

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 38 -- ROLLED UP SUMMARY

MILESTONE 38 -- Restore and maintain a minimum of three linear miles of riparian habitat along corridors of existing riparian scrub and shrub vegetation in each of the Ecological Management Units of the Suisun Marsh/North San Francisco Bay Ecological Management Zone.

PROJECTS REVIEWED -
ERP-98-C03,
ERP-98-E01,
ERP-98-E02,
ERP-98-E04,
ERP-98-E17,
ERP-99-N20,
ERP-00-E04,
ERP-00-F11,
ERP-01-N27,
ERP-02-P12

SUMMARY -- 5,000 liner feet of riparian habitat was created in Suisun Bay and Marsh EMU. An unspecified amount of riparian corridor was contracted for in the Napa River EMU. A combined 3,800 linear feet of riparian habitat was contracted for on 2 creeks and another locale within the Sonoma Creek EMU. 7,000 linear feet of riparian habitat was contracted on 2 creeks in the Petaluma EMU. No riparian habitat has been developed in the San Pablo Bay EMU, although there was a planning proposal funded that plans for providing riparian habitat.

AGENCY NOTES --

NOTES CONT'D --

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 38 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
38	SM SFB	H	Restore and maintain a minimum of three linear miles of riparian habitat along corridors of existing riparian scrub and shrub vegetation in each of the Ecological Management Units of the Suisun Marsh/North San Francisco Bay Ecological Management Zone.		38A. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Suisun Bay and Marsh EMU	ERP-98-E17	Apr-99	Apr-00	138,000		138,000	Contra Costa Water District	Carla Koop		Alhambra Creek Watershed CRMP Program	Project will develop a watershed management program for Alhambra Creek. Plan will address restoration of degraded aquatic and riparian communities, soil erosion, non-point pollution, and prevention of wildfire. The plan will improve riparian habitat using techniques that promote riparian habitat natural diversity. Project complete. Planning project. Carla Koop, CCWD,
		H			38A. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Suisun Bay and Marsh EMU	ERP-02-P12	Apr-03	Mar-06	1,800,000	0	1,800,000	Hart Restoration, Inc.	Jeff Hart	5,000 linear feet	Sustainable Restoration Technologies for Bay/Delta Tidal Marsh and Riparian Habitat	Restore 5,000 linear feet along Georgiana Slough. Jeff Hart, Hart Restoration, Inc.; Implementation. Riparian: 38A - 1,000 linear feet, for a total of 19,820 linear feet of riparian. Project 33% completed.
38	SM SFB	H			38B. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Napa River EMU	ERP-99-N20	Jun-00	Dec-01	191,100		191,100	Napa County RCD	Bob Zlomke		Napa River Watershed Stewardship Year 2	Task III: establish demonstration sites for floodplain wetland restoration and riparian corridor development. Planning and Modeling Project; completed. Kathleen Edson, Napa County RCD.
38	SM SFB	H			38B. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Napa River EMU	ERP-00-F11	Mar-01	Mar-06	1,063,600	None	1,063,600	Sonoma Ecology Center	Richard Dale		Arundo donax Eradication and Coordination	This project will direct funds to eradication partners in six watersheds (Putah Creek, Big Chico Creek, Sonoma Creek, Walnut Creek, Napa River, and San Francisco Creek) that are prepared to immediately carry out Arundo eradication (an invasive non-native plant) throughout the Bay-Delta and the Sacramento-San Joaquin watersheds. Kim Webb, USFWS; Implementation; project not completed. This project will direct eradication funds for on-the-ground eradication of Arundo, the state's most invasive riparian weed, to eradication partners in six watersheds, including the Napa River.

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38	SM SFB	H			38B. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Napa River EMU	ERP-98-E01	Feb-98	n/a	250,000		250,000	Napa County RCD	Dennis Bowker		Napa River Watershed Stewardship	Project will 1) stabilize streams using natural processes, 2) promote contiguous habitat, 3) increase biological diversity, 4) increase migratory and resident fish habitat; 5) coordinate natural resource protection and planning; and 6) encourage local land stewardship. Planning and Implementation project. Habitat restoration projects have been completed. Kathleen Edson, Napa County RCD.
38	SM SFB	H			38C. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Sonoma Creek EMU	ERP-00-F11	Mar-01	Mar-06	1,063,600	None	1,063,600	Sonoma Ecology Center	Richard Dale		Arundo donax Eradication and Coordination	This project will direct funds to eradication partners in six watersheds (Putah Creek, Big Chico Creek, Sonoma Creek, Walnut Creek, Napa River, and San Francisco Creek) that are prepared to immediately carry out Arundo eradication (an invasive non-native plant) throughout the Bay-Delta and the Sacramento-San Joaquin watersheds. Kim Webb, USFWS; Implementation; project not completed. This project will direct eradication funds for on-the-ground eradication of Arundo, the state's most invasive riparian weed, to eradication partners in six watersheds, including Sonoma Creek.
38	SM SFB	H			38C. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Sonoma Creek EMU	ERP-98-E02	Jan-98	n/a	300,000		300,000	Southern Sonoma County RCD	Robert Rand	3000 linear feet of riparian habitat	Sonoma Creek Watershed Enhancement Plan-Phase II	Reestablish 3000 feet of riparian vegetation on Sonoma Creek; Tree planting on 3000 feet of Sonoma Creek. Implementation Project; completed. Revegetation of 400 feet of streambank. Fence 6000 feet for improved pasture management. Re-establish 3000 feet of riparian vegetation along Sonoma Creek. Leandra Swent, Southern Sonoma County RCD.
38	SM SFB	H			38C. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Sonoma Creek EMU	ERP-00-E04	Jun-00	Nov-03	438,923	143,030	581,953	Southern Sonoma County RCD	Gillian Harris	800 linear feet	Sonoma Creek Watershed Conservancy	This project includes riparian habitat restoration, monitoring and assessment of habitats and species, salmon escapement monitoring, and stream restoration. Fish passage enhancement, and pool restoration and enhancement will restore steelhead spawning and rearing habitat, and benefit other aquatic and riparian species. (Project linked to ERP-01-N27). Implementation, monitoring, and research project; Project completed, included riparian restoration, bank stabilization, pool enhancement, and spawning and rearing habitat improvement. Chris Taylor, Southern Sonoma County RCD.
					38C. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Sonoma Creek EMU	ERP-01-N27	Oct-01	Oct-05	545,170		545,170	Southern Sonoma County RCD	David Luther		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement, water quality, and benthic macroinvertebrates. Specific tasks include salmon escapement monitoring. (Project linked to ERP-00-E04). Implementation, Monitoring, and Research Project. Project is 70% complete; streambed restoration projects are in progress, in various stages of completion. Chris Taylor, Southern Sonoma County RCD.
38	SM SFB	H			38D. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the Petaluma River EMU	ERP-98-E04	Sep-98	Dec-00	162,000		162,000	Southern Sonoma County RCD	Robert Rand	7000 linear feet of riparian habitat	Petaluma River Watershed Restoration Program	This project is for the expansion of the Petaluma River Floodplain; developing project plans and funding for acquisition. This project includes bank stabilization and reduction of fine sediments in San Antonio Creek by using loose rock structures and biotechnical methods to curtail lateral migration, and native plant revegetation on San Antonio (2000 linear feet) and Adobe (5000 linear feet) Creeks. Implementation Project; completed. Involved bank stabilization and reduction of fine sediment along 1000 feet of San Antonio Creek. Leandra Swent, Southern Sonoma County RCD.

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38	SM SFB	H			38E. Status of restoring riparian habitat along corridors of existing riparian scrub and shrub vegetation in the San Pablo Bay EMU	ERP-98-C03	Mar-98	Mar-01	1,025,015	1,186,300	2,211,315	California Coastal Conservancy	Terri Nevins		Hamilton Wetland Restoration Project	Scope of services covers planning and permitting work for restoration of up to 2,500 acres of subsided, diked baylands to a diverse array of upland seasonal and tidal wetland habitats. Project includes EIR/EISs, feasibility studies, and restoration plans. Project complete. Planning only, planning documents and environmental permitting completed; Carl Wilcox, CDFG,

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 39 -- ROLLED UP SUMMARY							
MILESTONE 39 -- In the Suisun Marsh/North San Francisco Bay EMZ, restore a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline) and a cumulative total of 1,000 acres in the Napa River, Sonoma Creek, Petaluma River, and San Pablo Bay Ecological Management Units. Restore high marsh and high-marsh upland transition habitat in conjunction with restoration of saline emergent wetland. Develop cooperative programs to acquire, in fee-title or through a conservation easement, the land needed for tidal restoration, and complete the needed steps to restore the wetlands to tidal action. Begin aggressive program of control of non-native plant species that are threatening the known populations of Suisun thistle, Suisun Marsh aster, soft bird's beak, and Point Reyes bird's beak. - Bring into protection at least 25% of currently occupied, but unprotected Suisun Marsh aster habitat, spread throughout the North, East, South Delta and Napa River Ecological Units, and ensure appropriate management. -Expand suitable tidal slough habitat for Suisun Marsh aster by 25 linear miles. -Identify at least three protected and managed sites for introduction of at least three additional populations of Suisun thistle; increase overall population size at least threefold. -Establish at least one new population of soft bird's beak with high likelihood of success in restored habitat in each of the Suisun Bay and Marsh EMU, the Napa River EMU, and the Petaluma River EMU. -Establish at least one new Point Reyes bird's beak population in the Petaluma River and San Pablo Bay EMUs.	PROJECTS REVIEWED -- ERP-97-N16, ERP-97-N18, ERP-97-N19, ERP-98-B13, ERP-98-C03, ERP-98-F08, ERP-98-F13, ERP-98-F14, ERP-98-F17, ERP-98-F22, ERP-98-F23, ERP-99-B11, ERP-99-F09, ERP-99-N05, ERP-01-C01, ERP-01-C04, ERP-01-C09, ERP-02-C01, ERP-02-P04D, ERP-02-P14		SUMMARY -- The first goal is to restore a minimum of 7,000 acres of Saline Emergent Wetland. To date 200 acres have been restored, a portion of 2,500 acres are in the planning phase, another 452 acres are also in the planning process, and there is an effort to acquire 569 more acres, for a total of 3,721 acres. The next series of goals call for a cumulative total of 1,000 acres in the Napa River, Sonoma Creek, Petaluma River, and San Pablo Bay EMUs will be exceeded. To date 507 acres have been restored, a portion of 4,065 acres are being restored, and there is planning for an additional 2,385 acres. There are plans to restore a portion of more than 600 acres to meet an unspecified target of high marsh and high-marsh upland transition habitat in conjunction with restoration of saline emergent wetland. Two projects developed cooperative programs to acquire the land needed for tidal restoration and complete the needed steps to restore the wetlands to tidal action. An aggressive program of control of non-native plant species that are threatening known populations of Suisun thistle, Suisun Marsh aster, soft bird's beak, and Point R		SUMMARY CONTINUED -- resulted in one project in the planning phase that addresses the non-native species of Spartina which threatens occurrences of all the targeted rare species except for Suisun thistle. One project is currently in the planning phase to identify at least three protected and managed sites for introduction of Suisun Marsh aster and Suisun thistle and expansion to increase overall population size at least threefold. Establishment of at least one new population of soft bird's beak with high likelihood of success in restored habitat was accomplished in the Suisun Bay and Marsh EMU, but not in the Napa River EMU and the Petaluma EMU. No Pt. Reyes bird's beak was established. Restoration of the various plant species targets is needed.	AGENCY NOTES --	NOTES CONT'D --

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39	SM SFB	H	and complete the needed steps to restore the wetlands to tidal action. Begin aggressive program of control of non-native plant species that are threatening the known populations of Suisun thistle, Suisun Marsh aster, soft bird's beak, and Point Reyes bird's beak. · Bring into protection at least 25% of currently occupied, but unprotected Suisun Marsh aster habitat, spread throughout the North, East, South Delta and Napa River Ecological Units, and ensure appropriate management. ·Expand suitable tidal slough habitat for Suisun Marsh aster by 25 linear miles.		39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline)	ERP-01-C04	na	na	536,750	536,750	1,073,500	CA Department of Water Resources	Terri Gaines		Suisun Marsh Property Acquisition and Habitat Restoration	Acquisition and planning project to eventually restore a 69 acre parcel (Blacklock parcel) currently managed as seasonal wetland. Project not yet complete; Gina Van Klompenburg, CDFG.

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39	SM SFB	H	Identify at least three protected and managed sites for introduction of at least three additional populations of Suisun thistle; increase overall population size at least threefold. Establish at least one new population of soft bird's beak with high likelihood of success in restored habitat in each of the Suisun Bay and Marsh EMU, the Napa River EMU, and the Petaluma River EMU. Establish at least one new Point Reyes bird's beak population in the Petaluma River and San Pablo Bay EMUs.		39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline)	ERP-01-C09	Feb-01	Nov-04	87,000		87,000	CA Dept Fish and Game	Laurie Briden		Hill Slough West Habitat Restoration Demonstration Project, Phase II	Project not completed, environmental documentation and permitting phase. Project will lead to eventual restoration of 200 acre site to include saline emergent wetland habitat by restoring tidal action in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.
39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline).	ERP-02-C01	n/a	n/a	1,046,400		1,046,400	CA Dept Fish and Game	Carl Wilcox		Suisun Marsh Land Acquisition and Tidal Marsh Restoration	Acquisition only. Plan is to acquire up to 500 acres and restore tides to reestablish tidal marsh in future project phases. Project not complete. This phase is searching for willing sellers only, and potential acquisition, but no physical restoration. Gina Van Klompenburg, CDFG.
39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline).	ERP-97-N16	Aug-98	Jan-01	185,000	53,900	238,900	East Bay Regional Park District	Susan Williams		Bay Point Shoreline Restoration Plan	Muted tidal marsh along Contra Costa shoreline; areas restored to tidal influence...appropriate hydrology for areas managed for seasonal wetlands; 52 acres. Project is complete. Planning documents created. Carl Wilcox, CDFG.
39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline)	ERP-98-C03	Mar-98	Mar-01	1,025,015	1,186,300	2,211,315	California Coastal Conservancy	Terri Nevins		Hamilton Wetland Restoration Project	Scope of services covers planning and permitting work for restoration of up to 2,500 acres of subsided, diked baylands to a diverse array of upland seasonal and tidal wetland habitats. Project includes EIR/EISs, feasibility studies, and restoration plans. Project complete. Planning only, planning documents and environmental permitting completed; Carl Wilcox, CDFG.
39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline)	ERP-98-F08	Feb-99	May-02	200,000		200,000	CA Dept Fish and Game	Frank Wernette		Hill Slough West Habitat Demonstration Project, Phase I	Project completed, planning phase only. Project will lead to eventual restoration of 200 acre site to include saline emergent wetland habitat by restoring tidal action in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.
39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline)	ERP-98-F17	Jan-99	Sep-99	59,000		59,000	City of Benicia	Michael Alvarez		Benicia Waterfront Marsh Restoration Project	Preparation of final restoration plan, design of viewing platforms, and project permitting; high marsh upland transition habitat, tidal perennial habitat. Michael Alvarez, City of Benicia Parks and Community Services. Planning / Design / Permitting

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39	SM SFB	H			39A. Status of restoring a minimum of 7,000 acres of Saline Emergent Wetland by restoring tidal action in the Suisun Bay and Marsh Ecological Management Unit (including 200 acres of muted tidal marsh along the Contra Costa shoreline).	ERP-98-F22	Dec-98	Sep-02	772,667	243,812	1,016,479	CSU Hayward	C. Kitting	200 Acres	Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone	This project will restore tidal marsh habitat in Shell Marsh near Martinez. Project tasks 1 and 2 include levee breaching, vegetation establishment, and vegetation restoration. Project complete. Restoration of 200 acres of tidal marsh habitat; Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-02-P04-D	Mar-03	n/a	4,511,400		4,511,400	CA State Coastal Conservancy	Sam Schuchat		Napa-Sonoma Marsh Restoration Project	Water quality improvements and restoration in three former commercial salt ponds along the Napa River; Tidal wetlands, 3000 acres. Project not complete. A final EIR has been drafted, salt flushing from the ponds has begun, and restoration is pending; Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-97-N18	Jun-98	Jun-01	368,500	450,000	818,500	Ducks Unlimited	Holly Andree		Cullinan Ranch Restoration	This project will restore and enhance property owned by San Pablo Bay National Wildlife Refuge; restoration to tidal saline emergent wetlands; 1,495 acres. Planning project complete; Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-97-N19	Jan-97	Jan-98	283,000	422,000	705,000	Ducks Unlimited	Dr. Michael Bias	435 acres	Tolay Creek Restoration Project	Restore and enhance saline emergent wetlands in the Tolay Creek Floodplain; 435 acres. Project complete. Carl Wilcox, CDFG.
	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-98-B13	Sep-98	Sep-00	1,000,000		1,000,000	Napa County Land Trust	John Hoffnagle		South Napa River Wetlands Acquisition	Acquire 956 acres and restore historic wetland function while allowing for seasonal flood control. Restoration activities include planning, design and construction of setback levees, modification and/or removal of existing levees along the boundaries between wetlands and uplands. This project represents Phase I, more acreage was purchased than the original proposal (192 acres purchased). Some of the cost went to environmental permitting, planning, and site work after acquisition. Project restoration is nearly complete; Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-98-F14	Dec-98	Jun-01	431,000		431,000	Napa County Land Trust	John Hoffnagle		South Napa River Wetlands Acquisition and Restoration Program	Proposed acquisition of 77.4 acres (Giovanonni property) along the Napa River, development and implementation of restoration plan to restore natural tidal action to property. This contract is part of a project originally intended to acquire and restore over 600 acres of wetlands ("South Wetland Opportunity Area) adjacent to the Napa River; with the exception of the Ghisletta Property, those lands were condemned and could not be purchased with CALFED money. An alternative site was recommended (Stanley Ranch South Wetland) at 260 acres and increased cost to nearly 1.6 million. Contract shows proposed acquisition letter dated Feb 2002 with no further update. Proposed new cost share would come from the CA Coastal Conservancy (\$800,000) and WCB (\$400,000). Project not completed, land is either soon to be or has just been acquired, new cost share was provided. Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-98-F23	Dec-98	Jun-01	1,490,000	623,000	2,113,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	While the scope of this project is to eventually restore existing city owned sewage ponds to tidal marsh (30 acres of 58 acres) , and acquire and restore adjacent degraded tidal wetlands (453 acres), the scope of this agreement is complete only partial tasks (1.1, 1.2, 1.3) of the original proposal. Those tasks include land acquisition, project design, and an environmental constraints study. Project not complete. Acquisitions complete, other planning still in progress; Carl Wilcox, CDFG.
39	SM SFB	H			39B. Status of restoring Saline Emergent Wetland by restoring tidal action in the Napa River EMU	ERP-99-B11	Apr-00	Sep-02	1,520,000	390,000	1,910,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	Task 2.4: Levee breaching and restore tidal action. Task 2.5: Remove wastewater pond berms. This project will re-establish tidal influence to restore the area to tidal marsh. Project not complete. Grants to purchase and build have been obtained, EIR has been completed, Restoration has not begun; Carl Wilcox, CDFG.

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39	SM SFB	H			39C. Status of restoring Saline Emergent Wetland by restoring tidal action in the Sonoma Creek EMU	ERP-98-F22	Dec-98	Sep-02	772,667	243,812	1,016,479	CSU Hayward	C. Kitting	72 acres	Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone	This project will restore tidal marsh habitat for the benefit of T&E species, waterbirds and fish, and other estuarine organisms on Upper Tubbs Island. Project complete. Restoration of 72 acres of tidal marsh habitat; Carl Wilcox, CDFG.
39	SM SFB	H			39D. Status of restoring Saline Emergent Wetland by restoring tidal action in Petaluma River EMU	ERP-02-P14	Jun-03	Jun-06	3,345,000	13,814,674	17,159,674	Marin Audubon Society	Barbara Salzman		Bahia Acquisition and Tidal Wetland Restoration	Task 6: Construction of Tidal Wetlands. This project will provide protection of 631 acres of Baylands and associated uplands. Within that 631 acres, 330 acres of currently diked wetlands will be restored to tidal marsh. A restored Bahia marsh will support recovery of T&E birds and fish. Planning project not complete. Land acquired and transferred to CDFG; Still developing project plans; Carl Wilcox, CDFG.
39	SM SFB	H			39D. Status of restoring Saline Emergent Wetland by restoring tidal action in Petaluma River EMU	ERP-98-F13	Dec-98	Jun-01	503,635	753,935	1,257,570	Marin Audubon Society	Barbara Salzman	109 acres	Petaluma Marsh Expansion Project - Marin County	Restoration of 109 acres of tidal marsh through lowering levees and channel excavations. Project not complete. Acquisitions and project planning has been completed, but implementation will take place next year; Carl Wilcox, CDFG.
39	SM SFB	H			39E. Status of restoring Saline Emergent Wetland by restoring tidal action in San Pablo Bay EMU	ERP-01-C01	Feb-01	Oct-04	1,793,661	582,840	2,367,501	SF Bay Area Conservancy	Nadine Hitchcock		Invasive Spartina Project	Project not complete. Project has conducted outreach, education, and clapper rail surveys. Actual eradication is pending environmental compliance documents. This project will undertake efforts to plan and implement control of Spartina to prevent an invasion of San Pablo and Suisun Bays and significantly reduce invasive populations bay wide. Contributes to the restoration of saline emergent wetland; Kim Webb, USFWS.
39	SM SFB	H			39E. Status of restoring Saline Emergent Wetland by restoring tidal action in San Pablo Bay EMU	ERP-99-F09	Mar-00	Dec-04	325,000	None	325,000	California Coastal Conservancy	Nadine Hitchcock		Introduced Spartina Eradication Project	Project will eliminate 1,000 acres of Spartina in the San Francisco Bay estuary. Addresses the invasive non-native plant (Spartina) throughout the Suisun Marsh and San Francisco Bay (EMZ) and San Francisco Bay. Actual acreage affected should be a portion of 1000 acres. Project incomplete. Project has conducted outreach, education, and mapping of eradication sites. Actual eradication is pending environmental compliance documents. Kim Webb, USFWS.
39	SM SFB	H			39F. Status of restoring high marsh and high-marsh upland transition habitat in conjunction with the restoration of saline emergent wetland.	ERP-01-C09	Feb-01	Nov-04	87,000		87,000	CA Dept Fish and Game	Laurie Briden		Hill Slough West Habitat Demonstration Project, Phase II	Restoring high marsh and upland transition habitat in the Suisun Bay and Marsh EMU. Project not completed, environmental documentation and permitting phase. Project will lead to eventual restoration of 200 acre site to include upland transition habitat in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.
39	SM SFB	H			39F. Status of restoring high marsh and high-marsh upland transition habitat in conjunction with the restoration of saline emergent wetland.	ERP-98-F08	Feb-99	May-02	200,000		200,000	CA Dept Fish and Game	Frank Wernette		Hill Slough West Habitat Demonstration Project, Phase I	Restoring high marsh and upland transition habitat in the Suisun Bay and Marsh EMU. Project completed, planning phase only. Project will lead to eventual restoration of 200 acre site to include upland transition habitat in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.
		H			39F. Status of restoring high marsh and high-marsh upland transition habitat in conjunction with the restoration of saline emergent wetland.	ERP-98-F23	Dec-98	Jun-01	1,490,000	623,000	2,113,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	This project includes the restoration of tidal marsh and adjacent natural upland transition areas. The scope of this agreement is complete only partial tasks (1.1, 1.2, 1.3) of the original proposal. Those tasks include land acquisition, project design, and an environmental constraints study. Project not complete. Acquisitions complete, other planning still in progress; Carl Wilcox, CDFG.

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 40 -- ROLLED UP SUMMARY																
MILESTONE 40 -- Restore suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 5 miles in the Suisun Bay and Marsh EMU and by at least 10 miles in the Napa River EMUs. Bring at least 25% the currently existing but unprotected occurrences of delta mudwort and delta tule into protection through purchase or conservation agreement, and ensure appropriate management.					PROJECTS REVIEWED - ERP-98-F23 ERP-99-B11 ERP-02-P04-D		SUMMARY -- Grants to complete an EIR, purchase and restore 2.3 miles of slough edge in the Napa EMU were awarded on North Slough, of the South Napa River, but no land has been acquired or restored at this time (part of a tidal marsh and wetland restoration project). Also in the Napa Marsh EMU, a grant to plan and restore 3 commercial salt ponds to tidal wetlands (3000 acres) will create some tidal slough edge habitat for the mudwort and tule pea and protect an unspecified amount.							AGENCY NOTES --	NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 40 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
40	SM SFB	H	Restore suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 5 miles in the Suisun Bay and Marsh EMU and by at least 10 miles in the Napa River EMUs. Bring at least 25% the currently existing but unprotected occurrences of delta mudwort and delta tule into protection through purchase or conservation agreement, and ensure appropriate management.		40A Status of the restoration of suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 5 miles in the Suisun Bay and Marsh EMU											
40	SM SFB	H			40B Status of the restoration of suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 10 miles in the Napa River EMU	ERP-02-P04-D	Mar-03	n/a	4,511,400		4,511,400	CA State Coastal Conservancy	Sam Schuchat		Napa-Sonoma Marsh Restoration Project	Water quality improvements and restoration in three former commercial salt ponds along the Napa River; Tidal wetlands 3000 acres. Project not complete. A final EIR has been drafted, salt flushing from the ponds has begun, and restoration is pending; This project will eventually create slough edge habitat for the delta tule pea (delta mudwort is not known to occur here) Carl Wilcox, CDFG.
40	SM SFB	H			40B Status of the restoration of suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 10 miles in the Napa River EMU	ERP-98-F23	Dec-98	Jun-01	1,490,000	623,000	2,113,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	While the scope of this project is to eventually restore existing city owned sewage ponds to tidal marsh (30 acres of 58 acres) , and acquire and restore adjacent degraded tidal wetlands (453 acres), the scope of this agreement is complete only partial tasks (1.1, 1.2, 1.3) of the original proposal. Those tasks include land acquisition, project design, and an environmental constraints study. Project not complete. Acquisitions complete, other planning still in progress; This project will eventually create slough edge habitat for the delta tule pea (delta mudwort is not known to occur here); Carl Wilcox, CDFG.

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								
40	SM SFB	H			40B Status of the restoration of suitable, occupied slough edge habitat for delta mudwort and delta tule pea by at least 10 miles in the Napa River EMU	ERP-99-B11	Apr-00	Sep-02	1,520,000	390,000	1,910,000	City of American Canyon	John Wankum	2.3 linear miles of historic slough	South Napa River Tidal Slough and Floodplain Restoration Project	Task 2.4. Levee breaching and restore tidal action. Restoration of tidal flow into 2.3 miles of historic slough habitat in North Slough. Project not complete. Grants to purchase and build have been obtained, EIR has been completed, Restoration has not begun. <i>This project will eventually create slough edge habitat for the delta tule pea (delta mudwort is not known to occur here); Carl Wilcox, CDFG.</i>
40	SM SFB	H			40 C. Status of bringing at least 25% the currently existing but unprotected occurrences of delta mudwort and delta tule pea into protection through purchase or conservation agreement, and ensure appropriate management.	ERP-98-F23	Dec-98	Jun-01	1,490,000	623,000	2,113,000	City of American Canyon	John Wankum		South Napa River Tidal Slough and Floodplain Restoration Project	While the scope of this project is to eventually restore existing city owned sewage ponds to tidal marsh (30 acres of 58 acres) , and acquire and restore adjacent degraded tidal wetlands (453 acres), the scope of this agreement is complete only partial tasks (1.1, 1.2, 1.3) of the original proposal. Those tasks include land acquisition, project design, and an environmental constraints study. <i>Project not complete. Acquisitions complete, other planning still in progress; This project will eventually create slough edge habitat for the delta tule pea (delta mudwort is not known to occur here); Carl Wilcox, CDFG.</i>
40	SM SFB	H			40 C. Status of bringing at least 25% the currently existing but unprotected occurrences of delta mudwort and delta tule pea into protection through purchase or conservation agreement, and ensure appropriate management	ERP-99-B11	Apr-00	Sep-02	1,520,000	390,000	1,910,000	City of American Canyon	John Wankum	see above	South Napa River Tidal Slough and Floodplain Restoration Project	Task 2.4. Levee breaching and restore tidal action. Restoration of tidal flow into 2.3 miles of historic slough habitat in North Slough. Project not complete. Grants to purchase and build have been obtained, EIR has been completed, Restoration has not begun. <i>This project will eventually create slough edge habitat for the delta tule pea (delta mudwort is not known to occur here); Carl Wilcox, CDFG.</i>

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 41 -- ROLLED UP SUMMARY

MILESTONE 41 -- In the Suisun Marsh/North San Francisco Bay Ecological Management Zone, restore and manage a minimum of 500 acres of seasonal wetland, and improve management of a minimum of 7,000 acres of existing, degraded seasonal wetland in a manner that provides suitable habitat for salt marsh harvest mouse, San Pablo California vole, and Suisun ornate shrew.		PROJECTS REVIEWED - ERP-98-B13 ERP-98-C03 ERP-98-F14 ERP-02-P23		SUMMARY -- A portion of 1,148 acres were purchased and are nearly restored and a portion of another 340 acres are being acquired and will be restored to seasonal wetland in the South Napa River Wetlands area. Planning and permitting are underway for a diverse array of upland and wetland habitats on the 2,500 acre Hamilton Wetland Restoration Project. 140 landowner management plans that guide management activities on over 40,000 acres in the Suisun Marsh will eventually be updated, and future implementation of those plans may inherently improve habitat for salt marsh harvest mouse in these areas.			AGENCY NOTES --	NOTES CONT'D --
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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 41 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
41	SM SFB	H	In the Suisun Marsh/North San Francisco Bay Ecological Management Zone, restore and manage a minimum of 500 acres of seasonal wetland, and improve management of a minimum of 7,000 acres of existing, degraded seasonal wetland in a manner that provides suitable habitat for salt marsh harvest mouse, San Pablo California vole, and Suisun ornate shrew.		41A Status of restoring and managing a minimum of 500 acres of seasonal wetland in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-B13	Sep-98	Sep-00	1,000,000		1,000,000	Napa County Land Trust	John Hoffnagle	<1,148 acres	South Napa River Wetlands Acquisition and Restoration Program	Acquire 956 acres and restore historic wetland function while allowing for seasonal flood control. Restoration activities include planning, design and construction of setback levees, modification and/or removal of existing levees along the boundaries between wetlands and uplands. This project represents Phase I, more acreage was purchased than the original proposal (192 acres purchased). Some of the cost went to environmental permitting, planning, and site work after acquisition. <i>Project restoration is nearly complete; Carl Wilcox, CDFG, 707. 944.5525.</i>
41	SM SFB	H			41A Status of restoring and managing a minimum of 500 acres of seasonal wetland in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-C03	Mar-98	Mar-01	1,025,015	1,186,300	2,211,315	California Coastal Conservancy	Terri Nevins		Hamilton Wetland Restoration Project	Scope of services covers planning and permitting work for restoration of up to 2,500 acres of subsided, diked baylands to a diverse array of upland seasonal and tidal wetland habitats. Project includes EIR/EISs, feasibility studies, and restoration plans. <i>Project complete. Planning only, planning documents and environmental permitting completed; Carl Wilcox, CDFG, 707.944.5525.</i>
41	SM SFB	H			41A Status of restoring and managing a minimum of 500 acres of seasonal wetland in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-F14	Dec-98	Jun-01	431,000		431,000	Napa County Land Trust	John Hoffnagle	<340 acres	South Napa River Wetlands Acquisition and Restoration Program	Proposed acquisition of 77.4 acres (Giovannoni property) along the Napa River, development and implementation of restoration plan to restore natural tidal action to property. This contract is part of a project originally intended to acquire and restore over 600 acres of wetlands ("South Wetland Opportunity Area) adjacent to the Napa River; with the exception of the Ghisletta Property, those lands were condemned and could not be purchased with CALFED money. An alternative site was recommended (Stanley Ranch South Wetland) at 260 acres and increased cost to nearly 1.6 million. Contract shows proposed acquisition letter dated Feb 2002 with no further update. Proposed new cost share would come from the CA Coastal Conservancy (\$800,000) and WCB (\$400,000). <i>Project not completed, land is either soon to be or has just been acquired, new cost share was provided. Carl Wilcox, CDFG, 707. 944.5525.</i>

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								
41	SM SFB	H			41B Status of improving management of a minimum of 7,000 acres of existing, degraded seasonal wetland in a manner that provides suitable habitat for salt marsh harvest mouse, San Pablo California vole, and Suisun ornate shrew in the Suisun Marsh/North San Francisco Bay EMU.	ERP-02-P23	n/a	n/a	136,243		136,243	Suisun RCD	Steve Chappell		Update individual ownership adaptive management habitat plans	This project will facilitate the updating of individual property owner management plans (currently 140 plans) so that landowners in the Suisun Marsh will be able to manage their ponds more effectively. Specific water management schedules will be refined for use to manage for dependent plant and wildlife species, as well as reduce take of listed fish. Of the 58,000 acres in the Suisun marsh, 43,700 are under management plans. <i>SRCD staff has started the process of updating management plans for the duck clubs in the Suisun Marsh. It is estimated that 30 clubs will have their plans updated this year. Future implementation of management plans may inherently improve habitat for salt marsh harvest mouse in these areas. It is not anticipated that habitat improvements will be realized for the Suisun shrew or the San Pablo California vole. Kristin Bruce, SRCD.</i>

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 42 -- ROLLED UP SUMMARY

MILESTONE 42 -- Restore a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.		PROJECTS REVIEWED - ERP-98-B13, ERP-98-C03, ERP-98-F08, ERP-98-F13, ERP-98-F14, ERP-98-F17, ERP-01-C09 ERP-02-P04D		SUMMARY -- Nearly 1,400 acres has been acquired and is undergoing restoration (previous planning and permitting). Another 5,700 acres are undergoing various planning and permitting actions. From these 7,100 acres an unspecified portion will be tidal perennial aquatic habitat.			AGENCY NOTES --	NOTES CONT'D --
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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 42 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
42	SM SFB	H	Restore a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.		42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-B13	Sep-98	Sep-00	1,000,000		1,000,000	Napa County Land Trust	John Hoffnagle	<1,148 acres	South Napa River Wetlands Acquisition	Acquire 956 acres and restore historic wetland function while allowing for seasonal flood control. Restoration activities include planning, design and construction of setback levees, modification and/or removal of existing levees along the boundaries between wetlands and uplands. <i>This project represents Phase I, more acreage was purchased than the original proposal (192 acres purchased). Some of the cost went to environmental permitting, planning, and site work after acquisition. Project restoration is nearly complete; Carl Wilcox, CDFG.</i>
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-C03	Mar-98	Mar-01	1,025,015	1,186,300	2,211,315	California Coastal Conservancy	Terri Nevins		Hamilton Wetland Restoration Project	Scope of services covers planning and permitting work for restoration of up to 2,500 acres of subsided, diked baylands to a diverse array of upland seasonal and tidal wetland habitats. Project includes EIR/EISs, feasibility studies, and restoration plans. <i>Project complete. Planning only, planning documents and environmental permitting completed; Carl Wilcox, CDFG..</i>
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-F08	Feb-99	May-02	200,000		200,000	CA Dept Fish and Game	Frank Wernette		Hill Slough West Habitat Demonstration Project, Phase I	<i>Project completed, planning phase only. Project will lead to restoration of 200 acre site to include tidal perennial aquatic habitat by restoring tidal action in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.</i>
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-F13	Dec-98	Jun-01	503,635	753,935	1,257,570	Marin Audubon Society	Barbara Salzman	109 acres	Petaluma Marsh Expansion Project - Marin County	Restoration of 109 acres of tidal marsh through lowering levees and channel excavations. <i>Project not complete. Acquisitions and project planning has been completed, but implementation will take place next year; Carl Wilcox, CDFG.</i>

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								
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-F14	Dec-98	Jun-01	431,000		431,000	Napa County Land Trust	John Hoffnagle	77.4 acres	South Napa River Wetlands Acquisition and Restoration Program	Proposed acquisition of 77.4 acres (Giovanonni property) along the Napa River, development and implementation of restoration plan to restore natural tidal action to property. This contract is part of a project originally intended to acquire and restore over 600 acres of wetlands ("South Wetland Opportunity Area) adjacent to the Napa River; with the exception of the Ghisletta Property, those lands were condemned and could not be purchased with CALFED money. An alternative site was recommended (Stanley Ranch South Wetland) at 260 acres and increased cost to nearly 1.6 million. Contract shows proposed acquisition letter dated Feb 2002 with no further update. Proposed new cost share would come from the CA Coastal Conservancy (\$800,000) and WCB (\$400,000). Project not completed, land is either soon to be or has just been acquired, new cost share was provided. Carl Wilcox, CDFG.
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-98-F17	Jan-99	Sep-99	59,000		59,000	City of Benicia	Michael Alvarez		Benicia Waterfront Marsh Restoration Project	Preparation of final restoration plan, design of viewing platforms, and project permitting; high marsh upland transition habitat, tidal perennial habitat. Michael Alvarez, City of Benicia Parks and Community Services. Planning / Design / Permitting.
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-01-C09	Feb-01	Nov-04	87,000		87,000	CA Dept Fish and Game	Laurie Briden		Hill Slough West Habitat Demonstration Project, Phase II	Project not completed, environmental documentation and permitting phase. Project will lead to restoration of 200 acre site to include tidal perennial aquatic habitat by restoring tidal action in the Suisun Bay and Marsh EMU; Gina Van Klompenburg, CDFG.
42	SM SFB	H			42 A. Status of restoration of a minimum of 400 acres of tidal perennial aquatic habitat in the Suisun Marsh/North San Francisco Bay Ecological Management Zone.	ERP-02-P04D	Mar-03	n/a	4,511,400		4,511,400	CA State Coastal Conservancy	Sam Schuchat		Napa-Sonoma Marsh Restoration Project	Water quality improvements and restoration in three former commercial salt ponds along the Napa River; Tidal wetlands, 3000 acres. Project not complete. A final EIR has been drafted, salt flushing from the ponds has begun, and restoration is pending; Carl Wilcox, CDFG.

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 44 -- ROLLED UP SUMMARY																		
MILESTONE 44 -- Develop a program to consolidate, screen, or eliminate 25% of the unscreened diversions in Suisun Marsh.					PROJECTS REVIEWED - ERP-95-M07, ERP-98-F08, ERP-01-C09		SUMMARY -- Five unscreened diversions were provided with screens and two unscreened diversions will be eliminated as a result of grants. After actions at these seven diversions, only 2% of the 430 unscreened diversions will have been screened in the Suisun Marsh.								AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 44 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																		
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments		
							START DATE	END DATE										
44	SM SFB	SR	Develop a program to consolidate, screen, or eliminate 25% of the unscreened diversions in Suisun Marsh.		44A Status of developing a program to consolidate 25% of the unscreened diversions in Suisun Marsh.													
44	SM SFB	SR			44 B Status of developing a program to screen 25% of the unscreened diversions in Suisun Marsh.	ERP-95-M07	Apr-96	Dec-96	450,000		450,000	Suisun RCD	Lee Lehman	5 screens	Suisun Marsh Fish Screen Project Phase 1	Construct five new water diversion facilities with associated fish screens. Project complete with installation of 5 new fish screens (additional diversions were screened using Four Pumps monies); Jim Starr, CDFG.		
44	SM SFB	SR			44 C. Status of developing a program to eliminate 25% of the unscreened diversions in Suisun Marsh.	ERP-95-M07	Apr-96	Dec-96	450,000		450,000	Suisun RCD	Lee Lehman		Suisun Marsh Fish Screen Project Phase 1	Construct five new water diversion facilities with associated fish screens. Project complete with installation of 5 new fish screens (additional diversions were screened using Four Pumps monies); Jim Starr, CDFG.		
44	SM SFB	SR			44 C. Status of developing a program to eliminate 25% of the unscreened diversions in Suisun Marsh.	ERP-01-C09	Feb-01	Nov-04	87,000		87,000	CA Dept Fish and Game	Laurie Briden	2 screens	Hill Slough West Habitat Demonstration Project, Phase II	Project not completed, environmental documentation and permitting phase. When implementation eventually occurs, this project will eliminate 2 unscreened diversions in the Suisun Marsh; Gina Van Klompenburg, CDFG.		
44	SM SFB	SR			44 C. Status of developing a program to eliminate 25% of the unscreened diversions in Suisun Marsh.	ERP-98-F08	Feb-99	May-02	200,000		200,000	CA Dept Fish and Game	Frank Wernette		Hill Slough West Habitat Demonstration Project, Phase I	Will eliminate unspecified number of unscreened diversions in the Suisun Marsh. Project complete, planning phase only. When implementation eventually occurs, this project will eliminate 2 unscreened diversions in the Suisun Marsh; Gina Van Klompenburg, CDFG.		

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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								
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-98-E02	Jan-98	n/a	300,000		300,000	Southern Sonoma County RCD	Robert Rand		Sonoma Creek Watershed Enhancement Plan-Phase II	Biotechnical streambank stabilization will be installed on 150 feet of undercut bank; native revegetation will be planted on 400 feet of streambank; additional storm damage and correction to bank stability to be identified. Implementation Project; completed. Revegetation of 400 feet of streambank. Fence 6000 feet for improved pasture management. Re-establish 3000 feet of riparian vegetation along
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-98-E04	Sep-98	Dec-00	162,000		162,000	Southern Sonoma County RCD	Robert Rand		Petaluma River Watershed Restoration Program	This project is for the expansion of the Petaluma River Floodplain; developing project plans and funding for acquisition. This project includes bank stabilization and reduction of fine sediments in San Antonio Creek by using loose rock structures and biotechnical methods to curtail lateral migration, and native plant revegetation on San Antonio and Adobe Creeks. Implementation Project; completed. Involved bank stabilization and reduction of fine sediment along 1000 feet of San Antonio Creek. Leandra Swent, Southern Sonoma County RCD.
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-00-E04	Jun-00	Nov-03	438,923	143,030	581,953	Southern Sonoma County RCD	Gillian Harris		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement. water quality, and benthic macroinvertebrates. Specific tasks include bank erosion stabilization. (Project linked to ERP-01-N27). Implementation, monitoring, and research project; Project completed, included riparian restoration, bank stabilization, pool enhancement, and spawning and rearing habitat improvement. Chris Taylor, Southern Sonoma County RCD.
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-01-N27	Oct-01	Oct-05	545,170		545,170	Southern Sonoma County RCD	David Luther		Sonoma Creek Watershed Conservancy	Fish passage enhancement will restore steelhead spawning and rearing habitat. Habitat restoration and enhancement will benefit steelhead and other aquatic/ riparian species. Project is complex, multi-objective program to include watershed monitoring, assessment tasks, including salmon escapement. water quality, and benthic macroinvertebrates. Specific tasks include salmon escapement monitoring. (Project linked to ERP-00-E04). Implementation, Monitoring, and Research Project. Project is 70% complete; streambed restoration projects are in progress, in various stages of completion. Chris Taylor, Southern Sonoma County RCD.
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-98-E01	Feb-98	n/a	250,000		250,000	Napa County RCD	Dennis Bowker		Napa River Watershed Stewardship	Project will 1) stabilize streams using natural processes, 2) promote contiguous habitat, 3) increase biological diversity, 4) increase migratory and resident fish habitat; 5) coordinate natural resource protection and planning; and 6) encourage local land stewardship. Planning and Implementation project. Habitat restoration projects have been completed. Kathleen Edson, Napa County RCD.
47	SM SFB	SR			47D. Status of the sub element of actions to reducing fine sediment loading: Implementation of stream restoration and revegetation work.	ERP-99-N20	Jun-00	Dec-01	191,100		191,100	Napa County RCD	Bob Zlomke		Napa River Watershed Stewardship Year 2	Task III: establish demonstration sites for floodplain wetland restoration and riparian corridor development. Planning and Modeling Project; completed. Kathleen Edson, Napa County RCD.

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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 48 -- ROLLED UP SUMMARY

MILESTONE 48 -- 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-98-F22 ERP-02-P40 ERP-99-B06 ERP-02-C06A ERP-02-C06B ERP-02D-C12 ERP-97-C05 ERP-02D-P62		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, 77, and 106 for additional projects that address this milestone at a landscape level.			AGENCY NOTES --	NOTES CONT'D --
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MULTI SPECIES CONSERVATION STRATEGY MILESTONE 48 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
48	SM SFB	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.		48. 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-98-F22	Dec-98	Sep-02	772,667	243,812	1,016,479	CSU Hayward	C. Kitting		Biological Restoration and Monitoring in the Suisun Marsh/North San Francisco Bay Ecological Zone	Project task 4 includes determination of heavy metal (emphasis on mercury) concentrations in sediments and emergent marsh vegetation before, during, and after marsh restoration. Project complete. Restoration of 272 acres of tidal marsh habitat; Carl Wilcox, CDFG.
48	SM SFB	SR			48. 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			U.S. Geological Survey	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. Donna Podger, CBDA.
48	SM SFB	SR			48. 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)	Research to determine no adverse ecological/biological effects threshold for mercury in sediments and key organisms in the Bay-Delta/watershed. This project investigated sources and cycling of mercury, including bioaccumulation and effects on avian populations. The study of sources was focused on the Sacramento R., Cache Ck and the Delta. 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. Donna Podger, CBDA.

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
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48	SM SFB	SR			48. 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	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 204 funded	<i>This research project has a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it. Donna Podger, CBDA.</i>
48	SM SFB	SR			48. 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	<i>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 has a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it. Donna Podger, CBDA.</i>
48	SM SFB	SR			48. 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	U.S. Fish and Wildlife Service	Tom Suchanek		Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction	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). Contract still under development. <i>Donna Podger, CBDA</i>
48	SM SFB	SR			48. 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	University of California, Davis	Darell Slotton		The Effects of Wetland Restoration on the Production of Methyl Mercury in the San Francisco Bay Delta System	<i>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. Donna Podger, CBDA.</i>
48	SM SFB	SR			48. 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 Francisco Bay Institute	Donald Yee		Mercury and Methylmercury Processes in North San Francisco Bay Tidal Wetland Ecosystems	<i>This project will examine mercury and methylmercury concentrations in the sediments, water and biota of five tidal marshes along a salinity 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. Contract still under development. Donna Podger, CBDA.</i>

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 49 -- ROLLED UP SUMMARY																		
MILESTONE 49 -- 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-98-B09, ERP-98-E02		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, 80, and 107.				AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 49 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																		
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments		
							START DATE	END DATE										
49	SM SFB	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		49A Status of the development of diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations.	ERP-98-B09	Sep-98	Aug-01	266,000		266,000	Central Contra Costa Sanitary District	Bonnie Lowe		Integrated Pest Management Partnership to Improve Water Quality in Suisun Bay and Local Creeks	Supports implementation of BMPs by increasing the use of Integrated Pest Management techniques and increasing community awareness of the water-quality risks of pesticide use. Project completed. Planning project. Bonnie Lowe		
49	SM SFB	SR			49B Status of actions taken in support of development and implementation of a TMDL for diazinon.													
49	SM SFB	SR			49C 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		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
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49	SM SFB	SR			49D. 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.
49	SM SFB	SR			49E. 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.
49	SM SFB	SR			49E. Status of actions taken in support of implementation of BMPs.	ERP-98-E02	Jan-98	n/a	300,000		300,000	Southern Sonoma County RCD	Robert Rand		Sonoma Creek Watershed Enhancement Plan-Phase II	Work with willing vineyard landowners to develop demonstration sites for BMPS for 1) Water quality 2) Habitat and 3) Wildlife. Implementation Project; completed. Revegetation of 400 feet of streambank. Fence 6000 feet for improved pasture management. Re-establish 3000 feet of riparian vegetation along Sonoma Creek. Leandra Swent, Southern Sonoma County RCD.
49	SM SFB	SR			49F 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 50 -- ROLLED UP SUMMARY																	
MILESTONE 50 -- Conduct the following selenium work: · Conduct selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report). · Evaluate and, if appropriate, implement real-time management of selenium discharges (from Phase II Report). · Expand and implement source control, treatment, and reuse programs (from Phase II Report). · Coordinate with other programs; e.g., recommendations of San Joaquin Valley Drainage Implementation Program, CVPIA for retirement of lands with drainage problems that are not subject to correction in other ways (from Phase II Report). · Support development and implementation of TMDL for selenium in the San Joaquin River watershed (focus on Grassland area).					PROJECTS REVIEWED - ERP-98-B07, ERP-02-P35, ERP-01-C07		SUMMARY --One contract attempts to resolve knowledge gaps and use models and monitoring to aid management of Se controversies that might impede the ecosystem restoration process. Other projects will conduct research relating to the bioavailability of selenium in the Delta and Bay and San Joaquin River. Other aspects of the milestone are yet to be addressed. See milestones 34 and 108 for additional projects that address this milestone at a landscape level.							AGENCY NOTES --		NOTES CONT'D --	
MULTI SPECIES CONSERVATION STRATEGY MILESTONE 50 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY																	
MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments	
							START DATE	END DATE									
50	SM SFB	SR	Conduct the following selenium work: · Conduct selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report). · Evaluate and, if appropriate, implement real-time management of selenium discharges (from Phase II Report). · Expand and implement source control, treatment, and reuse programs (from Phase II Report). · Coordinate with other programs; e.g., recommendations of San Joaquin Valley Drainage Implementation Program, CVPIA for retirement of lands with drainage problems that are not subject to correction in other ways (from Phase II Report). · Support development and implementation of TMDL for selenium in the San Joaquin River watershed (focus on Grassland area).		50A. Status of selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report).	ERP-98-B07	Aug-98	Dec-01	1,589,000	none	1,589,000	U.S. Geological Survey	Samuel Luoma		Assessment of the Impacts of Selenium on Restoration of the San Francisco Bay-Delta Ecosystem	Resolve knowledge gaps and use models and monitoring to aid management of Se controversies that might impede the ecosystem restoration process. Samuel Luoma, U.S. Geological Survey. Monitoring/Research. Project completed.	

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