

Table R-1. Seasonally Flooded Agriculture Habitats: Potential CALFED Effects and Conservation Measures

Summary Effect of Implementing CALFED Actions and Conservation Measures on Seasonally Flooded Agriculture Habitats: Potential for substantial losses of seasonally flooded agricultural lands with high wildlife foraging habitat value for associated species (primarily in the Delta Region) as a result of implementing CALFED actions. Overall forage availability for species that use upland cropland habitats, however, would potentially be substantially increased with the restoration or enhancement of natural foraging habitat areas, management of up to approximately 389,000 acres of agricultural lands to improve wildlife habitat values, and implementation of conservation measures to compensate for CALFED impacts on evaluated species.

Associated Evaluated Species: Bald eagle, Aleutian Canada goose, giant garter snake, greater sandhill crane, white-tailed kite, Swainson's hawk, tricolored blackbird, short-eared owl, California gull, long-billed curlew, northern harrier, and white-faced ibis.

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: bald eagle, Aleutian Canada goose, giant garter snake, greater sandhill crane, white-tailed kite, Swainson's hawk, short-eared owl, California gull, long-billed curlew, northern harrier, and white-faced ibis.					
Summary Programmatic Action Outcomes E1, E9, E17, E19-22, E24, E25, E28, Q1, Q2, Q7, and T1 are likely to have no discernable effect on seasonally flooded agricultural habitat or associated covered species in the Delta Region.					
Ecosystem Restoration Program					
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	Likely to be no discernable beneficial effects on existing habitat areas and associated evaluation species (N/E).	Potential for loss of high-value wildlife foraging habitat (e.g., flooded cornfields and wheat fields) resulting from conversion of agricultural lands to aquatic, wetland, riparian, or grassland habitat (AE1).	To the extent practicable, restore aquatic, wetland, riparian, and grassland habitats on agricultural lands that have relatively low forage value (e.g., orchards and vineyards) (M1).	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

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Table R-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 loss of traditional sandhill crane roost sites resulting from conversion of agricultural lands to aquatic, wetland, riparian, or grassland habitat (AE2).</p>	<p>Restore or enhance 1 to 3 acres of suitable natural foraging-habitat areas near affected lands for every acre of affected habitat regularly used by evaluation species and waterfowl to replace forage values of converted agricultural lands before or when project impacts are incurred (M2).</p> <p>Increase suitable forage availability and/or quantity on 1 to 5 acres of agricultural lands near affected lands for every acre of affected habitat regularly used by evaluation species or waterfowl to replace forage values of converted agricultural lands before or when project impacts are incurred (M3).</p> <p>Avoid converting seasonal agricultural wetlands that are traditional wintering sandhill crane roost sites to other habitat types (M4).</p>	

Table R-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 (AE3).	To the extent practicable, avoid construction activities in habitat areas when evaluation species are present and could be affected by proposed actions (M5).	
E5a. Restoration of up to 7,500 acres of tidal shallow-water habitat.	E010401, E010402, E010403, E010404, E010405, E010406, E010407, E010901, E010902, E010903, E010904, E010905, E010906, E015201, E015202	N/E	AE1. AE2. AE3.	M1. M2. M3. M4. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

Table R-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>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.</p>	<p>E010403, E010406, E011501, E011502, E011503, E011504, E011505, E011506, E011507, E011508, E011509, E011510, E017201, E017202</p>	<p>Potential for substantial increase in foraging habitat area particularly if seasonal wetlands are restored on lands with little or no forage value for species that use seasonally flooded agricultural lands (BE3).</p> <p>Substantial increase in forage abundance and availability for species that forage in seasonally flooded agricultural habitats (BE4).</p>	<p>AE1.</p> <p>AE2.</p>	<p>M1.</p> <p>M2.</p> <p>M3</p> <p>To the extent consistent with ERP objectives, manage restored and enhanced seasonal wetlands to maximize the availability or quantity of suitable forage for waterfowl and sandhill cranes (M7).</p> <p>M4.</p>	<p>Potential for substantial increases in availability and/or quantity of suitable forage habitat for species that forage in seasonally flooded agricultural habitats and seasonal wetlands.</p> <p>Depending on the types of agricultural land affected, potential for short-term loss of forage abundance or availability for some species and some long-term increase in forage availability or abundance with implementation of conservation measures.</p>

Table R-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
E15a. Restoration of 48–85 miles of riparian habitat along channels, restoration of riparian habitat in association with setback levees, protection of 500 acres of existing riparian forest, and reduction of current invasive riparian plants by 50%.	E010501, E010502, E010606, E011101, E011102, E011201, E011202, E011601, E011602, E011603, E011604, E011605, E011606, E011607, E011608, E011609, E014901, E015301, E015302, E015303	N/E	AE3. AE1. AE3.	M5. M1. M2. M3. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
E16a. Restoration of 4,000–6,000 acres of perennial grassland.	E011801, E011802, E011803, E011804, E017201, E017202	Potential for increase in availability and/or quantity of suitable forage habitat for waterfowl and other species that forage in seasonally flooded agricultural habitats and grasslands (BE5).	AE1.	M1. M2.	Depending on the types of agricultural lands affected, potential for substantial increases in availability and/or quantity of suitable forage habitat for some species. Depending on the types of agricultural land affected, potential for short-term loss of forage abundance or availability for some species and some long-term increase in forage availability or abundance with implementation of conservation measures.

Table R-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
E27a. Reduction in the concentrations and loadings of contaminants in the aquatic environment by 25%-50%.	E015701, E015702	Reduction in the use of herbicides and pesticides in or near existing habitat areas could result in an increase in invertebrate populations that are adversely affected by these agents and that are prey for some evaluation species (BE7).	Potential for loss of seasonally flooded agricultural habitats or forage if actions to reduce herbicide and pesticide loadings include growing crops with lower forage value than crops currently being grown, idling of cropland, or reduction in forage biomass (AE4).	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Levee System Integrity Program					
L1. Improvement and maintenance of Delta levees.	L010101, L010102, L010201, L010202, L010301	Long-term protection of existing habitat areas from flooding that would result from levee failures (BE8).	Potential for loss of high-value wildlife foraging habitat (e.g., flooded cornfields and wheat fields) if it is necessary to set back levees to achieve improvements (AE5). AE3.	M2. M3. To the extent practicable, avoid construction activities in habitat areas when evaluation species are present and could be affected by proposed actions (M9).	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of 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.

Table R-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 Quality Program					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q010501	BE7.	AE4.	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Water Use Efficiency Program					
W1. Support implementation of water management techniques that increase the effectiveness of water-use management and efficiency for agricultural uses.	None.	N/E	<p>Potential for loss of seasonally flooded agricultural habitat area if proposed actions result in reducing the amount or duration of water applied to agricultural lands (AE6).</p> <p>Potential for loss of traditional sandhill crane roost sites if implementation of proposed actions results in converting existing use areas to habitat types unsuitable for use as roosts (AE7).</p>	<p>M2.</p> <p>M3.</p> <p>Avoid implementing proposed program actions on seasonal agricultural wetlands that are traditional wintering sandhill crane roosts that could render them unsuitable as roost sites (M10).</p>	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

Table R-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 Transfer Program					
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 seasonally flooded agricultural habitat area if water supplies are made available for such uses through water transfers (BE9).	Potential for loss of seasonally flooded agricultural habitat areas if water is transferred from this use (AE8).	To the extent consistent with Program objectives, avoid implementing transfers of water from sources that support high value seasonally flooded agricultural habitat areas (M11). M2. M3.	Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting seasonally flooded agricultural habitats and long-term increase in habitat area as a result of implementing conservation measures. Potential for long-term increases in habitat area if water is transferred for use in farming crops that require seasonal flooding.
Watershed Management Program					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated

Table R-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
Conveyance Facilities					
C1. Construct and operate modifications to existing south-Delta conveyance features.	C010101, C010102, C010103, C010104, C010105, C010106, C010107, C010108	N/E	Construction of interties and supporting infrastructure between existing conveyance facilities and export pumps could result in the permanent loss of seasonally flooded agricultural habitat areas (AE9). AE2. AE3.	To the extent consistent with program objectives, avoid constructing conveyance facilities and associated infrastructure on seasonally flooded agricultural lands with high-value wildlife forage habitat (M12). M2. M3. M4. M9.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
C2. Construct and operate modifications to existing north-Delta conveyance features.	C020101, C020102, C020103	N/E	AE9. AE2. AE3.	M12. M2. M3. M4. M9.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

Table R-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
C3 Construct and operate an isolated conveyance facility from the Sacramento River along the east side of the Delta to Clifton Court Forebay.	C030101	N/E	AE9. AE2. AE3.	M12. M2. M3. M4. M9.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Storage Facilities					
S1. Construct and operate enlarged or new surface storage facilities.	None.	Potential for increase in forage habitat value for some species if storage facilities are located on islands that support crops with little or no forage value and storage islands are operated in a manner that results in the creation of wetland habitats (BE10).	Potential for permanent loss of seasonally flooded agricultural habitats with high-value wildlife forage habitat on Delta islands that are used for storage (AE10). AE2. AE3.	To the extent consistent with program objectives, select Delta islands that are farmed with crops that have little or no wildlife forage habitat value for use as storage facilities (M13). M2. M3. M4. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

Table R-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
Levee System Integrity Program					
L3. Enhancement of the level of flood protection provided by Suisun Marsh levees.	None.	BE8.	AE5. AE3.	M2. M3. M9.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Water Quality Program					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q020501	BE7.	AE4.	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Water Use Efficiency Program					
W1. Support implementation of water management techniques that increase the effectiveness of water-use management and efficiency for agricultural uses.	None.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

Table R-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.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of 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.

Table R-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 Transfer Program					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water-transfer market.	None.	BE9.	AE8.	M11. M2 M3.	Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting seasonally flooded agricultural habitats and long-term increase in habitat area as a result of implementing conservation measures. Potential for long-term increases in habitat area if water is transferred for use in farming crops that require seasonal flooding.
Watershed Management Program					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated
Sacramento River Region					
Associated Evaluated Species: bald eagle, Aleutian Canada goose, giant garter snake, greater sandhill crane, white-tailed kite, Swainson's hawk, tricolored blackbird, short-eared owl, California gull, long-billed curlew, northern harrier, and white-faced ibis.					

Table R-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
Summary Programmatic Action Outcomes E1, E3, E22, E23, E24, E25, E26, Q1, Q2, Q3, Q7, and S1 are likely to have no discernable effect on seasonally flooded agricultural habitat or associated covered species in the Sacramento River Region.					
Ecosystem Restoration Program					
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	N/E	Potential for loss of high-value wildlife foraging habitat (e.g., rice fields) resulting from actions to reintroduce erosional processes by setting levees back or otherwise allowing banks to erode (AE11). AE3.	M2. M3. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
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	N/E	AE1.	M1. M2.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

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Table R-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>E18b. Cooperative management of up to 298,643 acres of agricultural lands to enhance habitat values for waterfowl and other associated species.</p>	<p>E061901, E061902, E061903, E071901, E071902, E071903, E081901, E091901, E091902</p>	<p>BE6.</p>	<p>AE2.</p> <p>AE3.</p>	<p>M4.</p> <p>M8.</p>	<p>Depending on the types of cropland affected, potential for substantial increases in availability and/or quantity of suitable forage habitat for waterfowl, greater sandhill cranes, raptors, and other species that use agricultural lands.</p> <p>Depending on the types of cropland affected, potential for short-term loss of foraging habitat for species that use upland croplands, but not seasonally flooded agricultural lands and some long-term increase in forage habitat area or quality with implementation of conservation measures.</p>
<p>E27b. Reduction in the concentrations and loadings of contaminants in the aquatic environment.</p>	<p>E035702, E035703, E035704, E095701, E095702, E105701, E105702</p>	<p>BE7.</p>	<p>AE4.</p>	<p>M2.</p>	<p>Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.</p>

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Table R-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 Quality Program					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q030501, Q040501, Q050501, Q060501, Q070501, Q080501, Q090501, Q100501	BE7.	AE4.	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Water Use Efficiency Program					
W1. Support implementation of water management techniques that increase the effectiveness of water-use management and efficiency for agricultural uses.	None.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of 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.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

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Table R-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.
Water Transfer Program					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water-transfer market.	None.	BE9.	AE8.	M11. M2 M3.	Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting seasonally flooded agricultural habitats and long-term increase in habitat area as a result of implementing conservation measures. Potential for long-term increases in habitat area if water is transferred for use in farming crops that require seasonal flooding.

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Table R-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
Watershed Management Program					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated
Storage Facilities					
S2. Construct and operate new groundwater storage facilities.	None.	N/E	Potential for loss of high-value seasonally flooded agricultural habitats within the footprint of storage facilities and associated infrastructure (AE12). AE3.	M1. M2. M3. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
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 R-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 Quality Program					
Q4. Reduction of pesticide loadings in the aquatic environment.	Q120501, Q130501, Q140501, Q140502	BE7.	AE4.	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Q6. Reduction in selenium concentrations and loadings to the aquatic environment.	Q140701, Q140702, Q140703, Q140704, Q140705, Q140706, Q140707	N/E	Potential for loss of high-value seasonally flooded agricultural lands if these lands are retired to reduce selenium loadings (AE13).	M2.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
Water Use Efficiency Program					
W1. Support implementation of water management techniques that increase the effectiveness of water-use management and efficiency for agricultural uses.	None.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.

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Table R-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.	N/E	AE6.	M2. M3.	Potential for short-term loss of forage abundance or availability for some species and long-term increase in forage availability and/or quantity with implementation of 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.

Table R-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 Transfer Program					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water-transfer market.	None.	BE9.	AE8.	M11. M2 M3.	Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting seasonally flooded agricultural habitats and long-term increase in habitat area as a result of implementing conservation measures. Potential for long-term increases in habitat area if water is transferred for use in farming crops that require seasonal flooding.
Watershed Management Program					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	N/A	N/A		Potential program effects cannot be evaluated

Table R-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
Storage Facilities					
S2. Construct and operate new groundwater storage facilities.	None.	N/E	AE12. AE3.	M1. M2. M3. M5.	Potential for short-term loss of foraging habitat for some species and long-term increase in forage availability and/or quantity with implementation of conservation measures.
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.

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

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Table R-2. Key to Table R-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 substantial increases in availability and/or quantity of suitable forage habitat for waterfowl and other species that forage in seasonally flooded agricultural habitats and wetlands (BE1).	Potential for loss of high-value wildlife foraging habitat (e.g., flooded cornfields and wheat fields) resulting from conversion of agricultural lands to aquatic, wetland, riparian, or grassland habitat (AE1).	To the extent practicable, restore aquatic, wetland, riparian, and grassland habitats on agricultural lands that have relatively low forage value (e.g., orchards and vineyards) (M1).
Potential for some increases in availability and/or quantity of suitable forage habitat for waterfowl and other species that forage in seasonally flooded agricultural habitats and wetlands (BE2).	Potential for loss of traditional sandhill crane roost sites resulting from conversion of agricultural lands to aquatic, wetland, riparian, or grassland habitat (AE2).	Restore or enhance 1 to 3 acres of suitable natural foraging-habitat areas near affected lands for every acre of affected habitat regularly used by evaluation species and waterfowl to replace forage values of converted agricultural lands before or when project impacts are incurred (M2).
Potential for substantial increase in foraging habitat area particularly if seasonal wetlands are restored on lands with little or no forage value for species that use seasonally flooded agricultural lands (BE3).	Construction-related activities associated with implementing actions could result in take of evaluated species (AE3).	Increase suitable forage availability and/or quantity on 1 to 5 acres of agricultural lands near affected lands for every acre of affected habitat regularly used by evaluation species or waterfowl to replace forage values of converted agricultural lands before or when project impacts are incurred (M3).
Substantial increase in forage abundance and availability for species that forage in seasonally flooded agricultural habitats (BE4).	Potential for loss of seasonally flooded agricultural habitats or forage if actions to reduce herbicide and pesticide loadings include growing crops with lower forage value than crops currently being grown, idling of cropland, or reduction in forage biomass (AE4).	Avoid converting seasonal agricultural wetlands that are traditional wintering sandhill crane roost sites to other habitat types (M4).
Potential for increase in availability and/or quantity of suitable forage habitat for waterfowl and other species that forage in seasonally flooded agricultural habitats and grasslands (BE5).	Potential for loss of high-value wildlife foraging habitat (e.g., flooded cornfields and wheat fields) if it is necessary to set back levees to achieve improvements (AE5).	To the extent practicable, avoid construction activities in habitat areas when evaluation species are present and could be affected by proposed actions (M5).

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Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Substantial increase in forage abundance and/or availability with implementation of management practices to benefit wildlife that use agricultural lands (BE6).	Potential for loss of seasonally flooded agricultural habitat area if proposed actions result in reducing the amount or duration of water applied to agricultural lands (AE6).	To the extent consistent with ERP objectives, design wetlands to include transition habitat to uplands and upland buffer habitat area that would support small-mammal populations and provide suitable foraging habitat for raptors and other grassland-associated species (M6).
Reduction in the use of herbicides and pesticides in or near existing habitat areas could result in an increase in invertebrate populations that are adversely affected by these agents and that are prey for some evaluation species (BE7).	Potential for loss of traditional sandhill crane roost sites if implementation of proposed actions results in converting existing use areas to habitat types unsuitable for use as roosts (AE7).	To the extent consistent with ERP objectives, manage restored and enhanced seasonal wetlands to maximize the availability or quantity of suitable forage for waterfowl and sandhill cranes (M7).
Long-term protection of existing habitat areas from flooding that would result from levee failures (BE8).	Potential for loss of seasonally flooded agricultural habitat areas if water is transferred from this use (AE8).	To the extent practicable, avoid management activities in habitat areas when evaluation species are present and could be affected by proposed actions (M8).
Potential for maintaining or increasing the seasonally flooded agricultural habitat area if water supplies are made available for such uses through water transfers (BE9).	Construction of interties and supporting infrastructure between existing conveyance facilities and export pumps could result in the permanent loss of seasonally flooded agricultural habitat areas (AE9).	To the extent practicable, avoid construction activities in habitat areas when evaluation species are present and could be affected by proposed actions (M9).
Potential for increase in forage habitat value for some species if storage facilities are located on islands that support crops with little or no forage value and storage islands are operated in a manner that results in the creation of wetland habitats (BE10).	Potential for permanent loss of seasonally flooded agricultural habitats with high-value wildlife forage habitat on Delta islands that are used for storage (AE10).	Avoid implementing proposed program actions on seasonal agricultural wetlands that are traditional wintering sandhill crane roosts that could render them unsuitable as roost sites (M10).
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 for loss of high-value wildlife foraging habitat (e.g., rice fields) resulting from actions to reintroduce erosional processes by setting levees back or otherwise allowing banks to erode (AE11).	To the extent consistent with Program objectives, avoid implementing transfers of water from sources that support high value seasonally flooded agricultural habitat areas (M11).

Table R-2. Continued

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Likely to be no discernable beneficial effects on existing habitat areas and associated evaluated species (N/E).	Potential for loss of high-value seasonally flooded agricultural habitats within the footprint of storage facilities and associated infrastructure (AE12).	To the extent consistent with program objectives, avoid constructing conveyance facilities and associated infrastructure on seasonally flooded agricultural lands with high-value wildlife forage habitat (M12).
	Potential for loss of high-value seasonally flooded agricultural lands if these lands are retired to reduce selenium loadings (AE13).	To the extent consistent with program objectives, select Delta islands that are farmed with crops that have little or no wildlife forage habitat value for use as storage facilities (M13).
	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).	To the extent consistent with ERP objectives, manage enhanced seasonal wetlands to maximize the availability or quantity of suitable forage for species that are also dependent on seasonally flooded agricultural habitats (M14).