



Scaling Estuarine Restoration and Adaptation

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PMEP PEER Symposium
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Photo: Justin Lewis, courtesy of Sonoma Land Trust



Photo: Justin Lewis, courtesy of Sonoma Land Trust

San Francisco Bay

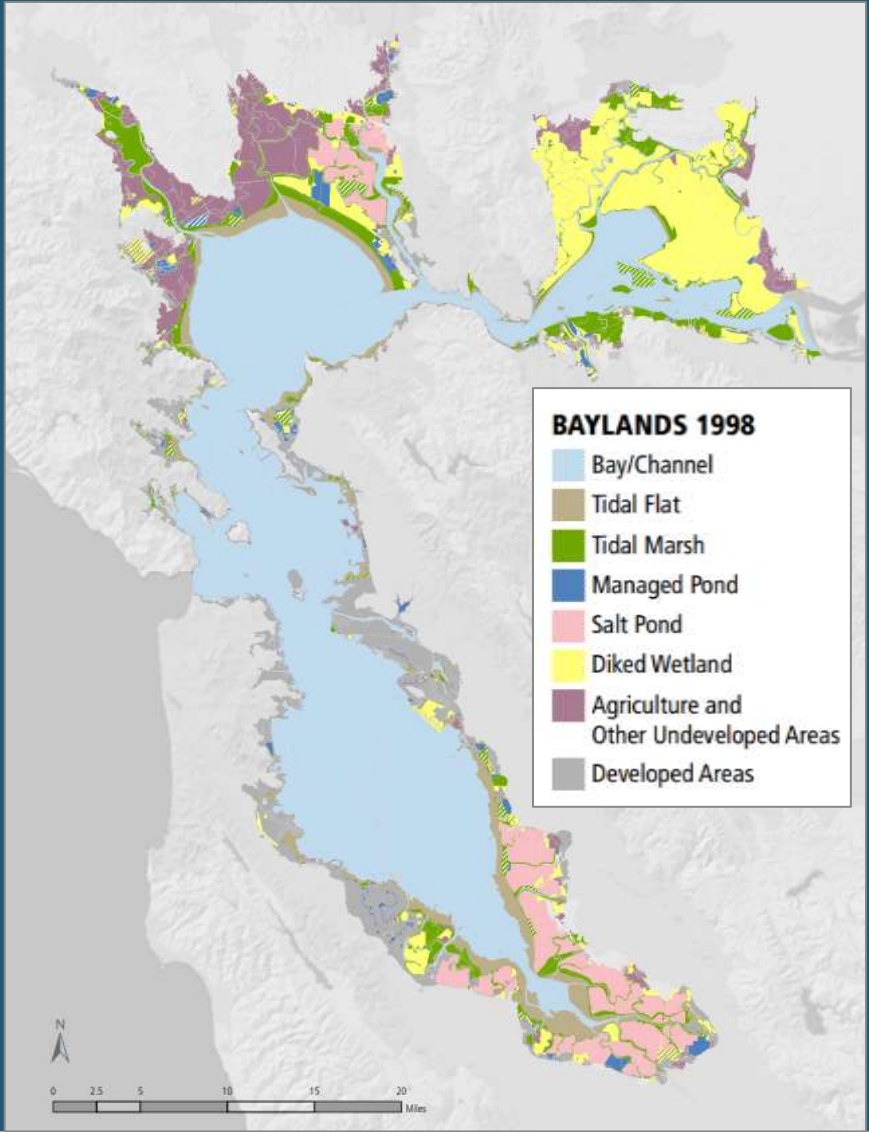
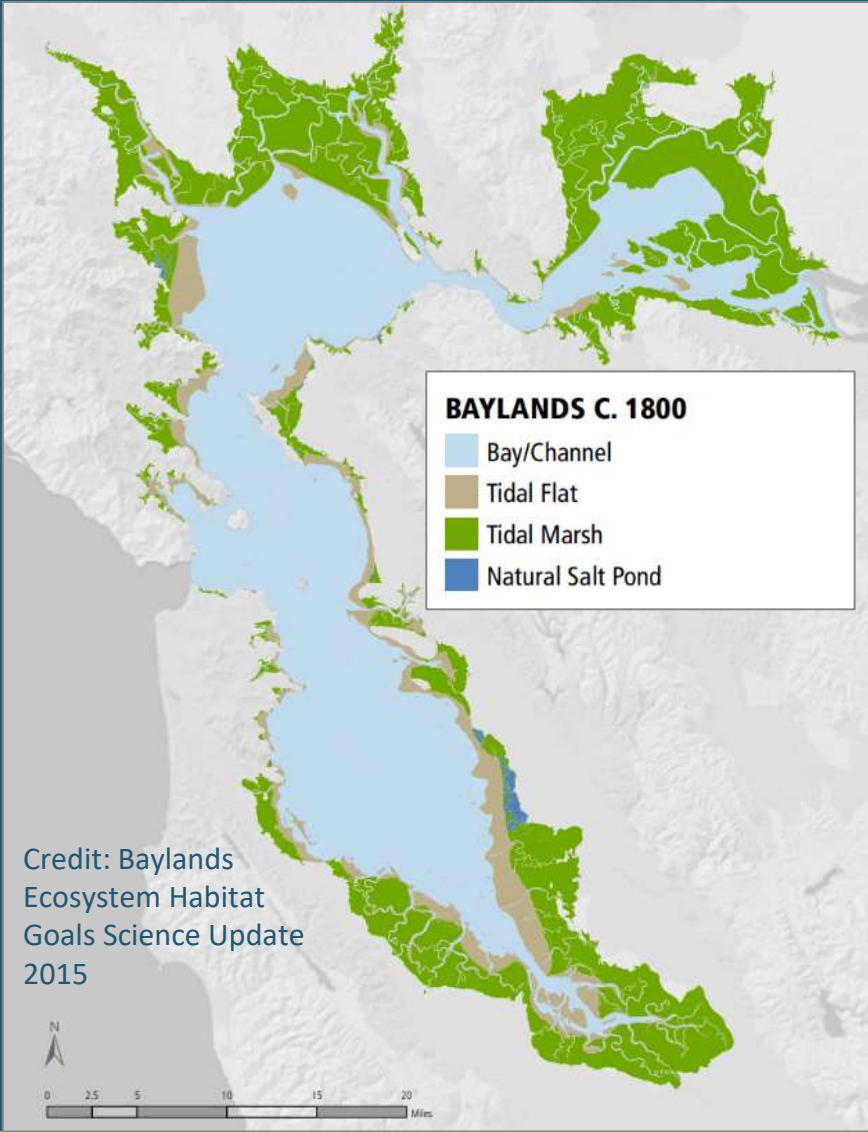
Historically, 190,000 acres of tidal marsh and 50,000 acres of tidal flat

Losses to diking and filling:

- 150,000 acres (79%) of tidal marsh
- 21,000 acres (42%) of tidal flat

Challenges:

- Habitat loss
- Subsidence
- Water quality
- Hardened shorelines



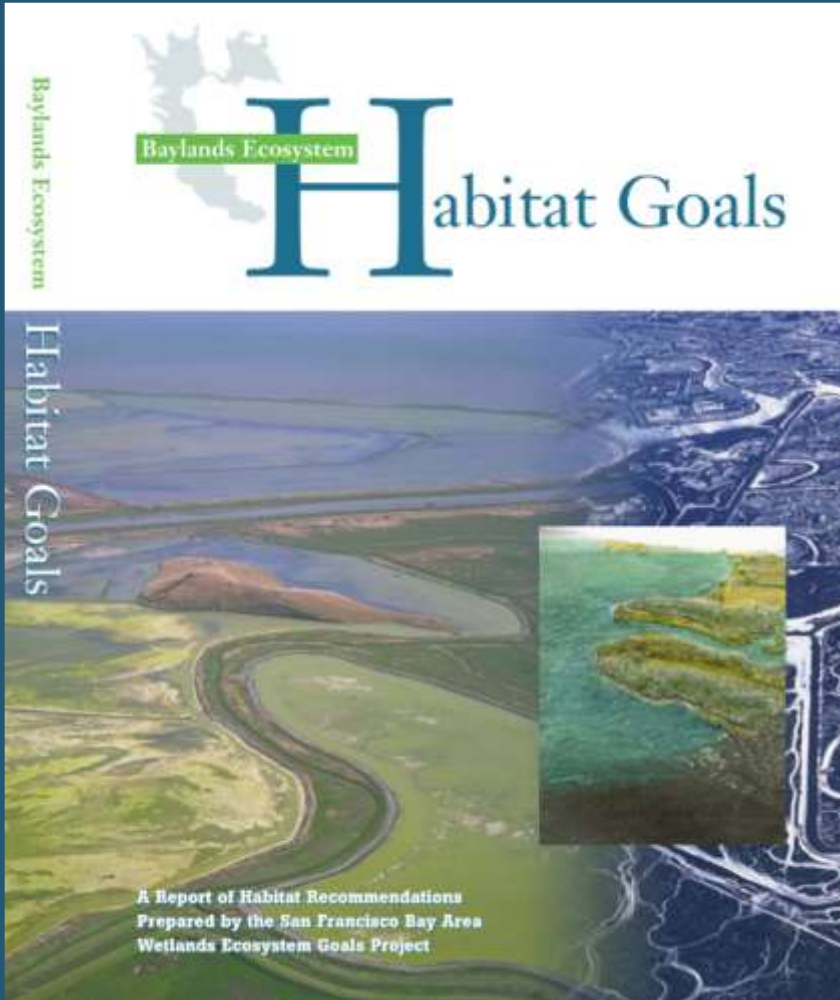
Public Awareness and Political Action

- **Grassroots Mobilization of Citizens** - Sylvia McLaughlin, Kay Kerr, Esther Gulick
- **Creation of Save The Bay** – a regional conservation movement to stop Bay fill
- **McAteer-Petris Act (1965)**
 - Restricted indiscriminate Bay filling
 - Established the Bay Conservation and Development Commission (BCDC)

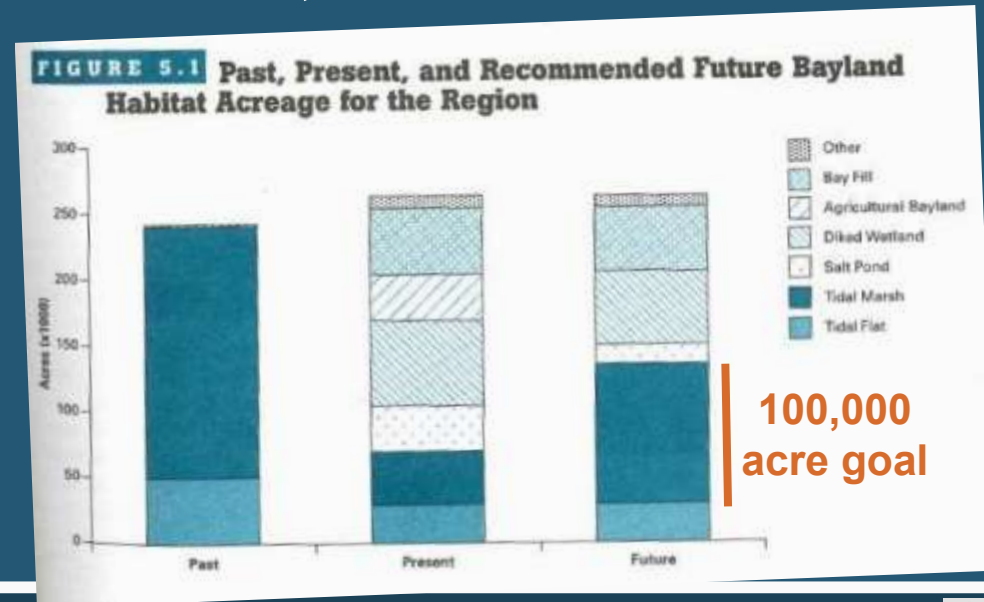


Photo: Save The Bay, SaveSFBay.org

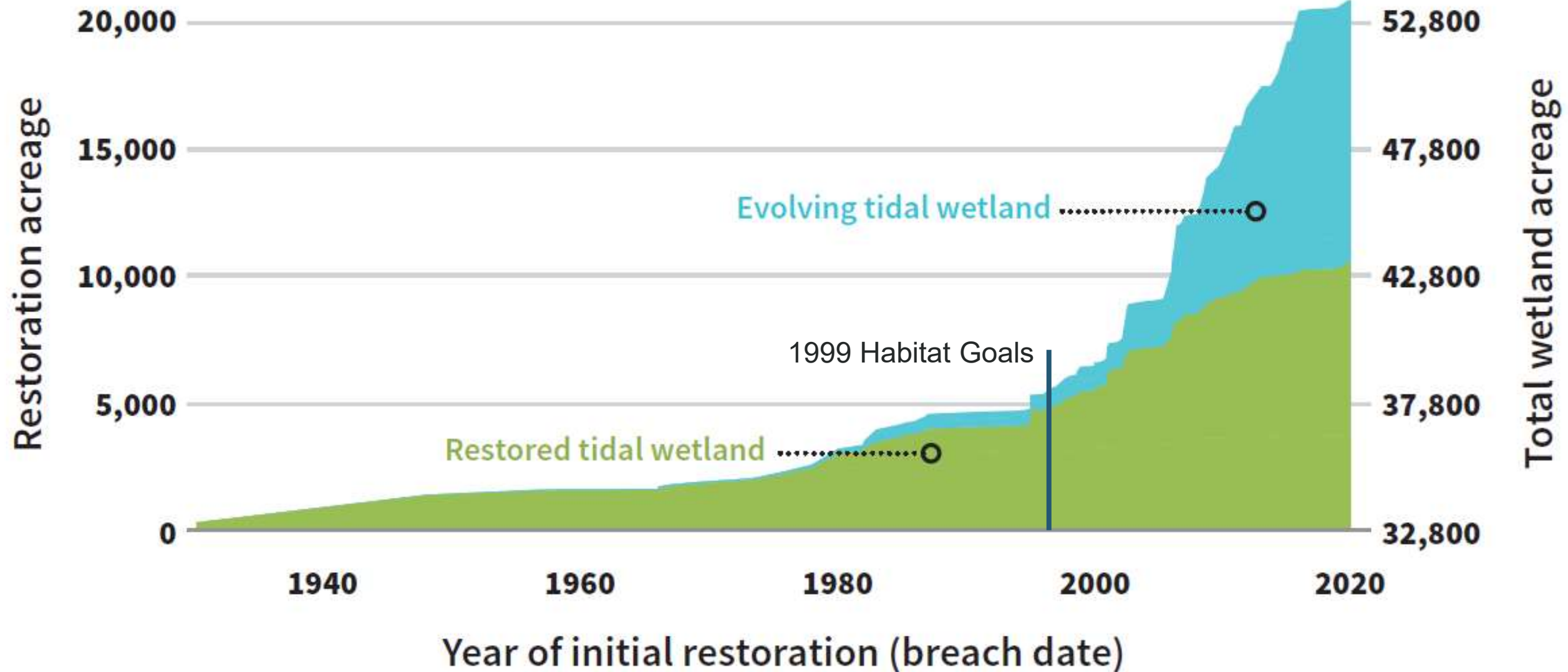
Scientific Basis - 1999 Baylands Ecosystem Habitat Goals



- Provides a picture of the **types, amounts, and distribution** of wetlands needed to restore and sustain a healthy bay ecosystem
- Target of **100,000 acres** of tidal wetlands

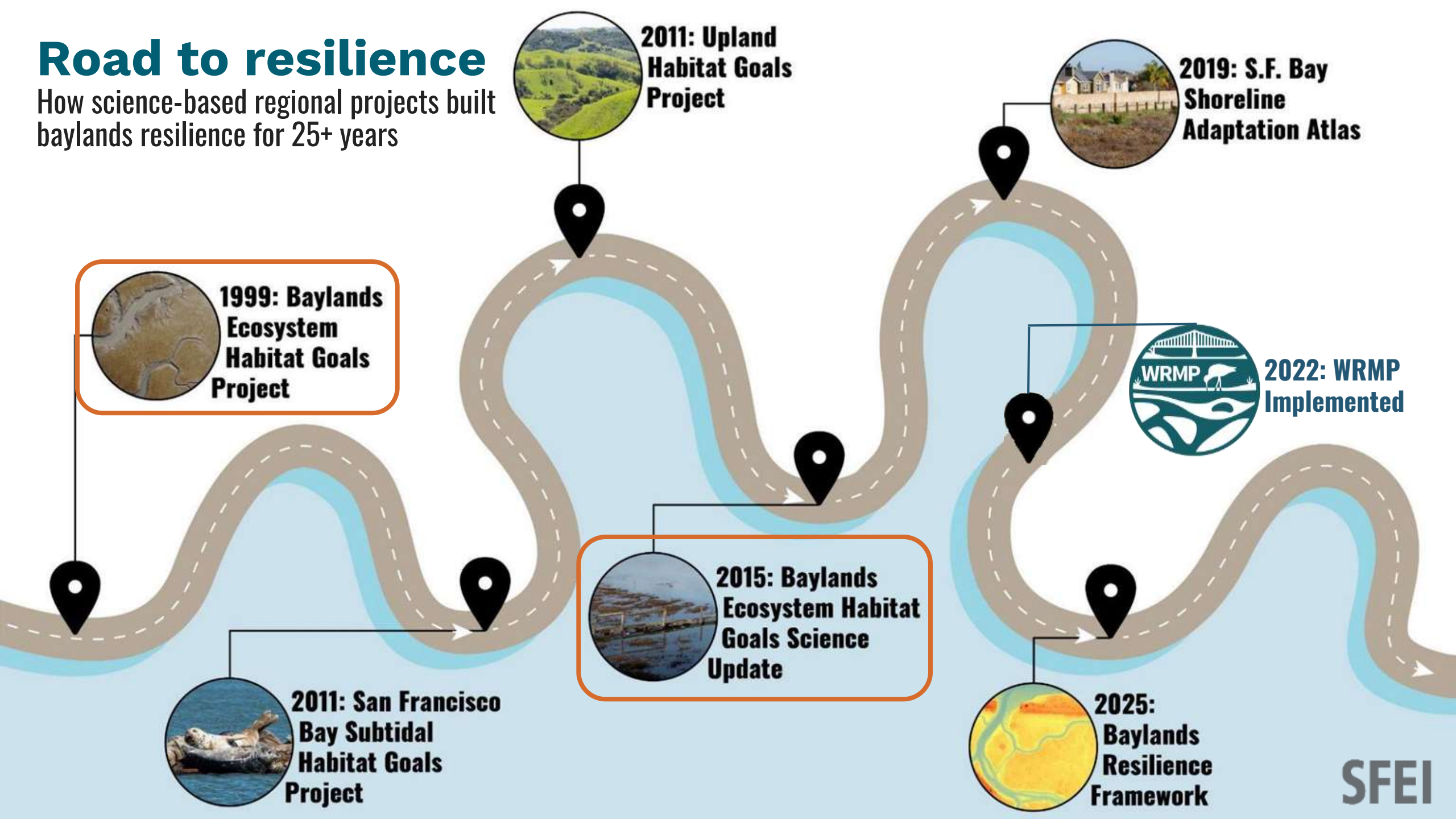


TIDAL WETLAND RESTORATION OVER TIME



Road to resilience

How science-based regional projects built baylands resilience for 25+ years



1999: Baylands Ecosystem Habitat Goals Project



2011: Upland Habitat Goals Project



2019: S.F. Bay Shoreline Adaptation Atlas



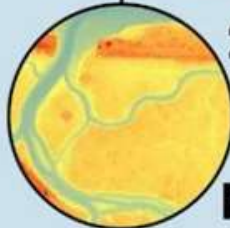
2022: WRMP Implemented



2015: Baylands Ecosystem Habitat Goals Science Update



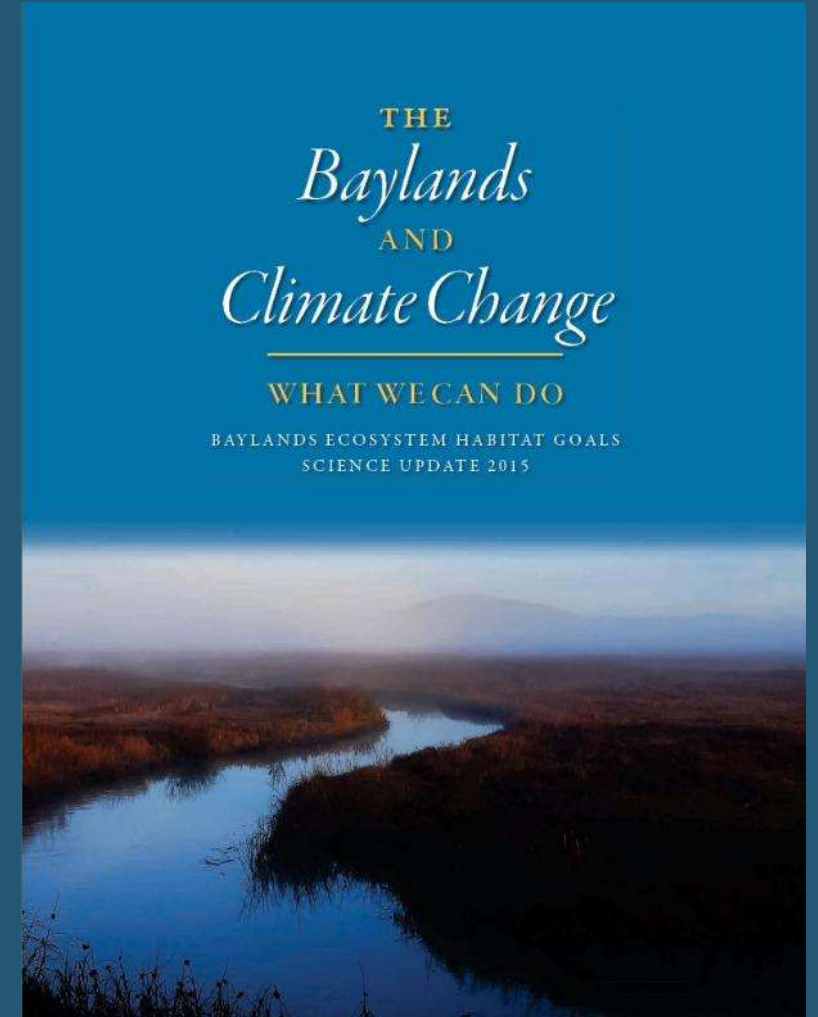
2011: San Francisco Bay Subtidal Habitat Goals Project



2025: Baylands Resilience Framework

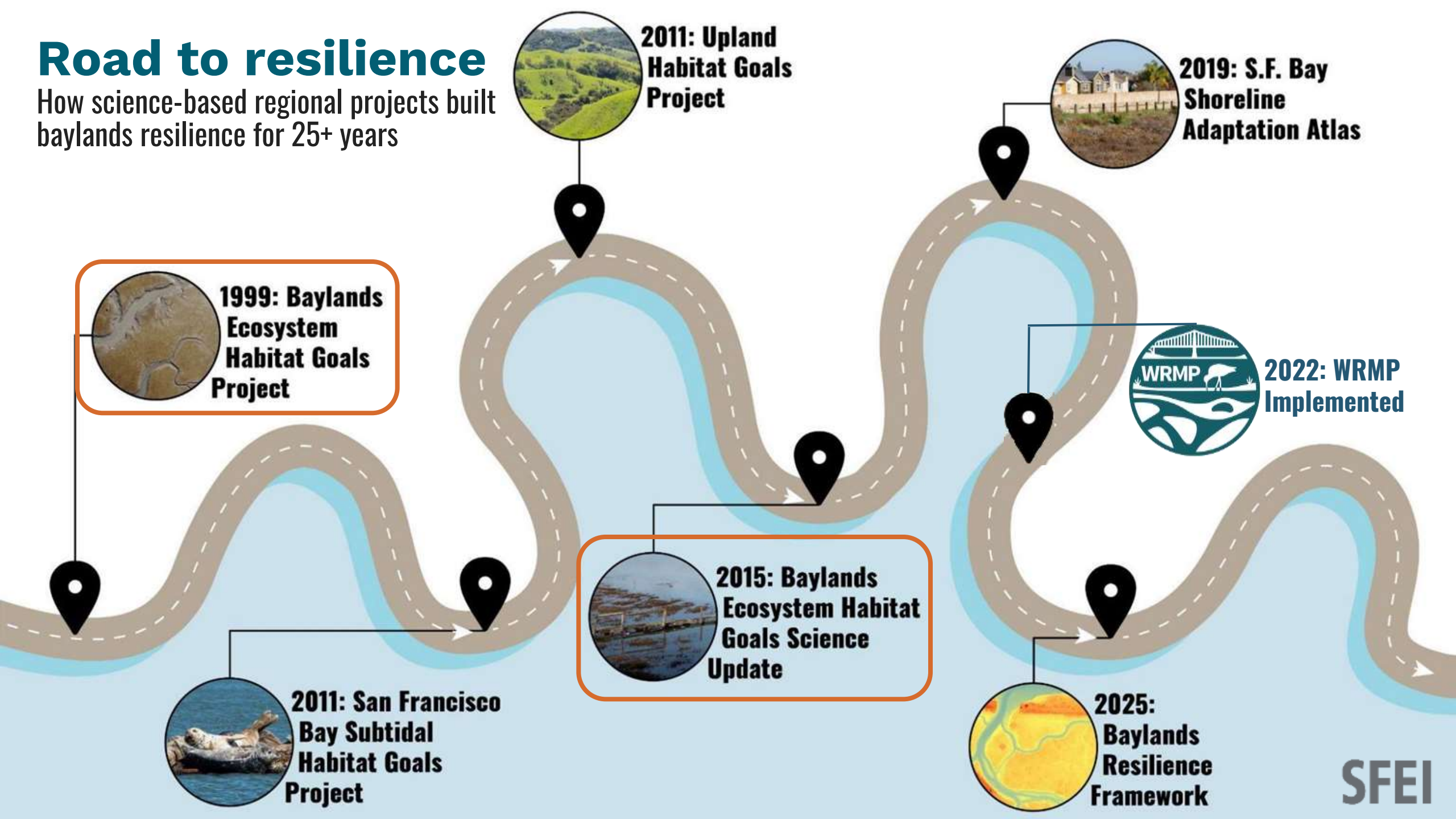
Changing Environment - 2015 Bayland Goals Update

- Restore complete systems, including processes
- Restore soon, in areas where marshes are likely to persist
- Plan for the Baylands to migrate



Road to resilience

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2022: WRMP Implemented

2025: Baylands Resilience Framework

Examples of Funding Sources

Measure AA, 2016

- 20-year, \$12 parcel tax (\$500M total)
- Established the Restoration Authority



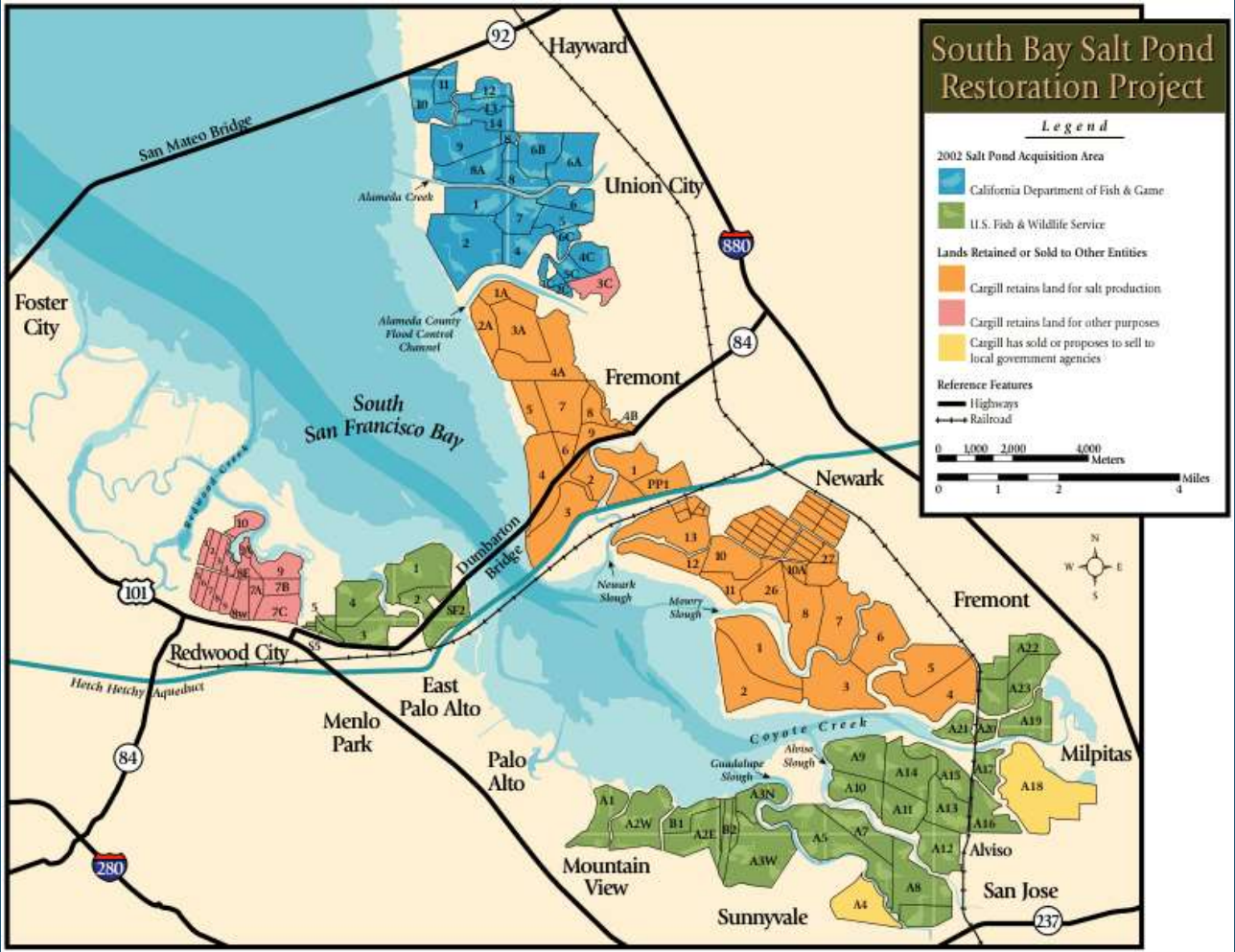
EPA's San Francisco Bay Geographic Program

- Approx. \$82 million available in Fiscal Years 2025 and 2026



Programmatic Examples

South Bay Salt Pond Restoration Project



Regionally Advancing Living Shorelines

Examples of Sharing Knowledge to Build Capacity

Living Shorelines Collaborative

- Estuarine Beaches
- Engineer's perspectives on Living Shorelines
- Revegetation approaches
- Managing invasives
- High tide refuge islands

Transforming Shorelines Collaborative

- Mitigation Needs of NBS Projects
- Managing Nutrient Loads with NBS
- Operations and Maintenance of NBS
- Community Engagement for NBS
- Engaging Electeds in Your SLR Projects

Landscape Resilience

Sonoma Creek Baylands

- 11,000 acres of diked agricultural land
- Undeveloped watersheds
- Significant road and rail infrastructure

Today



Landscape Resilience

Sonoma Creek Baylands Strategy 2020

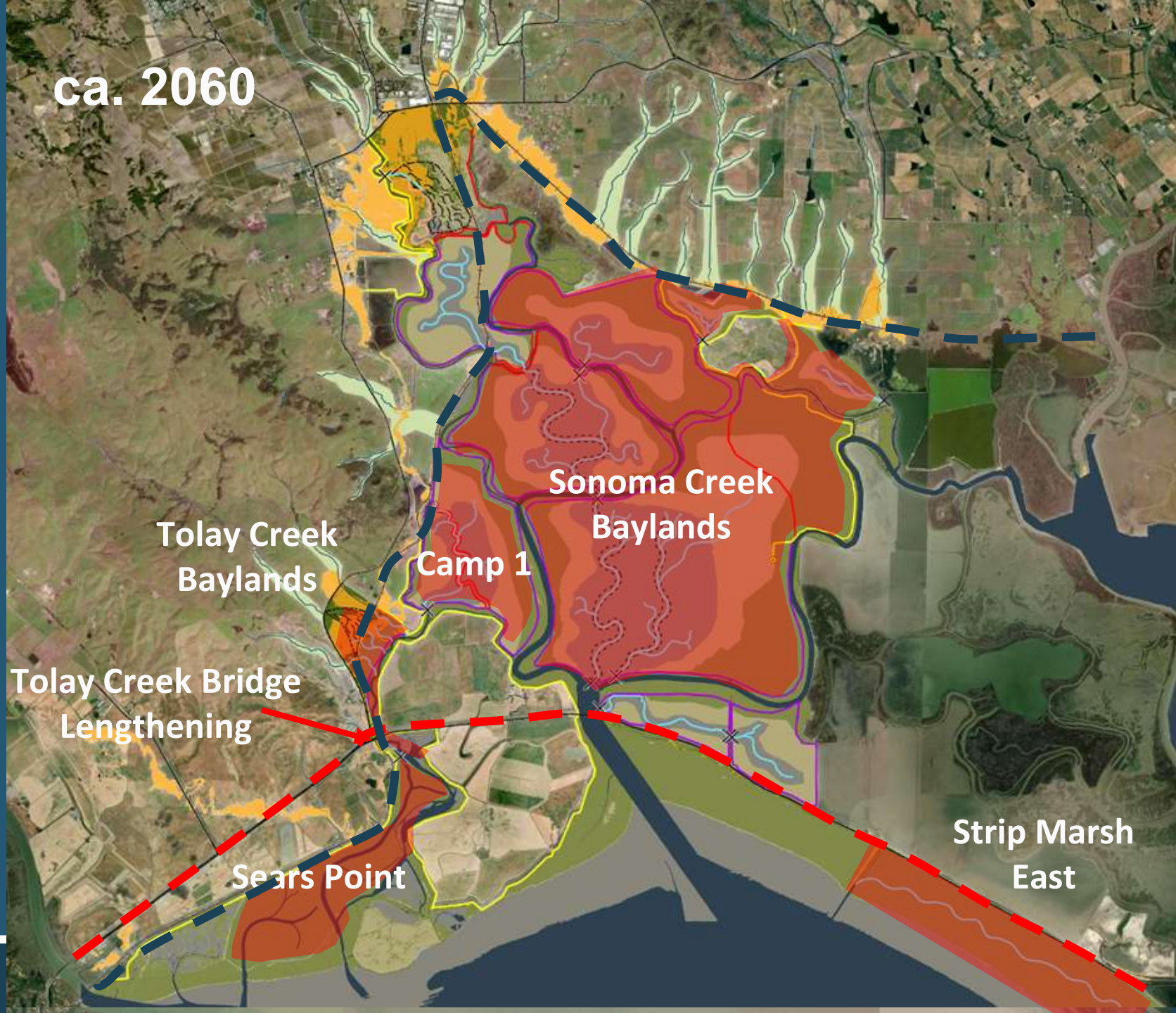
- Acquisition of land from willing sellers
- Design and permitting underway for 9000 acres
- Accommodates accelerated sea-level rise and groundwater concerns
- Integrated into transportation planning

ca. 2060



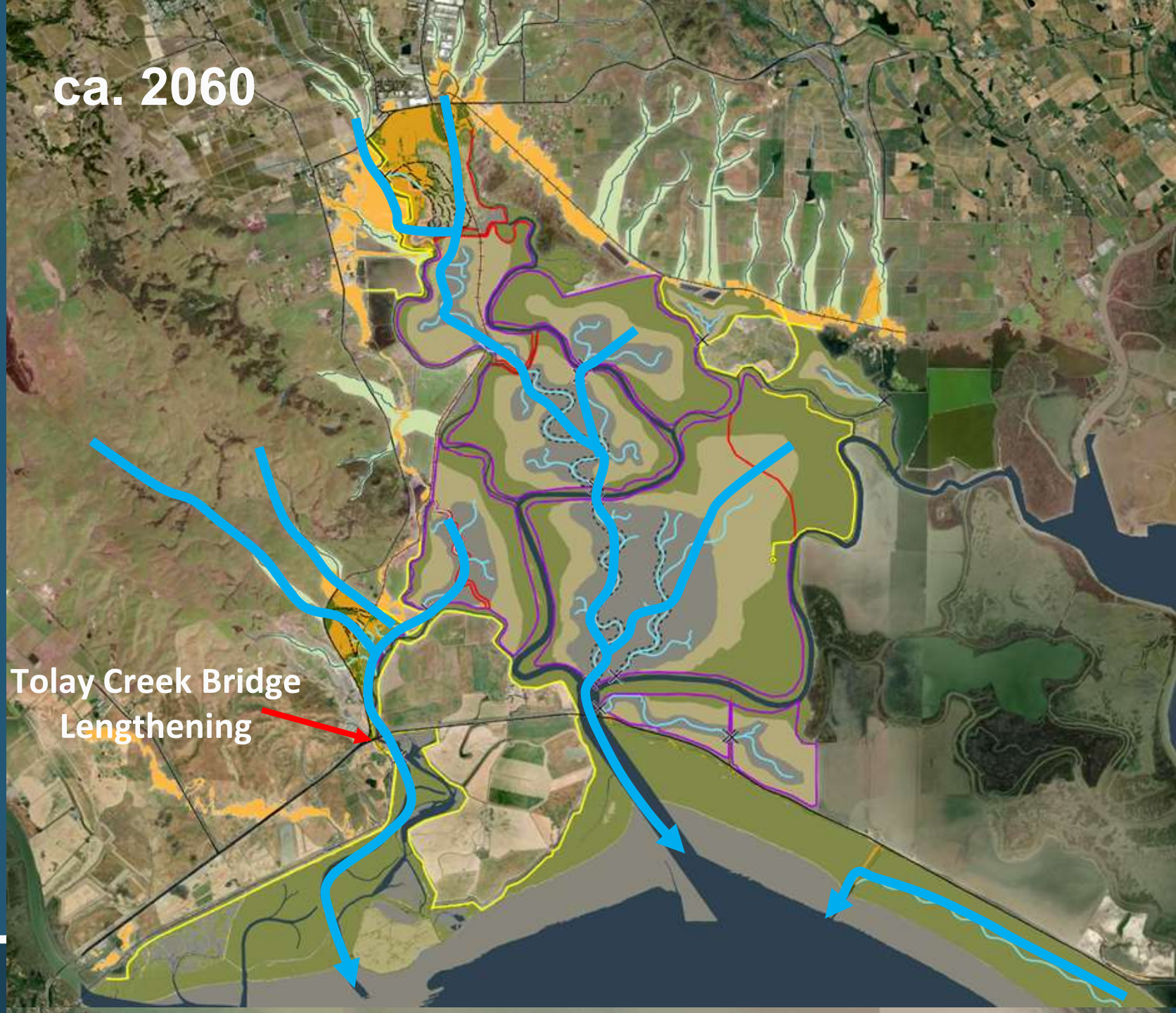
Landscape Resilience

- Bridge Lengthening
- Tolay Creek Baylands Restoration (250+ acres)
- Sears Point Restoration (960 acres)
- Camp 1 (950 acres)
- Sonoma Creek Baylands Restoration (9,000 acres)
- Strip Marsh East Enhancement (900 acres)

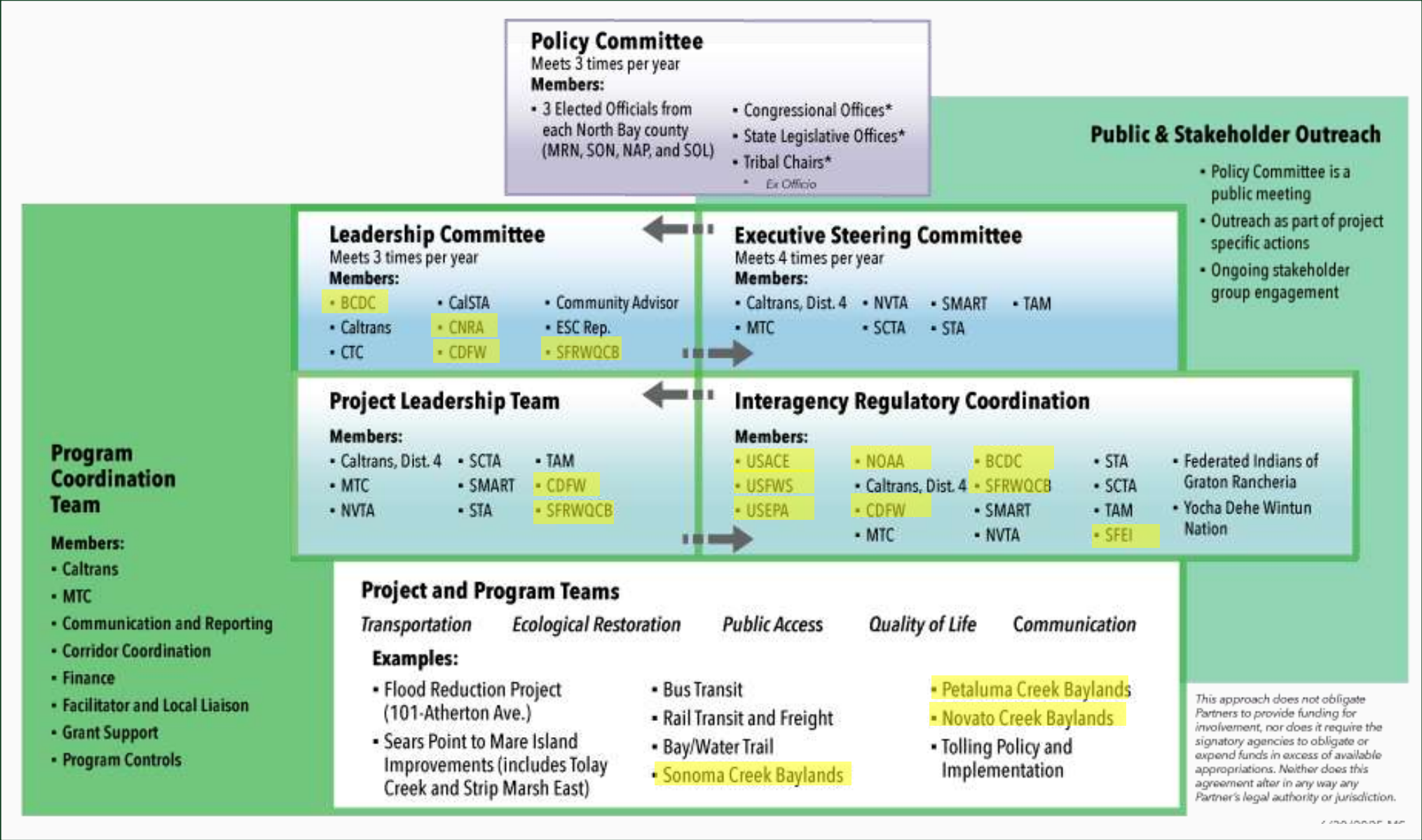


Landscape Resilience

- Restore tidal wetlands
- Reestablish processes
- Increase connectivity
- Increase resiliency of the natural landscape and the transportation infrastructure
- Access multiple funding sources and regulatory benefits



Governance – Resilient 37 Partnership



Benefits of Partnerships

Collaborative planning to integrate equity, restoration, and infrastructure efforts. Better projects and more resources.

Innovative regulatory approaches to permitting integrated projects. Looking at benefits as well as adverse impacts.

Coordinated strategies to plan, design, fund, and implement projects. Balancing the needs of the interested parties.

Useful documents:

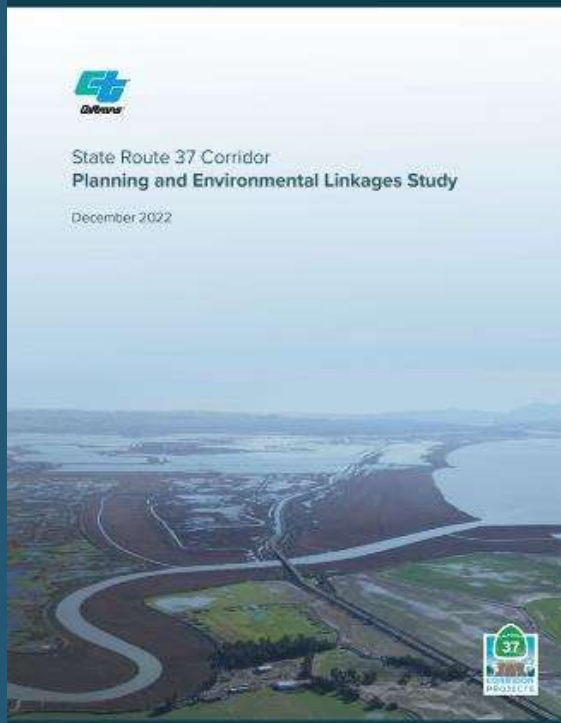
Sonoma Creek Baylands Strategy

sfei.org/projects/sonoma-creek-baylands-strategy

Sonoma Creek Baylands Strategy
Final Report – May 2020



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State Route 37 Corridor PEL

dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-37-corridor-projects/37-planning-environmental-linkages

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San Francisco Estuary Institute



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