

**Table D-1. Lacustrine Communities: Potential CALFED Effects and Conservation Measures**

**Summary Effect of Implementing CALFED Actions with Conservation Measures on Lacustrine Communities:** Restoration of up to 1,600 acres of lacustrine habitat adjacent to existing and restored wetlands in the Bay Region and potential for substantial increases in lacustrine habitat area associated with construction of reservoirs, and for restoration or enhancement of lacustrine habitat in all regions incidental to restoration and enhancement of wetlands, agricultural habitats, and floodplains. Potential for loss or degradation of existing habitat areas such as stockponds in some locations.

**Associated Evaluated Species:** American peregrine falcon, American peregrine falcon critical habitat, bald eagle, Aleutian Canada goose, California red-legged frog, California gull, osprey, western pond turtle, Sacramento perch, eel-grass pondweed.

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
<b>Delta Region</b>					
<b>Associated Evaluated Species:</b> American peregrine falcon, bald eagle, Aleutian Canada goose, California red-legged frog, California gull, osprey, western pond turtle, Sacramento perch, eel-grass pondweed					
Summary Programmatic Action Outcomes E1, E9, E17, E19-22, E24, E25, E26, Q1, Q2, and Q7 are likely to have no discernable effect on lacustrine communities in the Delta Region.					
<b>Ecosystem Restoration Program</b>					
E4. Provide more natural Delta hydraulic conditions (internal flow and velocity patterns) by altering channel configurations (e.g., setback levees) and physical barriers to channel flow.	E010601, E010602, E010603, E010604, E010605, E010606, E010607	Most likely to be no discernable beneficial effects on existing habitat areas and associated evaluation species (N/E).	Potential for loss of high-value lacustrine habitat resulting from conversion of lacustrine habitats to tidal or riverine aquatic, wetland, riparian, or grassland habitat (AE1).  Construction-related activities or flooding associated with implementing actions could result in take of evaluated species (AE2).	To the extent practicable, avoid disturbance to habitat areas occupied by evaluated species (M1).  To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M2).	Potential for loss of lacustrine habitat.

Table D-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>To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M3).</p> <p>To the extent practicable, establish and protect additional populations of affected evaluated plant species in suitable nearby habitat areas before actions that could affect existing populations or individuals are implemented (M4).</p>	
<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>N/E</p>	<p>AE1.</p> <p>AE2.</p>	<p>M1.</p> <p>M2.</p> <p>M3.</p> <p>M4.</p>	<p>Potential for loss of lacustrine habitat.</p>
<p>E8. Restoration of 30,000 to 45,000 acres of tidal fresh emergent wetland.</p>	<p>E010401, E010402, E010404, E010405, E010407, E010606, E011101, E011102, E011201, E011202, E011401, E011402, E011403, E011404, E011405, E015202</p>	<p>N/E</p>	<p>AE1.</p>	<p>M1.</p>	<p>Potential for loss of lacustrine habitat.</p>

Table D-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.	M2. M3. M4.	
E10a. Restoration of 85-190 miles of tidal sloughs.	E015201, E015202, E011101, E011102	N/E.	AE1.  AE2.	M1.  M2. M3. M4.	Potential for loss of lacustrine habitat.
E11. Restoration of up to 19,600 acres of nontidal freshwater emergent wetland.	E010403, E010406, E011001, E011002, E011003, E011004, E011005, E011006, E011007, E011301, E011302, E011303, E011304, E011305	Increase in lacustrine habitat area as a result of restoring permanent open-water areas within restored marshes (BE1).	Potential for temporary loss or degradation of habitat area associated with restoration actions (AE3).  AE2.	None.  M2. M3. M4.	Increase in habitat area as a result of restoring open-water habitat areas within restored marshes.
E13a. Enhancement of up to 4,000 acres of existing and restoration and management of up to 28,000 acres of seasonal wetlands for wildlife.	E010403, E010406, E011501, E011502, E011503, E011504, E011505, E011506, E011507, E011508, E011509, E011510, E017201, E017202	Potential increase in habitat area if restoration and management of seasonal wetlands results in the establishment of interior patches of permanent open-water habitat (BE2).	AE1.	M1.   M2.	Potential for increase in habitat area incidental to the restoration and management of seasonal wetlands.



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Table D-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
E18a. Cooperative management of 40,000–75,000 acres of agricultural lands to enhance habitat values for waterfowl and other associated species.	E011901, E011902, E011903, E011904, E011905, E011906, E011907, E007101	Potential increase in habitat area if management of agricultural lands results in the establishment of permanent open-water habitats, such as brood ponds (BE4).	Potential for permanent loss of habitat area if enhancement actions result in converting lacustrine habitats (e.g., stockponds) to other habitat types (AE4).  AE2.	M1.    M2.	Potential for loss of lacustrine habitat.  Potential for increase in lacustrine habitat area incidental to management of agricultural lands for wildlife.
E27a. Reduction in the concentrations and loadings of contaminants in the aquatic environment by 25%–50%.	E015701, E015702	Reduction in contaminant loadings in lacustrine habitats could improve the survivability of some species and increase aquatic invertebrate populations that are adversely affected by toxic agents (BE5).	Likely to be no discernable adverse effects on existing habitat areas and associated evaluation species (N/E).	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.
<b>Levee System Integrity</b>					
L1. Improvement and maintenance of Delta levees.	L010101, L010102, L010201, L010202, L010301	Long-term protection of existing lacustrine habitat areas from flooding that would result from levee failures (BE6).	Potential for loss of high-value lacustrine habitat if it is necessary to setback levees to achieve improvements (AE5).  AE2.	M1.    M2. M3. M4.	Potential for loss of lacustrine habitat.  Long-term protection of existing habitat areas from flooding that would be associated with levee failures.

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Table D-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
L2. Reduction in the risk to levee stability from subsidence.	L010401, L010402	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).	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).		Potential program effects cannot be evaluated.
<b>Water Quality Program</b>					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q010501	BE5.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.
<b>Water Use Efficiency Program</b>					
W1. Support implementation of water management techniques that increase the effectiveness of water use management and efficiency for agricultural uses.	None.	Potential for increase in habitat area if proposed actions result in the establishment of permanent ponds to capture agricultural tailwater for reuse (BE7).	Potential for loss of habitat area if proposed actions result in dewatering farm ponds or other habitat areas dependent on agricultural operations (AE6).	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
W2. Support implementation of measures that increase agricultural production per unit of water used, protect water quality, or increase environmental benefits while meeting agricultural needs.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.

Table D-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
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		Potential program effects cannot be evaluated.
W4. Support development and implementation of water-recycling projects.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Water Transfer Program</b>					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market.	None.	Potential for maintaining or increasing the availability of water for management of existing and restored lacustrine habitats if water supplies are made available for such uses through water transfers (BE8).	Potential for loss or degradation of existing habitat areas if water is transferred from uses that currently maintain lacustrine habitat (AE7).	Avoid implementing transfers of water from sources that support high-value lacustrine habitats (M5).	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.
<b>Watershed Management Program</b>					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated.

Table D-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
<b>Conveyance Facilities</b>					
C1. Construct and operate modifications to existing south-Delta conveyance features.	C010101, C010102, C010103, C010104, C010105, C010106, C010107, C010108	Construction and operation of conveyance facilities could increase lacustrine habitat area (BE9).	Construction of interties and supporting infrastructure between existing conveyance facilities and export pumps could result in the loss or degradation of habitat areas (AE8).  AE2.	M1.   M2. M3. M4.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.
C2. Construct and operate modifications to existing north-Delta conveyance features.	C020101, C020102, C020103	BE9.	Construction of conveyance facilities and associated infrastructure could result in loss or degradation of lacustrine habitat (AE9).  AE2.	M1.   M2. M3. M4.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.
C3 Construct and operate an isolated conveyance facility from the Sacramento River along the eastern side of the Delta to Clifton Court Forebay.	C030101	BE9.	AE9.	M1.   M5.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.

Table D-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.	M2. M3. M4.	
<b>Storage Facilities</b>					
S1. Construct and operate enlarged or new surface storage facilities.	None.	Substantial increase in lacustrine habitat area resulting from construction of new or enlarged reservoirs (BE10).	AE2.	M2.  M3. M4.	Substantial increase in lacustrine habitat area.
<b>Water Operations</b>					
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 D-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
<b>Bay Region</b>					
Associated Evaluated Species: American peregrine falcon, bald eagle, Aleutian Canada goose, California red-legged frog, California gull, osprey, and western pond turtle					
Summary Programmatic Action Outcomes E1, E14, E21, E22, E24, E25, E28, E30, Q2, Q7, and Q8 are likely to have no discernable effect on lacustrine in the Bay Region.					
<b>Ecosystem Restoration Program</b>					
E5b. Restoration of at least 1,500 acres of tidal shallow-water habitat.	E020401, E020901, E021101, E025201	N/E.	AE1.  AE2.	M1.  M2. M3. M4.	Potential for loss of lacustrine habitat.
E7. Protection of 6,200 existing acres and restoration of 7,500–12,000 additional acres of tidal saline emergent wetland.	E020401, E020901, E021101, E027301, E027302, E027303, E023904, E023903, E023904, E027401, E027501, E027601, E025201	N/E	AE1.  AE2.	M1.  M2. M3. M4.	Potential for loss of lacustrine habitat.
E10b. Restoration of 35-70 miles of tidal sloughs.	E021101	N/E	AE1.  AE2.	M1.  M2. M3.	Potential for loss of lacustrine habitat.

Table D-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
				M4.	
E12. Restoration of up to 1,600 acres of nontidal deep open-water habitat adjacent to existing and restored wetlands.	E021001, E021002	Substantial increase in lacustrine habitat area associated with wetlands (BE11).	N/E	None.	Substantial increase in lacustrine habitat area.
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	BE2.	AE1.  AE2.	M1.  M2. M3. M4.	Potential for increase in habitat area incidental to the restoration and management of seasonal wetlands.
E15b. Restoration of 50-75 miles of riparian habitat along channels and reduction of populations of invasive non-native riparian plants by 50%.	E021601, E025301, E025302	Potential for increase in lacustrine habitat area if actions result in modifying existing channels to create overflow channels and backwaters that maintain permanent water (BE12).	N/E	None.	Potential for increase in habitat area associated with stream and river channel improvements.
E16b. Restoration of up to 5,000 acres of perennial grassland.	E021801	BE3.	N/E	None.	Potential for increasing foraging, nesting, or roosting habitat area for lacustrine-associated species that also use grassland habitats where grassland is restored adjacent to existing habitat areas.

Table D-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
<b>Levee System Integrity Program</b>					
L3. Enhancement of the level of flood protection provided by Suisun Marsh levees.	None.	BE6.	AE5.  AE2.	M1.  M2. M3. M4.	Potential for loss of lacustrine habitat.  Long-term protection of existing habitat areas from flooding that would be associated with levee failures.
<b>Water Quality Program</b>					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q010501	BE5.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.
<b>Water Use Efficiency Program</b>					
W1. Support implementation of water management techniques that increase the effectiveness of water use management and efficiency for agricultural uses.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.

Table D-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
W2. Support implementation of measures that increase agricultural production per unit of water used, protect water quality, or increase environmental benefits while meeting agricultural needs.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
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		Potential program effects cannot be evaluated.
W4. Support development and implementation of water-recycling projects.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Water Transfer Program</b>					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market.	None.	BE8.	AE7.	M5.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat

Table D-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
<b>Watershed Management Program</b>					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Sacramento River Region</b>					
<b>Associated Evaluated Species:</b> American peregrine falcon, bald eagle, Aleutian Canada goose, California red-legged frog, California gull, osprey, western pond turtle, eel-grass pondweed					
Summary Programmatic Action Outcomes E3, E22, ED23, E24, E25, E26, Q1, Q2, Q3, Q7, and S2 are likely to have no discernable effect on lacustrine communities in the Sacramento River Region.					
<b>Ecosystem Restoration Program</b>					
E1. Provide for more natural riverflows and Bay-Delta freshwater inflow peaks in fall, winter, and spring of all but critical years.	E030101, E030102, E040101, E040102, E040103, E040104, E044701, E044703, E050101, E070101, E070102, E070103, E070104, E070105, E070106, E080101, E080102, E080103, E080104, E090101, E090102, E090103, E090104, E090105, E090106, E090107, E100101, E100102	More natural flows could improve floodplain lacustrine habitat and communities by providing higher, more natural water levels and riverflows that would inundate ponds, lakes, and oxbows in river floodplains, which in turn would provide greater quantity and quality of habitat and improved reproduction, growth, and survival of lacustrine species (BE13).	N/E	None.	More natural flows and restoration and enhancement of floodplain lacustrine habitats would increase floodplain-associated lacustrine habitat and improve populations of species in lacustrine communities.

Table D-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
E2. Improvement in the supply of sediment to rivers and streams necessary for providing spawning gravels and rehabilitation of related ecological processes (e.g., stream meander) and floodplain habitats (e.g., riparian habitats).	E030201, E030202, E030301, E030302, E030303, E030604, E031602, E040201, E040202, E040203, E040301, E040402, E050201, E050202, E050203, E060401, E070201, E070202, E070203, E080201, E080202, E080203, E080303, E090201, E090401, E090403, E090404, E090407, E090409, E100201, E100202, E105101	Reestablishment of floodplain processes could result in the establishment of oxbows and other lacustrine habitat areas associated with floodplains (BE14).	Potential for loss or degradation of habitat area on the landward side of levees if levees are set back to reestablish stream meander corridors (AE10).  AE2.	M1.  M2. M3. M4.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.
E6. Restoration and maintenance of riverine aquatic habitats.	E031602, E030301, E030302, E030303, E030604, E040301, E040402, E050201, E050202, E050203, E050301, E050401, E050402, E050403, E050404, E050405, E060401, E070201, E070202, E070203, E080301, E080302, E080303, E080401, E080402, E090401, E090402, E090403, E090404, E090407, E090408, E090408, E091604, E091605, E090201	BE14.	AE10.  AE2.	M1.  M2. M3.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.

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Table D-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
				M4.	
E13c. Enhancement and management of up to 73,325 acres of existing seasonal wetlands for wildlife.	E061501, E061502, E071501, E071502, E081501, E081502, E090405, E090406, E091501, E091502	BE2.	AE1.  AE2.	M1.  M2. M3. M4.	Potential for increase in habitat area incidental to the restoration and management of seasonal wetlands.
E15c. Protection and enhancement of 9,000–13,000 acres of riparian habitat in meander zones along the Sacramento River and its tributaries; protection, enhancement, and restoration of riparian habitat and shaded riverine aquatic (SRA) cover along other reaches of the Sacramento River and its tributaries; and reduction of populations of non-native invasive plants.	E031601, E031602, E031603, E031604, E031605, E030302, E030303, E030304, E035301, E035302, E040301, E040401, E041601, E041602, E041603, E051601, E051602, E051603, E061601, E065301, E071601, E071603, E071604, E080301, E080302, E080303, E080401, E081601, E081602, E081603, E090401, E090403, E090404, E090407, E091601, E091602, E091603, E091606, E095301, E101601, E101602, E101603, E101604, E105301	BE14.	AE1.  AE2.	M1.  M2. M3. M4.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat.

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Table D-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
E16c. Restoration of perennial grassland associated with existing or restored wetlands in the American River basin.	E091801	BE3.	N/E	None.	Potential for increase in or enhancement of foraging and nesting habitat where grassland is restored near lacustrine habitats for lacustrine-associated species that also use grassland habitats.
E18b. Cooperative management of up to 298,643 acres of agricultural lands to enhance habitat values for waterfowl and other associated species.	E061901, E061902, E061903, E071901, E071902, E071903, E081901, E091901, E091902	BE4.	AE4.  AE2.	M1.  M2.	Potential for loss of lacustrine habitat.  Potential for increase in lacustrine habitat area incidental to management of agricultural lands for wildlife.
E27b. Reduction in the concentrations and loadings of contaminants in the aquatic environment.	E035702, E035703, E035704, E095701, E095702, E105701, E105702	BE5.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.
<b>Water Quality Program</b>					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q030301, Q030302, Q040301, Q040302, Q050301, Q050302, Q060301, Q060302, Q070301, Q070302, Q080301, Q080302, Q090301, Q090302, Q100301, Q100302	BE5.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.

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Table D-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
<b>Water Use Efficiency Program</b>					
W1. Support implementation of water management techniques that increase the effectiveness of water use management and efficiency for agricultural uses.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
W2. Support implementation of measures that increase agricultural production per unit of water used, protect water quality, or increase environmental benefits while meeting agricultural needs.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
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		Potential program effects cannot be evaluated.
W4. Support development and implementation of water recycling projects.	None.	N/A	N/A		Potential program effects cannot be evaluated.

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Table D-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
<b>Water Transfer Program</b>					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market.	None.	BE8.	AE7.	M5.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat
<b>Watershed Management Program</b>					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Storage Facilities</b>					
S1. Construct and operate enlarged or new surface storage facilities.	None.	BE10.	AE2.	M2.  M3.  M4.  To the extent practicable, trap and relocate to suitable nearby habitat areas evaluated wildlife species that would be unlikely to escape from the inundation area of new or enlarged reservoirs (M6).	Substantial increase in lacustrine habitat area.

Table D-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
<b>Water Operations</b>					
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.
<b>San Joaquin River Region</b>					
<b>Associated Evaluated Species:</b> American peregrine falcon, bald eagle, Aleutian Canada goose, California red-legged frog, California gull, osprey, and western pond turtle					
Summary Programmatic Action Outcomes E18c, E22-26, E28, Q1, Q2, Q5-8, and S2 are likely to have no discernable effect on lacustrine communities in the San Joaquin River Region.					
<b>Ecosystem Restoration Program</b>					
E1. Provide for more natural riverflows and Bay-Delta freshwater inflow peaks in fall, winter, and spring of all but critical years.	E110101, E110102, E110103, E110104, E110105, E110106, E110107, E110108, E110109, E110110, E110205, E110502, E120101, E130103, E130101, E130102, E130104, E130105, E140101, E140102, E140103, E140104	BE13.	N/E	None.	More natural flows and restoration and enhancement of floodplain lacustrine habitats would increase floodplain-associated lacustrine habitat and improve populations of species in lacustrine communities.

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Table D-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
<b>Water Quality Program</b>					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q120501, Q130501, Q140501, Q140502	BE5.	N/E	None.	Implementation of the proposed actions would most likely have no discernable effect on evaluation species' numbers or distribution.
<b>Water Use Efficiency Program</b>					
W1. Support implementation of water management techniques that increase the effectiveness of water use management and efficiency for agricultural uses.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
W2. Support implementation of measures that increase agricultural production per unit of water used, protect water quality, or increase environmental benefits while meeting agricultural needs.	None.	BE7.	AE6.	M1.	Depending on actions to be implemented, potential for the loss of or increase in lacustrine habitat associated with agricultural infrastructure.
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		Potential program effects cannot be evaluated.

Table D-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
W4. Support development and implementation of water recycling projects.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Water Transfer Program</b>					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market.	None.	BE8.	AE7.	M5.	Depending on actions to be implemented, potential for the degradation or loss of or increase in lacustrine habitat
<b>Watershed Management Program</b>					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated.
<b>Storage Facilities</b>					
S1. Construct and operate enlarged or new surface storage facilities.	None.	BE10.	AE2.	M2. M3. M4. M6.	Substantial increase in lacustrine habitat area.

Table D-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
<b>Water Operations</b>					
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.

Contributors to the development of this table: Tom Cannon, Pete Rawlings, and Gerrit Plantenkamp of Jones & Stokes Associates.

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

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Increase in lacustrine habitat area as a result of restoring permanent open-water areas within restored marshes (BE1).	Potential for loss of high-value lacustrine habitat resulting from conversion of lacustrine habitats to tidal or riverine aquatic, wetland, riparian, or grassland habitat (AE1).	To the extent practicable, avoid disturbance to habitat areas occupied by evaluated species (M1).
Potential increase in habitat area if restoration and management of seasonal wetlands results in the establishment of interior patches of permanent open-water habitat (BE2).	Construction-related activities or flooding associated with implementing actions could result in take of evaluated species (AE2).	To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M2).
Potential for increased wildlife habitat values for some associated species where grassland is restored near lacustrine habitats (BE3).	Potential for temporary loss or degradation of habitat area associated with restoration actions (AE3).	To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M3).
Potential increase in habitat area if management of agricultural lands results in the establishment of permanent open-water habitats, such as brood ponds (BE4).	Potential for permanent loss of habitat area if enhancement actions result in converting lacustrine habitats (e.g., stockponds) to other habitat types (AE4).	To the extent practicable, establish and protect additional populations of affected evaluated plant species in suitable nearby habitat areas before actions that could affect existing populations or individuals are implemented (M4).
Reduction in contaminant loadings in lacustrine habitats could improve the survivability of some species and increase aquatic invertebrate populations that are adversely affected by toxic agents (BE5).	Potential for loss of high-value lacustrine habitat if it is necessary to setback levees to achieve improvements (AE5).	Avoid implementing transfers of water from sources that support high-value lacustrine habitats (M5).
Long-term protection of existing lacustrine habitat areas from flooding that would result from levee failures (BE6).	Potential for loss of habitat area if proposed actions result in dewatering farm ponds or other habitat areas dependent on agricultural operations (AE6).	To the extent practicable, trap and relocate to suitable nearby habitat areas evaluated wildlife species that would be unlikely to escape from the inundation area of new or enlarged reservoirs (M6).

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Table D-2. Continued

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Potential for increase in habitat area if proposed actions result in the establishment of permanent ponds to capture agricultural tailwater for reuse (BE7).	Potential for loss or degradation of existing habitat areas if water is transferred from uses that currently maintain lacustrine habitat (AE7)	
Potential for maintaining or increasing the availability of water for management of existing and restored lacustrine habitats if water supplies are made available for such uses through water transfers (BE8).	Construction of interties and supporting infrastructure between existing conveyance facilities and export pumps could result in the loss or degradation of habitat areas (AE8).	
Construction and operation of conveyance facilities could increase lacustrine habitat area (BE9).	.Construction of conveyance facilities and associated infrastructure could result in loss or degradation of lacustrine habitat (AE9).	
Substantial increase in lacustrine habitat area resulting from construction of new or enlarged reservoirs (BE10).	Potential for loss or degradation of habitat area on the landward side of levees if levees are set back to reestablish stream meander corridors (AE10).	
Substantial increase in lacustrine habitat area associated with wetlands (BE11).	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).	
Potential for increase in lacustrine habitat area if actions result in modifying existing channels to create overflow channels and backwaters that maintain permanent water (BE12).	Likely to be no discernable adverse effects on existing habitat areas and associated evaluation species (N/E).	

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Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
<p>More natural flows could improve floodplain lacustrine habitat and communities by providing higher, more natural water levels and riverflows that would inundate ponds, lakes, and oxbows in river floodplains, which in turn would provide greater quantity and quality of habitat and improved reproduction, growth, and survival of lacustrine species (BE13).</p>		
<p>Reestablishment of floodplain processes could result in the establishment of oxbows and other lacustrine habitat areas associated with floodplains (BE14).</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>Most likely to be no discernable beneficial effects on existing habitat areas and associated evaluation species (N/E).</p>		

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