

PRELIMINARY DRAFT

APPENDIX E. Performance Measures for the Delta Plan

Delta Plan Amendments

November 2019

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Appendix E

Performance Measures for the Delta Plan

Performance Measure Types

Delta Plan performance measures have been placed into three general categories:

- Administrative performance measures describe decisions made by policy makers and managers to finalize plans or approve resources (funds, personnel, projects) for implementation of a program or group of related programs.
- Output (also known as “driver”) performance measures evaluate the factors that may be influencing outcomes; including on-the-ground implementation of management actions, such as acres of habitat restored or acre-feet of water released, as well as natural phenomena outside of management control (such as a flood, earthquake, or ocean conditions).
- Outcome performance measures evaluate responses to management actions or natural outputs.

Core Output/Outcome Performance Measure Criteria

- Metrics define the unit(s) of measure and other characteristics for tracking aspects of performance over time.
- Baselines are standards or historical reference conditions for comparing with current conditions.
- Targets are the desired future conditions or trends.

Chapter 4: Protect, Restore, and Enhance the Delta Ecosystem

Proposed Modifications to Existing Performance Measures and Proposed New Performance Measures

Strategy 4.1 Create More Natural Functional Flows

Strategy 4.2: Restore Ecosystem Function

Strategy 4.3: Protect Land for Restoration and Safeguard Against Land Loss

Strategy 4.4: Protect Native Species and Reduce the Impact of Nonnative Invasive Species

Strategy 4.5: Improve Institutional Coordination to Support Implementation of Ecosystem Protection, Restoration, and Enhancement

Outcome Performance Measures

Strategy 4.2: Restore Ecosystem Function

Seasonal Inundation

Restoring land-water connections to increase hydrologic connectivity and seasonal floodplain inundation.

- **Metric:** Acres within the Sacramento-San Joaquin Delta and Suisun Marsh that are:
 1. Hydrologically connected to fluvial and tidally influenced waterways.
 2. A floodplain¹ area that inundates² at least once every two years.

Metric will be evaluated annually.

- **Baseline:** As of the year 2013:
 1. An estimated 75,000 acres of land physically connected to the fluvial river and tidal system.

¹ Area that is inundated on a two-year recurrence frequency and is connected to the fluvial river or tidal system.

² There is no depth threshold for the inundation analysis; inundation is deemed to occur at any depth.

2. Approximately 15,000 acres of the connected land inundated at a two-year interval, calculated as a long-term average for 1998-2018.
- Target: By 2050:
 1. Additional 51,000 acres added to the 75,000-acre baseline that are physically connected to the fluvial river and tidal system.
 2. At least an additional 19,000 acres of floodplain area is inundated on a two-year recurrence interval, for the total of at least 34,000 acres.

Acres of Natural Communities Restored

Restoring large areas of natural communities to provide for habitat connectivity and crucial ecological processes, along with supporting viable populations of native species.

- Metric: Acres of natural communities restored. Metric will be updated and evaluated every five years.
- Baseline: Acres of natural communities from the 2007 Vegetation Classification and Mapping Program (VegCAMP) dataset by the California Department Fish and Wildlife (CDFW), as designated below:

Ecosystem Type	Baseline Acres
Seasonal Wetland Wet Meadow Non-Tidal Wetland	5,029
Willow Riparian Scrub/Shrub Valley Foothill Riparian Willow Thicket	14,167
Tidal Wetland	19,892
Stabilized Interior Dune Vegetation	19
Oak Woodland	0
Grassland	32,994
Vernal Pool Complex	5,029
Alkali Seasonal Wetland Complex	698

Source: VegCAMP 2007

- **Target:** Net increase of target acres of natural communities by 2050:

Ecosystem Type	Target Acres' Net Increase (Net Increase from Baseline Acres)	Total Area (Baseline Acres Plus Net Increase)
Seasonal Wetland Wet Meadow Non-Tidal Wetland	19,000	24,029
Willow Riparian Scrub/Shrub Valley Foothill Riparian Willow Thicket	16,300	30,467
Tidal Wetland	32,500	52,392
Stabilized Interior Dune Vegetation	640	659
Oak Woodland	13,000	13,000
Grassland	0	32,994
Vernal Pool Complex	670	5,699
Alkali Seasonal Wetland Complex	230	928

Strategy 4.4: Protect Native Species and Reduce the Impact of Nonnative Invasive Species

Doubling Goal for Central Valley Chinook Salmon Natural Production

Achieve the state and federal doubling goal for Central Valley Chinook salmon natural production against the baseline from the period of 1967-1991.

- **Metric:** 15-year rolling annual average natural production of all Central Valley Chinook salmon runs (fall, late fall, spring, and winter). This metric will be measured annually.
- **Baseline:** Set by the Central Valley Protection Improvement Act, the baseline is the 1967-1991 Chinook salmon natural production annual average of 497,054 for all Central Valley runs.
- **Target:**
 1. The 15-year rolling annual average of natural production for all Central Valley Chinook salmon runs is 990,000 by 2065, nearly doubling the baseline of 497,054, consistent with the Central Valley Project Improvement Act.
 2. The slope of the 15-year rolling annual average of natural production for all Central Valley Chinook salmon runs is greater than zero (i.e., positive) for the period of 2035-2065.

Output Performance Measures

Strategy 4.2: Restore Ecosystem Function

Increase Funding for Restoring Ecosystem Function

Increased funding for projects that possess priority attributes to restore ecosystem functions and support a resilient, functioning Delta ecosystem.

- **Metric:** Project funding of covered actions that file a certification of consistency under New ER Policy “A” (Disclose Contributions to Restoring Ecosystem Function). This metric excludes funding for projects that do not include protection, enhancement, or restoration of the Delta ecosystem. This metric will be reported annually.
- **Baseline:** Set at zero as of the effective date of New ER Policy “A.”
- **Target:** By 2030, 80 percent of total funding for covered action projects that file certifications of consistency with New ER Policy “A” is for projects with Ecosystem Restoration Tier 1 or 2 attributes.

Strategy 4.3: Protect Land for Restoration and Safeguard Against Land Loss

Subsidence Reversal for Tidal Reconnection

Subsidence reversal³ activities will be located at shallow subtidal elevations to prevent net loss of future opportunities to restore tidal wetlands in the Delta and Suisun Marsh.

- **Metric:**
 1. Acres of Delta and Suisun Marsh land with subsidence reversal activity located on islands with large areas at shallow subtidal elevations. This metric will be reported annually.
 2. Average elevation accretion at each project site presented in centimeters per year. This metric will be reported every five years.
- **Baseline:**
 1. In 2019, zero acres of subsidence reversal on islands with large areas at shallow subtidal elevations.
 2. Short-term elevation accretion in the Delta at 4 centimeters per year.

³ Subsidence reversal is a process that halts soil oxidation and accumulates new soil material in order to increase land elevations. Examples of subsidence reversal activities are rice cultivation, managed wetlands, and tidal marsh restoration.

- **Target:**
 1. By 2030, 3,500 acres in the Delta and 3,000 acres in Suisun Marsh with subsidence reversal activities on islands, with at least 50 percent of the area or 1,235 acres at shallow subtidal elevations.
 2. An average elevation accretion of subsidence reversal is at least 4 centimeters per year up to 2050.

Strategy 4.4: Protect Native Species and Reduce the Impact of Nonnative Invasive Species

Barriers to Migratory Fish Passage

Resolve fish passage at priority barriers and select large dams in the Sacramento-San Joaquin River watershed, and screen diversions along native, anadromous fish migration corridors within the Delta.⁴

- **Metric:** Priority fish migration barriers and select large dams in the Sacramento-San Joaquin River watershed, and unscreened diversions along native, anadromous fish migration corridors in the Delta and Suisun Marsh. This metric will be evaluated annually.
- **Baseline:** Number of fish passage barriers, rim dams, and unscreened diversions listed in:
 1. CDFW Priority Barriers (2018).
 2. Central Valley Flood Protection Program (CVFPP) Conservation Strategy (Appendix K, 2016).
 3. Rim dams in the Sacramento-San Joaquin River watershed.
 4. Unscreened diversions along Delta native, anadromous fish migration corridors listed in the Passage Assessment Database, March 2018 version.
- **Target:**
 1. By 2030, resolve all (100 percent) of the priority fish migration barriers listed in CDFW 2018 Priority Barriers and CVFPP 2016 Conservation Strategy.
 2. By 2050, resolve 50 percent of fish passage at rim dams in the Sacramento-San Joaquin River watershed, and screen 50 percent of unscreened diversions along native, anadromous fish migration corridors in the Delta.

⁴ *Resolve* in this context means to construct, modify, or remove a barrier to allow migratory fish to travel past the barrier or former barrier. For unscreened diversions, resolve means to screen the diversion so that juvenile or adult fish are physically protected from entrainment.

Administrative Performance Measures

Strategy 4.1: Create More Natural Functional Flows

- The State Water Resources Control Board adopts Sacramento River and Delta flow objectives that are necessary to achieve the coequal goals by December 31, 2019. (Corresponds to ER R1)
- The State Water Resources Control Board adopts flow objectives for the Sacramento, San Joaquin, Calaveras, Cosumnes, and Mokelumne Rivers that are necessary to achieve the Delta’s coequal goals by June 2, 2020 (corresponds to ER R1).

Strategy 4.2: Restore Habitat

- 100 percent of proposed actions that include ecosystem protection, enhancement, or restoration use the California Department of Water Resources (DWR) Good Neighbor Checklist to avoid or reduce conflicts with existing uses (corresponds to New ER Recommendation “B”).
- The U.S. Army Corps of Engineers (USACE) develops an agreed-upon variance process to exempt Delta levees from the USACE’s levee vegetation policy, where appropriate (corresponds to ER R4).

Strategy 4.3: Protect Land for Restoration and Safeguard Against Land Loss

- The San Francisco Bay Conservation and Development Commission (BCDC) updates and certifies components of the Suisun Marsh Protection Plan to address adaptation to sea level rise and ensure consistency with the Suisun Marsh Preservation Act, the Delta Reform Act, and the Delta Plan (corresponds to ER R5).
- The BCDC submits amendments of the Suisun Marsh Protection Plan to the Council for review, for consistency (corresponds to ER R5).
- The BCDC submits amendments of components of the Suisun Marsh Local Protection Program to the Council for review, for consistency (corresponds to ER R5).
- The BCDC adopts the updated Suisun Marsh Protection Plan and the Suisun Marsh Local Protection Program that are consistent with the Delta Plan (corresponds to ER R5).
- The Sacramento-San Joaquin Delta Conservancy (Delta Conservancy) develops incentive programs for public and private landowners which encourage land management practices that stop subsidence on deeply subsided lands in the Delta and Suisun Marsh (corresponds to New ER Recommendation “C”).

- State investments in ecosystem restoration in subsided areas, coordinated by DWR, CDFW, and the Delta Conservancy, are directed at projects that both reverse subsidence and restore intertidal marsh habitat (corresponds to New ER Recommendation “C”).
- The California Legislature provides state agencies with funding to provide resources and support to resource conservation districts, and other local agencies and districts, to improve agricultural land management practices that support native species (corresponds to New ER Recommendation “D”).
- DWR, CDFW, the Delta Protection Commission, the Delta Conservancy, and other state agencies work with local resource conservation districts and other local agencies and districts to adaptively manage working landscape programs to improve outcomes for native bird and fish species (corresponds to New ER Recommendation “D”).
- State and local agencies have developed management plans, for all publicly owned lands in the Delta or Suisun Marsh, which address subsidence and consider the feasibility of subsidence reversal (corresponds to New ER Recommendation “E”).
- For all publicly owned lands in the Delta or Suisun Marsh, State and local agencies develop or update plans that identify land management goals, identify appropriate public or private uses for the land, and describe the operation and maintenance requirements needed to implement management goals. These activities address subsidence and consider the feasibility of subsidence reversal (corresponds to New ER Recommendation “E”).

Strategy 4.4: Protect Native Species and Reduce the Impact of Nonnative Invasive Species

- Public agencies fund and implement projects that improve aquatic habitat conditions, and reduce predation risk, for juvenile salmon (corresponds to New ER Recommendation “H”).
- The Delta Conservancy, Council’s Delta Science Program, CDFW, California Department of Food and Agriculture, and other state and federal agencies, develop and implement communication strategies, based on scientific expertise, for rapid response to address introductions of nonnative invasive species (corresponds to ER R7).
- The Delta Conservancy, Council’s Delta Science Program, CDFW, California Department of Food and Agriculture, and other state and federal agencies, develop and implement funding strategies, based on scientific expertise, for rapid response to address introductions of nonnative invasive species (corresponds to ER R7).

- CDFW, and the U.S. Fish and Wildlife Service ensure hatcheries continue to develop scientifically sound Hatchery and Genetic Management Plans (HGMPs) (corresponds to ER R8).
- CDFW provides annual updates to the Council on the status of HGMPs within its jurisdiction (corresponds to ER R8).
- CDFW, in cooperation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, coordinates with researchers conducting acoustic telemetry to identify fish migration pathways and survival (corresponds to ER R9).

Strategy 4.5: Improve Institutional Coordination to Support Implementation of Ecosystem Protection, Restoration, and Enhancement

- The Delta Plan Interagency Implementation Committee (DPIIC) develops strategies for acquisition and long-term ownership and management of lands necessary to achieve ecosystem restoration, consistent with the guidance in Appendix Q2 (corresponds to New ER Recommendation “F”).
- DPIIC develops a funding strategy that identifies a portfolio of approaches to remove institutional barriers and fund Ecosystem Restoration Tier 1 or 2 actions within the Delta (corresponds to New ER Recommendation “F”).
- DPIIC establishes program-level endangered species permitting mechanisms that increase efficiency for Ecosystem Restoration Tier 1 or 2 actions within the Delta and its watershed (corresponds to New ER Recommendation “F”).
- DPIIC coordinates with the Delta Science Program to align state, federal, and local resources for scientific support of restoration efforts, including adaptive management, data tools, monitoring, synthesis, and communication (corresponds to New ER Recommendation “F”).
- DPIIC develops a landscape-scale strategy for recreational access to existing and future restoration sites, where appropriate, and while maintaining ecological value (corresponds to New ER Recommendation “F”).
- DPIIC coordinates alignment of state, local, and regional restoration strategies, plans, or programs in the Delta to be consistent with the priority attributes described in Appendix Q2 (corresponds to New ER Recommendation “G”).

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