A New Approach to Protect, Restore, and Enhance the Delta Ecosystem

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DELTA STEWARDSHIP COUNCIL

May 1, 2020

Overview

- Background
- Preliminary Public Review Draft
- Overview of Comments and Responses
- Requested Council Action
- Next Steps

Background

The shift from BDCP to EcoRestore in 2015 necessitated update of Delta Plan Chapter 4 to achieve Delta Reform Act goals

Photo courtesy of DWR

Vision for a Restored Delta Ecosystem

Vision for a Restored Delta Ecosystem (cont. - 1)

The Council envisions a future in which the Delta ecosystem has the following characteristics:

- *Native species, including algae and other plants, invertebrates, fish, birds, and other wildlife, are self-sustaining and persistent.*
- *The tidal channels and bays in the Delta and Suisun Marsh connect with freshwater creeks, upland grasslands, and woodlands.*
- *The Sacramento and San Joaquin Rivers and Delta tributaries include reaches where streams are free to meander and connect seasonally to floodplains…*
- *Habitats for resident and rearing migratory fish, birds, and upland wildlife are connected by migratory corridors…*

Vision for a Restored Delta Ecosystem (cont. - 2)

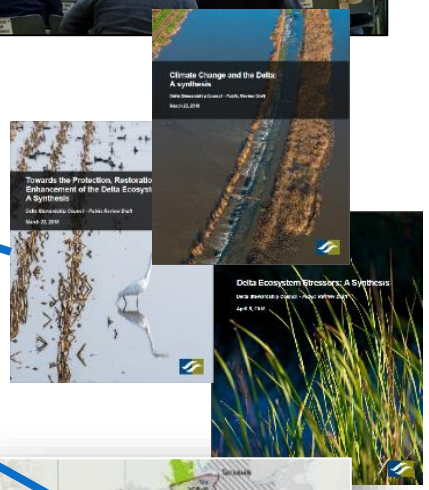
The Council envisions a future in which the Delta ecosystem has the following characteristics (cont'd):

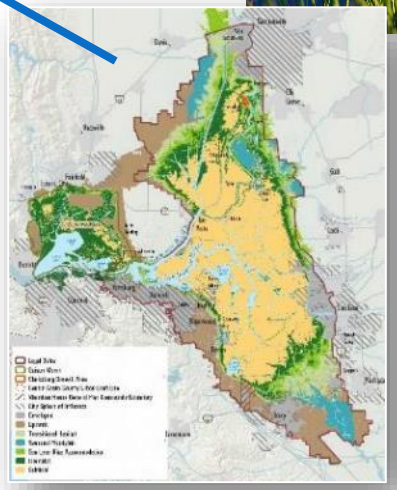
- *More natural variations in water flows and conditions make aquatic habitats, tidal marshes, and floodplains more dynamic, encourage survival of native species, and resist invasions by weeds and animal pests.*
- *The ecosystem is resilient enough to absorb and adapt to current and future effects of multiple stressors…*
- *The Delta will provide more reliable water supplies...*
- *Californians recognize and celebrate the Delta's unique natural resource values…*

The Amendment Process

Council Member Input

- Stakeholder Consultation
- Best Available Science
- Technical Analyses
- Preliminary Public Review





May 2020 Draft

Council Meeting Timeline

2016	
September	Laying the Foundation for a Proposed Ecosystem Restoration Amendment to the Delta Plan
2017	
October	Approach and Timeline for Delta Plan Ecosystem Amendment
December	Update on the Approach and Scope of the Ecosystem Amendment to the Delta Plan
2018	
January	Update on the Approach and Timeline of the Ecosystem Amendment to the Delta Plan
February	Summary of Ecosystem Amendment Synthesis Papers
May	Update on the Approach and Timeline of the Ecosystem Amendment to the Delta Plan

Council Meeting Timeline (cont.)

June	Review of the Synthesis Papers to Inform the Delta Plan Ecosystem Chapter Amendment
July	Update on the Development and Timeline of the Ecosystem Amendment to the Delta Plan
August	Workshop: Ecosystem Amendment Framework
September	Ecosystem Amendment Update - Continuation
November	Ecosystem Amendment Update: Institutional Aspects of Ecosystem Restoration

2019

April	Workshop: Review of Preliminary Draft Ecosystem Amendment Policies and Recommendations
June	Workshop: Preliminary Draft Narrative, Policies and Recommendations, and Performance Measures for the Ecosystem Amendment

November 2019 Draft

Public Comments

60-day public review period: Nov. 21, 2019 to Jan. 21, 2020

Comments received from:

- Federal and State agencies
  - CDFW, DWR, DPC, Delta Conservancy, SWRCB, Reclamation
- Local and regional agencies
  - Central Delta Water Agency, Local Agencies of the North Delta, RegionalSan, Solano County, State Water Contractors, Suisun RCD
- Other organizations:
  - California Water Research on behalf of California Sportfishing Protection Alliance, California Water Impact Network, and AquAlliance; Cramer Fish Sciences; PPIC; Restore the Delta

November 2019 Draft

Delta Independent Science Board (ISB)

- ISB recommended peer review of PMs in August 2019
- ISB reviewed the November 2019 draft to ensure use of best available scientific information (Wat. Code § 85308(a))
- ISB Comments discussed over 3 meetings:
- December 13, 2019
  - January 10, 2020
  - January 30, 2020
- Comments transmitted in summary memo on February 4, 2020

November 2019 Draft

Independent Scientific Peer Review

- Based on recommendation from the Delta ISB in August 2019
- Six peer reviewers
- Five output/outcome Performance Measures:
  - PM 4.6 Doubling Goal for Central Valley Chinook Salmon Natural Production
  - PM 4.12 Subsidence Reversal for Tidal Reconnection
  - PM 4.13 Barriers to Migratory Fish Passage
  - PM 4.15 Seasonal Inundation
  - PM 4.16 Acres of Natural Communities Restored

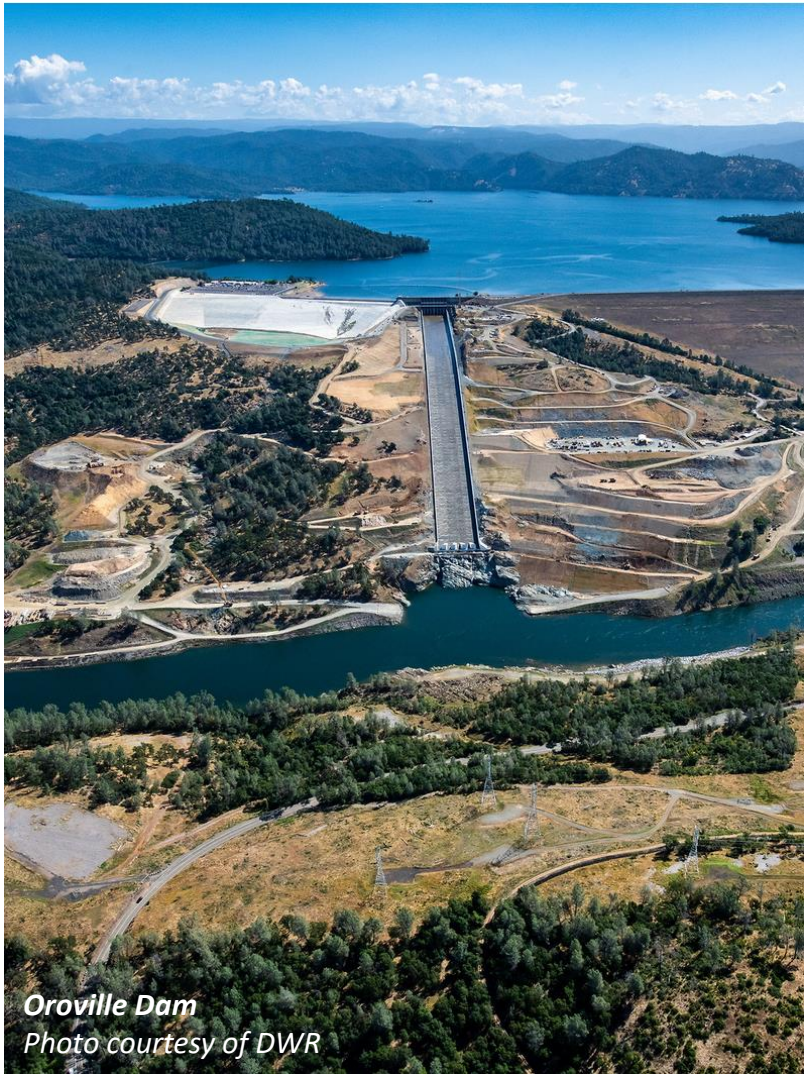
Overview of Comments and Responses

General Comment Themes

- Best available science
- Adaptive management
- Delta as an evolving place
- Indigenous communities
- Use of terms
- Flooded islands
- Priorities and timelines
- Institutional coordination and implementation

Core Strategy 1

Create More Natural Functional Flows



Oroville Dam
Photo courtesy of DWR

- Use best available science to manage flows to support the needs of native species throughout their lifecycle

Core Strategy 1

Create More Natural Functional Flows

Comments on Nov 2019 Draft:

- Best available science
- Water quality impacts
- Special-status species impacts
- Unimpaired flows

Revisions to May 2020 Draft:

- **Chapter 4 Narrative**
- **ER R1** – account for changing conditions due to other factors

Core Strategy 2

Restore Ecosystem Function

Photo courtesy of Carson Jeffres

Priority attributes for protection, restoration, and enhancement actions:

1. Restore hydrological, geomorphic, and biological processes
2. Be large-scale
3. Improve connectivity
4. Increase native vegetation cover
5. Benefit at-risk natural communities or species

Core Strategy 2

Restore Ecosystem Function

Comments on Nov 2019 Draft:

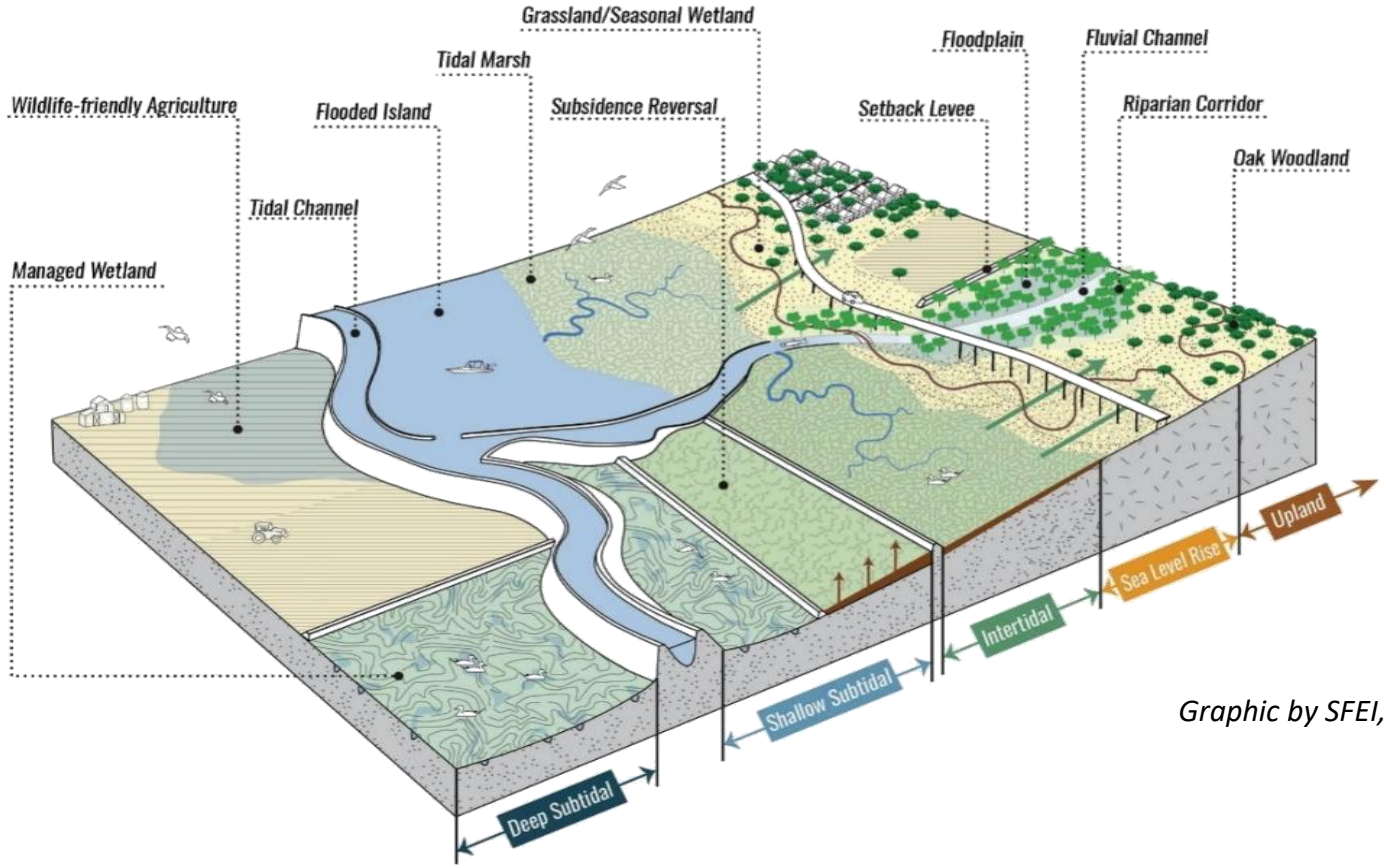
- Regulatory burden
- Weight of priority attributes
- Tier 3 and 4 projects
- Protecting Delta as Place
- Impacts to existing uses

Revisions to May 2020 Draft:

- **Chapter 4 Narrative**
- NEW **ER PA** – updated to require one or more priority attributes
- **Appendix 3A** – adjusted Ecosystem Tier scoring
- **Appendix Q1** – added detailed methods for ER P4 map (Appendix 8A)
- **Appendix Q2** – removed DWR Good Neighbor Checklist

Core Strategy 3

Protect Land for Restoration and Safeguard Against Land Loss



Graphic by SFEI, 2019

- Protect existing but limited opportunities for tidal marsh restoration
- Halt and reverse subsidence
- Consider sea-level rise in restoration planning

Core Strategy 3

Protect Land for Restoration and Safeguard Against Land Loss

Comments on Nov 2019 Draft:

- Description of activities that avoid carbon emissions and/or reverse subsidence
- Regulatory burden
- Projects on deeply-subsided islands
- Impacts to existing uses

Revisions to May 2020 Draft:

- **Chapter 4 Narrative**
- **Appendix 4A** – clarified definitions of *subsidence halting* and *subsidence reversal*
- **Appendix Q2** – clarified use of best available science to address sea level rise
- NEW **ER RD** – revised to account for broader local agency involvement; revised title

Core Strategy 4

Protect Native Species and Reduce the Impact of Nonnative Invasive Species

Manage nonnative invasive species

- Nonnative invasive species take over physical space, compete for food, alter food webs, modify habitat structure, and prey on native species

Improve fish management

- In the Central Valley, less than 20% of historic spawning habitat is accessible to Chinook salmon and steelhead
- Removing fish passage barriers would enable Chinook salmon and Central Valley steelhead to access spawning habitat in the upper Delta watershed

Core Strategy 4

Protect Native Species and Reduce the Impact of Nonnative Invasive Species

Comments on Nov 2019 Draft:

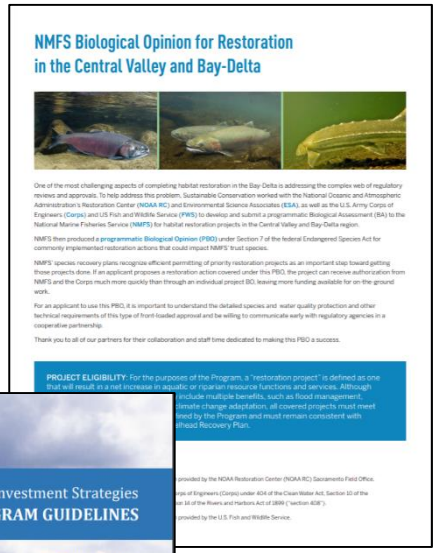
- Best available science
- Cultural or recreational value of select nonnative species
- Implementation priorities
- Responsible agencies

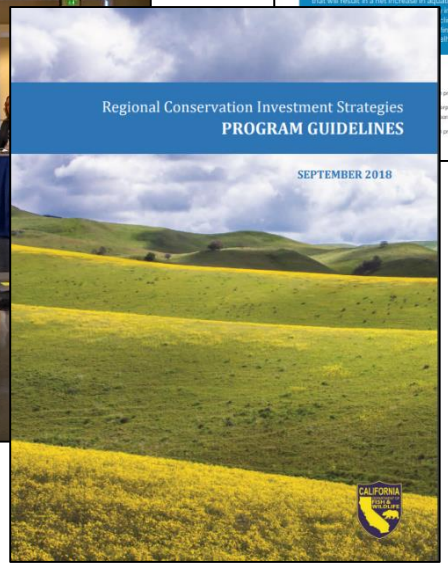
Revisions to May 2020 Draft:

- **Chapter 4 Narrative**
- **ER R7** – added responsible agencies; added known invasives
- **ER RH** – revised to describe current data on unscreened diversions; revised title
- **ER R8** – revised for greater precision
- **ER R9** – broadened beyond acoustic telemetry

Core Strategy 5

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





Core Strategy 5

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

Comments on Nov 2019 Draft:

- Implementation priorities
- Responsible agencies
- Local agency role
- Baselines and experiments for adaptive management

Revisions to May 2020 Draft:

- **Chapter 4 Narrative**

Effective Date of Policies

Regulatory Change	Project Status	Proposed Effective Date
New Policy ER P "A"	--	at completion of rulemaking
Revised Policies (ER P2, ER P3, ER P4)	Proponent has issued NOP, IS/ND, or IS/MND prior to completion of rulemaking	2-Year grace period
Revised Policies (ER P2, ER P3, ER P4)	Proponent has <u>not</u> issued NOP, IS/ND, or IS/MND prior to completion of rulemaking	at completion of rulemaking

Performance Measures

Core Strategy 1

4.2 – Yolo Bypass, peak flows, recession flows, in-Delta flows

Core Strategy 2

4.14 – Increase funding for restoration

4.15 – Seasonal inundation

4.16 – Restore natural communities

Core Strategy 3

4.12 – Subsidence reversal for tidal reconnection

Core Strategy 4


4.6 – Doubling goal for Central Valley Chinook Salmon natural production

4.10 – Terrestrial and aquatic invasive species

4.13 – Restore and enhance fish habitat connectivity

Performance Measures (cont. - 1)

Comments on Nov 2019 Draft:

- Provide scientific justification and clarification
- Include interim targets
- Adaptive management
- Best available science
- Model estimate and statistical uncertainties
- Alternative/additional measures

Performance Measures (cont. - 2)

Revisions to May 2020 Draft:

- Provides additional scientific basis and clarification
- Adds ‘Interim Performance Assessment’ section
- Adds ‘Adaptive Management’ section
- Updates best available science
- Incorporates additional data sources and models
- Changes and adds metrics and submetrics

Requested Council Action

Environmental Review

- Ecosystem Amendment would be a “project” under CEQA (Pub. Res. Code § 21065)
- Environmental review would be required to identify and analyze potential effects of the project on the environment and consider a range of alternatives that would reduce potential effects.
- Council would prepare a Program EIR consistent with CEQA statute and guidelines
- Public CEQA process would continue Council’s engagement efforts
- Process begins with NOP and scoping meeting

Proposed Project

- The **Chapter 4 narrative** (Attachment 2);
- Three regulatory appendices:
  - **Appendices 3A and 4A, and New Definitions** (Attachment 3)
  - **Appendix 8A** (Attachment 4);
- Four technical appendices
  - **Appendix Q1** (Attachment 5)
  - **Appendix Q2** (Attachment 6)
  - **Appendix Q3** (Attachment 7)
  - **Appendix Q4** (Attachment 8); and
- **Appendix E**, Performance Measures for the Delta Plan (Attachment 9)

Supporting Documents

- **Performance Measure Datasheets** (Attachment 10)
- **Draft Amendments to Chapter 4 Policies & Recommendations, Redlined** Relative to Existing Chapter 4 Policies and Recommendations (Attachment 11)

Requested Council Action

Staff is requesting that Council authorize staff to:

1. Commence the environmental review process for the Ecosystem Amendment pursuant to CEQA using the May 2020 draft as set forth in Attachments 2 through 9 to this staff report as the project description for the proposed project for the CEQA review; and
2. Include as part of the proposed project the recommendations described in Attachment 1 regarding the effective date for proposed amended regulatory policies ER P2, ER P3, and ER P4; and
3. Use the Performance Measure Datasheets in Attachment 10 to this staff report as documentation supporting the use of best available science for the Ecosystem Amendment Performance Measures; and

Requested Council Action (Cont'd)

Staff is requesting that Council authorize staff to:

4. Make revisions to the proposed project description set forth in Attachments 2 through 9 and to the supporting documentation in Attachment 10 pursuant to the Council's input at today's meeting; and
5. Make revisions as necessary to complete the CEQA environmental review, including the PEIR, for the proposed project; and
6. Take any such steps and actions as are necessary to carry out the CEQA environmental review of the proposed project authorized by this action.

Executive Order N-54-20

- Issued on April 24, 2020 in response to COVID-19 emergency
- Affects public notice requirements and timeframes for tribal consultation
- Council staff will ensure environmental review process for the draft Ecosystem Amendment adheres to these modified requirements

Next Steps

- If the Council provides the requested authorization, staff will publish a Notice of Preparation (NOP) for the proposed project.
  - Staff will send AB 52 tribal consultation letters within 14 days Council's authorization
- After publication of the NOP, Council staff would hold one CEQA scoping meeting during the NOP public comment period to receive comments from agencies and the public on the scope and content of the PEIR.
- Following the scoping meeting, staff would commence preparation of the PEIR.
- Staff will continue to periodically update the Council on the CEQA process at publicly noticed meetings of the Council.

Questions and Discussion

PM 4.6 Doubling Goal for Central Valley Chinook Salmon Natural Production

Metric: Annual average natural production of all Central Valley Chinook salmon runs and for individual run types (fall, late-fall, spring, and winter) on select rivers. Census will be conducted annually for the general population in the Central Valley and select rivers.

Target: The 15-year rolling annual average of natural production for all Central Valley Chinook salmon runs increases for the period of 2035-2065, and reaches 990,000 fish by 2065; for each run on select rivers, the target values are specified below:

Watershed	River	Baseline (1967-1991)	Target (2065)
Sacramento River	Mainstem	Fall: 115,369 Late-Fall: 33,941 Spring: 29,412 Winter: 54,316	Fall: 230,000 Late-Fall: 68,000 Spring: 59,000 Winter: 110,000
Sacramento River	American River	Fall: 80,874	Fall: 160,000
Sacramento River	Feather River	Fall: 86,028	Fall: 170,000
San Joaquin River	Mokelumne River	Fall: 4,680	Fall: 9,300
San Joaquin River	Stanislaus River	Fall: 10,868	Fall: 22,000
San Joaquin River	Tuolumne River	Fall: 18,949	Fall: 38,000
San Joaquin River	Merced River	Fall: 9,005	Fall: 18,000

PM 4.6 Doubling Goal for Central Valley Chinook Salmon Natural Production

Addresses the limitations of the current datasets and compliments the overall intentions of the doubling goal:

Submetric 1: Positive slope of the 15-year rolling annual average of Central Valley Chinook salmon natural production, calculated and evaluated annually. The interim milestone is a positive slope of the 15-year rolling annual average to be achieved by 2035.

Submetric 2: Positive slope of the 15-year rolling annual average of natural production using the Constant Fractional Marking (CFM) data which is available from 2010 onwards. The interim milestone is a positive slope of the 15-year rolling annual average by 2035.

PM 4.6 Doubling Goal for Central Valley Chinook Salmon Natural Production

Proposed Additions to Datasheet

Process Risks and Uncertainties

Adults

- Overestimates of natural production and estimate of hatchery-origin salmon
- Spawner numbers
- Harvest rates in-river and ocean

Juvenile

- Abundances of outmigrants
- Survival rates upstream and within the Delta
- Differential life-history stage survival rates
- Response to habitat restoration
- Distinguishing run-types

PM 4.6 Doubling Goal for Central Valley Chinook Salmon Natural Production

Proposed Alternative to improve linkage to PM 4.6

ER R9. Coordinate Fish Migration and Survival Research

The California Department of Fish and Wildlife, in cooperation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, should seek coordination among researchers studying ***juvenile anadromous*** *fish migration pathways and survival* ***upstream of, and*** *within the Delta waterways to improve synthesis of results across research efforts* ***and application to adaptive management actions****.*

PM 4.12 Subsidence Reversal for Tidal Reconnection

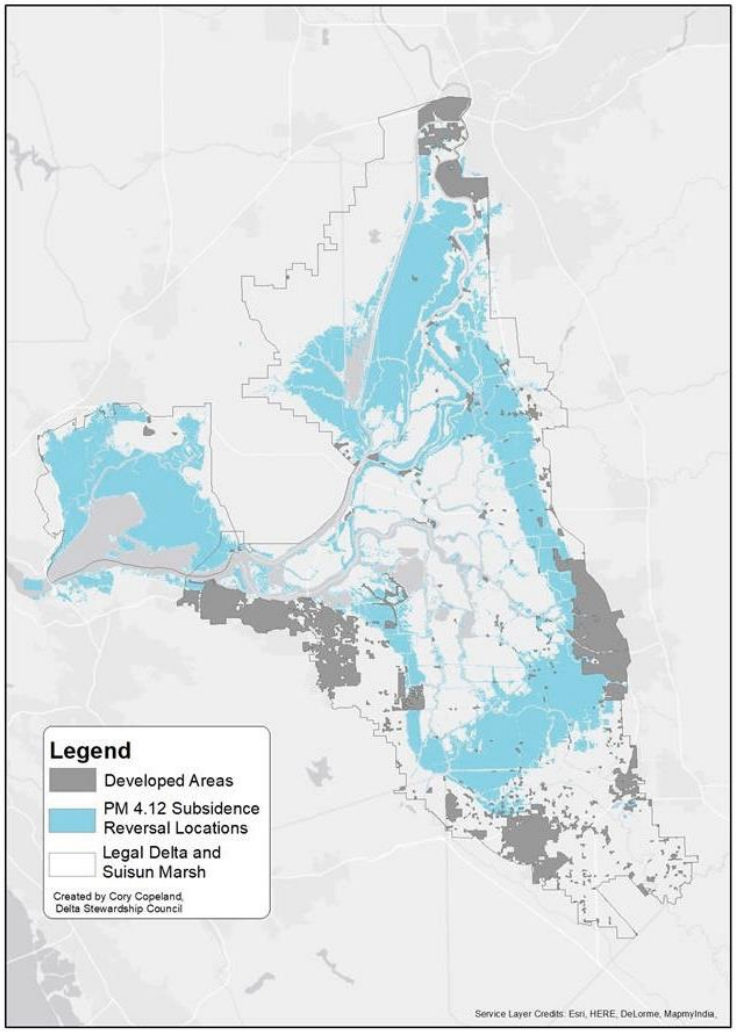
NEW

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. Tracking will continue until a project is tidally reconnected.

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 at least 1,235 acres at shallow subtidal elevations.
2. For each project, an average elevation accretion of at least 4 centimeters per year until the project is tidally reconnected.



Locations capable of reaching intertidal elevations by 2100
Map produced by Cory Copeland, Delta Stewardship Council

PM 4.13 Restore and Enhance Fish Habitat Connectivity

NEW

Metric: Priority fish migration barriers and select large rim 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.

Target: Resolve fish migration barriers, passage at select large dams, and unscreened diversions prioritized in the following documents:

1. By 2030, remediate all priority barriers identified in the 2018 CDFW priority barriers list. For subsequent updates, remediate 100 percent within 10 years of being included in the priority barrier list.
2. By 2030, remediate all of the priority fish migration barriers listed in CVFPP 2016 Conservation Strategy.
3. By 2050, remediate fish passage at all large rim dams in the Sacramento-San Joaquin River watershed.
4. By 2030, prioritize all unscreened diversions along native, anadromous fish migration corridors in the Delta, and by 2050 screen all priority diversions.

Photo courtesy of Carl Costas, DWR

PM 4.14 Increase Funding for Restoration

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.

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.

Photo courtesy of DWR

PM 4.15 Seasonal Inundation

NEW

Metric: Acres within the Sacramento-San Joaquin Delta and Suisun Marsh that are:

Hydrologically connected to fluvial and tidally influenced waterways.

1. A non-tidal floodplain area that inundates at least once every two years.

Metric will be evaluated annually.

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, for a total of 126,000 acres.
2. At least an additional 19,000 acres of non-tidal floodplain area is inundated on a two-year recurrence interval, for a total of 34,000 acres.

Photo courtesy of Florence Low, DWR

PM 4.16 Acres of Natural Communities Restored

NEW

Metric: Acres of natural communities restored. This metric will be updated and evaluated every five years.

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

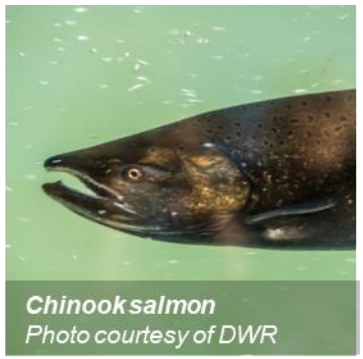
Riparian & Wetland Ecosystems	Tidal Wetland Ecosystems	Upland Ecosystems (Dune Vegetation, Vernal Pool, Alkali Seasonal Complex, Grassland)
		
19,000 - 35,300 acres	32,500 acres	14,540 acres
Photo courtesy of Kelly M. Grow, DWR	*Photo courtesy of Kelly M. Grow, DWR*	*Photo courtesy of Consumes River Preserve*

Originally a highly productive wetland and riparian ecosystem at the confluence of the state's two largest rivers…

Laura Cunningham

… the Delta ecosystem has become a significantly altered and degraded system that requires it be highly managed.

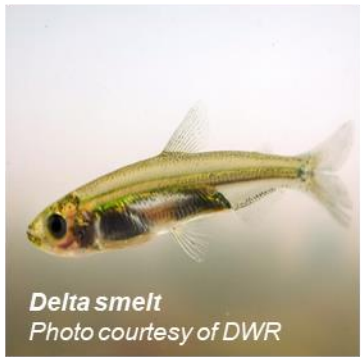
A Growing Number of Species of Concern


Chinook salmon
Photo courtesy of DWR


Sandhill crane
Photo courtesy of DWR


Lange's metalmark butterfly
Photo courtesy of USFWS


Giant garter snake
Photo courtesy of USFWS


Delta smelt
Photo courtesy of DWR


Swainson's hawk
Photo courtesy of CDFW


Riparian brush rabbit
Photo courtesy of USFWS


California red-legged frog
Photo courtesy of USFWS


Longfin smelt
Photo courtesy of USFWS

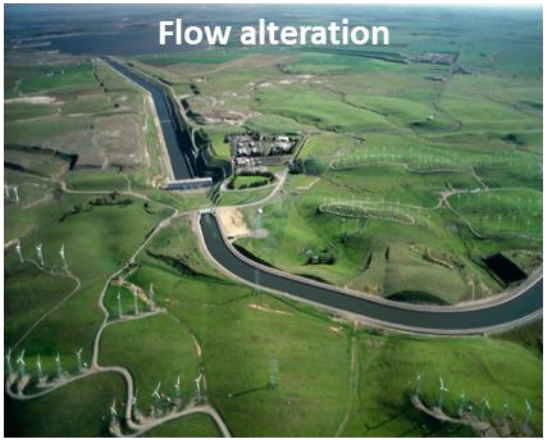

Least Bell's vireo
Photo courtesy of Steve Maslowski/USFWS


Salt marsh harvest mouse
Photo courtesy of Joan Morris


Colusa grass
Photo courtesy of Carol Witham

A Growing Number of Species of Concern

Threats and Stresses

Loss of Natural Communities	Loss of Land-Water Connections	Alteration of Delta Hydrology
		
		

All photos courtesy of DWR

State of the Modern Delta