

## APPENDIX D: Ecosystem Restoration Strategic Goals and Objectives

Note: This appendix is provided to help the applicant fill in Line 1 List task information, Section 4: Project Objectives of the ERP Proposal Application Form.

<p><b>Goal 1: Endangered and Other At-risk Species and Native Biotic Communities</b>          Achieve recovery of at-risk native species dependent on the Delta and Suisun Bay as the first step toward establishing large, self-sustaining populations of these species; support similar recover of at-risk native species in San Francisco Bay and the watershed above the estuary; and minimize the need for future endangered species listings by reversing downward population trends of native species that are not listed.</p>
<p><b>Objective 1:</b> Achieve, first, recovery and then large self-sustaining populations of the following at-risk native species dependent on the Delta, Suisun Bay, and Suisun Marsh: Central Valley winter-, spring- and fall/late fall-run chinook salmon ESUs, Central Valley steelhead ESU, delta smelt, longfin smelt, Sacramento splittail, green sturgeon, valley elderberry longhorn beetle, Suisun ornate shrew, Suisun song sparrow, soft bird's-beak, Suisun thistle, Mason's lilaeopsis, San Pablo song sparrow, Lange's metalmark butterfly, Antioch Dunes evening primrose, Contra Costa wallflower, and Suisun marsh aster.</p>
<p><b>Objective 2:</b> Contribute to the recovery of the following at-risk native species in the Bay-Delta estuary and its watershed: Sacramento perch, delta green ground beetle, giant garter snake, salt marsh harvest mouse, riparian brush rabbit, San Pablo California vole, San Joaquin Valley woodrat, least Bell's vireo, California clapper rail, California black rail, little willow flycatcher, bank swallow, western yellow-billed cuckoo, greater sandhill crane, Swainson's hawk, California yellow warbler, salt marsh common yellowthroat, Crampton's tuctoria, Northern California black walnut, delta tule pea, delta mudwort, bristly sedge, delta coyote thistle, alkali milkvetch, and Point Reyes bird's-beak.</p>
<p><b>Objective 3:</b> Enhance and/or conserve native biotic communities in the Bay-Delta estuary and its watershed, including the abundance and distribution of the following biotic assemblages and communities: native resident estuarine and freshwater fish assemblages, anadromous lampreys, neotropical migratory birds, wading birds, shore birds, waterfowl, native anuran amphibians, estuarine plankton assemblages, estuarine and freshwater marsh plant communities, riparian plant communities, seasonal wetland plant communities, vernal pool communities, aquatic plant communities, and terrestrial biotic assemblages associated with aquatic and wetland habitats.</p>
<p><b>Objective 4:</b> Maintain the abundance and distribution of the following species: hardhead, western least bittern, California tiger salamander, western spadefoot toad, California red-legged frog, western pond turtle, California freshwater shrimp, recurved larkspur, mad-dog skullcap, rose-mallow, eel-grass pondweed, Colusa grass, Boggs Lake hedge-hyssop, Contra Costa goldfields, Greene's legenere, heartscale, and other species designated "maintain" in the Multi-Species Conservation Strategy.</p>

<p><b>Goal 2: Ecological Processes</b>  Rehabilitate natural processes in the Bay-Delta estuary and its watershed to fully support, with minimal ongoing human intervention, natural aquatic and associated terrestrial biotic communities and habitats, in ways that favor native members of those communities.</p>	
	<p><b>Objective 1:</b> Establish and maintain hydrologic and hydrodynamic regimes for the Bay and Delta that support the recovery and restoration of native species and biotic communities, support the restoration and maintenance of functional natural habitats, and maintain harvested species.</p>
	<p><b>Objective 2:</b> Increase estuarine productivity and rehabilitate estuarine food web processes to support the recovery and restoration of native estuarine species and biotic communities.</p>
	<p><b>Objective 3:</b> Rehabilitate natural processes to create and maintain complex channel morphology, in-channel islands, and shallow water habitat in the Delta and Suisun Marsh.</p>
	<p><b>Objective 4:</b> Create and/or maintain flow and temperature regimes in rivers that support the recovery and restoration of native aquatic species.</p>
	<p><b>Objective 5:</b> Establish hydrologic regimes in streams, including sufficient flow timing, magnitude, duration, and high flow frequency, to maintain channel and sediment conditions supporting the recovery and restoration of native aquatic and riparian species and biotic communities.</p>
	<p><b>Objective 6:</b> Reestablish floodplain inundation and channel-floodplain connectivity of sufficient frequency, timing, duration, and magnitude to support the restoration and maintenance of functional natural floodplain, riparian, and riverine habitats.</p>
	<p><b>Objective 7:</b> Restore coarse sediment supplies to sediment-starved rivers downstream of reservoirs to support the restoration and maintenance of functional natural riverine habitats.</p>
	<p><b>Objective 8:</b> Increase the extent of freely meandering reaches and other pre-1850 river channel forms to support the restoration and maintenance of functional natural riverine, riparian, and floodplain habitats.</p>
<p><b>Goal 3: Harvested Species</b>  Maintain and/or enhance populations of selected species for sustainable commercial and recreational harvest, consistent with the other ERP strategic goals.</p>	
	<p><b>Objective 1:</b> Enhance fisheries for salmonids, white sturgeon, pacific herring, and native cyprinid fishes.</p>
	<p><b>Objective 2:</b> Maintain, to the extent consistent with ERP goals, fisheries for striped bass, American shad, signal crayfish, grass shrimp, and nonnative warmwater gamefishes.</p>
	<p><b>Objective 3:</b> Enhance, to the extent consistent with ERP goals, populations of waterfowl and upland game for harvest by hunting and for non-consumptive recreation.</p>
	<p><b>Objective 4:</b> Ensure that chinook salmon, steelhead, trout, and striped bass hatchery, rearing, and planting programs do not have detrimental effects on wild populations of native fish species and ERP actions.</p>

<p><b>Goal 4: Habitats</b> Protect and/or restore functional habitat types in the Bay-Delta estuary and its watershed for ecological and public values such as supporting species and biotic communities, ecological processes, recreation, scientific research, and aesthetics.</p>	
	<p><b>Objective 1:</b> Restore large expanses of all major habitat types, and sufficient connectivity among habitats, in the Delta, Suisun Bay, Suisun Marsh, and San Francisco Bay to support recovery and restoration of native species and biotic communities and rehabilitation of ecological processes. These habitat types include tidal marsh (fresh, brackish, and saline), tidal perennial aquatic (including shallow water and tide flats), nontidal perennial aquatic, tidal sloughs, midchannel island and shoal, seasonal wetlands, riparian and shaded riverine aquatic, inland dune scrub, upland scrub, and perennial grasslands.</p>
	<p><b>Objective 2:</b> Restore large expanses of all major aquatic, wetland, and riparian habitats, and sufficient connectivity among habitats, in the Central Valley and its rivers to support recovery and restoration of native species and biotic communities and rehabilitation of ecological processes. These habitat types include riparian and shaded riverine aquatic, instream, fresh emergent wetlands, seasonal wetlands, other floodplain habitats, lacustrine, and other freshwater fish habitats.</p>
	<p><b>Objective 3:</b> Protect tracts of existing high quality major aquatic, wetland, and riparian habitat types, and sufficient connectivity among habitats, in the Bay-Delta estuary and its watershed to support recovery and restoration of native species and biotic communities, rehabilitation of ecological processes, and public value functions.</p>
	<p><b>Objective 4:</b> Minimize the conversion of agricultural land to urban and suburban uses and maintain open space buffers in areas adjacent to existing and future restored aquatic, riparian, and wetland habitats, and manage agricultural lands in ways that are favorable to birds and other wildlife.</p>
	<p><b>Objective 5:</b> Manage the Yolo and Sutter Bypasses as major areas of seasonal shallow water habitat to enhance native fish and wildlife, consistent with CALFED Program objectives and solution principles.</p>
<p><b>Goal 5: Nonnative Invasive Species</b> Prevent the establishment of additional non-native invasive species and reduce the negative ecological and economic impacts of established non-native species in the Bay-Delta estuary and its watershed.</p>	
	<p><b>Objective 1:</b> Eliminate further introductions of new species from the ballast water of ships into the Bay-Delta estuary.</p>
	<p><b>Objective 2:</b> Eliminate further introductions of new species from imported marine and freshwater baits into the Bay-Delta estuary and its watershed.</p>
	<p><b>Objective 3:</b> Halt the unauthorized introduction and spread of potentially harmful non-native introduced species of fish or other aquatic organisms in the Bay-Delta and Central Valley.</p>
	<p><b>Objective 4:</b> Halt the release of non-native introduced fish and other aquatic organisms from private aquaculture operations and the aquarium and pet trades into the Bay-Delta estuary, its watershed, and other California waters.</p>
	<p><b>Objective 5:</b> Halt the introduction of non-native invasive aquatic and terrestrial plants into the Bay-Delta estuary, its watershed, and other central California waters.</p>

	<b>Objective 6:</b> Reduce the impact of non-native mammals on native birds, mammals, and other organisms.
	<b>Objective 7:</b> Limit the spread or, when possible and appropriate, eradicate populations of non-native invasive species through focused management efforts.
	<b>Objective 8:</b> Prevent the invasion of the zebra mussel into California.
<b>Goal 6: Water and Sediment Quality</b>	
Improve and/or maintain water and sediment quality conditions that fully support healthy and diverse aquatic ecosystems in the Bay-Delta estuary and watershed; and eliminate, to the extent possible, toxic impacts to aquatic organisms, wildlife, and people.	
	<b>Objective 1:</b> Reduce the loadings and concentrations of toxic contaminants in all aquatic environments in the Bay-Delta estuary and watershed to levels that do not adversely affect aquatic organisms, wildlife, and human health.
	<b>Objective 2:</b> Reduce loadings of oxygen-depleting substances from human activities into aquatic ecosystems in the Bay-Delta estuary and watershed to levels that do not cause adverse ecological effects.
	<b>Objective 3:</b> Reduce fine sediment loadings from human activities into rivers and streams to levels that do not cause adverse ecological effects.