

June 1999

Table E-1. Saline Emergent Communities: Potential CALFED Effects and Conservation Measures

Summary Effect of Implementing CALFED Actions with Conservation Measures on Saline Emergent Communities: Protection and enhancement of 6,200 acres and restoration of 7,500-12,000 acres of tidal saline emergent habitat area in the Bay Region. Potential short-term loss of tidal and nontidal habitat area from implementation of CALFED actions and long-term increase in habitat area resulting from implementation of conservation measures to compensate for CALFED impacts.

Associated Evaluated Species: Salt marsh harvest mouse, California clapper rail, American peregrine falcon, Aleutian Canada goose, Central Coast Steelhead Evolutionarily Significant Unit (ESU), Central Valley Steelhead ESU, delta smelt, winter-run chinook salmon, tidewater goby, California seablite, soft bird's-beak, Suisun thistle, California black rail, white-tailed kite, Mason's lilaopsis, Sacramento splittail, Central Valley fall-run chinook salmon, Central Valley spring-run chinook salmon, Suisun ornate shrew, saltmarsh common yellowthroat, San Pablo song sparrow, Suisun song sparrow, short-eared owl, California gull, long-billed curlew, northern harrier, Sacramento perch, longfin smelt, delta tule pea, Point Reyes bird's-beak, San Pablo California vole, and Marin knotweed.

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Delta Region					
Associated Evaluated Species: Salt marsh harvest mouse, California clapper rail, American peregrine falcon, Aleutian Canada goose, Central Valley Steelhead ESU, delta smelt, winter-run chinook salmon, soft bird's-beak, Suisun thistle, California black rail, white-tailed kite, Mason's lilaopsis, Sacramento splittail, Central Valley fall-run chinook salmon, Central Valley spring-valley chinook salmon, Suisun ornate shrew, Suisun song sparrow, short-eared owl, saltmarsh common yellowthroat, California gull, long-billed curlew, northern harrier, Sacramento perch, longfin smelt, and delta tule pea.					
Summary Programmatic Action Outcomes E1, E4, E8, E9, E10a, E11, E13a, E15a, E16a, E17, E18a, E19, E21, E22, E24, E25, Q1, Q2, Q7, W1, W2, T1, M1, C1-3, and S1 are likely to have no discernable effect on saline emergent wetland communities in the Delta Region.					

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Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Ecosystem Restoration Program					
<p>E5a. Restoration of up to 7,500 acres of tidal shallow-water habitat.</p>	<p>E010401, E010402, E010403, E010404, E010405, E010406, E010407, E010901, E010902, E010903, E010904, E010905, E010906, E015201, E015202</p>	<p>Potential for increase in habitat area as a result of restoring shallow-water habitats along modified channels in the extreme western Delta (BE1).</p>	<p>Potential for permanent loss or degradation of existing tidal saline emergent wetland habitat area along channels in the extreme western Delta if construction activities result in removal of saline emergent vegetation or if the hydrology necessary to support emergent vegetation is removed (AE1).</p>	<p>To the extent practicable, avoid disturbance to existing saline emergent wetland habitat areas (M1).</p> <p>Restore or enhance 2-5 acres of additional in-kind habitat for every acre of affected existing saline emergent wetland habitat. This compensation should be implemented before actions are implemented and near affected habitat areas (M2).</p> <p>To the extent consistent with ERP objectives, include project design features that allow for onsite reestablishment and long-term maintenance of saline emergent wetland vegetation following project construction (M3).</p>	<p>Potential for short-term loss of tidal saline emergent wetland habitat in the extreme western Delta. Some long-term increase in habitat area as a result of implementing conservation measures.</p> <p>Potential for long-term increase in tidal saline emergent wetland habitat area in the extreme western Delta as a result of implementing channel modifications.</p>

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Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
			Construction-related activities associated with implementing actions could result in take of evaluated species (AE2).	<p>To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M4).</p> <p>To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M5).</p> <p>When feasible, establish and protect additional populations of evaluated plant species in suitable nearby habitat areas before construction activities are implemented that could affect existing populations or individuals (M6).</p> <p>To the extent practicable, trap and relocate evaluated wildlife species that would be unlikely to escape from the area inundated by the restoration to suitable nearby habitat areas (M7).</p>	
E20. Reduction in the adverse effects of dredging on estuarine aquatic habitats.	E015001, E015002, E015003, E015004	Potential for long-term protection of existing tidal saline emergent wetland habitat in the extreme western Delta from the direct adverse effects of dredging (BE2).	Likely to be no discernable adverse effects on existing habitat areas and associated evaluation species (N/E).	None.	Potential for localized increases in saline emergent wetland vegetation.

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Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
		Potential for increases in suitable substrates necessary for the natural reestablishment of saline emergent vegetation in the extreme western Delta as a result of increased sediment deposition in channels (BE3).			
E27a. Reduction in the concentrations and loadings of contaminants in the aquatic environment by 25%-50%.	E015701, E015702	Reduction in contaminant loadings in saline emergent habitats could improve the survivability of some species and increase aquatic invertebrate populations that are adversely affected by toxic agents (BE4).	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on the evaluation species' numbers or distribution.
E28. Reduction in the adverse effects of boat wakes on shoreline habitats and wildlife in sensitive habitat areas.	E016001, E016002, E016003, E016004, E016005, E016006	<p>Long-term protection of existing habitat areas in the extreme western Delta from boat-wake-induced erosion of shoreline habitat (BE5).</p> <p>Potential for increased nesting success of species that nest in tidal saline emergent vegetation as a result of reducing the potential for boat wakes to swamp nests (BE6).</p>	N/E	None.	Potential for long-term protection of habitat areas in the extreme western Delta from loss associated with boat-wake-induced erosion and potential for increase in nesting success of species that nest in tidal emergent vegetation.

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Water Use Efficiency Program					
W3. Provide planning and technical assistance, financing assistance, and assurances for development and implementation of water management plans and best management practices to urban water agencies.	None.	N/A	N/A	None.	Potential program effects cannot be evaluated.
W4. Support development and implementation of water-recycling projects.	None.	N/A	N/A	None.	Potential program effects cannot be evaluated.
Water Operations					
01. Implement operating criteria needed to improve water management for beneficial uses.	None.	N/A	N/A		Potential program effects cannot be evaluated.
02. Implement an Environmental Water Account to provide operational flexibility to achieve environmental benefits.	None.	N/A	N/A		Potential program effects cannot be evaluated.

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
			<p>Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area on diked or leveed lands that are flooded to restore shallow-water habitat (AE4).</p> <p>AE2.</p>	<p>M1.</p> <p>M2.</p> <p>M4.</p> <p>M5.</p> <p>M6.</p> <p>M7.</p>	
<p>E7. Protection of 6,200 existing acres and restoration of 7,500–12,000 additional acres of tidal saline emergent wetland.</p>	<p>E020401, E020901, E021101, E027301, E027302, E027303, E023904, E023903, E023904, E027401, E027501, E027601, E025201</p>	<p>Long-term protection of existing habitat from potential future loss or degradation and substantial increase in tidal saline emergent wetland habitat area and suitable habitat for associated species (BE8).</p>	<p>Potential for short-term loss or degradation of existing tidal saline emergent wetland habitat area along channels if restoration activities results in removal of tidal saline emergent vegetation (AE5).</p> <p>Potential for permanent loss or degradation of existing nontidal saline or brackish habitat where tidal habitat is restored by setting back or breaching dikes or levees (AE6).</p>	<p>To the extent practicable, initially restore habitat areas in locations that do not support tidal emergent vegetation before restoring habitat in areas that support emergent vegetation to ensure there is no net loss of habitat area during the period in which restoration is implemented (M8).</p> <p>To the extent consistent with ERP objectives, avoid restoring nontidal habitat areas with high habitat values to tidal wetlands (M9).</p>	<p>Long-term protection of existing habitat area and substantial increases in tidal saline emergent wetland habitat.</p> <p>Potential for short-term loss of nontidal saline emergent habitat and potential for long-term increase in nontidal habitat area with implementation of conservation measures.</p>

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
			AE5. AE2.	M3. M8. M4. M5. M6. M7.	
E12. Restoration of up to 1,600 acres of nontidal deep open-water habitat adjacent to existing and restored wetlands.	E021001, E021002	Potential for increased wildlife habitat values for some associated species where open-water habitat is restored within or adjacent to existing wetlands (BE10).	Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area as a result of restoring open-water habitat (AE8). AE2.	To the extent consistent with ERP objectives, avoid restoring nontidal habitat areas with high habitat values to open-water habitat (M11). M10. M2. M3. M4. M5. M6.	Potential for increased foraging and roosting habitat area for wetland-associated species that also use open-water habitats. Potential for short-term loss or degradation of nontidal saline wetlands and some long-term increase in habitat area as a result of implementing conservation measures.

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Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
E13b. Restoration of 1,000-1,500 acres of seasonal wetland and enhancement and management of 40,000-50,000 acres of existing seasonal wetlands for wildlife.	E021501, E021502, E021503	Potential increase in habitat area if management of seasonal wetlands results in the establishment of interior patches of nontidal saline wetland habitats (BE11).	Potential for short-term disturbance to existing nontidal saline wetlands as a result of implementing actions (AE9). AE2.	M7. M10. M4. M5. M6.	Potential for degradation of habitat area as a result of implementing enhancement actions. Potential for increase in habitat area incidental to enhancement and management of seasonal wetlands.
E16b. Restoration of up to 5,000 acres of perennial grassland.	E021801	N/E	AE9. AE2.	M10. M4. M5. M6.	Potential for temporary degradation of habitat associated with restoration activities adjacent to wetlands.

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
E28. Reduction in the adverse effects of boat wakes on shoreline habitats and wildlife in sensitive habitat areas.	E026001, E026002, E026003	Long-term protection of existing tidal saline emergent habitat areas from boat-wake-induced erosion of shoreline and channel island habitat areas (BE12). BE6.	N/E	None.	Potential for long-term protection of tidal saline emergent habitat areas from loss associated with boat-wake-induced erosion and potential for increase in nesting success of species that nest in tidal emergent vegetation.
E30. Enhancement of habitat conditions for the Suisun song sparrow in occupied habitat areas.	E023901, E023902, E023903, E023904	Restoration of saline emergent habitat in patterns beneficial to the Suisun song sparrow would contribute to maintaining existing populations and creating habitat conditions necessary for the natural expansion of populations (BE13).	N/E	None.	Potential for increasing the range and numbers of the Suisun song sparrow.
Levee System Integrity Program					
L3. Enhancement of the level of flood protection provided by Suisun Marsh levees.	None.	N/E	Potential for permanent loss or degradation of existing tidal and nontidal saline emergent wetland habitat area along the water and land sides of levees if construction activities results in removal of saline emergent vegetation or if the hydrology necessary to support emergent vegetation is removed (AE10).	M1.	Potential for short-term loss of tidal and nontidal saline emergent wetland habitat. Some long-term increase in habitat area as a result of implementing conservation measures.

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
			AE2.	M10. M2. M3. M4. M5. M6. M7.	
Water Quality Program					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q010501	BE4.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on the evaluation species' numbers or distribution.
Water Use Efficiency Program					
W3. Provide planning and technical assistance, financing assistance, and assurances for development and implementation of water management plans and best management practices to urban water agencies.	None.	N/A	N/A	None.	Potential program effects cannot be evaluated.
W4. Support development and implementation of water-recycling projects.	None.	N/A	N/A	None.	Potential program effects cannot be evaluated.

Table E-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Sacramento River Region					
CALFED actions proposed for the Sacramento River Region would not affect saline emergent communities.					
San Joaquin River Region					
CALFED actions proposed for the San Joaquin River Region would not affect saline emergent communities.					

Contributors to the development of this table: Pete Rawlings and Gerrit Platenkamp of Jones & Stokes Associates.

Table E-2. Key to Table E-1 Potential Beneficial Effects, Potential Adverse Effects, and Conservation Measures Codes

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Potential for increase in habitat area as a result of restoring shallow-water habitats along modified channels in the extreme western Delta (BE1).	Potential for permanent loss or degradation of existing tidal saline emergent wetland habitat area along channels in the extreme western Delta if construction activities result in removal of saline emergent vegetation or if the hydrology necessary to support emergent vegetation is removed (AE1).	To the extent practicable, avoid disturbance to existing saline emergent wetland habitat areas (M1).
Potential for long-term protection of existing tidal saline emergent wetland habitat in the extreme western Delta from the direct adverse effects of dredging (BE2).	Construction-related activities associated with implementing actions could result in take of evaluated species (AE2).	Restore or enhance 2-5 acres of additional in-kind habitat for every acre of affected existing saline emergent wetland habitat. This compensation should be implemented before actions are implemented and near affected habitat areas (M2).
Potential for increases in suitable substrates necessary for the natural reestablishment of saline emergent vegetation in the extreme western Delta as a result of increased sediment deposition in channels (BE3).	Potential for permanent loss or degradation of existing tidal saline emergent wetland habitat area along channels if construction activities result in removal of saline emergent vegetation or if the hydrology necessary to support emergent vegetation is removed (AE3).	To the extent consistent with ERP objectives, include project design features that allow for onsite reestablishment and long-term maintenance of saline emergent wetland vegetation following project construction (M3).
Reduction in contaminant loadings in saline emergent habitats could improve the survivability of some species and increase aquatic invertebrate populations that are adversely affected by toxic agents (BE4).	Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area on diked or leveed lands that are flooded to restore shallow-water habitat (AE4).	To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M4).
Long-term protection of existing habitat areas in the extreme western Delta from boat-wake-induced erosion of shoreline habitat (BE5).	Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area on diked or leveed lands that are flooded to restore shallow-water habitat (AE4).	To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M5).

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Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Potential for increased nesting success of species that nest in tidal saline emergent vegetation as a result of reducing the potential for boat wakes to swamp nests (BE6).	Potential for short-term loss or degradation of existing tidal saline emergent wetland habitat area along channels if restoration activities results in removal of tidal saline emergent vegetation (AE5).	When feasible, establish and protect additional populations of evaluated plant species in suitable nearby habitat areas before construction activities are implemented that could affect existing populations or individuals (M6).
Potential for increase in habitat area incidental to restoration of tidal shallow-water habitats (BE7).	Potential for permanent loss or degradation of existing nontidal saline or brackish habitat where tidal habitat is restored by setting back or breaching dikes or levees (AE6).	To the extent practicable, trap and relocate evaluated wildlife species that would be unlikely to escape from the area inundated by the restoration to suitable nearby habitat areas (M7).
Long-term protection of existing habitat from potential future loss or degradation and substantial increase in tidal saline emergent wetland habitat area and suitable habitat for associated species (BE8).	Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area as a result of restoring tidal sloughs on diked or leveed lands (AE7).	To the extent practicable, initially restore habitat areas in locations that do not support tidal emergent vegetation before restoring habitat in areas that support emergent vegetation to ensure there is no net loss of habitat area during the period in which restoration is implemented (M8).
Potential for increase in tidal saline emergent wetland habitat area along restored tidal sloughs where saline emergent wetland vegetation could naturally reestablish (BE9).	Potential for permanent loss or degradation of existing nontidal saline emergent wetland habitat area as a result of restoring open-water habitat (AE8).	To the extent consistent with ERP objectives, avoid restoring nontidal habitat areas with high habitat values to tidal wetlands (M9).
Potential for increased wildlife habitat values for some associated species where open-water habitat is restored within or adjacent to existing wetlands (BE10).	Potential for short-term disturbance to existing nontidal saline wetlands as a result of implementing actions (AE9).	Minimize potential effects of construction-related runoff into nearby wetlands through use of siltation-control barriers, detention basins, or other appropriate methods (M10).
Potential increase in habitat area if management of seasonal wetlands results in the establishment of interior patches of nontidal saline wetland habitats (BE11).	Potential for permanent loss or degradation of existing tidal and nontidal saline emergent wetland habitat area along the water and land sides of levees if construction activities results in removal of saline emergent vegetation or if the hydrology necessary to support emergent vegetation is removed (AE10).	To the extent consistent with ERP objectives, avoid restoring nontidal habitat areas with high habitat values to open-water habitat (M11).

Table E-2. Continued

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
<p>Long-term protection of existing tidal saline emergent habitat areas from boat-wake-induced erosion of shoreline and channel island habitat areas (BE12).</p>	<p>Potential adverse effects of the program are not analyzed. The type and magnitude of potential adverse effects would depend on the type of specific program actions that are implemented (N/A).</p>	
<p>Restoration of saline emergent habitat in patterns beneficial to the Suisun song sparrow would contribute to maintaining existing populations and creating habitat conditions necessary for the natural expansion of populations (BE13).</p>	<p>Likely to be no discernable adverse effects on existing habitat areas and associated evaluation species (N/E).</p>	
<p>Potential beneficial effects of the program are not analyzed. The type and magnitude of potential beneficial effects would depend on the type of specific program actions that are implemented (N/A).</p>		
<p>Likely to be no discernable beneficial effects on existing habitat areas and associated evaluation species (N/E).</p>		