SAN FRANCISCO
Estuary Blueprint

2022

San Francisco ESTUARY PARTNERSHIP

PROGRESS REPORT 6

March 19, 2025

Welcome to the sixth progress report of the 2022 Estuary Blueprint.

This report shares the progress toward completion of the 25 Blueprint actions, including the current status of the 126 Blueprint tasks, and highlights successes and significant progress made in implementing the Blueprint, including the completion of seven tasks.

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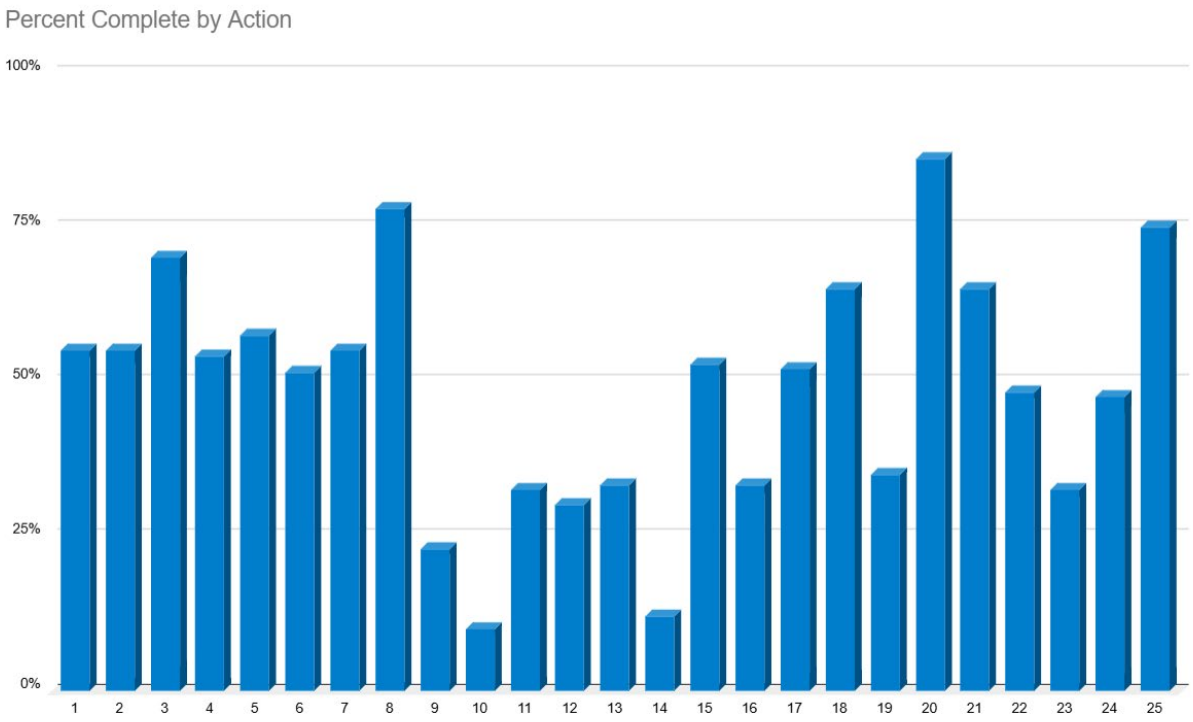
ACTION PROGRESS



With this progress report, 2.5 years from the release of the Blueprint, all Actions are showing some progress. As of this month, 67 of the 126 tasks have reached or exceeded 50% completion, including 23 completed tasks.

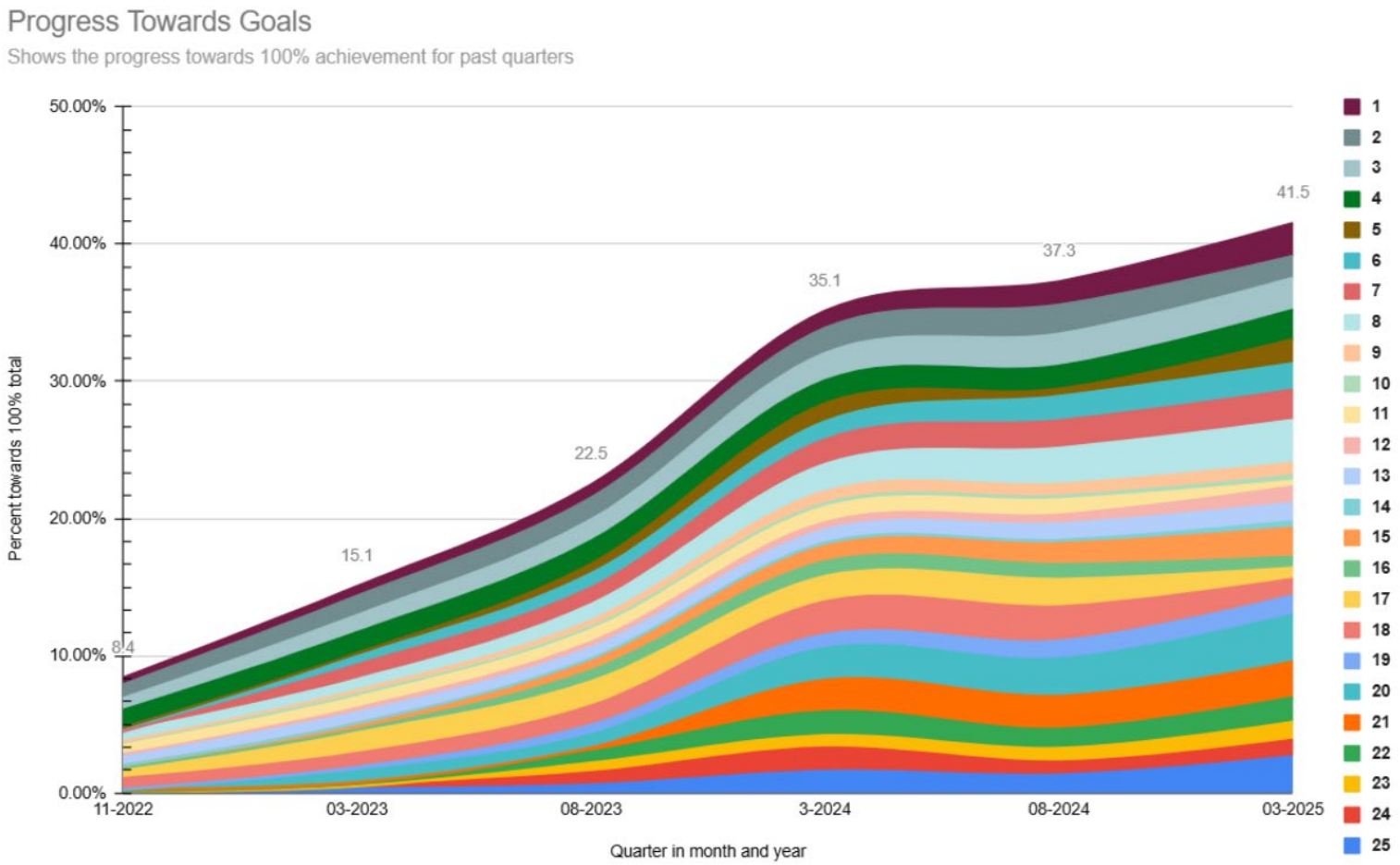
As a reminder, this graph is most helpful in showing which Actions are making substantial progress since the Actions do not have a uniform number of Tasks.

For example, Action 20 (Nutrients) has five Tasks, three of which have been completed, with varying levels of progress made on the other two. In comparison, action 1 (Climate Resilience) has seven Tasks, one completed, five of which show substantial progress, but overall, this equates to a lower percentage completed.

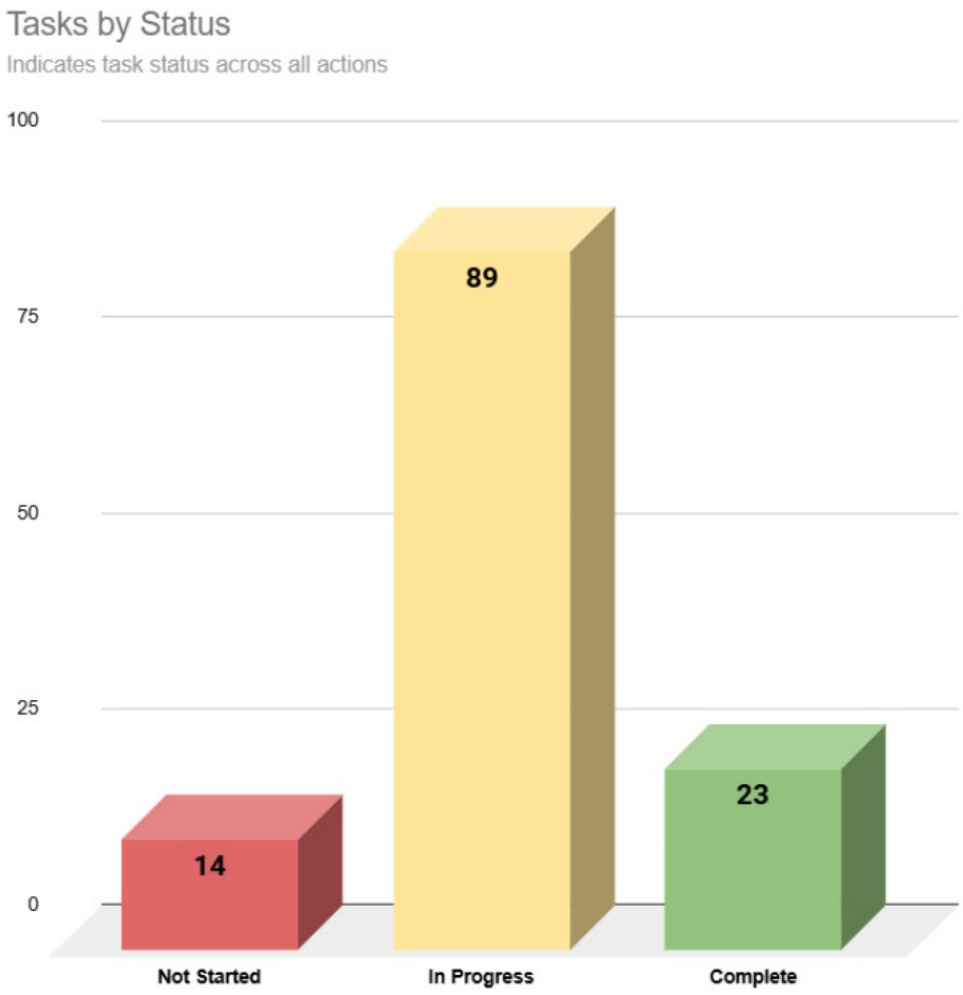
A supplemental graph below shows the relative progress of each Action and progress toward the overall goal of 100% completion of all Tasks. The graph provides a snapshot of the variation among the Actions and the cumulative progress of all Actions toward a 100% implemented Blueprint.

Currently, the cumulative progress is approaching 42% completion.

PROGRESS TOWARD 100% COMPLETION OF ALL TASKS



TASK PROGRESS



Since the last report, two additional tasks have been initiated, and seven more tasks have been completed, bringing the percentage of in-progress Tasks to 89%. Fourteen tasks have yet to be activated. Staff are actively seeking to advance these tasks by pursuing funding sources and reaching out to potential project partners, among other activities.

The following section will highlight completed tasks, which will also be featured in the summer edition of the Partnership in Action (formerly the Estuary Blueprint) e-newsletter.

PROGRESS HIGHLIGHTS: COMPLETED TASKS

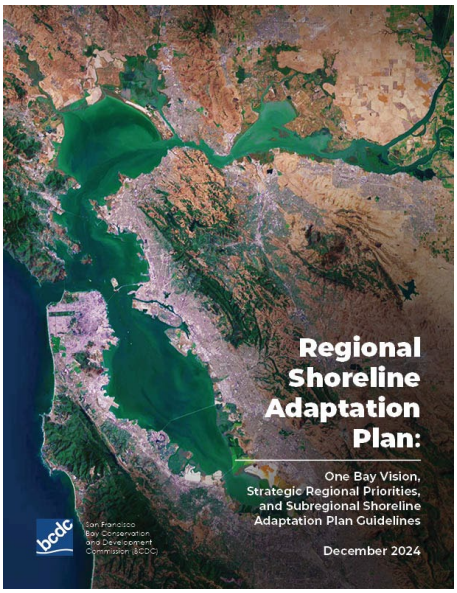
This tracking cycle celebrates the completion of seven tasks and the significant progress of 17 tasks within this reporting period.

Action 1: Climate Resilience

Plan for increased climate resilience that incorporates natural resource protection.

TASK 1-1

Implement the Bay Adapt Joint Platform to advance climate adaptation in the lower Estuary, which will support the protection of the Estuary's resources and communities.



MILESTONE

"Vision Statement" for the Bay shoreline that sets a long-term picture of successful adaptation; regional and sub-regional objectives; regional and sub-regional strategies and actions; and guidelines and methodologies for evaluating local plans and projects for funding and other incentives.

UPDATE

The San Francisco Bay Conservation & Development Commission (BCDC)'s Regional Shoreline Adaptation Plan (RSAP) was adopted and released in December 2024. The RSAP includes a "One Bay Vision" for a resilient future shoreline, strategic priorities, and guidelines for subregional adaptation plans.

PERCENT COMPLETED – 100%

Action 5: Watershed Connections

Restore watershed connections to the Estuary to improve habitat, flood protection, and water quality.

TASK 5-3

Advance the use and implementation of sediment management principles and approaches at the Bay margins identified in the 2021 Sediment for Survival Report to improve sediment supply and conveyance in Operational Landscape Units (OLU) with the most significant potential for tributary sediment supply to meet demands, given appropriate intervention.

MILESTONE

Stakeholders for one Operational Landscape Unit (OLU) were identified and convened to demonstrate the OLU partnership structure and advance sediment transport planning.

UPDATE

As part of the San Francisco Estuary Institute's EPA Water Quality Improvement Fund Grant *Sediment Solutions*, the San Francisco Estuary Institute and the San Francisco Estuary Partnership planned and hosted the **Petaluma River Watershed Beneficial Sediment Reuse Workshop** on May 1, 2024. This interactive workshop will build upon the Bay Conservation and Development Commission's ongoing *Sediment for Wetland Adaptation Project* and bring the Bay Area's collective regional-scale ideas to the Petaluma River Operational Landscape Unit (OLU) to address challenges and operationalize solutions. Invitees from the OLU and across the region included representatives from entities that produce, use, or regulate sediment in the Petaluma Watershed. The conversations and activities will provide a foundation for creating the *Petaluma River Watershed Beneficial Reuse Strategy*.

PERCENT COMPLETED - 100%

Action 6: Sediment

Manage sediment and soil on a regional scale and advance beneficial use.

TASK 6-3

Update contaminant screening criteria and risk assessment methodology for dredged sediment and upland soils.

MILESTONE

Revised Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines and Master Quality Assurance Project Plan for upland material reuse at the Don Edwards San Francisco Bay National Wildlife Refuge.

UPDATE

The San Francisco Bay Regional Water Quality Control Board worked with the San Francisco Estuary

Institute in coordination with the Bay Conservation and Development Commission, the South Bay Salt Pont Project, and the US Fish and Wildlife Service to develop new screening criteria for sediment used for South Bay Salt Pond restoration projects, including the Don Edwards San Francisco Bay National Wildlife Refuge. These new criteria include a mean hazard quotient and weighted average risk assessment approach to facilitate additional beneficial reuse of upland soil materials. The master QAPP for the South Bay Salt Ponds was updated with this new screening criteria and approved in late 2024.

PERCENT COMPLETED – 100%

Action 7: Carbon Management

Decrease carbon emissions and subsidence in the Delta and increase carbon sequestration on natural and agricultural lands.

TASK 7-3

Increase economic impact of carbon markets in the Estuary to advance wetland restoration and management goals.

MILESTONE

Report detailing the potential impacts and benefits of various co-management activities on lands included in the carbon market, various strategies to scale participation in the market through regionally coordinated applications for multiple sites, and the institutional and regulatory barriers that limit entry of wetland restoration and agriculture projects into the carbon market.

UPDATE

Completion of this project includes these key resources and reports detailing the potential impacts and benefits of co-management activities: (1) San Francisco Estuary Institute Reporting Tool (2) Delta Wetland Futures: Blue Carbon & Elevation Change (3) and the Delta Wetland Futures: Tidal Marsh Resilience to Sea Level Rise.

Currently, practitioners are actively driving forward projects that this report was intended to support. Therefore, a developing consensus is that continued progress on the mission behind this task would include advocating for additional funding for projects and conducting outreach to farmers in the Delta to provide clear and accessible information on how these practices will benefit them.

PERCENT COMPLETED – 100%

Action 20: Nutrients

Support water quality investigations, consistent monitoring and modeling, and analysis of management alternatives for nutrients, along with disseminating public-facing outreach materials on resulting data and management decisions.

TASK 20-1

Ensure the continuation of a long-term monitoring and modeling program of nutrient-related indicators in San Francisco Bay through the San Francisco Bay Regional Water Quality Control Board's Nutrient Management Strategy and program partnerships, and in the Delta through the U.S. Geological Survey and Interagency Ecological Program.

MILESTONE

Funding for long-term monitoring and modeling program renewed at sustainable levels, and additional funding sources investigated.

UPDATE

In 2024, the Nutrient Watershed NPDES Permit was adopted, and BACWA committed $2.2M to the Nutrient Management Strategy. In the last quarter, the first allotment of EPA Water Quality Improvement Fund funding was dedicated to the Nutrient Management Strategy via the San Francisco Estuary Institute for $6 million over several years, with some funds being used for monitoring infrastructure. More certainty is expected next quarter regarding the status of the next term of EPA funding, and additional funding sources shall be continuously investigated.

PERCENT COMPLETED – 100%

Action 20: Nutrients

Support water quality investigations, consistent monitoring and modeling, and analysis of management alternatives for nutrients, along with disseminating public-facing outreach materials on resulting data and management decisions.

TASK 20-2

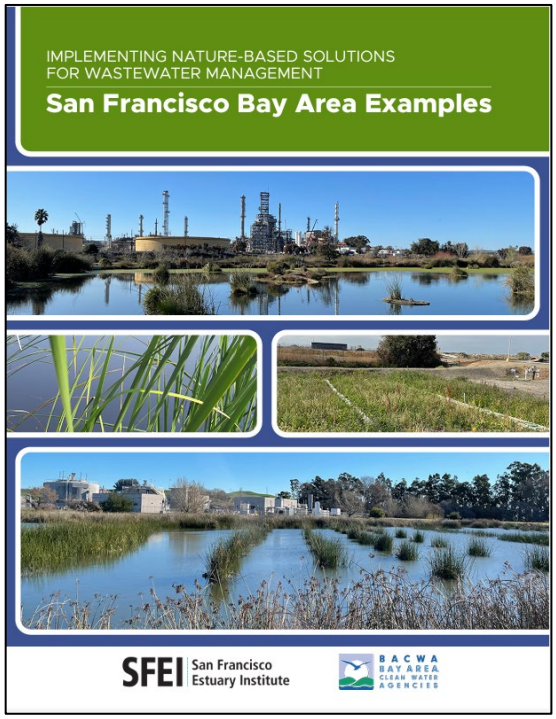
Implement and iterate the Science Plan and Nutrient Assessment Framework of the San Francisco Bay Nutrient Management Strategy to establish the status and trends of nutrient indicators and quantitatively inform San Francisco Bay's response to nutrient loading.

MILESTONE

Completed round of modeling and synthesis studies and final version of the Assessment Framework developed by 2024 to inform future permits and other management actions.

UPDATE

The Nutrient Management Strategy is being reviewed to inform the five-year science plan. Modeling and synthesis studies are ongoing, and the Assessment Framework will likely be completed in the next one to two years. The task title is a bit misleading since the modeling to inform the 2024 permit was completed last year, but the Assessment Framework is ongoing. While this task is marked complete because the studies informed the 2024 permit, the Assessment Framework is still being finalized.



PERCENT COMPLETED - 100%

Action 22: Health Risks of Contaminants

Addresses legacy contaminants and contaminants in fish and health risks related to fish consumption, and cultural and traditional uses. Support underserved and disadvantaged communities and Tribes' efforts to collect toxic site and fish consumption data and to implement projects to mitigate health impacts.

TASK 22-3

Conduct thorough fish monitoring in the locations where communities with high rates of consumption collect fish from the Bay. Analyze the species they consume and the pollutants that they are concerned about. Coordinate this monitoring with the consumption survey work of Task 22-2 in partnership with community-based organizations.

MILESTONE

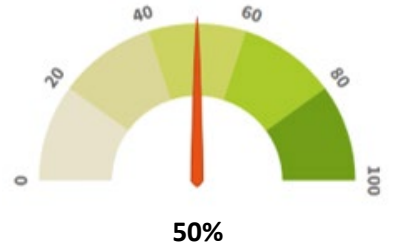
Fish contamination in priority locations identified and monitored in at least two communities in the San Francisco Estuary.

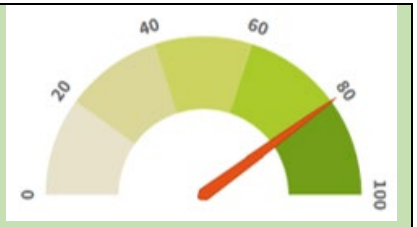
UPDATE

All Positives Possible (APP) secured a grant through the US EPA to collect fish for tissue sampling and to conduct fish consumption surveys in Vallejo and Rodeo. APP worked with the San Francisco Estuary Institute (SFEI) to create data collection methodologies that informed the collection of live fish, storage, shipping, and testing. APP worked with fisher people along the Napa River and Carquinez Strait shorelines to collect fish that were considered edible. SFEI tested the fish tissue for various contaminants. This work began in 2023, and results are expected in 2026. The above image is from the QAPP created for this project and shows where fish collection occurred.

PERCENT COMPLETED – 100%

PROGRESS HIGHLIGHTS: SIGNIFICANT UPDATES

Task Number	Task Description	Milestone	Update	Percent Complete
Task 1-6	Expand the use of the Adaptation Atlas to support analysis and selection of adaptation strategies within Operational Landscape Units (OLUs) to support natural resource protection and advancement of nature-based strategies.	Adaptation strategies for one to two OLUs per year through collaborative process.	Adaptation strategies for several OLUs in the region have been identified and are underway through a collaborative process.	 **70%**
Task 1-8	Determine potential influence of rising sea level on groundwater elevations (and contaminated sites) within counties using an interpolated groundwater model based on empirical measurements.	Groundwater data model for nine counties.	Pathways Climate Institute developed a draft data layer for Contra Costa's current groundwater levels. The final product will be shared in April. The Fairfield-Suisun Sewer District led the Solano Bayshore Regional Resiliency Grant Partnership to develop a data layer showing areas vulnerable to current and future groundwater rise. They are developing an action plan with adaptation alternatives.	 **50%**
Task 3-2	Establish a technical assistance network that coordinates programs and entities to provide data and technical assistance for climate adaptation for cities, counties, and other stakeholders that facilitates natural resource protection.	Regional climate change adaptation “help desk” network.	The Bay Area Regional Collaborative (BARC) has convened a technical assistance (TA) working group consisting of BARC member agencies. Staff have completed an informal inventory of TA offerings from providers in the public and NGO sectors. Based on this inventory, a preliminary regional list of TA offerings has been developed.	 **50%**

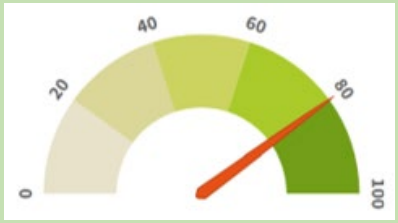
Task 8-1	Develop the WRMP Monitoring Network through the establishment of benchmark, reference, and restoration project sites.	Five monitoring sites with biogeographic representation within San Francisco Bay.	Permits have been acquired for all priority sites.	 **80%**
Task 8-4	Ensure that WRMP outreach and engagement includes diverse audiences. Increase engagement with community representatives, social science and community-based science, and Traditional Ecological Knowledge on the SC, TAC, and in development of social indicators to monitor connections between people and wetlands.	Standard Operating Procedures to monitor connections between people and wetlands.	The People & Wetlands Standard Operating Procedures (SOP) on Representation in Decision-Making is complete, and data collection is underway. The Equity & Engagement Strategy is complete, and the wetland restoration benefits map and StoryMap are also underway.	 **80%**
Task 8-5	Strengthen partnerships and monitoring coordination between the lower and upper San Francisco Estuary.	Workgroup to increase coordination between the Delta Interagency Ecological Program and the WRMP Technical Advisory Committee.	The interviews and workshop focused on Bay-Delta monitoring coordination have wrapped up. The summary report is complete and has been presented to the WRMP Steering Committee. The representation indicator covers both Bay and Delta.	 **60%**

Task 12-2	Investigate the effectiveness of specific habitat enhancement measures to provide increased successful bird nesting, foraging, roosting, and high tide refugia.	Five reports summarizing results of habitat enhancement measures.	San Francisco Bay Bird Observatory (SFBBO) is finishing its report on the annual salt pond bird surveys. The 2024 snowy plover monitoring is now complete, and a report is forthcoming.	 **60%**
Task 12-5	Develop and implement predation control measures on managed ponds. These measures include camouflaging habitats and installing exclusion fencing.	Measures tested and implemented at five sites.	The final report for an Eden Landing Ecological Reserve Pilot Study on Predators of Western Snowy Plovers and California Least Terns (prepared by SFBBO and UC Berkeley) is now available. The study covers many CDFW-managed ponds within Eden Landing, representing the most significant snowy plover nesting sites. This task remains in operation as additional predator control support is needed for remaining key plover sites and to benefit non-plover species.	 **60%**
Task 13-2	Restore non-tidal seasonal wetlands, including vernal pool complexes.	At least 800 acres of seasonal wetlands restored in the Bay region and 3,200 acres in the Delta region.	A new seasonal wetland restoration project, the 159-acre Coyote Hills Restoration and Public Access, was completed in the Bay. In the Delta the Staten Island non-tidal wetland project is currently in progress. Total seasonal wetland restoration acreage in the Bay to date: 899 (milestone: 800 acres). Total seasonal wetland restoration acreage in the Delta to date: 1000 (milestone: 3200 acres).	 **50%**

Task 15-1	Maintain, expand, and improve invasive species prevention programs (including for ballast water, marine biofouling, trailer boats, and organisms in trade).	Five to seven new or expanded policies or programs, list of priority activities in various programs, and two outreach campaigns implemented through pertinent networks.	US EPA released its supplemental Notice of Proposed Rulemaking on Ballast Water on October 18, 2023, and comments were due in December 2023. As of February 2025, the Final Rule is available. The California State Lands Commission adopted and began implementing and enforcing regulations establishing ballast water discharge performance standards in 2022, with a new emergency regulation passed by CLSC on February 25, 2025.	 **70%**
Task 15-2	Increase early detection, monitoring, and rapid response programs by identifying additional funding sources and creating a Rapid Response Fund.	Rapid response fund established, and three to four funding sources identified for monitoring and/or mapping.	Funding is now being invested in monitoring and mapping Nutria. Additionally, funding has been allocated for golden mussel monitoring and mapping following their detection in October 2024, marking the first detection in North America. More information is available at: https://wildlife.ca.gov/Conservation/Invasives/Species/Golden-Mussel.	 **90%**
Task 15-3	Develop Early Detection and Rapid Response (EDRR) Frameworks at the local or national scale by setting up a framework to detect and respond to invasive species and a series of sustained and coordinated actions with associated responsible agencies and partners.	At least one new EDRR Framework.	The Delta EDRR Framework is currently under development. The Delta Stewardship Council is funding research through CSU Long Beach to conduct interviews with scientists and managers in the Delta and Suisun Marsh who are working on invasive species. Based on these interviews, policy recommendations will be developed to inform future stages of the Delta EDRR Framework.	 **60%**

Task 15-4	Develop new early detection tools using eDNA (i.e., eDNA meta barcoding) for specific environments and suites of species (i.e., marine species).	One to three techniques for early detection, such as pilot eDNA meta barcoding or other eDNA techniques.	USGS, through meetings with Pacific state partners, developed and tested an eRNA version of this technology to detect living target organisms, which could help test treated ballast water; testing is ongoing. CDFW OSPR are continuing their molecular work utilizing metabarcoding for early detection of marine species. The eDNA sub-team of the Golden Mussel Task Force Monitoring team developed and validated an eDNA detection method by qPCR.	 **70%**
Task 15-5	Implement eradication and control programs with priority given to species that can be eradicated and/or species that have extensive impacts on habitats important to the health of the estuarine ecosystem. Research and test pilot control measures for key invasive species.	For two to five key invasive species, total acreage of species reduced and/or number of acres being managed to reduce species increased.	Treatment to address marshes infested with Spartina started in 2023 and resumed in 2024. Treatment at a fourth highly infested site, North Marsh, will begin in 2025. Please see the new project website at www.spartina.org. Nutria has been found within the Delta. The NEP has deployed 3,129 traps across 10,000 acres, and taken 5,448 statewide to date, with 695 of those taken in the Delta. The total Nutria taken in 2024 is 1,353, which is an annual record high for the eradication effort. The Golden mussel (*Limnoperna fortunei*) was detected in the Delta in October 2024. Following the discovery in October, CDFW formed an interagency Task Force to lead a statewide response to prevent the overland spread of golden mussels.	 **60%**

Task 18-4	Evaluate reverse osmosis concentrate (ROC) management options to protect San Francisco Bay health and water quality.	Two to three semi-annual inter-agency discussions convened on the pathways to permitting ROC management.	Valley Water met with the City of Sunnyvale in October 2024. The meeting was a starting point for collaboration on a potential horizontal levee pilot project in Pond A4.	 **50%**
Task 21-1	Review and update the SF Bay Regional Monitoring Program contaminants of emerging concern (CEC) and microplastics monitoring strategies every two years.	Updated RMP monitoring strategies every two years with distribution of associated management-relevant information.	San Francisco Estuary Institute (SFEI) published a major revision to the RMP CEC Strategy. Link to publication: https://www.sfei.org/documents/contaminants-emerging-concern-san-francisco-bay-strategy-future-investigations-2024.	 **80%**
Task 23-4	Control trash discharges from municipal storm drain systems to the Estuary and its tributaries through implementation of trash capture systems or other equivalent controls in accordance with the San Francisco Bay Municipal Regional Stormwater Permit and the Statewide Water Quality Control Plans for Trash.	Complete implementation of full trash capture systems or other equivalent controls by municipalities subject to the San Francisco Bay Municipal Regional Stormwater Permit and 40 percent implementation by other municipalities.	The San Francisco Bay Municipal Region and State Water Resource Control Board released the following documents: Trash control through the municipal storm drain by MRP permittees: https://waterboards.ca.gov/sanfranciscobay/board_info/agendas/2024/September/Item_9_SSR.pdf Caltrans trash control on its ROW: https://waterboards.ca.gov/sanfranciscobay/board_info/agendas/2024/December/6-ssr.pdf	 **80%**

			Small MS4 Reissuance: https://waterboards.ca.gov/water_issues/programs/stormwater/small_ms4_reissuance.html	
Task 25-4	Support and expand Estuary-oriented outreach and education programs provided by local and community-based organizations, either through direct funding, by developing materials, or through other tools to be identified in collaboration with existing programs.	Existing or new outreach and education programs expanded to reach 500 new participants.	Audiences reached through San Francisco Bay Restoration Authority (SFBRA) projects that fund outreach/education: Ninth Root, Sustainable Solano, Sacred Spaces, etc.	 **80%**