



## INFORMATION ITEM

### Delta Plan Performance Measures: 2024 Year in Retrospect

#### Summary

Council staff will present an annual update on Delta Plan performance measures. Each of these science-based and peer-reviewed measures tracks a unique aspect of the Sacramento-San Joaquin Delta and is important in evaluating progress in implementing the Delta Plan. Staff will also highlight preliminary work on the Five-Year Review recommendation to consider and implement performance measure revisions and ways educational materials are being used to enhance Delta Plan understanding.

#### Background

The Sacramento-San Joaquin Delta Reform Act of 2009 (Wat. Code, § 85000 et seq., Delta Reform Act.) requires that the Delta Plan “[i]nclude quantified or otherwise measurable targets associated with achieving the objectives of the Delta Plan.” (Wat. Code, § 85308.) To fulfill this requirement, the Delta Plan includes performance measures that track and evaluate environmental and administrative changes due to the implementation of policies and recommendations in the Delta Plan. Delta Plan performance measures inform the Council’s decision-making and track progress toward achieving the state’s coequal goals for the Delta over time.

The schedule for performance measure-related data collection and evaluation is based on data frequency and availability. Some performance measures are updated annually, while others are related to a specific water year type (e.g., critically dry years, wet years) or triggered by specific events (e.g., emergency-related water delivery interruption). The Council’s Performance Management Unit continually tracks and evaluates performance measure data, maintains the performance measure dashboard ([www.viewperformance.deltacouncil.ca.gov](http://www.viewperformance.deltacouncil.ca.gov)), and summarizes key findings to the Council annually.

This is the fourth year of reporting to the Council on performance measures, which yields information about incremental progress toward established Delta Plan goals made by implementing agencies over time.

## Water Supply Reliability and Water Quality Measures

The Delta is the hub of state, federal, and many local water systems. One of the coequal goals of the Delta Reform Act is “providing a more reliable water supply for California”. (Wat. Code, § 85054.) Accordingly, this report highlights key updates in urban water conservation, sustainable groundwater management, and Delta water quality, including salinity and harmful algal blooms (HABs).

During water year 2024 (October 1, 2023, to September 30, 2024), California experienced normal hydrologic conditions and higher than average temperature conditions. Water year 2024 was characterized by an average rainfall of 70–130% of normal precipitation amounts. California also recorded one of the hottest summers on record, with daily summer temperatures averaging 3–7°F higher than normal. The following summaries provide status updates on several water supply reliability and water quality measures from the Delta Plan’s performance measures.

### Urban Water Conservation

**Delta Plan Performance Measure:** Urban water suppliers serving more than 20,000 people who are within the Delta watershed and those relying on water from the Delta watershed achieve individual water efficiency targets established in their urban water management plans. To achieve water efficiency goals, suppliers must meet targets for per capita water use in their supply area.

**Baseline:** 2010 per capita water use.

**Target:** Urban water suppliers achieve per capita water use targets set in their urban water management plans every five years. Urban water consumption in California is reduced by 20 percent over baseline by 2020.

**Current Status:** By 2024, a statewide 20 percent reduction in per capita water use compared to 2010 baseline was achieved, on average. Subsequently, the State Water Resources Control Board (SWRCB) adopted

regulations that took effect January 1, 2025, to require urban water suppliers to establish new annual objectives for reducing indoor and outdoor water use. (Cal. Code Regs., tit. 23, §§ 966, 967, 968, 969.). Implementation of these regulations is expected to result in improved water conservation, increased local self-reliance and reduced demand for Delta water. (Link to [Urban Water Use Performance Measure](#) is available here:

<https://viewperformance.deltacouncil.ca.gov/pm/urban-water-use>)

### Sustainable Groundwater Management

**Delta Plan Performance Measure:** State and local agencies carry out their responsibilities established by the Sustainable Groundwater Management Act (Wat. Code, § 10720 et seq., SGMA) addressing chronic groundwater overdrafts throughout California.

**Baseline and Target:** This performance measure tracks administrative actions by groundwater sustainability agencies (GSAs) to complete groundwater sustainability plans (GSPs).

**Current Status:** In 2024, SGMA implementation marked a 10-year milestone. Over ten years, over 250 GSAs were formed. These GSAs developed over 100 plans to manage high- and medium-priority basins that account for 98% of California's total groundwater supply. The formation of GSAs and GSPs has resulted in major improvements in groundwater data tracking, with over 9,000 wells monitored in water year 2024 and increased funding for local groundwater recharge projects. (Link to [Sustainable Groundwater Performance Measure](#) is available here:

<https://viewperformance.deltacouncil.ca.gov/pm/sustainable-groundwater>).

### Delta Salinity

**Delta Plan Performance Measure:** Water management agencies comply with SWRCB objectives for salinity in the Delta (objectives included in D-1641), and US Fish and Wildlife Service 2019 Biological Opinion and Department of Fish and Wildlife (CDFW) 2020 Incidental Take Permit requirements for X2.

**Baseline:** Average monthly electrical conductivity, water temperature, and X2 at SWRCB compliance points from 1995-2015.

**Target:** Meet salinity objectives at compliance points 99% of the time. Maintain average X2 at 80 km or less from the Golden Gate Bridge in wet and above normal years for September and October.

**Current Status:** In 2024, salinity objectives at compliance points were met 100% percent of the time. A fall X2 action was required for the month of September. Operating Suisun Marsh Salinity Control Gates in September was an alternative action intended to achieve fish food enhancements, allowing permitting agencies to relax X2 in October. (Link to [Delta Salinity Performance Measure](#) available here: <https://viewperformance.deltacouncil.ca.gov/pm/salinity>)

## Harmful Algal Blooms

**Delta Plan Performance Measure:** The extent of freshwater HABs in select waterbodies in the Delta is reduced.

**Baseline:** HABs' acreages during 2016-2017 as mapped using the SWRCB satellite-based cyanobacteria screening tool.

**Target:** Zero acres of waterbodies exceeding the cyanobacteria threshold of 100,000 cells/ml.

**Current Status:** In 2024, cyanobacteria levels throughout Delta waterbodies were low overall but not zero. ([Harmful Algal Blooms Performance Measure](#) available here: <https://viewperformance.deltacouncil.ca.gov/pm/harmful-algal-blooms>)

## Delta Ecosystem

Another coequal goal established in the Delta Reform Act is “protecting, restoring, and enhancing the Delta ecosystem.” (Wat. Code, § 85054.) Accordingly, the Delta Plan sets a vision for a resilient, functioning estuary capable of supporting viable populations of native, resident, and migratory species with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes.

Next, Council staff present key performance measures describing progress toward restoration targets, increasing land-water connections and floodplain inundation,

remediating fish passage barriers, and tracking the emergence of new, highly invasive species. Staff also highlight actions addressing land subsidence in the Delta.

### Ecosystem Restoration

**Delta Plan Performance Measure:** Restore large areas of natural communities for habitat connectivity and crucial ecological processes, along with supporting viable populations of native species.

**Baseline:** About 70,000 acres of natural communities as mapped in 2007.

**Target:** Restore an additional 60,000-80,000 acres of natural habitat, and reconnect at least 50,000 acres to freshwater and tidal influence, by 2050.

**Current Status:** Over 12,000 acres of natural habitat was restored since 2007 by implementing restoration projects, including about 9,000 acres of tidal, riparian, and floodplain habitat, most of it re-connected to tidal and freshwater flows, and an additional 2,700 acres of non-tidal and seasonal wetlands. ([Ecosystem Restoration Performance Measure](https://viewperformance.deltacouncil.ca.gov/pm/acres-natural-communities-restored) available here: <https://viewperformance.deltacouncil.ca.gov/pm/acres-natural-communities-restored>)

### Yolo Bypass Floodplain Inundation

**Delta Plan Performance Measure:** A frequently inundated Yolo Bypass floodplain provides functional flow patterns that support native fish spawning and rearing, along with important ecosystem processes.

**Baseline:** 1997-2012 Yolo Bypass inundation area, duration, and frequency.

**Target:** Allow for at least 17,000 acres of seasonal inundation for at least 14 consecutive days in two out of three years; and for at least 21 days in one out of two years, between November 1 and March 15.

**Current Status:** In 2024, the Yolo Bypass flooded in the spring for the second year in a row for at least 14 days (23 days in 2023, and 20 days in 2024). When completed, the Big Notch project will open up to 30,000 acres of

floodplain habitat in the Yolo Bypass, which is expected to lead to more frequent and longer periods of inundation. ([Yolo Bypass Inundation Performance Measure](#) is available here: <https://viewperformance.deltacouncil.ca.gov/pm/yolo-bypass-inundation>)

### Fish Passage Restoration

**Delta Plan Performance Measure:** Restoring fish passage at priority barriers within the Delta watershed provides access to spawning grounds and contributes to migratory species recovery.

**Baseline:** Priority barriers to fish passage (57 sites) were identified and listed by CDFW in 2018.

**Target:** Remediate all 57 priority barriers by 2030. Implement feasibility studies and remediate fish passage at key rim dams.

**Current Status:** Fish passage restored at five sites out of 57, between 2018 and 2024. Evaluating fish passage and re-introduction of salmon into blocked streams is ongoing above Shasta Dam on the Sacramento River and New Bullards Bar Dams on the Yuba River. ([Fish Passage Performance Measure](#) is available here: <https://viewperformance.deltacouncil.ca.gov/pm/fish-passage>)

### Salmon Doubling Goal

**Delta Plan Performance Measure:** Central Valley salmon populations increase to achieve state and federal doubling goals.

**Baseline:** 1967-1992 Chinook salmon natural production annual average of 497,000 fish for all Central Valley runs.

**Target:** Annual average of natural production for all Central Valley Chinook salmon runs increases for the period 2035-2065 and reaches 990,000 fish by 2065.

**Current Status:** In 2022, based on the latest data available, salmon natural production averaged about 99,000 fish annually (about 10% of the doubling goal). In some tributaries, such as the American River and Mokelumne River, salmon natural production slightly increased in 2022 but remains below the

doubling goal. A statewide strategy (available here: <https://www.gov.ca.gov/wp-content/uploads/2024/01/Salmon-Strategy-for-a-Hotter-Drier-Future.pdf>) was released in 2024 aiming to stabilize and recover California salmon populations and restore aquatic ecosystems in the face of climate change. ([Salmon Doubling Goal Performance Measure](https://viewperformance.deltacouncil.ca.gov/pm/salmon-doubling-goal) is available here: <https://viewperformance.deltacouncil.ca.gov/pm/salmon-doubling-goal>)

### Invasive Species

**Delta Plan Performance Measure:** New invasive species are prevented from establishing, and already established populations of key non-native, invasive species, including fish, plants, and invertebrates, are reduced.

**Baseline:** Non-native invasive species reported as established in the Delta prior to 2013.

**Target:** Zero new non-native invasive species populations establish.

**Current Status:** Golden Mussel (*Limnoperna fortunei*), an invasive, non-native freshwater/brackish bivalve, was discovered in the Delta in October 2024, and has more recently been found throughout the Delta and even outside the Delta in the San Luis Reservoir. This discovery is the first known occurrence of Golden Mussels in North America.



*Map of Golden Mussel Detections in 2024*

In addition, nutria (*Myocastor coypus*), a highly invasive, non-native, semi-aquatic mammal, continues to proliferate within the Delta despite eradication efforts by CDFW and other state, local, and federal agencies. In 2024, a total of 361 nutria were found and taken within the Delta, more than doubling the total take since the program began in 2017. ([Invasive Species Performance Measure](https://viewperformance.deltacouncil.ca.gov/pm/terrestrial-and-aquatic-invasive-species) is available here: <https://viewperformance.deltacouncil.ca.gov/pm/terrestrial-and-aquatic-invasive-species>)

### Subsidence Reversal and Carbon Sequestration

**Delta Plan Performance Measure:** Land management practices on subsided land focus on rebuilding soil, reversing subsidence, and sequestering carbon.

**Baseline:** Zero acres of subsidence reversal projects as of 2008.

**Target:** 30,000 acres of subsidence reversal projects by 2030.

**Current Status:** As of 2024, subsidence reversal projects covered about 3,300 acres. New projects currently in planning phases will add approximately 11,000 acres when completed. ([Subsidence Reversal Performance Measure](https://viewperformance.deltacouncil.ca.gov/pm/terrestrial-and-aquatic-invasive-species) is available here:

<https://viewperformance.deltacouncil.ca.gov/pm/terrestrial-and-aquatic-invasive-species>)

### Performance Measures Outreach and Education

Communicating findings and conclusions from performance measure updates is important to enhance public understanding and to inform broad audiences about how management actions contribute to ecosystem health and community benefits.

#### The 'Delta Dispatch' Podcast

Podcasting is an easily accessible media format that can reach a broad audience and provide a novel way to communicate and educate in an engaging and relatable way. In 2024, a podcast series was launched focusing on certain performance measures, connecting the Delta Plan to topics relevant to Delta residents and managers.



The *'Delta Dispatch'* podcast series features conversations with local experts, delves into important Delta issues and the Delta Plan performance measures that describe them, and examines the issues from multiple perspectives.

Episodes released so far include:

- Episode 1: **Bloom Boom** - Harmful Algal Blooms in the Sacramento-San Joaquin Delta, conversations with Tricia Lee from the Council's Delta Science Program and Spencer Fern from Restore the Delta.
- Episode 2: **Land Below Sea** – Subsidence in the Sacramento-San Joaquin Delta, conversations with Campbell Ingram from the Delta Conservancy and Steve Deverel from Hydrofocus.
- Episode 3: **Silent Defenders of the Delta** – Delta Levees, conversations with Erin Mullin from the Council and Kathleen Schaefer from the University of California, Davis.

Two more episodes are in production:

- Episode 4: **Water Supply Reliability** with Anthony Navasero from DWR and Jofil Borja from Sacramento Area Sewer District.
- Episode 5: **Ecosystem Restoration** with Dylan Chapple from the Council's Delta Science Program and Don Hankins from California State University, Chico.

*'The Delta Dispatch'* episodes are accessible through the Council's [performance measure dashboard](#) and together with the science podcasts *'Science Sounds'* on the Maven's Notebook website (<https://mavensnotebook.com/category/podcasts/science-podcasts/>).

## Upcoming in 2025 and Beyond

### Performance Measure Revisions

In 2024, the Council completed its second Five-Year Review of the Delta Plan. The 2024 review used Delta Plan performance measures to provide “report cards” that rated 10-year progress toward the Delta Plan targets to inform the Council's near-term priorities. The Five-Year Review also evaluated existing measures and

identified areas where new monitoring data and tools could expand performance metrics and targets to improve understanding of management effectiveness and to better account for the changes occurring in the system. Subsequently, Council staff is initiating work to update, revise, and improve metrics for sustainable groundwater management, pesticide toxicity, harmful algal blooms, and other topics critical to measuring the health of the Delta and water supply reliability.

### Fiscal Information

Not applicable.

### List of Attachments

No attachments.

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