

# SF Estuary Wetlands Regional Monitoring Program (WRMP) -

Designing monitoring for adaptive management through stakeholder collaboration

SF ESTUARY  
Wetlands  
Regional  
Monitoring  
Program



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EPA Region 9 Wetland Program Development Grant Conference  
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# Land Acknowledgement

The San Francisco Bay is the unceded ancestral homeland of many indigenous people, including the Him-R^n Ohlone Jalquin, Saclan Tribe, the Villages of Lisjan, the Karkin, Muwekma, Ramaytush, Tamien, and Yokuts Ohlone, Amah Mutsun Tribal Band, Coast and Bay Miwok, and Patwin people. The broader San Francisco Estuary is also the homeland of the Plains Miwok, Wappo, Wintun, and Nisenan people.

# Presentation Outline

## WRMP Overview

- Program goals
- Phases of development
- Science framework & monitoring site network

Key program areas funded by recent Wetland Program Development Grants

# WRMP Overview



# WRMP Program Goals

The WRMP is a collaborative stakeholder program working to provide regional, long-term, high-quality monitoring data to support adaptive management. We aim to produce and synthesize data to inform decisions that:

- Protect the ecological integrity and ecosystem services of the San Francisco Estuary's tidal wetlands
- Make tidal wetland restoration across the region economically viable, feasible, and successful in achieving intended benefits

# WRMP Scope and Focus

- Establish a robust, sustainable program
- Synthesize existing and new data to answer some of the region's most critical questions
- Maintain an inclusive, collaborative process



# WRMP Guiding & Management Questions (summarized)

GQ 1: Where are the tidal wetlands and how are they changing?

MQ 1A: How are **marshes** changing over time?

MQ 1B: Are changes impacting **water quality**?

GQ 2: How are external factors impacting tidal wetlands?

MQ 2A: How are **elevations** changing over time?

MQ 2B: Is there enough **sediment** to support marshes?

GQ 3: How are plants and animals affected?

MQ 3A: How are **fish & wildlife habitats** changing?

MQ 3B: How are **fish & wildlife populations** changing?

GQ 4: What new information do we need?

MQ 4A: How can **interventions** help sustain or increase marsh ecosystem quantity & quality?

GQ 5: How are public health, safety, and recreation affected?

MQ 5A: What strategies influence how restoration affects **mosquito & disease vector populations**?

MQ 5B: What **data will help optimize** marsh restoration, mosquito & vector control, and fish & wildlife support?

# WRMP Program Development and Implementation

Phase 1

Phase 2

Phase 3

2016-2019

2019-2022

2022-2025

## Program Development

- Science Framework
- Administration & Governance
- Data Management
- Implementation Roadmap

Funding: USEPA and in-kind

## Program Development and Implementation

- Monitoring Site Network and monitoring plan
- Engage regulatory agencies in developing protocols that align with permit requirements
- Engage with Tribes and community-based organizations

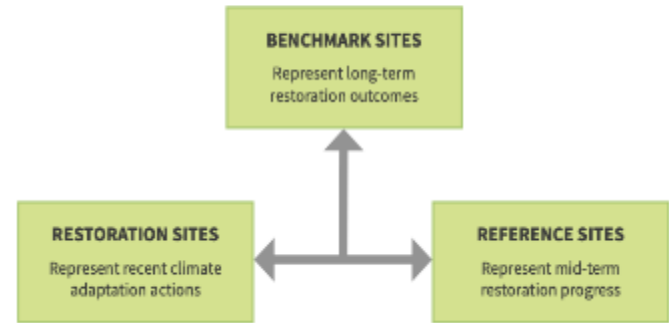
Funding: USEPA, SFBRA, in-kind, other

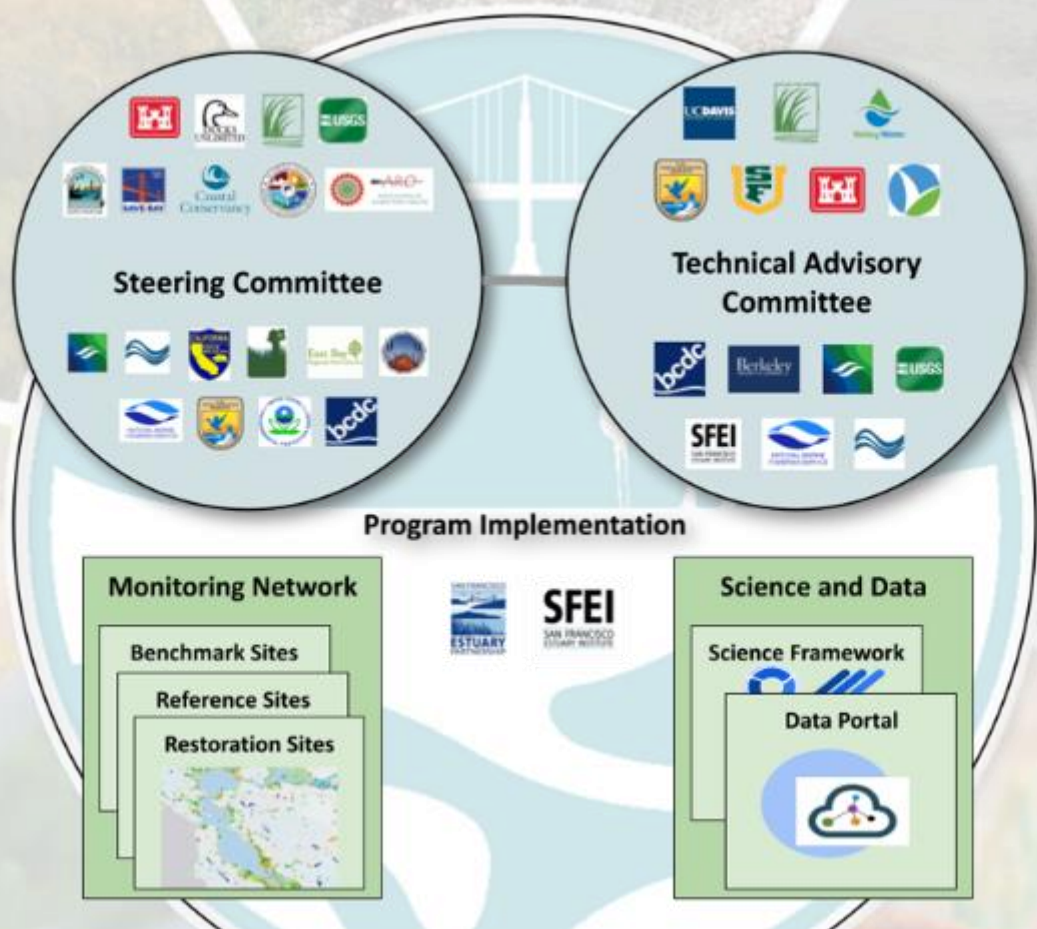


# WRMP Monitoring Site Network

- **Benchmark sites:** Represent mature, mostly ancient marshes
- **Reference sites:** Represent target conditions for restoration projects, mid-to late-stage evolution
- **Project sites:** Reflect a variety of design and management approaches over last 20 years

## Regional Monitoring Site Network





# Areas Funded by Recent Wetland Program Development Grants



# Regulatory Engagement

GOAL: Structure the WRMP so that it can align with regulatory needs to accelerate the pace of wetland restoration project permitting.

- Focus groups and interviews with regulators
- Resulting in a Regulatory Needs Assessment and a Regulatory Engagement Roadmap

# Data Management



GOAL: Centralize new and existing data about SF Estuary tidal wetlands to make data searchable and publicly available.

- Data submission portal
- Geospatial Data Catalog: searchable database
- Data visualizations tailored to stakeholder needs/interests



Open Search

Search...

Search

Topic > habitat ✕

### Limit your search

Source >

Publisher >

Topic ▾

- habitat ✕ 31
- imagery + basemaps 29
- natural resources 26
- restoration 14
- land use and land cover 2
- recreation 2
- elevation 1
- sea level 1

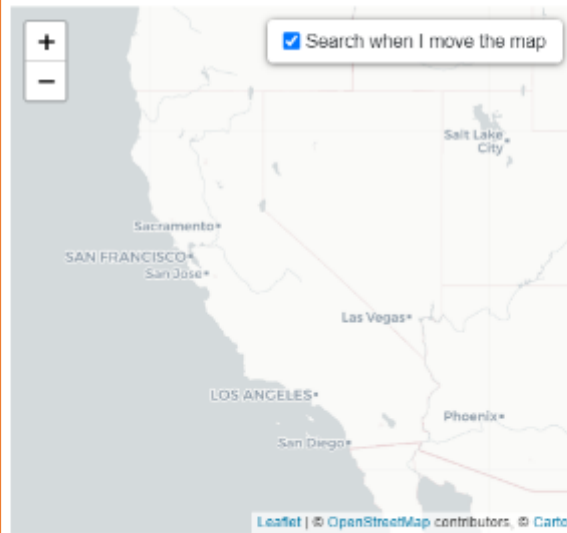
WRMP Primary Indicator >

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1. California Aquatic Resource Inventory (CARI) 📍 ▶
2. California Habitat Restoration and Shoreline Adaptation Projects 📍 ▶
3. Delta Aquatic Resource Inventory (DARI) 📍 ▶
4. Don Edwards San Francisco Bay National Wildlife Refuge boundary ▶
5. Don Edwards San Francisco Bay National Wildlife Refuge Polygon ▶
6. Modern Baylands arcs (1995 - 1996) ▶
7. Modern pannes polygons (1995 - 1996) ▶
8. Modern riparian polygons (1995 - 1996) ▶
9. Modern rivers arcs (1995 - 1996) ▶

Sort by relevance ▾

10 per page ▾



Geospatial

Selection-Based

# Human Dimensions, Equity, and Engagement

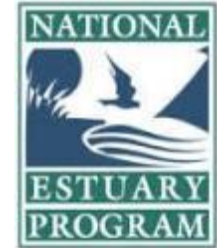
GOAL: Identify ways for the WRMP to better serve frontline communities and Tribes, and reflect their values and forms of knowledge.

- Representation in decision-making
- People and Wetlands workgroup: developing indicators for human connections to wetlands, that enable evaluation of equity questions
- 5-year engagement plan & equity strategy

# Acknowledgements

## *Funders*

### *Co-managers of the WRMP*





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# Thank you!

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