFG***
69	SAC	SR			69 B. Status of the implementation of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	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	***Project 70% complete; planning and design. Planning and designs are nearly complete. Harry Rectenwald, DFG***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
69	SAC	SR			69 B. Status of the implementation of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	ERP-97-M02	Jul-01	Jun-02	395,000	395,000	790,000	DWR Northern District	William Mendenhall		Battle Creek Screens and Fish Passage	***Project completed; planning and design. Curtis Anderson, DWR***
69	SAC	SR			69 B. Status of the implementation of a solution to improve passage of upstream migrant adult fish and downstream migrant juvenile fish Battle Creek.	ERP-96-M25	May-97	Oct-99	50,000	50,000	100,000	Western Shasta Resource Conservation District	Richard Baumann		Battle Creek Watershed Management Strategy Project	***Project completed; planning and education. Harry Rectenwald, DFG***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 70 -- ROLLED UP SUMMARY

MILESTONE 70 -- Evaluate the feasibility of constructing fish passage facilities at the Grays Bend-Old River-Freemont weir complex at the upper end of the Yolo Bypass.		**PROJECTS REVIEWED -**		**SUMMARY** -- No contracts have been awarded to evaluate the feasibility of constructing fish passage facilities at the Grays Bend-Old River-Freemont weir complex.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 70 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
70	SAC	SR	Evaluate the feasibility of constructing fish passage facilities at the Grays Bend-Old River-Freemont weir complex at the upper end of the Yolo Bypass.		70 A. Status of the evaluation of the feasibility of constructing fish passage facilities at the Grays Bend-Old River-Freemont weir complex at the upper end of the Yolo Bypass.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 71 -- ROLLED UP SUMMARY

MILESTONE 71 -- Develop a program to reduce or eliminate fish stranding in the Sacramento, Feather and Yuba rivers and the Colusa Basin drain and Sutter Bypass in the active stream channels, floodplains, shallow ponds and borrow areas. Develop protocols for ramping flow reductions. Conduct surveys of stranding under a range of flow conditions and recommend solutions.		**PROJECTS REVIEWED -** ERP-99-B27, ERP-99-N14, ERP-99-N17, ERP-02-P13, ERP-02-P47, AFRP-01-01		**SUMMARY –** No contracts were issued to develop flow reduction ramping plans, conduct stranding surveys over a range of flow conditions, or make recommendations to reduce fish stranding on the Sacramento or Feather Rivers or in the Sutter Bypass. The Colusa Basin Drain Watershed Program was funded to address riparian and floodplain restoration issues at selected sites and may reduce fish stranding, but is not a program to specifically target stranding or ramping of flows. Another watershed coordination program on the Yuba River might similarly address fish stranding issues, but the Narrows 2 project specifically addresses a fixed bypass flow that will maintain downstream flows at 3000 cfs in the lower Yuba River. Expectations were to reduce or eliminate fish stranding on each of the Sacramento, Feather, Yuba Rivers and the Colusa Basin Drain and Sutter Bypass by development of flow reduction ramping plans, conducting stranding surveys through a range of flow conditions, and making recommendations to reduce stranding.			**AGENCY NOTES --**	**NOTES CONT'D --**
				Only the Narrows 2 project specifically addresses fish stranding issues by constructing a bypass to allow a stable flow below the power plant. It is not known if a flow reduction ramping plan was developed or if stranding surveys and recommendations were developed.				

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 71 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
71	SAC	SR	Develop a program to reduce or eliminate fish stranding in the Sacramento, Feather and Yuba rivers and the Colusa Basin drain and Sutter Bypass in the active stream channels, floodplains, shallow ponds and borrow areas. Develop protocols for ramping flow reductions. Conduct surveys of stranding under a range of flow conditions and recommend solutions.		71 A. Status of the development of a program to reduce or eliminate fish stranding in the Sacramento River in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-02-P13	Oct-02	Sep-05	600,000	400,000	1,000,000	Hydrologic Research Center	Konstantine Georgakakos		INFORM - Integrated Forecast and Reservoir Management Demonstration for Northern California Water Resources	The purpose of this project is to demonstrate, as well as quantify, the improved efficiency of water management in California for hydropower production, water supply and flood control through implementation of an integrated management system for reservoir operation that incorporates global climate model forecasts. May contribute to temperature management problems. ***Konstatine Georgakakos, Hydrological Research Center. Planning/Research. Project is 20% complete.***
71	SAC	SR			71 B. Status of the development of a program to reduce or eliminate fish stranding in the Feather River in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-02-P13	Oct-02	Sep-05	600,000	400,000	1,000,000	Hydrologic Research Center	Konstantine Georgakakos		INFORM - Integrated Forecast and Reservoir Management Demonstration for Northern California Water Resources	The purpose of this project is to demonstrate, as well as quantify, the improved efficiency of water management in California for hydropower production, water supply and flood control through implementation of an integrated management system for reservoir operation that incorporates global climate model forecasts. May contribute to temperature management problems. ***Konstatine Georgakakos, Hydrological Research Center. Planning/Research. Project is 20% complete.***
71	SAC	SR			71 C. Status of the development of a program to reduce or eliminate fish stranding in the Yuba River in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-99-N17	Jun-00	Jun-03	142,618	0	142,618	Yuba Watershed Council/Nevada County Resource Conservation District	Ron Zinke, Cara Wasilewski, also John Van Der Veen		Yuba Watershed Council: Collaborative Approach	Project is to request funding for a watershed coordinator position, including the materials, equipment, and office space necessary to administer and coordinate the efforts of the Yuba Watershed Council. The role of the watershed coordinator is to provide coordination and assistance, adaptive management and monitoring, education a outreach, and continuity and program oversight of current and future watershed projects. May contribute to various Yuba River (EMU) milestones. ***John Van Derveen, Yuba Watershed Council. Implementation. 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
71	SAC	SR			71 C. Status of the development of a program to reduce or eliminate fish stranding in the Yuba River in the active stream channels, floodplains, shallow ponds and borrow areas	AFRP-01-01			299,606	109,568	409,174	Yuba County Water Agency	Curt Aikens		Narrows 2 Hydro Power Plant Flow Bypass System Design	The Narrows 2 powerplant on the Yuba River just downstream of Englebright Dam. Under existing conditions, anadromous fish in the lower Yuba River can be adversely affected by normal maintenance, emergency operations, and catastrophic failure of the Narrows 2 powerplant or PG&E transmission system. Potential impacts include stranding of juveniles, dewatering of redds, and thermal stress caused by increased river temperatures.Yuba County Water Agency is requesting funding for final engineering design work for a proposed flow bypass system for the Narrows 2 hydroelectric powerplant. The objective is to provide a means of maintaining uninterrupted releases from the Narrows 2 powerplant during temporary or sustained transmission or plant malfunctions for flows up to 3,000 cfs, and, thus, eliminate or substantially reduce flow fluctuations and associated biological impacts caused by scheduled and unscheduled outages of the Narrows 2 powerplant. **DFG: Ian Drury. Project is 50% complete - working on designs and permits.**
71	SAC	SR			71 C. Status of the development of a program to reduce or eliminate fish stranding in the Yuba River in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-02-P13	Oct-02	Sep-05	600,000	400,000	1,000,000	Hydrologic Research Center	Konstantine Georgakakos		INFORM - Integrated Forecast and Reservoir Management Demonstration for Northern California Water Resources	The purpose of this project is to demonstrate, as well as quantify, the improved efficiency of water management in California for hydropower production, water supply and flood control through implementation of an integrated management system for reservoir operation that incorporates global climate model forecasts. May contribute to temperature management problems. ***Konstatine Georgakakos, Hydrological Research Center. Planning/Research. Project is 20% complete.***
71	SAC	SR			71 C. Status of the development of a program to reduce or eliminate fish stranding in the Yuba River in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-02-P47	Jul-03	Jun-06	4,280,600	0	4,280,600	Yuba County Water Agency	Curt Aikens		Narrows 2 Powerplant Flow Bypass System	Project will construct a 3,000-cfs bypass system to maintain stable releases and water temperatures in the lower Yuba River during emergency and maintenance shutdowns of the Narrows 2 Powerplant. This project will improve flow management to reduce or eliminate fish stranding in active stream channels and floodplains. ***John Nelson, DFG. Implementation. Construct a 3,000 cfs bypass system to maintain stable releases and water temperature on the Lower Yuba River. 50 percent complete. Construction in progress.***
71	SAC	SR			71 D. Status of the development of a program to reduce or eliminate fish stranding in the Colusa Basin Drain in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-99-N14	Jun-01	May-04	492,500	191,000	683,500	Colusa Resource Conservation District	Christopher Rose		Colusa Basin Watershed Project	The Colusa Basin Drain Watershed project will serve as a project that assists private landowners in addressing non-pint source pollution, flood control issues, exotic invasive weeds, and reactivating important ecological processes and functions of riparian corridors. The project will consist of 6 to 12 selected sites, which will implement riparian enhancement and other restoration practices. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; 75 percent complete. Six sites are done. Monitoring and restoration of 600,000 acres. Land owners,NCRS, and Colusa Basin Drainage funded restoration projects.***
71	SAC	SR			71 D. Status of the development of a program to reduce or eliminate fish stranding in the Colusa Basin Drain in the active stream channels, floodplains, shallow ponds and borrow areas	ERP-99-B27	Oct-99	3/9/03	13,000	7,686	20,686	Colusa County Resource Conservation District	Patti Ann Turner		Watershed Educational Training	Contributes to monitoring and restoration efforts along the Colusa Basin. The Watershed Educational Training (WET) project revolves around the use of EnviroScape interactive watershed models to teach the importance of how the public's actions can have both positive and adverse effects on the watershed ecosystem. ***Patti A. Turner, Colusa County Resource Conservation District. Educational; project completed. Colusa County Resource Conservation District funded an educational project on Best Management Practices for Non Point Source Pollution.***
71	SAC	SR			71 E. Status of the development of a program to reduce or eliminate fish stranding in the Sutter Bypass in the active stream channels, floodplains, shallow ponds and borrow areas											

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
71	SAC	SR			71 F. Status of developing protocols for ramping flow reductions.											
71	SAC	SR			71 G. Status of conducting surveys of stranding under a range of flow conditions and recommended solutions.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 72 -- ROLLED UP SUMMARY

MILESTONE 72 -- Install positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin. Among those diversions to be screened are the DWR Pumping Plants and 50% of small diversion located on east side of Sutter Bypass, the Bella Vista diversion in the upper Sacramento River near Redding, East West Diversion Weir, Weir 5, Weir 3, Guisti Weir and Weir 1 in the Sutter Bypass, White Mallard Dam, Morton Weir, Drivers Cut Outfall and Colusa Shooting/Tarke Weir Outfall and associated diversion screens in the Butte Sink..	**PROJECTS REVIEWED** - ERP-95-M02, ERP-95-M05, ERP-96-M04, ERP-96-M05, ERP-96-M07, ERP-96-M17, ERP-96-M19, ERP-96-M21, ERP-96-M22, ERP-96-M23, ERP-97-C01, ERP-97-C02, ERP-97-C04A, ERP-97-M02, ERP-97-M03, ERP-97-M04, ERP-98-B01, ERP-98-B02, ERP-98-B03, ERP-98-B16, ERP-98-B22, ERP-98-B24, ERP-98-B26, ERP-98-B28, ERP-98-B29, ERP-98-N01, ERP-99-B03, ERP-99-N01, ERP-00-B01, ERP-00-B02, ERP-00-R01, ERP-01-N51, ERP-01-N52, ERP-01-N53, ERP-01-N55, ERP-01-N60, ERP-02-P08D, ERP-02-P09D, ERP-02-P10D, ERP-02-P15, ERP-02-P24, ERP-98-R01, CVPIA-02-V02, AFRP-00-19	**SUMMARY --** Several projects were funded by CALFED, AFRP, or other funds to plan, permit, design, construct, or repair fish screens in the Sacramento River Basin. Of 38 diversions > 250cfs, 21 (55%) have been screened leaving 17 (45%) to be screened. There are 903 smaller unscreened diversions in the Basin and 85 (9%) have been screened, leaving us 145 screens short of the 25% target. Tracy Mitigation funds studied design and engineered plans for 2 of the 3 DWR Pumping Plants. DWR funded the design and engineering of the third plant. Construction and permit funds are needed to screen the 3DWR Plants. The task of screening 50% of the 95 small diversions located on east side of Sutter Bypass, the Bella Vista diversion in the upper Sacramento River near Redding, East West Diversion Weir, Weir 5, Weir 3, Guisti Weir and Weir 1 in the Sutter Bypass, White Mallard Dam, Morton Weir, Drivers Cut Outfall and Colusa Shooting/Tarke Weir Outfall and associated diversion screens in the Butte Sink has not been addressed – none were screened except Weir 5.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 72 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR	Install positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin. Among those diversions to be screened are the DWR Pumping Plants and 50% of small diversion located on east side of Sutter Bypass, the Bella Vista diversion in the upper Sacramento River near Redding, East West Diversion Weir, Weir 5, Weir 3, Guisti Weir and Weir 1 in the Sutter Bypass, White Mallard Dam, Morton Weir, Drivers Cut Outfall and Colusa Shooting/Tarke Weir Outfall and associated diversion screens in the Butte Sink.		72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin. Among those diversions to be screened are the DWR Pumping Plants and 50% of small diversion located on east side of Sutter Bypass, the Bella Vista diversion in the upper Sacramento River near Redding, East West Diversion Weir, Weir 5, Weir 3, Guisti Weir and Weir 1 in the Sutter Bypass, White Mallard Dam, Morton Weir, Drivers Cut Outfall and Colusa Shooting/Tarke Weir Outfall and associated diversion screens in the Butte Sink..	ERP-95-M02	Jul-97	Dec-97	316,500	591,251	907,751	Durham Mutual Water Co.	Dale Nelson		Durham Mutual Fish Screen and Fish Ladder Project	***Project completed. Installed ladder and fish screens on Butte Creek. Paul Ward, DFG***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-95-M05	Feb-97	Dec-97	1,610,000	260,000	1,870,000	Ducks Unlimited	James Well		Mand T / Parrot Pumping Station and Fish Screen Project (Relocation and Construction)	***Project relocated and screened a 130 cfs pump. Project completed. James Well, Ducks Unlimited***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M04	Oct-96	Dec-97	75,000	162,980	237,980	Reclamation District 1004	Jack Baber		Princeton Pumping Plant Fish Barriers-Feasibility Study Phase 1	***Project completed, Planning and feasibility. Jack Baber, Reclamation District 1004, Reclamation District 1004***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M05	Sep-96	Apr-97	75,000	75,000	150,000	Princeton - Codora - Glenn and Provident Irrigation District	Lance Boyd		Sacramento River Princeton - Codora - Glenn Irrigation District Fish Screen Phase 1	***Project completed. Planning phase. Lance Boyd***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M07	Apr-97	not sure	5,500,000	5,881,213	11,381,213	Princeton - Codora - Glenn and Provident Irrigation District	Lance Boyd		Sacramento River Princeton - Codora - Glenn Irrigation District Pumping Station and Fish Screen Phase 2	***Project completed. This project installed fish screens on three pump sites in the Sacramento River. Lance Boyd***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M17	Mar-98	Dec-98	114,750	191,250	306,000	Browns Valley Irrigation District	Robert Winchester		Browns Valley Irrigation District Fish Screen Project	***Project completed. Installed fish screens on Browns Valley Diversion in the Yuba River. Ian Drury, DFG***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M19	Mar-97	Jun-97	100,000	116,300	216,300	Reclamation District 108	Luther Hintz		Wilkins Slough Fish Screen Project PHASE 2 (Feasibility Study and Preliminary Design)	***Project completed. Luther Hintz, Rec District 108***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M21	May-98	Jun-98	70,304	50,000	120,304	Rancho Esquon Partners	Rick Ponciano		Adams Dam Fish Ladder and Screen Feasibility Study	***Project completed. Planning and design phase. Paul Ward, DFG***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M22	?	?	67,990	56,500	124,490	Gorrill Land Co.	Don Heffren		The Gorrill Dam Fish Screen and Fish Ladder Project	***Project completed: planning, feasibility and design. Tracy Pumps funded one phase of this project. Paul Ward, DFG***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M23	Jan-97	Nov-97	90,000	0	90,000	Buell and Associates Inc.	James W. Buell		Hydraulic and Biological Performance Testing of an Innovative Fish Screen for Small Unscreened Diversions	(< 50 cfs) unscreened diversions 2 foot wide with 0.5mm clear openings. ***Project completed, Planning***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-C01	Jul-98	Dec-99	2,500,000	7,872,000	10,372,000	Reclamation District 108	Luther Hintz		Wilkins Slough Pumping Plant Fish Screen Project	***Installation of an 810 cfs pumping plant with fish screens. Project completed, Implementation***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-C02	Sep-98	Jun-99	1,750,000	5,350,000	7,100,000	Reclamation District 1004	Jack Baber		Princeton Pumping Plant Fish Screen Project (construction phase)	***Installation of fish screens on a pumping plant in the Sacramento River. Project completed, Implementation***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-C04A	Sep-98	Feb-02	374,850	0	374,850	CDFG	Phil Warner		Selected Fish Screens on the Sacramento River and Tributaries	***Cal Crawford, DFG. Implementation; project complete. Selected Fish Screens on Sacramento River and Tributaries. The project constructed or upgraded 14 fish screens smaller unscreened diversions and one fishway, in the Sacramento River Basin.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-M02	Jul-01	Jun-02	395,000	395,000	790,000	DWR Northern District	William Mendenhall		Battle Creek Screens and Fish Passage	***Curtis Anderson, DWR. Project completed, Planning and Design***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-M04	Jul-98	Nov-99	216,892	679,192	896,084	Rancho Esquon Partners	Rick Ponciano		Adams Ladder and Screen Construction	***Construction of a fish ladder and fish screens on Adams Dam. Paul Ward, DFG, Project completed, Implementation. Tracy Pumps funded the preliminary engineering phase of this project.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	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. ***Project completed, Implementation and Monitoring***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B01	Jun-98	Aug-99	49,000	0	49,000	Borcalli and Associates,Inc.	Francis E. Borcalli P.E.		Richter Brothers Screen Phase I	Positive barrier fish screen. ***Henry, Mark and David Richter, Owners. Project completed, planning***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B02	Aug-98	Apr-99	15,000	0	15,000	Boeger Family Farms	Matt Boeger		Boeger Family Farms Screen Feasibility Study Phase 1	Phase 1 is to determine which screen is effective. ***Project completed, planning.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B03	Aug-98	Mar-99	325,000	0	325,000	Anderson - Cottonwood Irrigation District	Dee E. Swearingen		Anderson - Cottonwood Irrigation District Fish Passage and Screen	***Planning and Design, project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	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)	***Harry Rectenwald, DFG. Planning / Design; project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B22	Dec-99	Feb-00	340,164	39,100	379,264	Tehama - Colusa Canal Authority	Arthur R. Bullock		Fish Passage Improvement at the Red Bluff Diversion Dam	***Planning / Feasibility; project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B24	Feb-99	Oct-99	860,000	reduced by 19,240.65	840,759	Anderson - Cottonwood Irrigation District	Dee E. Swearingen		Anderson - Cottonwood Irrigation District Fish Passage and Fish Screen Improvement Project Phase II Final Design	***Planning , Permitting ,and Design, project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B26	Mar-99	Jan-04	139,500	0	139,500	Boeger Family Farms	Matt Boeger		Boeger Family Farms Fish Screen Phase 2	***15-18 cfs pump was screened. Project completed, implementation*** .
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B28	Jul-99	Sep-00	654,500	1,310,000	1,964,500	City of Sacramento	Gary E. Gosse		City of Sacramento Fish Screen Replacement Project Phase 2	***Project completed, planning***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B29	Sep-99	Jun-02	200,000	250,000	450,000	Natomas Mutual Water Company	Peter J. Hughes		American Basin Fish Screen and Habitat Improvement Project (Feasibility)	***Project completed, planning***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	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	No description

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-01-N51	Spring of 2001 (proposed)	?	47,220,001	0	47,220,001	City of Sacramento Department of Utilities	Gary E. Gosse		City of Sacramento Intake Fish Screen Replacement Project	***Replaced two fish screens. Implementation; project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-01-N55	Oct-01	Dec-03	1,384,000	0	1,384,000	Reclamation District 2035	James Staker		Reclamation District 2035 Fish Screen Design and Environmental Review	***Regina Cherovsky, Reclamation District 2035. Planning, Design, Environmental Permitting; 75 percent complete. Waiting on permits.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-01-N60	Nov-01	Jun-04	950,000	950,000	1,900,000	Natomas Mutual Water Company	Peter J. Hughes		American Basin Fish Screen and Habitat Improvement Project Phase III	***Planning and Design; 60 percent done.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-N01	Mar-99	Feb-00	100,000	0	100,000	Reclamation District 2035	James Staker		Reclamation District 2035 Fish Screen	***Regina Cherovsky, Reclamation District 2035. Planning, Design, Environmental Permitting; 75 percent complete. Waiting on permits. Planning / Feasibility; project completed.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-02-P08D	Jul-03	Jun-06	636,000	0	636,000	Ducks Unlimited	Olen Zirkle		M and T / Llano Seco Fish Screen Facility Short Term / Long Term Protection	Pump has changed the course of the river and created a gravel bar near the pumping station. ***Planning, Research and Design; project is 50 percent complete.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-02-P10D	Jul-03	Jun-04	630,000	630,000	1,250,000	Reclamation District 108	Luther Hintz		Reclamation District 108 Consolidated Pumping Facility and Fish Screen	***Planning and Design; 60 percent complete.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-02-P09D	Jul-03	Jun-06	12,600,000	12,600,000	25,200,000	Natomas Mutual Water Co.	Peter J. Hughes		American Basin Fish Screen and Habitat Improvement Project; Phase I and II	Removal of a diversion dam. ***Removal of a diversion dam and pumps from the Natomas cross canal. Also, consolidate five pumps to two on the Sacramento river and screen them. Implementation; 40 percent done.***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-02-P15	Jul-03	Jun-04	750,000	300,000	1,050,000	Meridian Farms Water Co.	Harold Webster		Meridian Farms Water Company Positive Barrier Fish Screen Project	***Planning; project just started up (not 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-02-P24	Apr-03	Mar-04	1,270,000	230,000	1,500,000	Sutter Mutual Water Co.	Max Sakato		Sutter Mutual Water Company-Tisdale Positive Barrier Fish Screen Pumping Plant	Phase 3 is the final design and environmental documentation & planning. Phase 4 is the construction of the screen. ***Planning and Design; 90 percent done***
72	SAC	SR			72 A. Status of the Installation of positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-M03	Sep-98	Nov-99	369,641	1,024,266	1,393,907	Gorrill Land Company	Don Heffren		Gorrill Dam Fish Screen and Fish Ladder Project	***Paul Ward, DFG. Planning and design. Project completed.***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-B01	Jun-98	Aug-99	49,000	0	49,000	Borcalli and Associates,Inc.	Francis E. Borcalli P.E.		Richter Brothers Screen Pase I	Positive barrier fish screen. ***Henry, Mark and David Richter, Owners. Project completed, planning***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-01-N52	Oct-01	Oct-04	1,800,000	0	1,800,000	Family Water Alliance	Susan Sutton		Sacramento River Small Fish Screen Project Vertical River Pump Diversions	***Install fish screens on eleven pumps in the Sacramento River. Monitoring,Planning,Implementation; project completed.***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-98-R01	Sep-01	Sep-03	957,200	0	957,200	Family Water Alliance	Susan Sutton		Small Diversion Fish Screens	Installation of a positive barrier fish screens. 10 fish screens, 20 cfs screen. ***Install five fish screens on pumps in the Sacramento River. Project completed, implementation.***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-95-M05	Feb-97	Dec-97	1,610,000	260,000	1,870,000	Ducks Unlimited	James Well		Mand T / Parrot Pumping Station and Fish Screen Project (Relocation and Construction)	***Relocate and screen a 130 cfs pump. Project completed. Implementation***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-96-M23	Jan-97	Nov-97	90,000	0	90,000	Buell and Associates Inc.	James W. Buell		Hydraulic and Biological Performance Testing of an Innovative Fish Screen for Small Unscreened Diversions	(< 50 cfs) unscreened diversions 2 foot wide with 0.5mm clear openings. ***Project completed, Planning***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-97-C04A	Sep-98	Feb-02	374,850	0	374,850	CDFG	Phil Warner		Selected Fish Screens on the Sacramento River and Tributaries	***Cal Crawford, DFG. Implementation; project complete. Selected Fish Screens on Sacramento River and Tributaries. The project constructed or upgraded 14 fish screens smaller unscreened diversions and one fishway, in the Sacramento River Basin.***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-00-B01	Aug-00	Nov-04	495,400	90,000	585,400	City of Redding Dept. of Public Works	Mike Robertson		City of Redding Water Utility Fish Screen Rehabilitation	44.6 cfs. ***Darren Langfield, City of Redding Public Works. Planning / Feasability. The project is 25 percent complete. The Feasability phase is complete.***
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-00-B02	May-01	Dec-02	427,900	0	427,900	Maxwell Irrigation District	Douglas B. Mc Geoghegan		Maxwell Irrigation District (Tuttle Pump Relocation)	After relocation, pumps will be screened, 20 cfs. ***Douglas B. Mc Geoghegan, Maxwell Irrigation District. Implementation. A positive barrier fish screen was installed on a 20cfs pump. 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 B. Status of the installation of positive barrier fish screens on 25% of all smaller unscreened diversions in the Sacramento River Basin.	ERP-00-R01	Apr-01	Nov-01	312,700	0	312,700	Family Water Alliance	Susan Sutton		Sacramento River Small Diversion Fish Screen (Monitoring)	***Project completed, monitoring***
72	SAC	SR			72 C. Status of the installation of positive barrier fish screens on DWR Pumping Plants	AFRP-00-19			195,000		195,000	AFRP	John Icanberry	3 diversions screened	Develop a final list of pumping plants requiring screens and collect site specific information for each pumping plant for the east side of Sutter Bypass on lower Butte Creek	Objective: Determine the exact location of each of the pumps in the East Side Sutter Bypass and characterize the pumping plant sites including elevations, cross-sections, pumping plant specifications and annual pumping durations and determine the feasibility of pumping plant consolidations. ***Contract was signed 9/2000 between FWS (AFRP) and Ducks Unlimited, Inc (DU). Initial meetings held with stakeholders to discuss project methodology and process. DU identified 24 sites, which with valid water rights in the area. Meetings have been held with stakeholders, agencies and DWR to review and approve plans to screen the 3 DWR pumping plant diversions. Jones & Stokes has been hired to develop a Biological Assessment for the Sutter Bypass and to facilitate a process to develop a Memorandum of Agreement (MOA) setting out the framework for the development of a fisheries plan for the east side of the Sutter Bypass. Meetings with stakeholders began in October of 2001. Current schedule for the project indicate that a signed MOA will be available by December 31, 2003.***
72	SAC	SR			72 D. Status of the installation of positive fish screens on 50% of the small diversions located on the east side of Sutter Bypass.	AFRP-00-19			195,000		195,000	AFRP	John Icanberry	3 diversions screened	Develop a final list of pumping plants requiring screens and collect site specific information for each pumping plant for the east side of Sutter Bypass on lower Butte Creek	Objective: Determine the exact location of each of the pumps in the East Side Sutter Bypass and characterize the pumping plant sites including elevations, cross-sections, pumping plant specifications and annual pumping durations and determine the feasibility of pumping plant consolidations. ***Contract was signed 9/2000 between FWS (AFRP) and Ducks Unlimited, Inc (DU). Initial meetings held with stakeholders to discuss project methodology and process. DU identified 24 sites, which with valid water rights in the area. Meetings have been held with stakeholders, agencies and DWR to review and approve plans to screen the 3 DWR pumping plant diversions. Jones & Stokes has been hired to develop a Biological Assessment for the Sutter Bypass and to facilitate a process to develop a Memorandum of Agreement (MOA) setting out the framework for the development of a fisheries plan for the east side of the Sutter Bypass. Meetings with stakeholders began in October of 2001. Current schedule for the project indicate that a signed MOA will be available by December 31, 2003.***
72	SAC	SR			72 E. Status of the installation of positive fish screens on the Bella Vista Diversion on the upper Sacramento River near Redding											
72	SAC	SR			72 F. Status of the installation of positive fish screens on the East/West Diversion Weir											
72	SAC	SR			72 G. Status of the installation of positive fish screens on Weir 5											
72	SAC	SR			72 H. Status of the installation of positive fish screens on Weir 3											
72	SAC	SR			72 I. Status of the installation of positive fish screens on Guisti Weir											

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
72	SAC	SR			72 J. Status of the installation of positive fish screens on Weir 1 in the Sutter Bypass.											
72	SAC	SR			72 K. Status of the installation of positive fish screens on the Diversion at White Mallard Dam	ERP-01-N53	Jan-02	Apr-04	84,938	0	84,938	California Waterfowl Association	Robert Capriola		White Mallard Dam and Associated Diversions	***Planning and Engineering; project completed.***
72	SAC	SR			72 K. Status of the installation of positive fish screens on the Diversion at White Mallard Dam	CVPIA-02-V02	Apr-04	Jun-04	753,415	?	753,415	Ducks Unlimited	Olen Zirkle		White Mallard Dam and Associated Diversions Phase III Construction	***Fish passage impediments are currently being removed. Implementation; 20 percent complete (new project)***
72	SAC	SR			72 N. Status of the installation of positive fish screens on Colusa Shooting/Tarke Weir Outfall and associated diversion screens in the Butte Sink											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 73 -- ROLLED UP SUMMARY

MILESTONE 73 -- Develop, implement, and support measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)		**PROJECTS REVIEWED -** ERP-98-B05, ERP-99-N14, ERP-01-N22		**SUMMARY --** Two watershed projects with non-point source pollution control objectives were funded for this region. However, these projects did not specifically target runoff from animal feeding operations or runoff and control of oxygen depleting substances. These projects emphasized improved management practices for grazing, orchards and irrigated croplands. The management practices evaluated and implemented for these land uses may indirectly contribute to improved runoff/pollutant control from animal feeding operations. There may be other projects under different grant programs (SWRCB 319 (j) or Prop 50) that would contribute more directly to this milestone. See milestones 27, 45, and 101 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 73 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
73	SAC	SR	Develop, implement, and support measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)		73 A. Status of development of measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
73	SAC	SR			73 A. Status of development of measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)	ERP-99-N14	Jun-01	May-04	492,500	191,000	683,500	Colusa County Resource Conservation District	Christopher Rose		Colusa Basin Watershed Project	The Colusa Basin Drain Watershed project will serve as a project that assists private landowners in addressing non-point source pollution, flood control issues, exotic invasive weeds, and reactivating important ecological processes and functions of riparian corridors. The project will consist of 6 to 12 selected sites, which will implement riparian enhancement and other restoration practices. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; 75 percent complete. Six sites are done. Monitoring and restoration of 600,000 acres.***
73	SAC	SR			73 A. Status of development of measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)	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. Project not completed. There have been contract delays. The work has not yet started.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
73	SAC	SR			73 B. Status of implementing measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations (from Phase 11 Report)	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. Project not completed. There have been contract delays. The work has not yet started.***
73	SAC	SR			73 B. Status of implementing measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations (from Phase 11 Report)	ERP-99-N14	Jun-01	May-04	492,500	191,000	683,500	Colusa County Resource Conservation District	Christopher Rose		Colusa Basin Watershed Project	The Colusa Basin Drain Watershed project will serve as a project that assists private landowners in addressing non-point source pollution, flood control issues, exotic invasive weeds, and reactivating important ecological processes and functions of riparian corridors. The project will consist of 6 to 12 selected sites, which will implement riparian enhancement and other restoration practices. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; 75 percent complete. Six sites are done. Monitoring and restoration of 600,000 acres.***
73	SAC	SR			73 B. Status of implementing measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations (from Phase 11 Report)	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 74 -- ROLLED UP SUMMARY

MILESTONE 74 -- Actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan): · Develop inter-substrate DO testing for salmonid spawning and rearing habitat. · Conduct comprehensive surveys to assess the extent and severity of inter-substrate low DO conditions. · Develop and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate inter-substrate low DO conditions.	**PROJECTS REVIEWED** - ERP-98-B05, AFRP-01-10		**SUMMARY --** Two projects contribute to this milestone which apply best management practices and undertake actions to improve soil erosion and sedimentation. There are no ERP studies that specifically address inter-substrate low dissolved oxygen conditions for spawning and rearing habitat. The management practices evaluated and implemented for these land uses may indirectly contribute to this milestone. There may be other projects under different grant programs that would contribute more directly to this milestone. See milestone 102 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 74 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
74	SAC	SR	Actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan): · Develop inter-substrate DO testing for salmonid spawning and rearing habitat. · Conduct comprehensive surveys to assess the extent and severity of inter-substrate low DO conditions. · Develop and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate inter-substrate low DO conditions.		74 A. Status of actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan):	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
74	SAC	SR			74 A. Status of actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan):	AFRP-01-10	Jun-05	Sep-02	299,606	75,000	224,606	Battle Creek Watershed Conservancy	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. 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 work in the schools and communities, with agencies and landowners, toward the complementary objectives of safeguarding the Battle Creek watershed's lightly- populated, agricultural lifestyle and protecting the public investment in the Battle Creek Salmon and Steelhead Restoration Project. ***Harry Rectenwald, DFG. Planning / Implementation; 50 percent complete. Project is ongoing.Watershed strategy is complete.Conservation easement planning is complete. Implement an information system for watershed.***
74	SAC	SR			74 B. Status of the development of inter-substrate DO testing for salmonid spawning and rearing habitat.											
74	SAC	SR			74 D. Status of developing and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate inter-substrate low DO conditions.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 75 -- ROLLED UP SUMMARY

MILESTONE 75 -- Encourage regulatory activity to reduce discharge of oxygen reducing substances and nutrients by unpermitted dischargers. (from Phase II Report)		**PROJECTS REVIEWED -** ERP-98-B05		**SUMMARY** -- At this time there are no funded projects or specific actions taken by ERP to encourage regulatory activities to address this milestone. However, the ERP staff works closely with RWQCBs who are taking steps under their own authority (agricultural waiver and non-point source pollution programs). There may be other projects under different grant programs (Especially recent Prop 50 solicitations) that would contribute more directly to this milestone. Those projects were not addressed in this evaluation. See milestones 28, 46, and 104 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 75 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
75	SAC	SR	Encourage regulatory activity to reduce discharge of oxygen reducing substances and nutrients by unpermitted dischargers. (from Phase II Report)		75 A. Number of actions taken to encourage regulatory activities which reduce discharge of oxygen reducing substances and nutrients by unpermitted dischargers. (from Phase II Report)	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. **Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 76 -- ROLLED UP SUMMARY

MILESTONE 76 -- Actions to reduce fine sediment loading to streams, especially Tuolumne, Merced, Stanislaus, Cosumnes, Napa, and Petaluma Rivers, and Sonoma Creek, due to human activities (from Phase II Report and Water Quality Program Plan): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites. · Implement stream restoration and revegetation work. · Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	**PROJECTS REVIEWED -** ERP-97-N05, ERP-98-B05, ERP-01-N26, ERP-01-N25, ERP-01-N30, ERP-01-N31, ERP-02-P36, AFRP-01-10		**SUMMARY --** Many projects have or when completed will contribute to this milestone. These projects take steps (either through planning or restoration) to reduce erosion and sedimentation in several Sacramento Valley watersheds. Two projects are located in watersheds with high importance for anadromous fish habitat. The degree to which these projects participated in the USDA sediment reduction program is unclear from the available information. Clearly BMPs are being used to achieve the objectives of erosion control. Projects from other fund sources (other than AFRP) and programs were not evaluated and importantly there is a high likelihood there are others would contribute to this milestone. See milestones 29, 47, and 105 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 76 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
76	SAC	SR	Actions to reduce fine sediment loading to streams, especially Tuolumne, Merced, Stanislaus, Cosumnes, Napa, and Petaluma Rivers, and Sonoma Creek, due to human activities (from Phase II Report and Water Quality Program Plan): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites. · Implement stream restoration and revegetation work. · Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.		76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
76	SAC	SR			76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-01-N25	Sep-01	Aug-04	1,464,167	2,879,113	4,343,280	Yolo County Resource Conservation District	Katy Pye or Jeanette Wrysinski		Sustaining Agriculture and Wildlife Beyond the Riparian Corridor	Objectives: 1) Develop compressed protocols to assess watershed functions and prioritize conservation work; 2) Conduct on-farm demonstration projects and research of a discrete set of agricultural conservation solutions; 3) Quantify the effects of the practices through replicated, multi-year trials and monitoring of these projects; 4) Develop a web-based landowner conservation decision assistance tool (Yolo OnePlan) to facilitate small scale, private conservation planning for large-scale watershed improvements; and 5) Increase landowner participation as a result of a strong education and outreach program and the "landowner service" to provide technical assistance, economic incentives. ***Jeannette Wrysinski 530.662.2037 X 118 Project 75% complete. program to establish, restore, and maintain riparian habitat (4,000 ft) along Union Slough tributary to Willow Slough in the Yolo Basin EMZ***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
76	SAC	SR			76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-01-N30	Aug-01	Aug-04	573,810	287,901	861,711	Natural Resources Conservation Service	Eric Vinson		Digital Soil Survey Mapping and Digital Orthophotoquad Imagery Development	Five published Soil Survey Areas (East Stanislaus Area, Merced Area, Madera Area, Tehama County, Glenn County) in the Bay-Delta Region will be digitized, have SSURGO databases created, and have Digital Orthophotoquad (DOQ) imagery developed. ***Glenn Stanisewski, Natural Resources Conservation Service. Monitoring. 80% complete.***
76	SAC	SR			76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	AFRP-01-10	Jun-05	Sep-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. 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 work in the schools and communities, with agencies and landowners, toward the complementary objectives of safeguarding the Battle Creek watershed's lightly- populated, agricultural lifestyle and protecting the public investment in the Battle Creek Salmon and Steelhead Restoration Project. ***Harry Rectenwald, DFG. Planning / Implementation; 50 percent complete. Project is ongoing.Watershed strategy is complete. Conservation easement planning is complete. Implement an information system for watershed.***
76	SAC	SR			76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	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.***
76	SAC	SR			76 A. Status of actions to reduce fine sediment loading to streams in the Sacramento River Basin due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-02-P36	Jun-03	1-Jun	1402159	0	1402159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
76	SAC	SR			76 B. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Participate in implementation of USDA sediment reduction program.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
76	SAC	SR			76 B. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Participate in implementation of USDA sediment reduction program.	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.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
76	SAC	SR			76 B. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Participate in implementation of USDA sediment reduction program.	ERP-01-N25	Sep-01	Aug-04	1,464,167	2,879,113	4,343,280	Yolo County Resource Conservation District	Katy Pye or Jeanette Wrysinski		Sustaining Agriculture and Wildlife Beyond the Riparian Corridor	Objectives: 1) Develop compressed protocols to assess watershed functions and prioritize conservation work; 2) Conduct on-farm demonstration projects and research of a discrete set of agricultural conservation solutions; 3) Quantify the effects of the practices through replicated, multi-year trials and monitoring of these projects; 4) Develop a web-based landowner conservation decision assistance tool (Yolo OnePlan) to facilitate small scale, private conservation planning for large-scale watershed improvements; and 5) Increase landowner participation as a result of a strong education and outreach program and the "landowner service" to provide technical assistance, economic incentives. ***Jeannette Wrysinski. Project 75% complete. program to establish, restore, and maintain riparian habitat (4,000 ft) along Union Slough tributary to Willow Slough in the Yolo Basin EMZ***
76	SAC	SR			76 B. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Participate in implementation of USDA sediment reduction program.	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.***
76	SAC	SR			76 C Status of the sub element of actions to reducing fine sediment loading to the Sacramento Rive Basin: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
76	SAC	SR			76 C Status of the sub element of actions to reducing fine sediment loading to the Sacramento Rive Basin: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	ERP-02-P36	Jun-03	1-Jun	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
76	SAC	SR			76 C Status of the sub element of actions to reducing fine sediment loading to the Sacramento Rive Basin: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	ERP-01-N31	Oct-01	Aug-04	1,800,668	0	1,800,668	National Audubon Society	Judy Boshoven		Willow Slough Watershed Rangeland Stewardship	Project will enhance riparian habitat by erecting fences along 3 miles of riparian corridor to manage grazing and will also revegetate selected areas. ***Vance Russell,Audubon California. Implementation. Riparian: 3.38 miles/91 acres; Grassland treated with prescribed fire: 1397 acres; Native perennial grassland restoration: 423 acres; Wildlife ponds/stock ponds: 19.2 acres; Erosion control projects: 3 acres. Project 80% complete.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
76	SAC	SR			76 C Status of the sub element of actions to reducing fine sediment loading to the Sacramento Rive Basin: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	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.***
76	SAC	SR			76 D. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Implementation of stream restoration and revegetation work.	ERP-01-N31	Oct-01	Aug-04	1,800,668	0	1,800,668	National Audubon Society	Judy Boshoven		Willow Slough Watershed Rangeland Stewardship	Project will enhance riparian habitat by erecting fences along 3 miles of riparian corridor to manage grazing and will also revegetate selected areas. ***Vance Russell, Audubon California. Implementation. Riparian: 3.38 miles/91 acres; Grassland treated with prescribed fire: 1397 acres; Native perennial grassland restoration: 423 acres; Wildlife ponds/stock ponds: 19.2 acres; Erosion control projects: 3 acres. Project 80% complete.***
76	SAC	SR			76 D. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Implementation of stream restoration and revegetation work.	ERP-01-N26	Oct-01	Oct-04	849,845	0	849,845	USFS; 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 Watersched 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.***
76	SAC	SR			76 D. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Implementation of stream restoration and revegetation work.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
76	SAC	SR			76 D. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Implementation of stream restoration and revegetation work.	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.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
76	SAC	SR			76 E. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	ERP-01-N25	Sep-01	Aug-04	1,464,167	2,879,113	4,343,280	Yolo County Resource Conservation District	Katy Pye or Jeanette Wrysinski		Sustaining Agriculture and Wildlife Beyond the Riparian Corridor	Objectives: 1) Develop compressed protocols to assess watershed functions and prioritize conservation work; 2) Conduct on-farm demonstration projects and research of a discrete set of agricultural conservation solutions; 3) Quantify the effects of the practices through replicated, multi-year trials and monitoring of these projects; 4) Develop a web-based landowner conservation decision assistance tool (Yolo OnePlan) to facilitate small scale, private conservation planning for large-scale watershed improvements; and 5) Increase landowner participation as a result of a strong education and outreach program and the "landowner service" to provide technical assistance, economic incentives. ***Jeannette Wrysinski. Project 75% complete. program to establish, restore, and maintain riparian habitat (4,000 ft) along Union Slough tributary to Willow Slough in the Yolo Basin EMZ***
76	SAC	SR			76 E. Status of the sub element of actions to reducing fine sediment loading to the Sacramento River Basin: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	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.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 77 -- ROLLED UP SUMMARY

MILESTONE 77 -- Conduct the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed.		**PROJECTS REVIEWED -** ERP-97-C05, ERP-99-B06, ERP-02-C01-D, ERP-02-C06-A, ERP-02-C06-B, ERP-02D-C12, ERP-02D-P62, ERP-02-P40		**SUMMARY --** This milestone should be reworded. Previous research has shown that there are many factors that affect mercury methylation and bioaccumulations, and we cannot set an "effects threshold" for mercury concentration in sediments, without consideration of the other factors. However, ERP has made substantial investments for research projects to understand mercury sources, transformations, and factors controlling the methlation/demethylation and bioaccumulation processes. Two studies have been completed, and four more studies are just beginning that will evaluate sources, processes and effects. However, at this time there are still significant knowledge gaps in understanding mercury transformations, bioaccumulation and effects to fish and wildlife. The mercury strategy also provides additional information on what is known, and a framework for future investigations to investigate this issue. See milestones 30, 48, and 106 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 77 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
77	SAC	SR	Conduct the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed.		77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02-C01-D	Jul-01	Jun-05	4,432,966	0	4,432,966	USGS	Charlie Alpers		Upper Yuba River: Water Quality and Sediment Studies	Project 1A Tasks 3,4, and 5 evaluate the existing mercury problem in the Upper Yuba River, including mercury inputs, cycling and bioaccumulation in the Upper Yuba River and Englebright Reservoir. This contributes to our understanding of the mercury problem in the tributaries. ***Implementation: 50 percent complete. Gravel augmentation only; Ian Drury, DFG.***
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02D-C12			5,337,012		5,337,012	USFWS	Tom Suchanek		Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction	***NO CONTRACT STILL UNDER DEVELOPMENT. This is a very comprehensive study to determine exposure pathways and effects of mercury exposure and bioaccumulation in 3 bird guilds in the Bay-Delta. The guilds include: terns, diving ducks and recurvirostrids. The project includes both field and lab studies, reproductive effects, dietary exposure and bioaccumulation, and histopathological effects in bird populations. (NOTE: this milestone is somewhat misleading because there are many factors that affect exposure and bioaccumulation of mercury - not just mercury concentrations in sediment - therefore it is unlikely to develop NOEL sediment concentrations)***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Conduct the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta and its watershed. This research project investigated sources and cycling of mercury, including bioaccumulation and effects on avian populations. The study of sources was focused on the Sacramento River, Cache Creek and the Delta, but the biogeochemical cycling component applies to all regions. This milestone is difficult to achieve because mercury sediment concentrations are not well correlated with affects, and there are many other factors that influence methylation, exposure, bioaccumulation and effects. The results made significant gains in understanding mercury sources and cycling, but there are still many critical unknown processes that are not understood. More studies are needed to understand effects on fish and wildlife, methylation/demethylation processes and the factors that influence rates, controllable sources of mercury, bioaccumulation and trophic transfer.***
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02-C06-A	Apr-03	Mar-06	2,668,091		2,668,091	CDFG; San Jose State University Foundation	Mark Stephenson, Chris Thompson		Transport, Cycling and Fate of Mercury and Monomethyl Mercury in the San Francisco Delta and Tributaries - An Integrated Mass Balance Assessment Approach- Prop 204 funded	***This research projects have a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it.***
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02-C06-B			1,213,121			Dept. of Fish and Game; San Jose State University Foundation	Mark Stephenson, Chris Thompson		Transport, Cycling and Fate of Mercury and Monomethyl Mercury in the San Francisco Delta and Tributaries - An Integrated Mass Balance Assessment Approach- Prop 13 funded	***Conduct the necessary research to determine no adverse ecological / biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta and its watershed. This research projects have a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it.***
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02-P40	Jul-03	Jun-06	2,262,567			USGS	Mark Marvin-DiPasquale		Evaluation of Mercury Transformations and Trophic Transfer in the San Francisco Bay Delta: Identifying Critical Processes for Ecosystem Restoration Program	***This research project conducts investigations to understand mercury bioavailability in two different Delta locations and the processes and factors that control it, including bioaccumulation in the food chain. Understanding of processes applies to other regions as well.***
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-97-C05	Jul-98	Sep 98?	546,171		546,171	UC Davis	Darell Slotton		The Effects of Wetland Restoration on the Production of Methyl Mercury in the San Francisco Bay Delta System	***This research project looks at methylmercury production and exposure in wetland environments, which are found in all regions. This project found elevated methylmercury in the water column and biota of wetlands, compared to adjacent channels. More studies are needed to determine methylation / demethylation and exposure in different types of wetlands and other habitats, to determine if there are controllable factors that can reduce methylation rates and exposure.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
77	SAC	SR			77 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02D-P62			1,656,569		1,656,569	San Fransisco Bay Institute	Donald Yee		Mercury and Methylmercury Processes in North San Francisco Bay Tidal Wetland Ecosystems	***NO CONTRACT STILL UNDER DEVELOPMENT. This project will examine mercury and methylmercury concentrations in the sediments, water and biota of frive tidal marshes along a slainity gradient up the Petaluma River. The study will investigate how environmental variables affect methylmercury production and bioaccumulation, including age of marsh and salinity, and assess seasonal and interannual variation. The project will also investigate potential effects to Virginia Rail and Clapper Rail populations in these marshes. The process-oriented investigations are applicable to other watersheds.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 78 -- ROLLED UP SUMMARY

MILESTONE 78 -- Conduct the following mercury evaluation and abatement work in the Cache Creek watershed (from Phase II Report): · Support development and implementation of TMDL for mercury. · Determine bioaccumulation effects in creek and Delta. · Source, transport, inventory, mapping and speciation of mercury. · Participate in Stage 1 remediation (drainage control) of mercury mines as appropriate. · Determine sources of high levels of bioavailable mercury	**PROJECTS REVIEWED -** ERP-99-B06, ERP-02-C03-D, ERP-02D-C12, ERP-02D-P62, ERP-03-C03, CSP-01-C01		**SUMMARY** -- One large multifaceted project has been completed to evaluate mercury in Cache Creek, including mercury loads, particularly during storm events, mercury sources and source bioavailability, mine remediation feasibility, mercury bioaccumulation and trophic transfer in the food chain. This project provided significant information on loads of mercury from Cache Creek and the contribution of the mine sites to the mercury loads that is being used in the development of the Cache Creek TMDL for mercury. Several other mercury research studies that have recently begun will contribute information on mercury processes and effects on birds. Significant unknowns include the extent of mercury contamination in stream bed and bank sediments and its ability to mobilize, particularly during storm events. Factors such as speciation of mercury, presence of sulfides, redox conditions, availability of organic carbon, and structure of the trophic web have all been identified as potentially affecting bioavailability of mercury. However, this watershed has not been characterized to determine where these conditions exist or	**SUMMARY CONTINUED** -- control them. Several other mercury research studies that have recently begun will contribute information on mercury processes and effects on birds. Several large mine sites in this watershed have been assessed, but no remediation has yet occurred. See milestone 31 for additional projects that address this milestone at a landscape level.	**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 78 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
78	SAC	SR	Conduct the following mercury evaluation and abatement work in the Cache Creek watershed (from Phase II Report): · Support development and implementation of TMDL for mercury. · Determine bioaccumulation effects in creek and Delta. · Source, transport, inventory, mapping and speciation of mercury. · Participate in Stage 1 remediation (drainage control) of mercury mines as appropriate. · Determine sources of high levels of bioavailable mercury		78 A. Status of actions undertaken to support the development and implementation of TMDL for mercury in Cache Creek watershed	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of actions undertaken to support the development and implementation of TMDL for mercury in Cache Creek watershed. Task 1: Evaluate sources and storm loading of mercury in Cache Creek watershed, Task 5: Mercury Sources, bioaccumulation and trophic transfer in the Cache Creek Watershed. This project contributed most of the scientific basis for development of the Cache Creek draft TMDL, including water and sediment concentrations and loads, identification of sources, mercury levels in biota, sediment flux rates, and estimated bioaccumulation factors in the Cache Creek watershed. NOTE: Cache Creek is in the Sacramento Region, although there are milestones related to Cache Creek listed in the Delta and Sacramento Regions.***
78	SAC	SR			78 A. Status of actions undertaken to support the development and implementation of TMDL for mercury in Cache Creek watershed	ERP-02-C03-D	May-02	Sep-04	400,000	0	400,000	California Department of Conservation	Douglas Craig		Department of Conservation, Abandoned Mine Lands Unit Mine Remediation Assessment and Field Investigations of the Middle Yuba River and other Watersheds	***Tasks 1) Complete site assessments & final reports for the North Yuba watershed abandoned mine inventory; 2) Perform preliminary site assessments & provide summary report for abandoned mines in the Middle Yuba Watershed and other watersheds identified as a priority by CALFED; 3) Work with DOC California Geologic Survey to prepare summary information on mine sites in the Cache Creek Watershed; 4) Provide technical support and information related to the abandoned mine inventory and remediation technology and costs; 5) Facilitate and coordinate an interagency & stakeholder discussion group to resolve technical and legal issues regarding the remediation of abandoned mine sites.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
78	SAC	SR			78 A. Status of actions undertaken to support the development and implementation of TMDL for mercury in Cache Creek watershed	ERP-03-C03	no contract	no contract	100,000	0	100,000	Central Valley Regional Water quality Control Board	Patrick Morris		Regulatory Activities of Inactive Mine Sites Affecting Bay-Delta Water quality	***Support development and implementation of TMDL for mercury. This project provides support for TMDL implementation - to support activities that will get inactive mine sites cleaned up by the owners.***
78	SAC	SR			78 B. Status of the determination of bioaccumulation effects in Cache Creek and the Delta	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of the determination of bioaccumulation effects in Cache Creek and the Delta. Task 1: Evaluate sources and storm loading of mercury in Cache Creek watershed, Task 5: Mercury Sources, bioaccumulation and trophic transfer in the Cache Creek Watershed. This project contributed most of the scientific basis for development of the Cache Creek draft TMDL, including water and sediment concentrations and loads, identification of sources, mercury levels in biota, sediment flux rates, and estimated bioaccumulation factors in the Cache Creek watershed. NOTE: Cache Creek is in the Sacramento Region, although there are milestones related to Cache Creek listed in the Delta and Sacramento Regions.***
78	SAC	SR			78 B. Status of the determination of bioaccumulation effects in Cache Creek and the Delta											
78	SAC	SR			78 B. Status of the determination of bioaccumulation effects in Cache Creek and the Delta	ERP-02D-C12			5,337,012		5,337,012	U.S. Fish and Wildlife Service	Tom Suchanek		Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction	***NO CONTRACT STILL UNDER DEVELOPMENT. This is a very comprehensive study to determine exposure pathways and effects of mercury exposure and bioaccumulation in 3 bird guilds in the Bay-Delta. The guilds include: terns, diving ducks and recurvirostrids. The project includes both field and lab studies, reproductive effects, dietary exposure and bioaccumulation, and histopathological effects in bird populations.***
78	SAC	SR			78 B. Status of the determination of bioaccumulation effects in Cache Creek and the Delta	ERP-02D-P62			1,656,569		1,656,569	San Francisco Bay Institute	Donald Yee		Mercury and Methylmercury Processes in North San Francisco Bay Tidal Wetland Ecosystems	***NO CONTRACT STILL UNDER DEVELOPMENT. Status of the determination of bioaccumulation effects in Cache Creek and the Delta. This project will investigate dietary exposure and potential reproductive effects to Virginia Rail and Clapper Rail. The study also includes investigations on food web transfer of mercury in these systems.***
78	SAC	SR			78 B. Status of the determination of bioaccumulation effects in Cache Creek and the Delta	CSP-01-C01	??-01	??-02	395,500		395,500	Dept. of Water Resources	Ted Sommer		Science Program Directed Action for Ecological evaluation of Yolo Bypass to support floodplain restoration	***Research. Project 50% complete. Most of research has been done.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
78	SAC	SR			78 C. Status of determining source, transport, inventory, mapping and speciation of mercury in Cache Creek watershed.	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of determining source, transport, inventory, mapping and speciation of mercury in Cache Creek watershed. Task 1: Sources and loads from Cache Creek watershed, including special storm events Subtask 5A: Source Bioavailability and Mine Remediation Feasibility in the Cache Creek Watershed; Subtask 5B Mercury Bioaccumulation and Trophic Transfer in the Cache Creek Watershed Subtask 5C1: Assessment of the Feasibility of Remediation of Mercury Mine Sources in the Cache Creek Watershed, This project has contributed substantial information towards evaluating the loads from Cache Creek, mine sources, and bioavailability of some of those sources. Water quality sampling occurred in only 3 years, so it is not known how sources and loads relate to a variety of flow events. It is not known how the bioavailability changes as the sediment moves downstream.***
78	SAC	SR			78 C. Status of determining source, transport, inventory, mapping and speciation of mercury in Cache Creek watershed.	ERP-02-C03-D	May-02	Sep-04	400,000	0	400,000	California Department of Conservation	Douglas Craig		Department of Conservation, Abandoned Mine Lands Unit Mine Remediation Assessment and Field Investigations of the Middle Yuba River and other Watersheds	***Tasks 1) Complete site assessments & final reports for the North Yuba watershed abandoned mine inventory; 2) Perform preliminary site assessments & provide summary report for abandoned mines in the Middle Yuba Watershed and other watersheds identified as a priority by CALFED; 3) Work with DOC California Geologic Survey to prepare summary information on mine sites in the Cache Creek Watershed; 4) Provide technical support and information related to the abandoned mine inventory and remediation technology and costs; 5) Facilitate and coordinate an interagency & stakeholder discussion group to resolve technical and legal issues regarding the remediation of abandoned mine sites.***
78	SAC	SR			78 C. Status of determining source, transport, inventory, mapping and speciation of mercury in Cache Creek watershed.	CSP-01-C01	??-01	??-02	395,500		395,500	Dept. of Water Resources	Ted Sommer		Science Program Directed Action for Ecological evaluation of Yolo Bypass to support floodplain restoration	***Research. Project 50% complete. Most of research has been done.***
78	SAC	SR			78 D. Status of participation in Stage 1 remediation (drainage control) of mercury mines in Cache Creek watershed	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of participation in Stage 1 remediation (drainage control) of mercury mines in Cache Creek watershed. Subtask 5C1: Assessment of the Feasibility of Remediation of Mercury Mine Sources in the Cache Creek Watershed This project evaluated a number of specific mine sites in the Cache Creek watershed to determine extent of mercury contamination, loads to the waterbody and feasibility of cleanup.***
78	SAC	SR			78 D. Status of participation in Stage 1 remediation (drainage control) of mercury mines in Cache Creek watershed	ERP-02-C03-D	May-02	Sep-04	400,000	0	400,000	California Department of Conservation	Douglas Craig		Department of Conservation, Abandoned Mine Lands Unit Mine Remediation Assessment and Field Investigations of the Middle Yuba River and other Watersheds	***Participate in Stage 2 remediation of mercury mines as appropriate. This project inventories and prioritizes abandoned mines that need to be remediated. This project also leads several groups to share information on mine remediation techniques and legal challenges associated with abandoned mine cleanup.***
78	SAC	SR			78 D. Status of participation in Stage 1 remediation (drainage control) of mercury mines in Cache Creek watershed	ERP-03-C03	no contract	no contract	100,000	0	100,000	Central Valley Regional Water quality Control Board	Patrick Morris		Regulatory Activities of Inactive Mine Sites Affecting Bay-Delta Water quality	***Participate in Stage 2 remediation of mercury mines as appropriate. This project provides support so that the Regional Board can have staff pursue mine cleanup by responsible parties, requiring permits or enforcement actions.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
78	SAC	SR			78 E. Status of determining sources of high levels of bioavailable mercury in the Cache Creek Watershed	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Subtask 1C:Mercury (Hg) Loads to the Sacramento-San Joaquin Delta from the Cache Creek Watershed and the Yolo Bypass. Subtask 1D: Special Storm Event Study of Hg Loading in Cache Creek, Subtask 5A: Source Bioavailability and Mine Remediation Feasibility in the Cache Creek Watershed, Subtask 5B Hg Bioaccumulation and Trophic Transfer in the Cache Creek Watershed, Subtask 5C1: Assessment of the Feasibility of Remediation of Hg Mine Sources in the Cache Creek Watershed. This project provided information on loads of Hg from Cache Creek and the contribution of the mine sites to the Hg loads. Siginificant unknowns include the extent of Hg contamination in stream bed and bank sediments and its ability to mobilize, particularly during storm events. Factors such as speciation of Hg, presence of sulfides, redox conditions, availability of organic carbon, structure of the trophic web have all been identified as potentially affecting bioavailability of Hg.***
78	SAC	SR			78 E. Status of determining sources of high levels of bioavailable mercury in the Cache Creek Watershed	CSP-01-C01	??-01	??-02	395,500		395,500	Dept. of Water Resources	Ted Sommer		Science Program Directed Action for Ecological evaluation of Yolo Bypass to support floodplain restoration	***Research. Project 50% complete. Most of research has been done.***
79	SAC	SR			78 E. Status of determining sources of high levels of bioavailable mercury in the Cache Creek Watershed	ERP-02-C03-D	May-02	Sep-04	400,000	0	400,000	California Department of Conservation	Douglas Craig		Department of Conservation, Abandoned Mine Lands Unit Mine Remediation Assessment and Field Investigations of the Middle Yuba River and other Watersheds	***Determine sources of high levels of bioavailable mercury. This project inventories and assesses abandoned mine sites throughout the watershed. It ranks and prioritizes sites for remediation.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 79 -- ROLLED UP SUMMARY

MILESTONE 79 -- Conduct the following mercury evaluation and abatement work in the Sacramento River (from Phase II Report): · Determine, inventory, and sources of high levels of bioavailable mercury · Refine mercury models.· Participate in remedial activities.		**PROJECTS REVIEWED -** ERP-97-C05, ERP-99-B06, ERP-00D-C01, ERP-02-C01-D		**SUMMARY --** Two projects have been funded to do abandoned mine inventory and assessments mostly focused in the Sacramento River watershed. One large multi-faceted study has done a "mass balance" assessment of mercury sources in the watershed, including some monitoring on mercury sources and loads. One study has been completed on investigating mercury cycling in wetlands. Four new studies are just beginning to further reduce uncertainties in the mercury mass balance, including detailed studies an mercury movement between sediment, water, and air, and an in-depth investigation of methyl mercury production and bioaccumulation in the food chain in different habitat types. All of these projects will contribute towards development of a mercury model to understand mercury sources, cycling, and bioaccumulation. No remediation activities have taken place in the watershed yet, but work has been done to try to identify major sources of mercury from abandoned mines.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 79 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
79	SAC	SR	Conduct the following mercury evaluation and abatement work in the Sacramento River (from Phase II Report): · Determine, inventory, and sources of high levels of bioavailable mercury · Refine mercury models.· Participate in remedial activities.		79 A. Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury.	ERP-00D-C01	Jan-01	Sep-01	100,000	0	100,000	Department of Conservation	Doug Craig (Original investigators have left agency)		Yuba River, Sacramento Region	***Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury.***
79	SAC	SR			79 A. Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury.	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury. Several of the tasks in this project evaluate sources of mercury in the Sacramento River watershed, including water and sediment concentrations. More information is needed to evaluate sources, including instream and bank sediments. More studies are needed to determine factors that influence methylation / demethylation and exposure.***
79	SAC	SR			79 A. Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury.	ERP-02-C01-D	Jul-01	Jun-05	4,432,966	0	4,432,966	USGS	Charlie Alpers		Upper Yuba River: Water Quality and Sediment Studies	Determine, inventory, and sources of high levels of bioavailable mercury. Project 1A Tasks 1-5 evaluate the sources, cycling and bioaccumulation of mercury in the Upper Yuba River Watershed and Englebright reservoir. ***Ian Drury, DFG. Implementation; 50 percent complete. Gravel augmentation only. Implement gravel augmentation.***
79	SAC	SR			79 A. Status in the Sacramento River of the mercury evaluation and abatement work including inventory and determine sources of high level bioavailable mercury.	ERP-97-C05	Jul-98	Sep 98?	546,171		546,171	UC Davis	Darell Slotton		The Effects of Wetland Restoration on the Production of Methyl Mercury in the San Francisco Bay Delta System	***Although this research project occurred in the Delta, it also applies to other areas. This project assists in determining how wetland environments may contribute as sources of bioavailable mercury.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
79	SAC	SR			79 B. Status of refining mercury models for the Sacramento River	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of refining mercury models for the Sacramento River. This project collected two years of water quality data to develop a simple mass balance model of sources in the watershed. More monitoring is needed to evaluate sources particularly during high flow events. More studies are needed to evaluate methylation and demethylation processes and the factors that influence them. More information is needed on landscape level changes that may affect the sources and bioavailability of methylmercury.***
79	SAC	SR			79 B. Status of refining mercury models for the Sacramento River											
79	SAC	SR			79 C. Status of actions in behalf of participation in Sacramento River mercury remedial activities.	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***Status of actions in behalf of participation in Sacramento River mercury remedial activities. his project contributed to this goal by beginning an assessment of the most important sources and loads to the Sacramento River and Delta. This can help prioritize areas for remediation activities, as well as baseline monitoring data.***
79	SAC	SR			79 C. Status of actions in behalf of participation in Sacramento River mercury remedial activities.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 80 -- ROLLED UP SUMMARY

MILESTONE 80 -- Conduct the following pesticide work (from Phase II Report): · Develop diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations. · Support development and implementation of a TMDL for diazinon. · Develop BMPs for dormant spray and household uses. · Determine the ecological significance of pesticide discharges. · Support implementation of BMPs. · Monitor to determine effectiveness of BMPs	**PROJECTS REVIEWED -** ERP-97-C12, ERP-97-N20, ERP-98-B05, ERP-98-C06, ERP-01-N22 , ERP-02-P36		**SUMMARY --** One project has been completed to develop the diazinon and chlorpyrifos hazard assessment criteria for toxicity. One project has been completed to support the development and implantation of a TMDL for diazinon, to assess and reduce diazinon inputs from urban stormwater runoff in Sacramento County. Three projects have been funded to evaluate and implement pesticide reduction practices for both urban stormwater and agriculture. Three projects have been funded to evaluate effects of pesticides on aquatic life. One project that developed BMPs for pesticide reductions in agriculture also monitored for effectiveness of various techniques. Recent results from studies indicate that pyrethroids are causing significant toxicity to benthic organisms in 25-60% of the waterbodies tested (particularly creeks and drainages). Other studies have also shown that very low concentrations of organophosphate pesticides may interfere with sensory cues needed for salmonid migration. Lab studies of salmon with sublethal exposures to pyrethroids showed significant increased susceptibility to mortality from	**SUMMARY continued** -- disease. More investigations are needed to evaluate episodes of both water and sediment toxicity from pesticides, including pyrethroids, as well as potential effects from sublethal exposures that may affect aquatic populations. There are significant efforts by other organizations to address pesticide issues, including the ag drainage program and TMDL development at the Regional Board, PRIZM grants from USEPA, and other efforts by USDA and local groups to reduce pesticide usage and impacts from pesticides. Also see milestones 33, 49, and 107.	**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 80 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
80	SAC	SR	Conduct the following pesticide work (from Phase II Report): · Develop diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations. · Support development and implementation of a TMDL for diazinon. · Develop BMPs for dormant spray and household uses. · Determine the ecological significance of pesticide discharges. · Support implementation of BMPs. · Monitor to determine effectiveness of BMPs		80A Status of the development of diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations.	ERP-98-C06	Aug-98	Jun-99	67,753	0	67,753	CDFG	Brian Finlayson		Water Quality Criteria for Cloropyrifos and Diazinon	Develop hazard assessment criteria for diazinon and cloropyrifos with DFG and Dept. of Pesticide and Regulation. ***Brian Finlayson, DFG. Implementation. DFG tested for chlorpyrifos and diazinon and recalculated the criteria for them.***
80	SAC	SR			80B Status of actions taken in support of development and implementation of a TMDL for diazinon.											
80	SAC	SR			80C Status of the development of BMPs for dormant spray and household uses.	ERP-97-C12	Aug-98	Jul-01	957,781	none	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research. 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
80	SAC	SR			80C Status of the development of BMPs for dormant spray and household uses.	ERP-97-N20	Jul-98	Jun-01	1,680,631	None	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. Project completed.***
80	SAC	SR			80D. Status of determining the ecological significance of pesticide discharges.	ERP-97-C12	Aug-98	Jul-01	957,781	none	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research. Project completed.***
80	SAC	SR			80D. Status of determining the ecological significance of pesticide discharges.	ERP-97-N20	Jul-98	Jun-01	1,680,631	None	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. Project completed. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
80	SAC	SR			80D. Status of determining the ecological significance of pesticide discharges.	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. Project not completed. There have been contract delays. The work has not yet started.***
80	SAC	SR			80D. Status of determining the ecological significance of pesticide discharges.	ERP-02-P36	Jun-03	1-Jun	1,402,159	0	1,402,159	UC Davis	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
80	SAC	SR			80E. Status of actions taken in support of implementation of BMPs.	ERP-97-C12	Aug-98	Jul-01	957,781	none	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research. 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
80	SAC	SR			80E. Status of actions taken in support of implementation of BMPs.	ERP-97-N20	Jul-98	Jun-01	1,680,631	None	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. Project completed. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
80	SAC	SR			80E. Status of actions taken in support of implementation of BMPs.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District (CCRCD)	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
80	SAC	SR			80F Status of monitoring program to determine effectiveness of BMPs	ERP-97-C12	Aug-98	Jul-01	957,781	none	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research. Project completed.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 81 -- ROLLED UP SUMMARY

MILESTONE 81 -- Conduct the following actions in reduce organochlorine pesticide inputs to streams (from Phase II Report): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs on agricultural lands and other specific sites. · Implement BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.		**PROJECTS REVIEWED -** ERP-97-N20, ERP-98-B05, ERP-98-E13, ERP-01-N25, ERP-02-P36, WSP-01-FP-053, WSP-01-FP-065, WSP-02-FP-419		**SUMMARY --** Organochlorine pesticides are no longer used in this watershed. However, they are extremely persistent and tend to bind strongly to the sediment. Therefore, efforts to reduce sediment inputs will also reduce inputs of organochlorine pesticides. These projects have been funded to reduce sediment and fertilizer usage in this watershed. See milestones 35, 51, and 109 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 81 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
81	SAC	SR	Conduct the following actions in reduce organochlorine pesticide inputs to streams (from Phase II Report): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs on agricultural lands and other specific sites. · Implement BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.		81A. Status of participation in the implementation of USDA sediment reduction program in behalf of reducing organochlorine pesticide inputs to streams.	ERP-97-N20	Jul-98	Jun-01	1,680,631	None	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. Project completed. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
81	SAC	SR			81A. Status of participation in the implementation of USDA sediment reduction program in behalf of reducing organochlorine pesticide inputs to streams.	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-01-N25	Sep-01	Aug-04	1,464,167	2,879,113	4,343,280	Yolo County Resource Conservation District	Katy Pye or Jeanette Wrysinski		Sustaining Agriculture and Wildlife Beyond the Riparian Corridor	Objectives: 1) Develop compressed protocols to assess watershed functions and prioritize conservation work; 2) Conduct on-farm demonstration projects and research of a discrete set of agricultural conservation solutions; 3) Quantify the effects of the practices through replicated, multi-year trials and monitoring of these projects; 4) Develop a web-based landowner conservation decision assistance tool (Yolo OnePlan) to facilitate small scale, private conservation planning for large-scale watershed improvements; and 5) Increase landowner participation as a result of a strong education and outreach program and the "landowner service" to provide technical assistance, economic incentives. ***Jeannette Wrysinski .Project 75% complete. program to establish, restore, and maintain riparian habitat (4,000 ft) along Union Slough tributary to Willow Slough in the Yolo Basin EMZ***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-02-P36	Jun-03	Jun-06	1402159	0	1402159	UC Davis	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-97-N20	Jul-98	Jun-01	1,680,631	None	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. Project completed. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-98-B05	Dec-99	Dec-01	599,000	0	599,000	Colusa County Resource Conservation District	Roney Gutierrez		Sand and Salt Creek Watershed Project	Reclamation and CCRCD entered into this Agreement for the purpose of improving water quality by decreasing undesirable runoff, residues, and sedimentation. Benefits of this project include improving and increasing aquatic and terrestrial habitats in the Bay-Delta and supporting sustainable populations of diverse plant and animal species. ***Patti A. Turner, Colusa County Resource Conservation District. Implementation; project completed. Selection of 20 sites aimed at reducing runoff into the Colusa Drain.***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-98-E13	May-99	Jun-02	636,000	0	636,000	National Audubon Society, California Chapter	Judy Boshoven		Union School Slough Watershed Improvement Program	This project will implement sediment reduction practices to 1) reduce pesticide runoff that can degrade water quality (Subtask 6: Construction of Tailwater Ponds: 5 tailwater ponds), and Revegetate canals and ditches that will reduce weed invasion and reduce herbicide use (Subtask 7: Revegetation of Irrigation Canals and Ditches: revegetation of 3 miles of canal and ditch bank). ***Vance Russell, Audubon California. Implementation. Riparian: 1.05 miles; 56 acres; Grassland treated with prescribed fire: 567 acres; Native perennial grassland restoration: 277 acres; Wetlands/ponds: 15.7 acres; 7 ponds, 1 wetland project.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	WSP-01-FP-053	Jun-01	Jun-05	400,000	362,000	762,000	Agricultural Resource Consulting	Gary Obenauf		Implementation of BMPs to Mitigate OP Pesticides Runoff	***Project will develop demonstration orchards to educate landowners on BMP implenmentation***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	WSP-01-FP-065	Jun-01	Jun-05	308,000	63,341	371,341	Coalition for Rural/Urban Environmental Stewardship	Parry Klassen		Promotion of Farming BMPs and Calibration Technology to Mitigate OP Pesticide Runoff into the Sacramento River Watershed	***Project sets up demonstration orchards for the implementation of BMPs to reduce the amount of OP chemical runoff into surface water of the Sacramento River. Target orchards are those with riparian habitat adjacent to orchard. Landowners will be educated on the use of the BMPs and their effectiveness.***
81	SAC	SR			81B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	WSP-02-FP-419			275,000	71,500	346,500	Glenn County Department of Agriculture	Ed Romano		Glenn County Surface Water Stewardship	***Project has developed a demonstration area that shows how BMPs for controlling runoff and stripping pesticides from runoff can work. Continuation of the demonstration to educate landowners in the project area in BMP implementatioin.***
81	SAC	SR			81 C. Status of Implementing BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 82 -- ROLLED UP SUMMARY

MILESTONE 82 -- Conduct the following trace metals work (from Phase II Report): · Determine spatial and temporal extent of metal pollution. · Determine ecological significance and extent of copper contamination. · Evaluate impacts of other metals such as cadmium, zinc, and chromium. · Participate in Brake Pad Partnership to reduce introduction of copper. · Partner with municipalities on evaluation and implementation of storm water control facilities. · Participate in remediation of mine sites as part of local watershed restoration and Delta restoration.	**PROJECTS REVIEWED -**		**SUMMARY** -- No projects have been funded by CBDA to address this milestone in the Sacramento River Region. However, there have been efforts by the Sacramento River Watershed Program to monitor for metal contamination in the watershed. There have also been significant efforts by the Central Valley Regional Board to reduce inputs of metals to the Sacramento River through regulatory actions and cleanup of mine sites, such as the Iron Mountain Mine. See milestones 36, 52, and 110 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 82 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
82	SAC	SR	Conduct the following trace metals work (from Phase II Report): · Determine spatial and temporal extent of metal pollution. · Determine ecological significance and extent of copper contamination. · Evaluate impacts of other metals such as cadmium, zinc, and chromium. · Participate in Brake Pad Partnership to reduce introduction of copper. · Partner with municipalities on evaluation and implementation of storm water control facilities. · Participate in remediation of mine sites as part of local watershed restoration and		82 A. Status of determining spatial and temporal extent of trace metal pollution.											
82	SAC	SR			82 B. Status of determining ecological significance and extent of copper contamination.											
82	SAC	SR			82 C. Status of evaluating impacts of other metals such as cadmium, zinc, and chromium											
82	SAC	SR			82 D. Status of participation in Brake Pad Partnership to reduce introduction of copper.											
82	SAC	SR			82 E, Status of partnerships with municipalities on evaluation and implementation of storm water control facilities.											

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								
82	SAC	SR			82 F. Participate in remediation of mine sites as part of local watershed restoration and Delta restoration.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 83 -- ROLLED UP SUMMARY

MILESTONE 83 -- Conduct the following unknown toxicity work (from Phase II Report): · Conduct appropriate studies to identify unknown toxicity, and develop management actions as appropriate.		**PROJECTS REVIEWED -** ERP-97-C06, ERP-98-C07, ERP-98-C08, ERP-01-N22, ERP-02-P36, ERP-02-P42, WSP-01-FP-073		**SUMMARY --** One 1997 study did 3 species toxicity testing at several monitoring locations in the Delta and found toxicity in 4 samples out of 29. Chlorpyrifos was identified as the cause of toxicity in one sample. A 1999 study on pyrethroids found sediment toxicity in 42% of locations sampled on at least one occasion, with severe toxicity in 14% of the sites (all Central Valley sites). Pyrethroid concentrations were identified as the cause of toxicity in many instances, but did not explain all of the toxicity observed. Several more studies are underway to develop methods for toxicity identification evaluations (TIE), as well as additional monitoring for toxicity throughout the watershed. A multi-agency group has developed a "Strategy for Toxicity of Unknown Origin" that includes recommendations on future actions to monitor, identify and reduce episodes of toxicity in the watershed. In general, recent monitoring data has shown that toxic events from OP pesticides may be declining as control measures are put in place. However, new pesticides, such as pyrethroids are gaining in popularity and may increa	**SUMMARY continued** -- toxicity and affect benthic organisms throughout the watershed. Additional studies need to be done to determine the spatial and temporal extent of toxic events, methods for identifying toxicants need further development. Once toxicants are identified, control programs need to be implemented to reduce affects to waterbodies. Currently, there are activities to reduce pesticide usage and inputs to waterbodies from both urban and agricultural sources. Some activities have been funded by CBDA (see pesticide milestone), but there are also significant efforts by other organizations including the Regional Boards, USEPA, and NRDC. See milestones 37, 53, and 111 for additional projects that address this milestone at a landscape level.	**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 83 -- 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
83	SAC	SR	Conduct the following unknown toxicity work (from Phase II Report): · Conduct appropriate studies to identify unknown toxicity, and develop management actions as appropriate.		83 A. Status on conducting appropriate studies to identify unknown toxicity	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.***
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	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. Project not completed. There have been contract delays. The work has not yet started.***
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	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, State Water Resource Control Board. Monitoring. Project completed.***
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	ERP-97-C06	Jul-98	Jun-01	437,326	none	437,326	UC Davis (Bodega Bay)	William A. Bennett		Contaminant Effects on Smelt	Research and monitoring of listed species. ***William A. Bennett, UCD Bodega Bay. Research and Monitoring. Project completed.***
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	UC Davis	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality.***
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	ERP-02-P42	Oct-02	Sep-05	800,000	60,000	860,000	US Geological Survey	Kathryn Kuivila		Pyrethroid Insecticides: Analysis, Occurrence, and Fate in the Sacramento and San Joaquin Rivers and Delta	Studying the unknown toxicity of Pyrethroids. ***Kathryn Kuivila,US Geological Survey. Monitoring/Research. Note: Project is a landscape project. Project is about 1% 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 START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
83	SAC	SR			83 A. Status on conducting appropriate studies to identify unknown toxicity	WSP-01-FP-073	Jun-01	Jun-05	288,081		288,081	City of Woodland	Gary Wegener		Yolo Bypass Watershed Planning Project	***This project is conducting studies to determine pollutants of concern, and a watewrshed plan to provide implementation of measures to address those pollutants***
83	SAC	SR			83 B. Status on development of management actions to address identified unknown toxicity.	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. Project not completed. There have been contract delays. The work has not yet started.***
83	SAC	SR			83 B. Status on development of management actions to address identified unknown toxicity.	ERP-97-C06	Jul-98	Jun-01	437,326	none	437,326	UC Davis (Bodega Bay)	William A. Bennett		Contaminant Effects on Smelt	Research and monitoring of listed species. ***William A. Bennett, UCD Bodega Bay Research and Monitoring. Project completed.***
83	SAC	SR			83 B. Status on development of management actions to address identified unknown toxicity.	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.***