

# Ecosystem Restoration Progress Review for the Delta and Suisun Marsh

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Delta Science Program

Delta Stewardship Council Meeting, November 17<sup>th</sup> 2022



**Delta  
Stewardship  
Council**

A CALIFORNIA STATE AGENCY

# Delta Plan Chapter 4 Amendment

- **Target: 60-80k acres** of restoration targeted by **2050** above **2007** baseline
  - Based on existing science-based recovery plans
- **Gap:** What progress has been made towards these targets since 2007?
  - First time this question has been answered
  - Journal paper
- Delta Plan Interagency Implementation Committee Restoration Subcommittee
  - Operationalizing restoration targets across agencies with Tribal and community input

DRAFT CHAPTER 4

## Protect, Restore, and Enhance the Delta Ecosystem



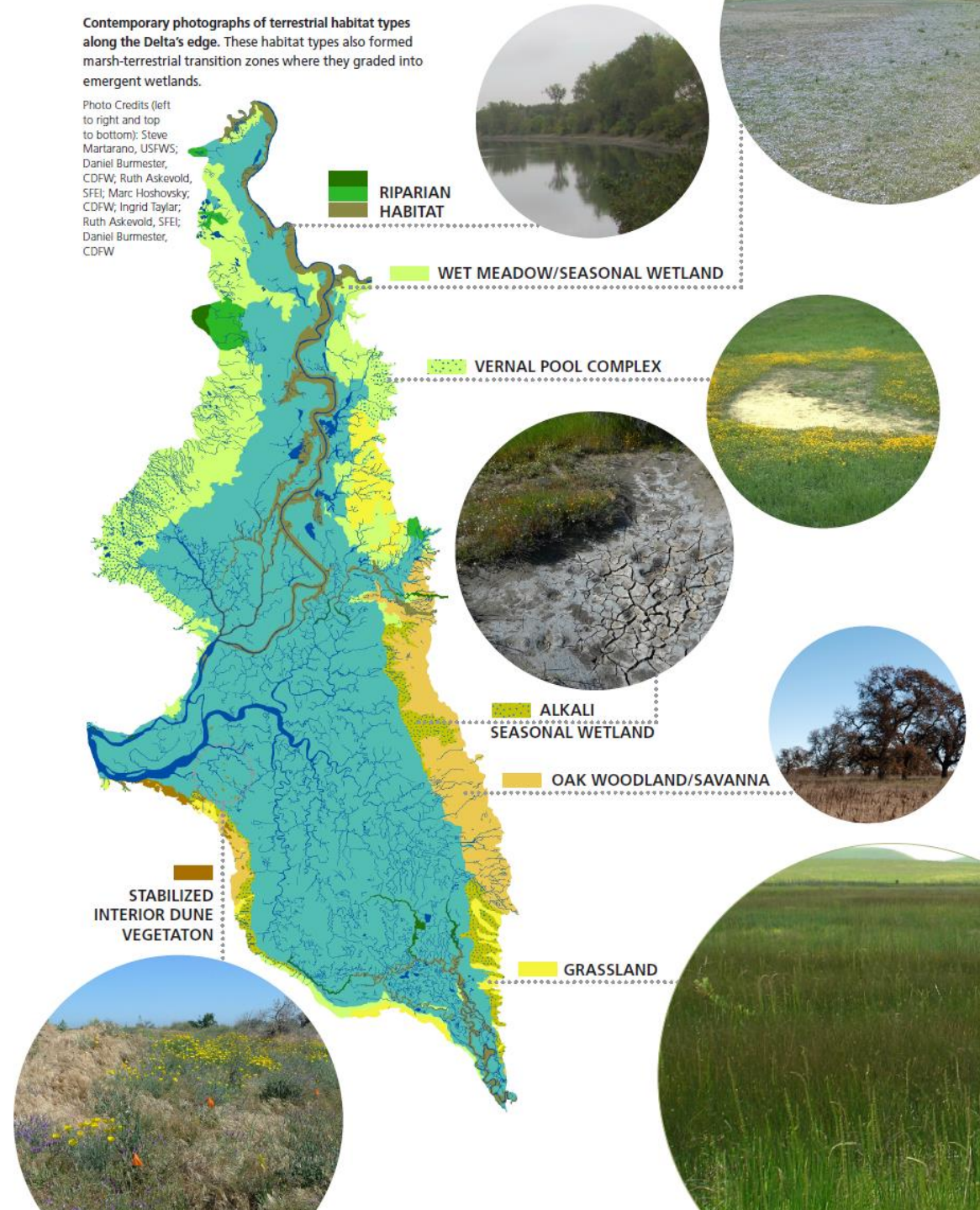
# Historical Delta



Ancestral and current un-ceded territory historically stewarded by Bay Miwok, Coast Miwok, Plains Miwok, Maidu, Nisenan, Ohlone, Patwin, Pomo, Wappo, Wintun, and Yokuts

Contemporary photographs of terrestrial habitat types along the Delta's edge. These habitat types also formed marsh-terrestrial transition zones where they graded into emergent wetlands.

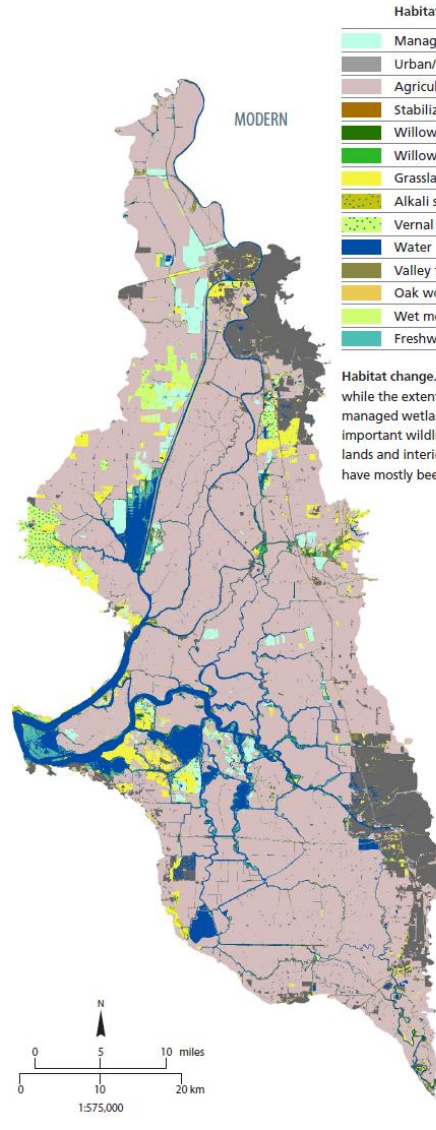
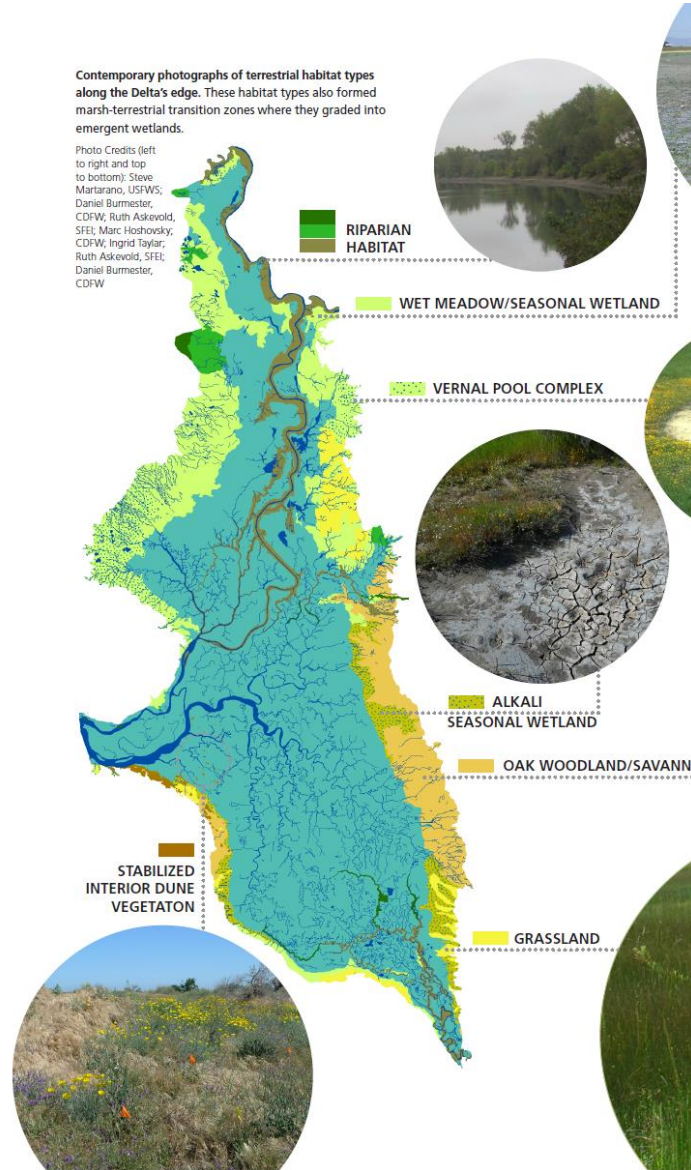
Photo Credits (left to right and top to bottom): Steve Martarano, USFWS; Daniel Burmester, CDFW; Ruth Askevold, SFEI; Marc Hoshovsky, CDFW; Ingrid Taylor; Ruth Askevold, SFEI; Daniel Burmester, CDFW



# Modern Delta

Contemporary photographs of terrestrial habitat types along the Delta's edge. These habitat types also formed marsh-terrestrial transition zones where they graded into emergent wetlands.

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Habitat Type	Historical	Modern	% Change
Managed wetlands	0	9,454	∞
Urban/Barren	0	35,517	∞
Agriculture/Non-native/Ruderal	0	216,085	∞
Valley foothill riparian	15,608	4,010	-74
Oak woodland/savanna	20,460	0	-100
Wet meadow/Seasonal wetland	37,561	2,445	-93
Freshwater emergent wetland	193,224	4,253	-98



# Species Impacts



Delta Smelt



Giant Garter Snake

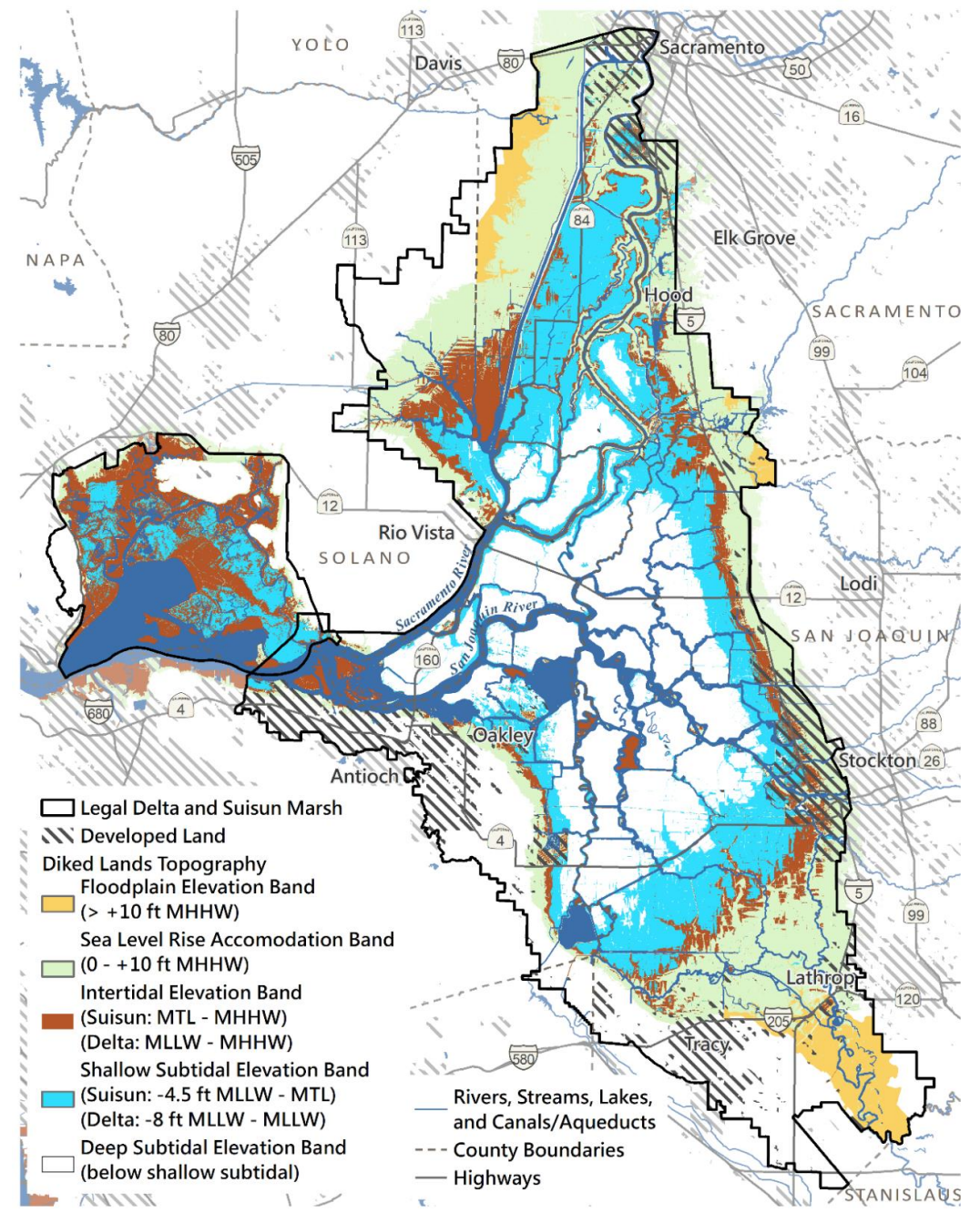
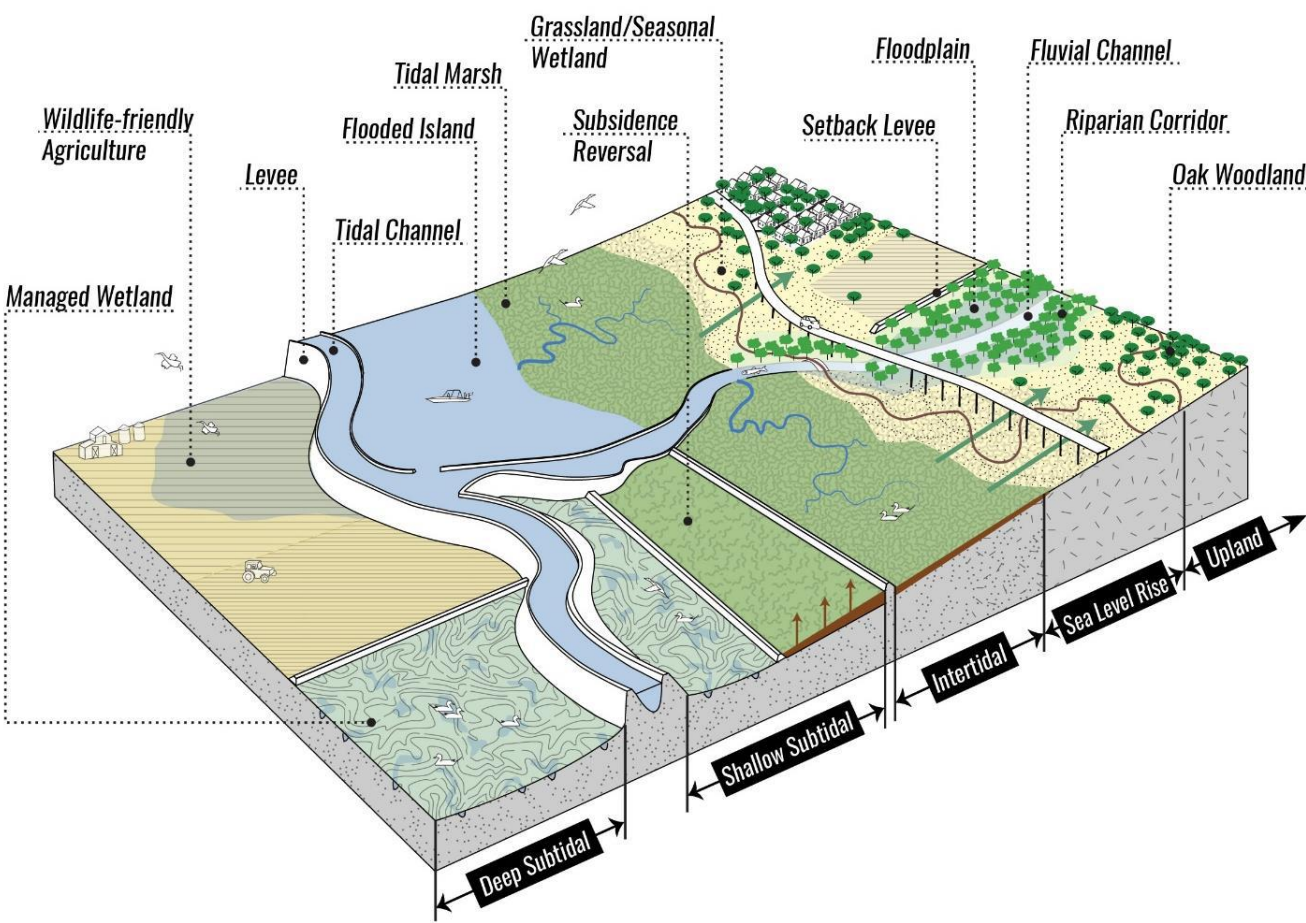


Chinook Salmon



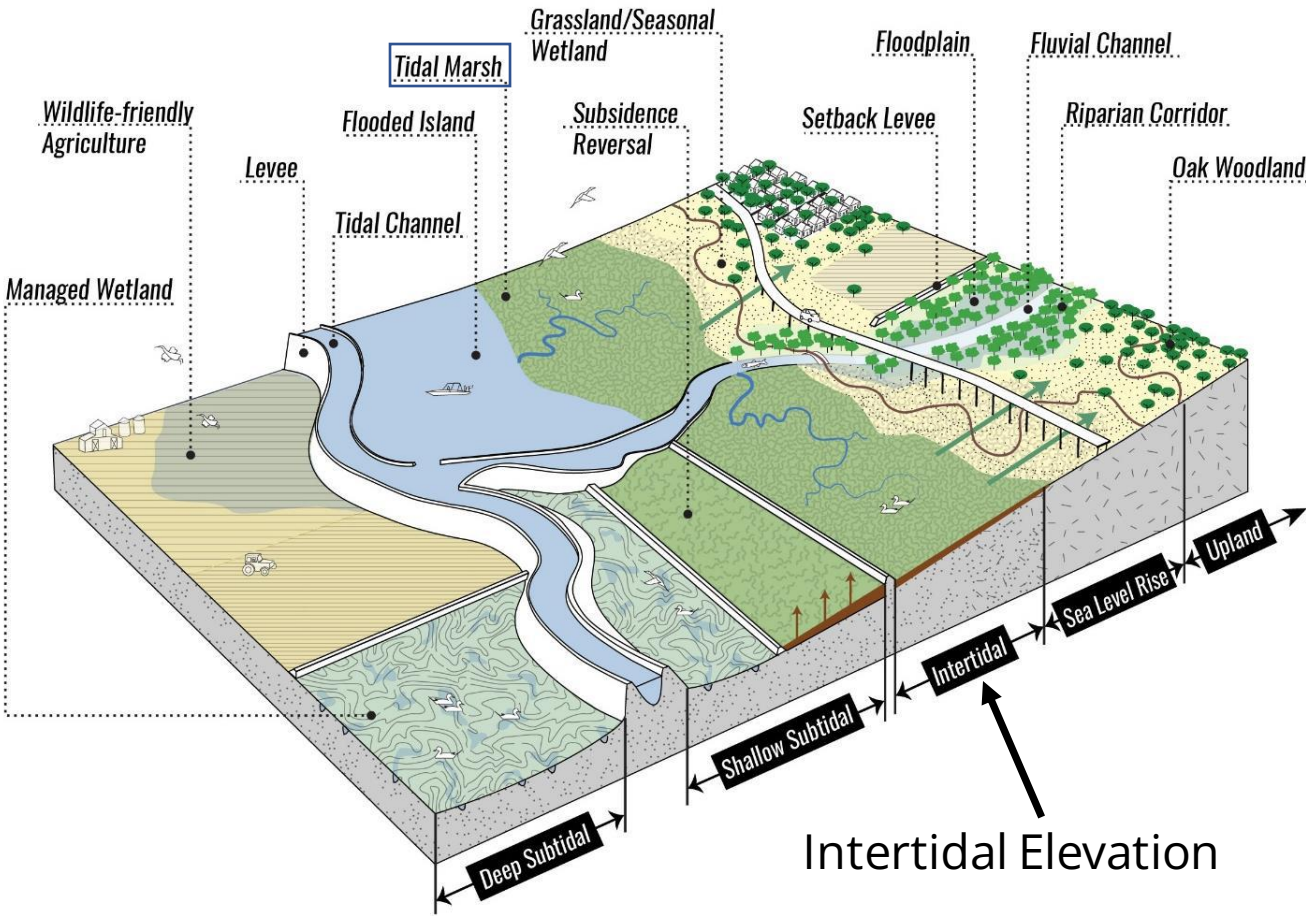
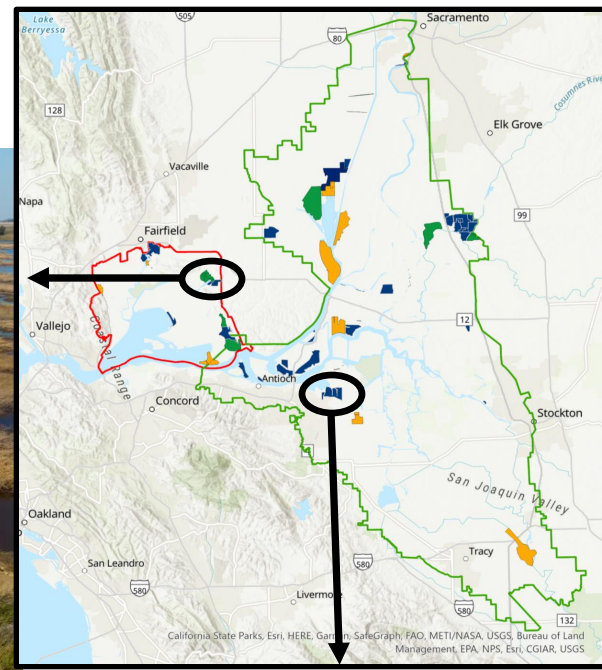
Swainson's Hawk

# Elevation is Destiny for Restoration

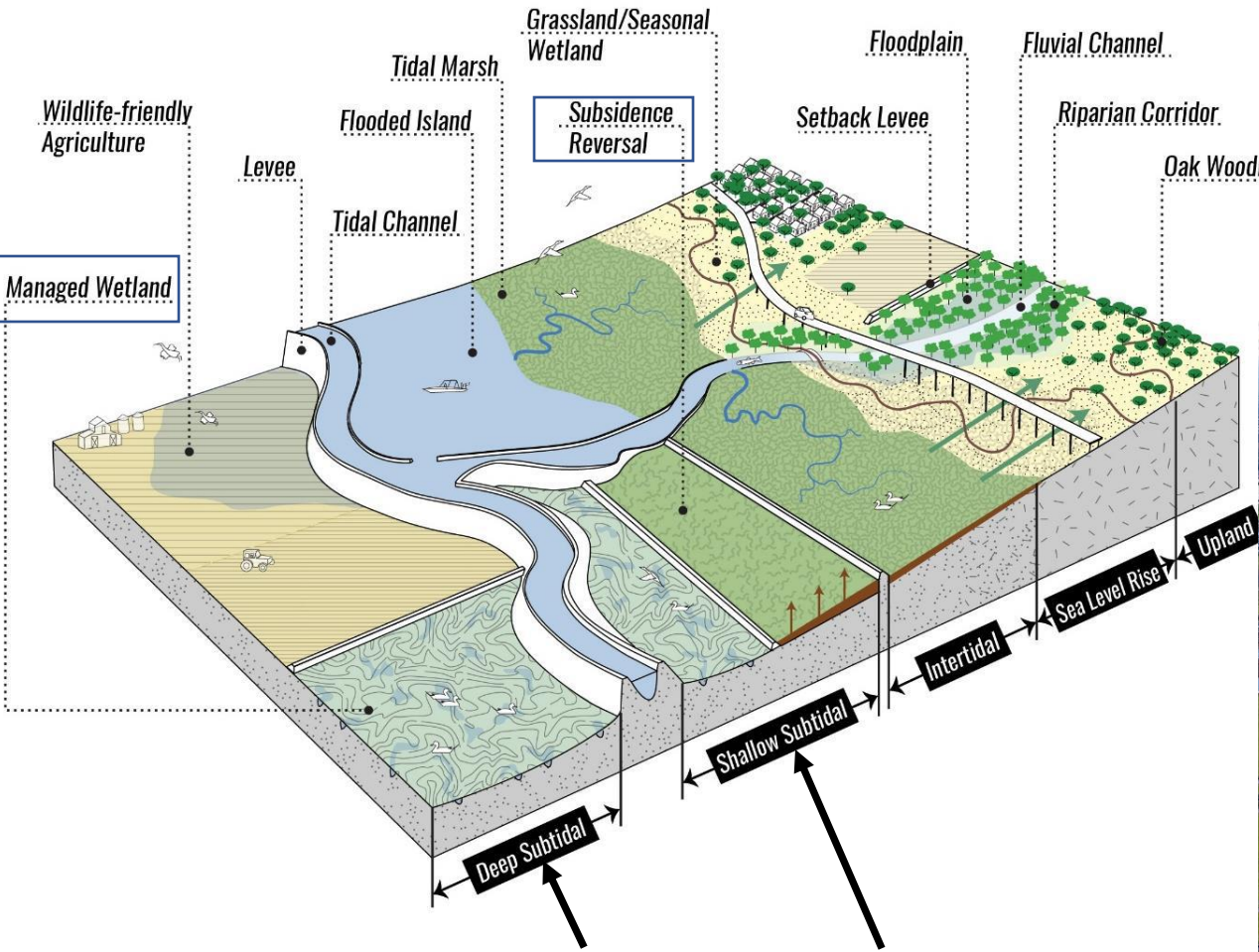
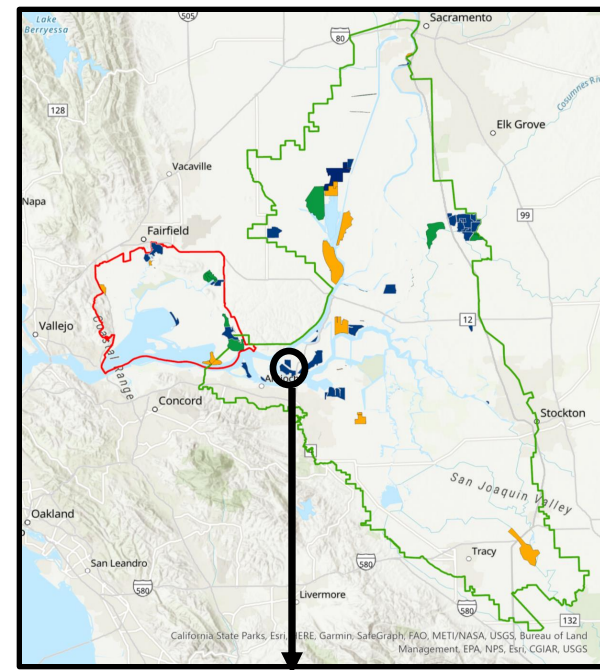


# Tidal Wetland: daily tidal inundation, tidal channels

## 32,500 acre Delta Plan Target



# Non-Tidal Wetland: no direct connection to rivers or tides, often subsidence-reversal projects 19,500 acre Delta Plan Target



Deep/Shallow Subtidal Elevation

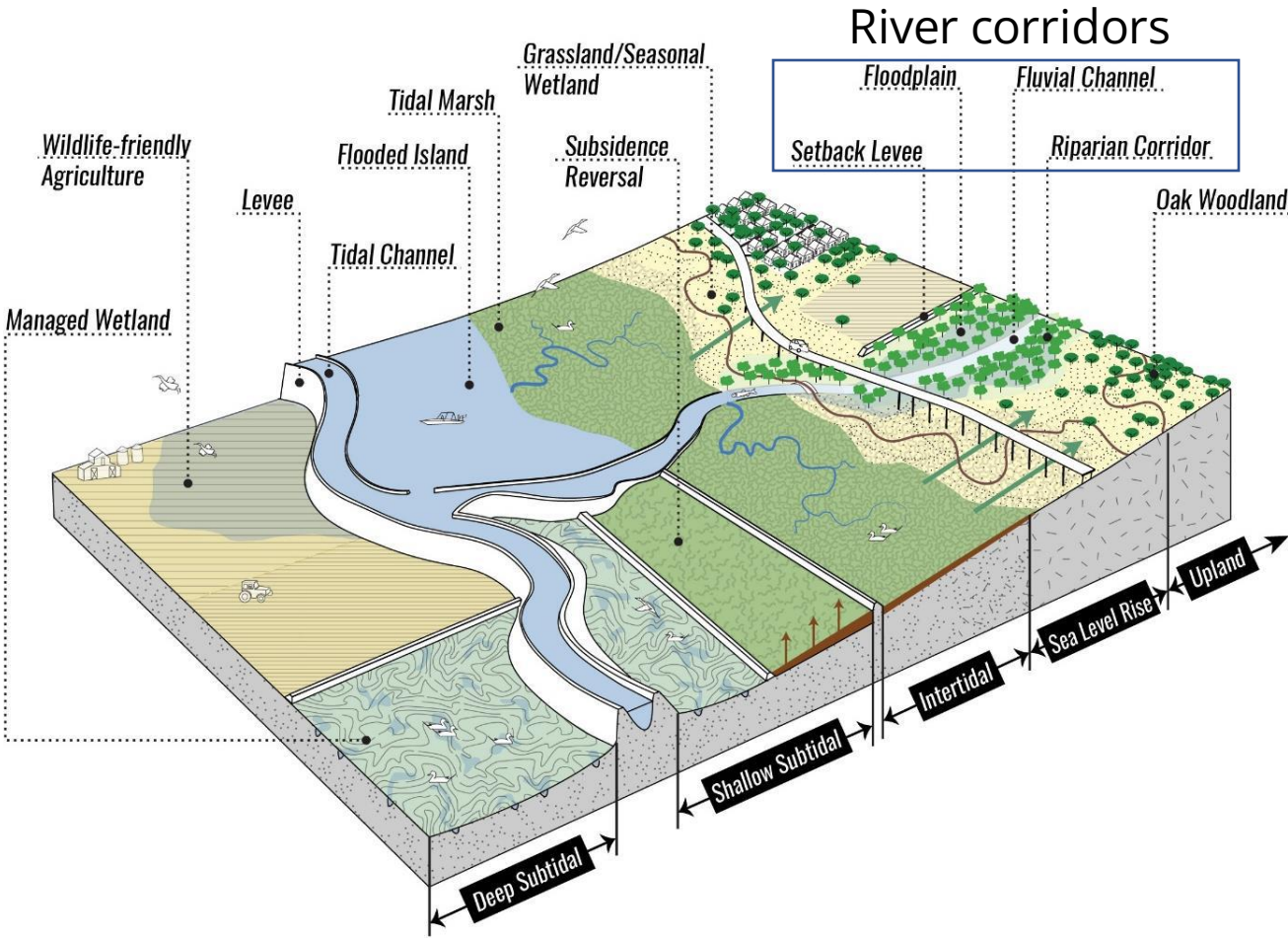
Mayberry Wetland, Whale's Mouth Wetland, Sherman Island



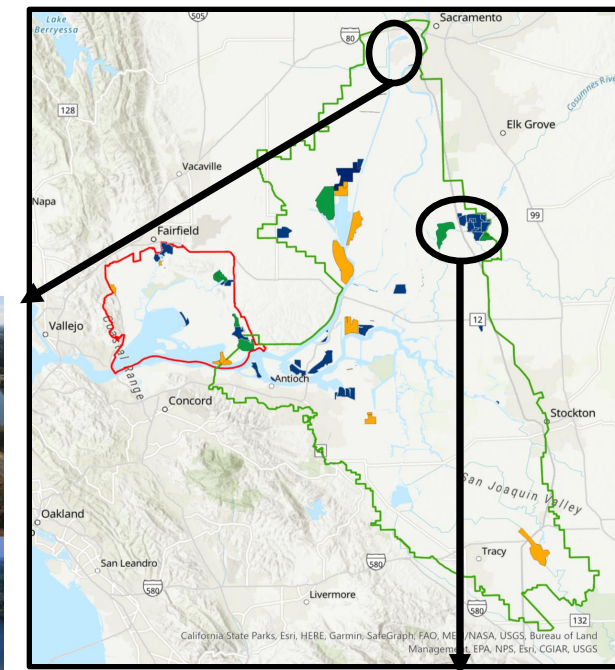


# Riparian and Floodplain: Connected to river corridors, along levee edges, and groundwater-wetted areas

## 16,300 acre Delta Plan Target



Southport Levee, West Sacramento

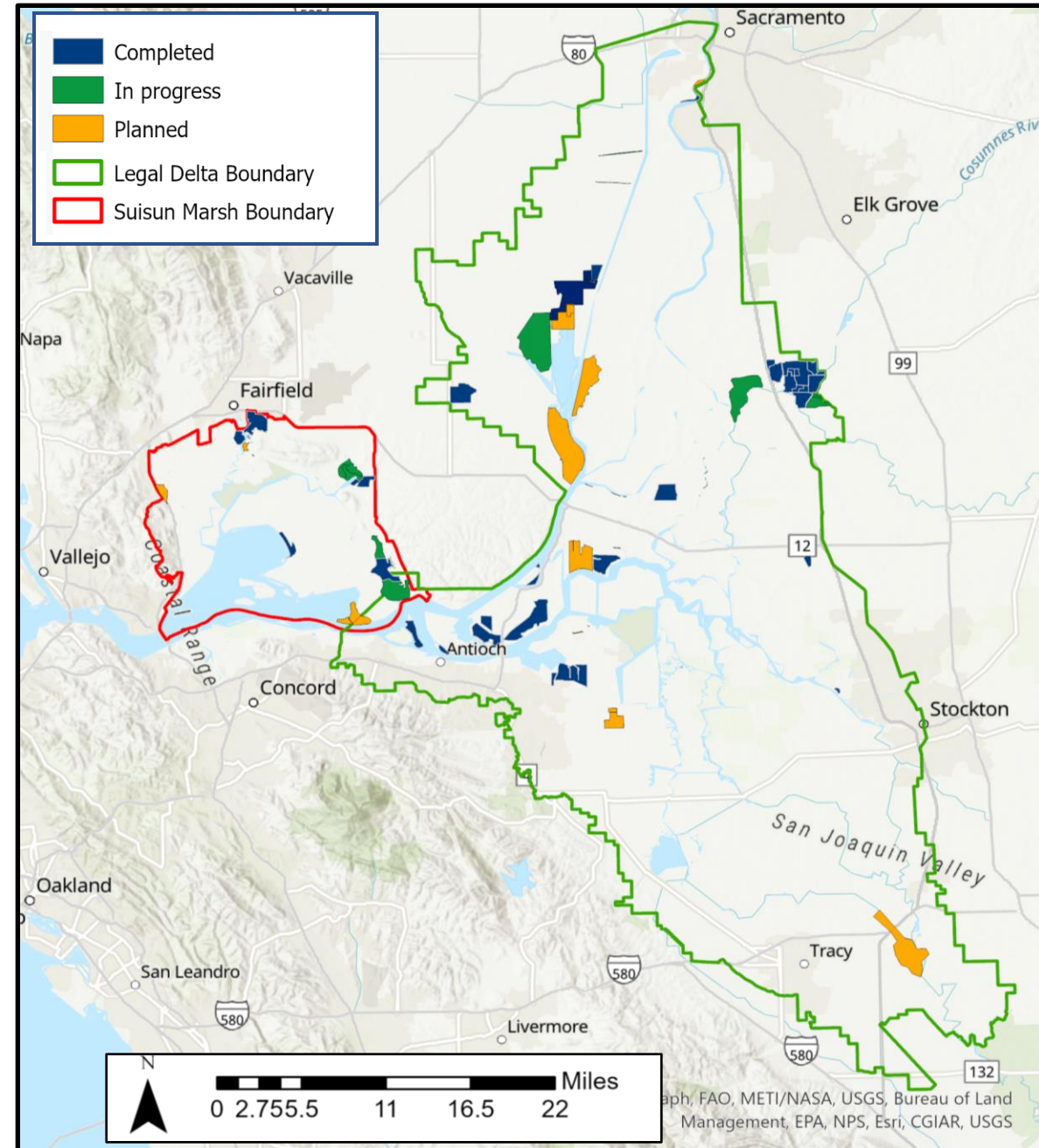


Cosumnes River Preserve, Galt



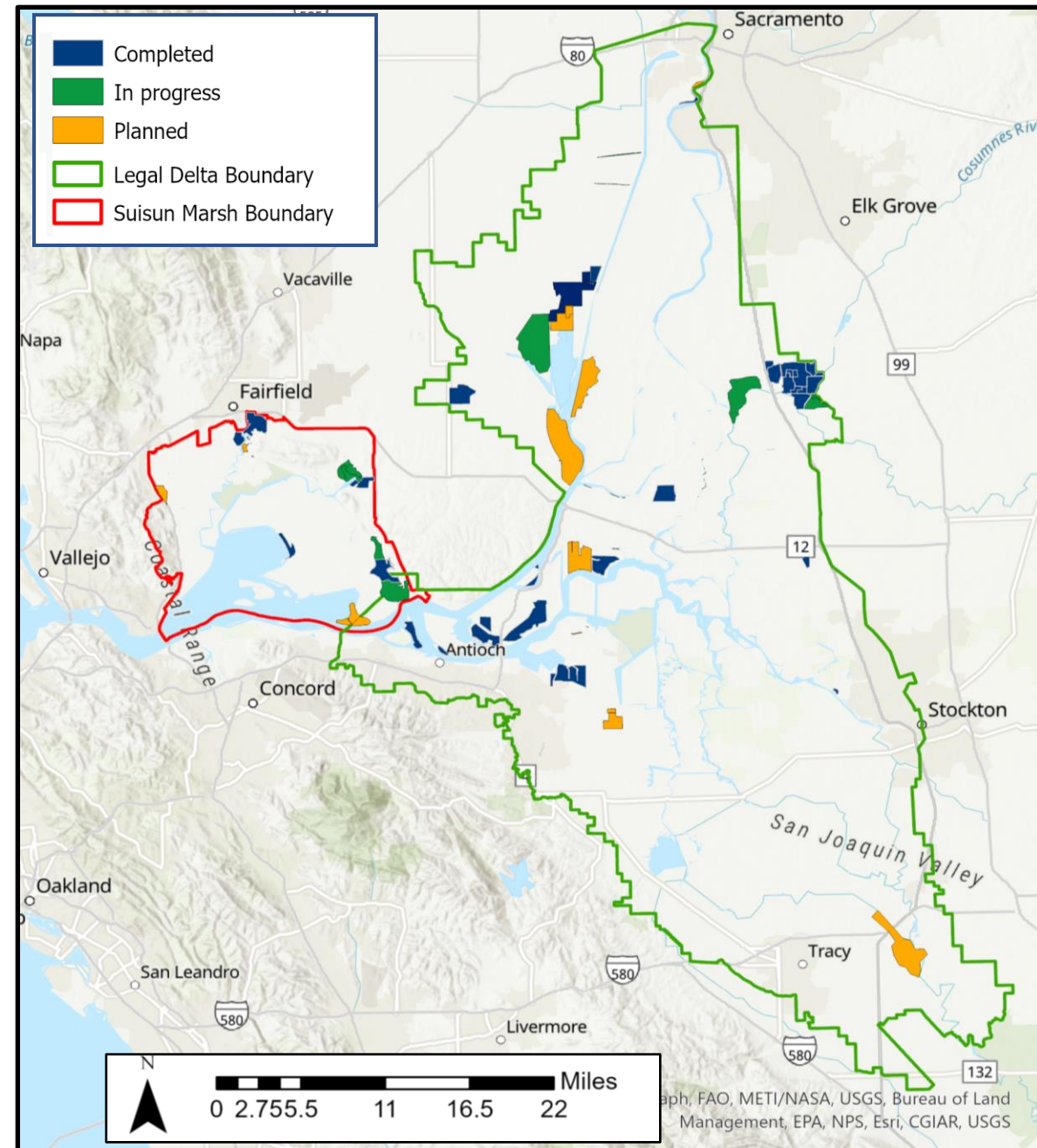
# Review Scope

- **Gap:** What progress has been made towards restoration targets since 2007?
- **Spatial:** Legal Delta and Suisun Marsh, EcoAtlas Data



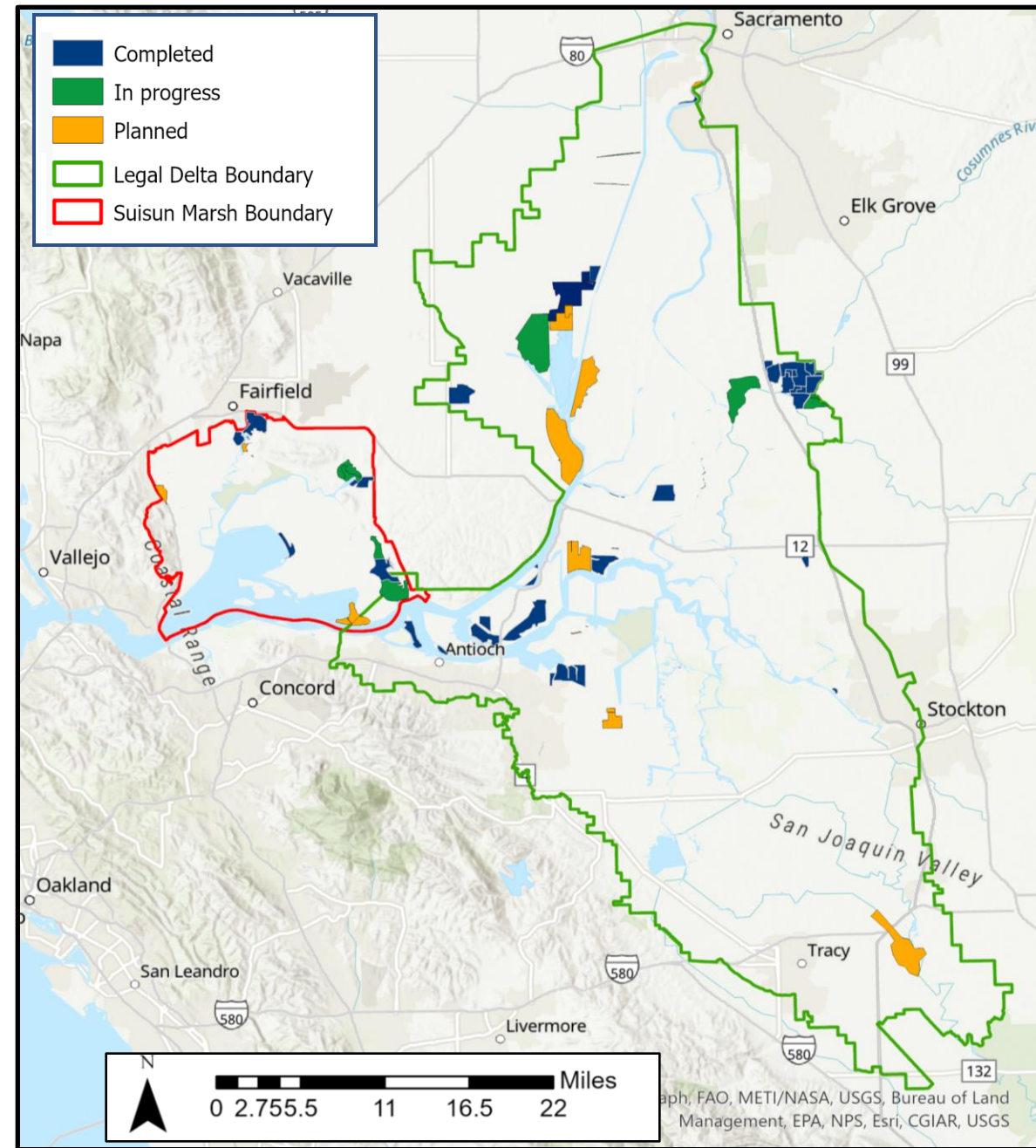
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- **Projects:**
  - Planting, construction, and related activities to create new habitat



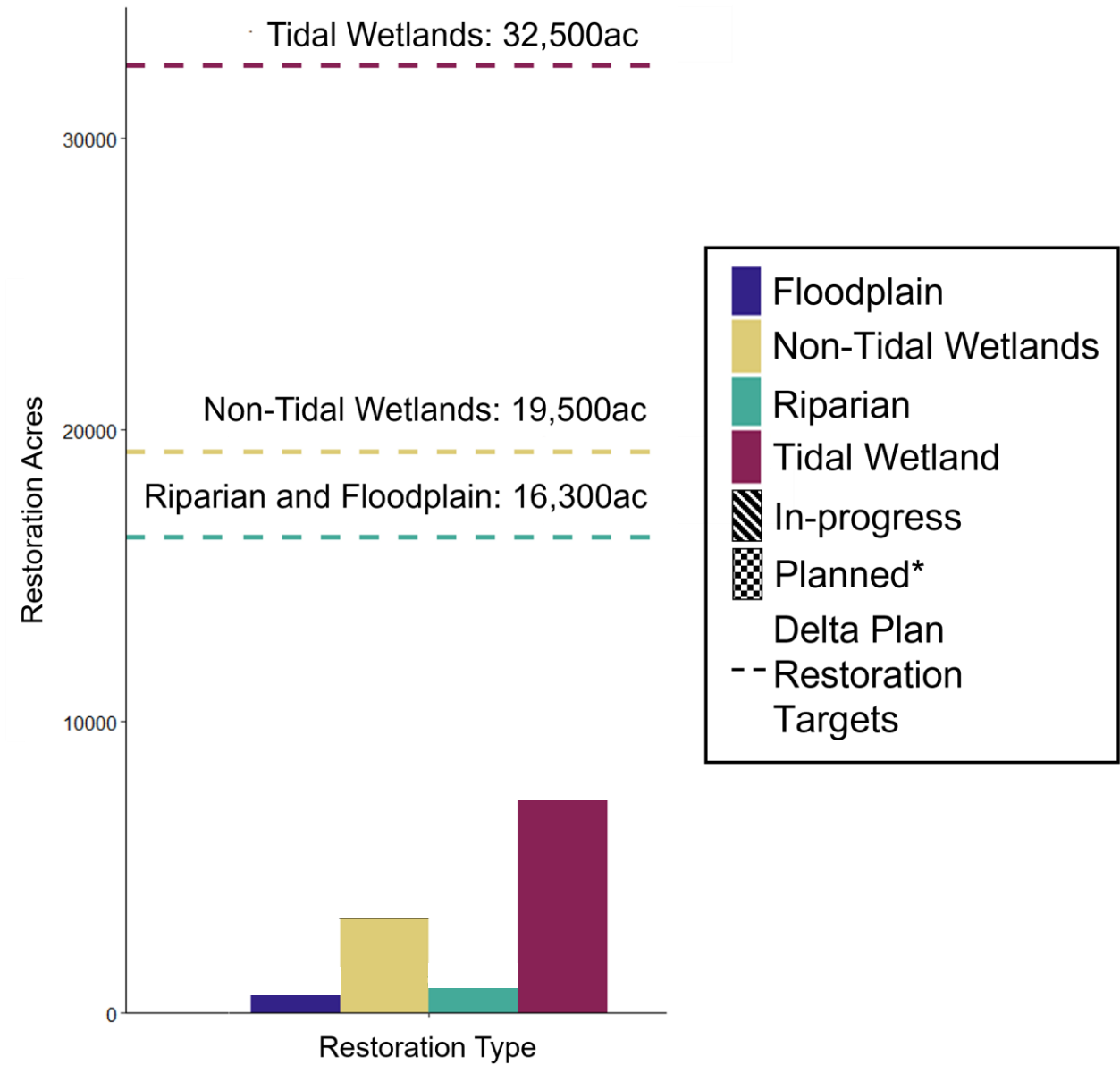
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- **Phase:** Completed, In Progress, and Planned



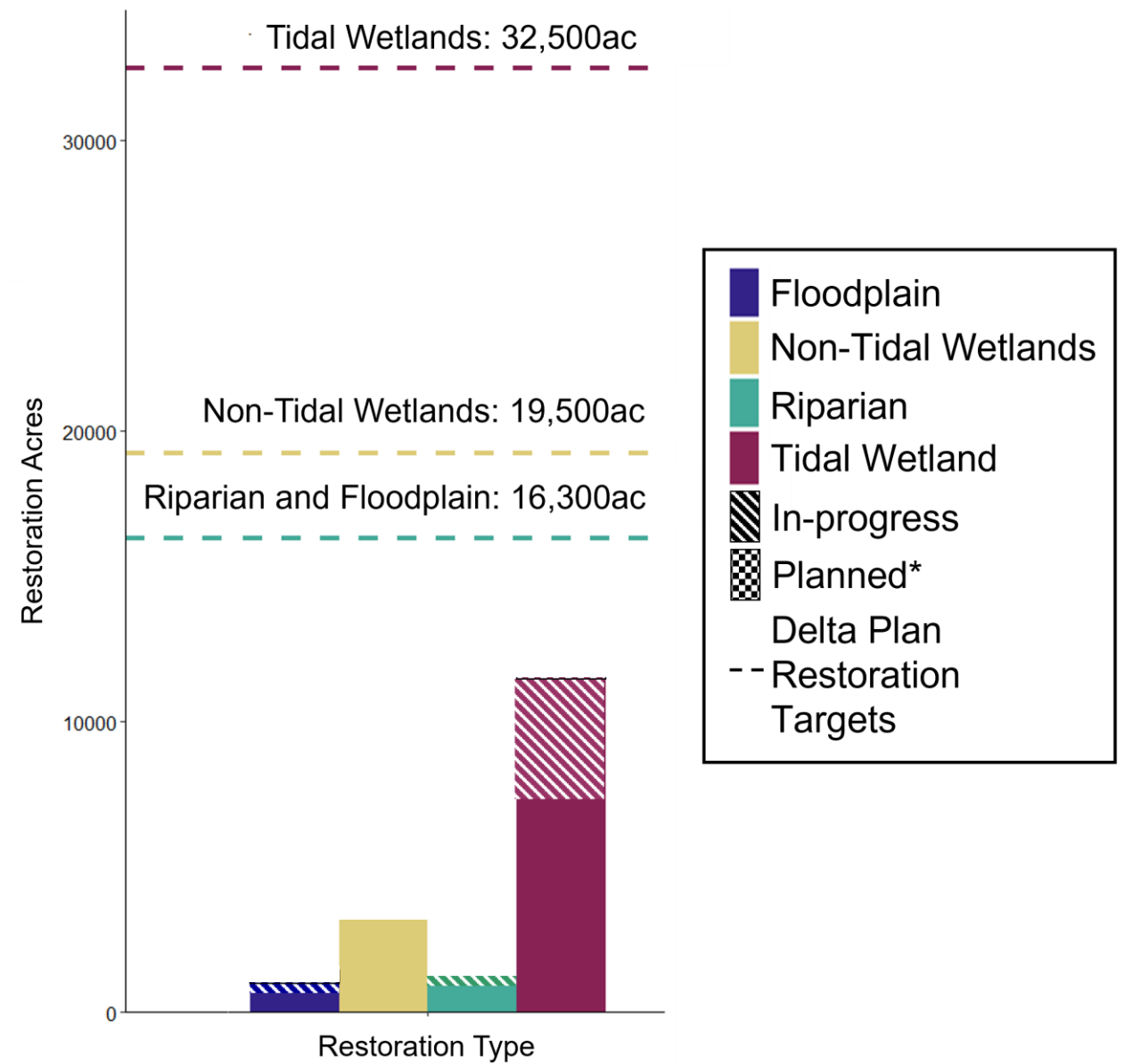
# Progress Towards Restoration Targets

<u>Phase</u>	<u>Tidal Wetlands</u>	<u>Non-Tidal Wetlands</u>	<u>Riparian and Floodplain</u>
	7,129	2,777	699



# Progress Towards Restoration Targets

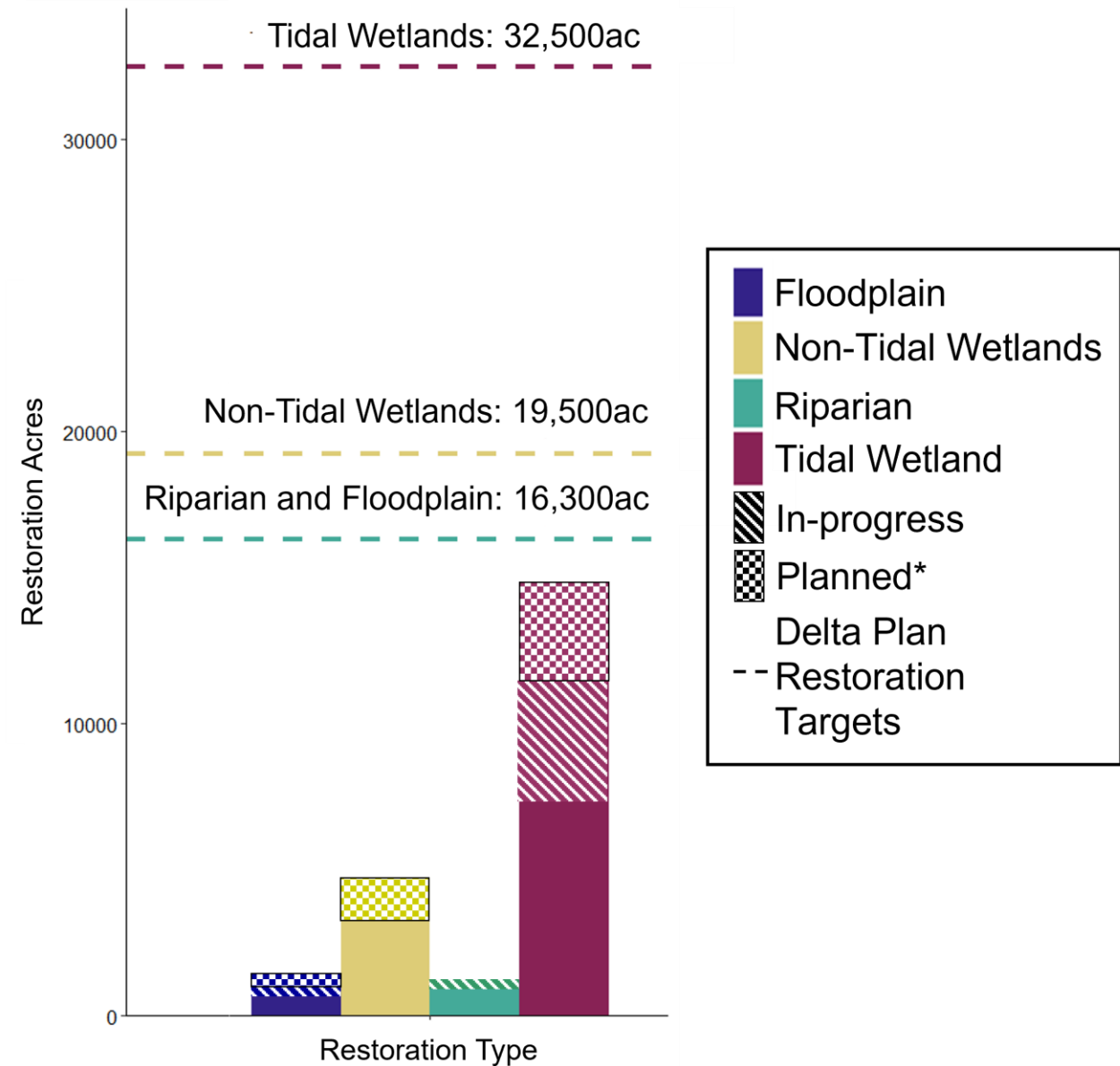
Phase	Tidal Wetlands	Non-Tidal Wetlands	Riparian and Floodplain
	7,129	2,777	699
	4,073	18	690



# Progress Towards Restoration Targets

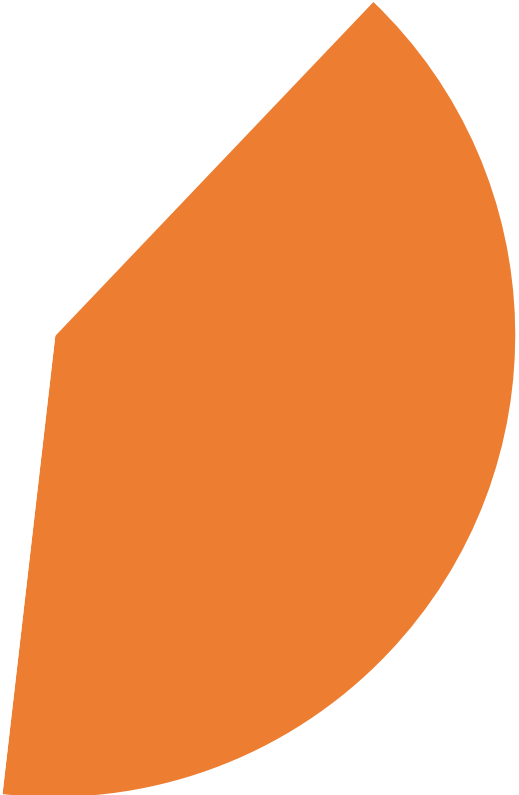
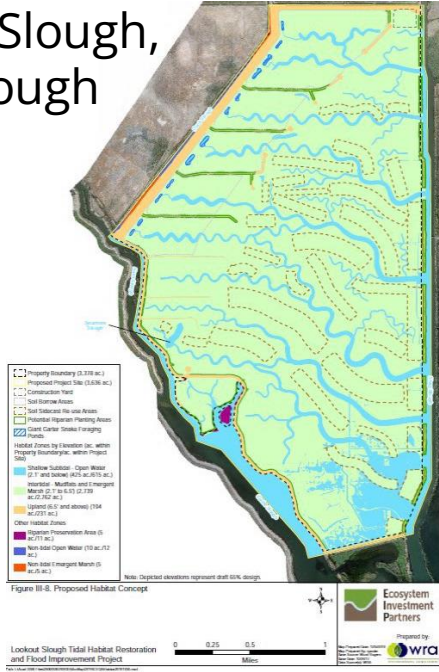
Phase	Tidal Wetlands	Non-Tidal Wetlands	Riparian and Floodplain
Completed (constructed) since 2008	7,129	2,777	699
In progress	4,073	18	690
Planned	4,736	1,442	511
<b>TOTAL</b>	<b>14,624</b>	<b>4,238</b>	<b>1,900</b>
<i>Delta Plan Performance Measure Targets</i>	<b>32,500</b>	<b>19,500</b>	<b>16,300</b>

- **64%** of total, **88%** of tidal wetland restoration acreage completed since 2017
- Restoration projects can take decades to develop



# Restoration Motivations

Lookout Slough, Cache Slough

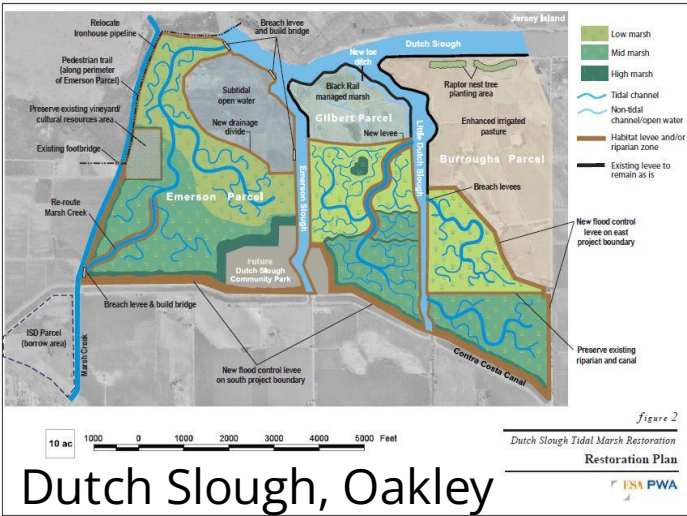


Water Project Mitigation  
40% (8830 ac)

Planned, In Progress, and Completed

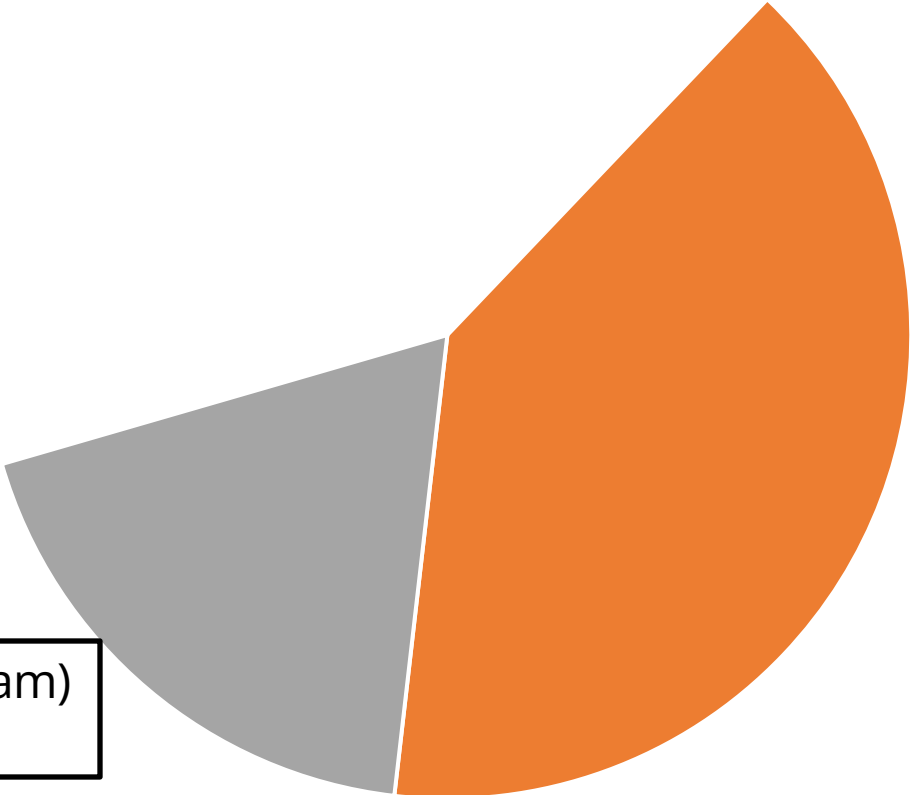


# Restoration Motivations



Dutch Slough, Oakley

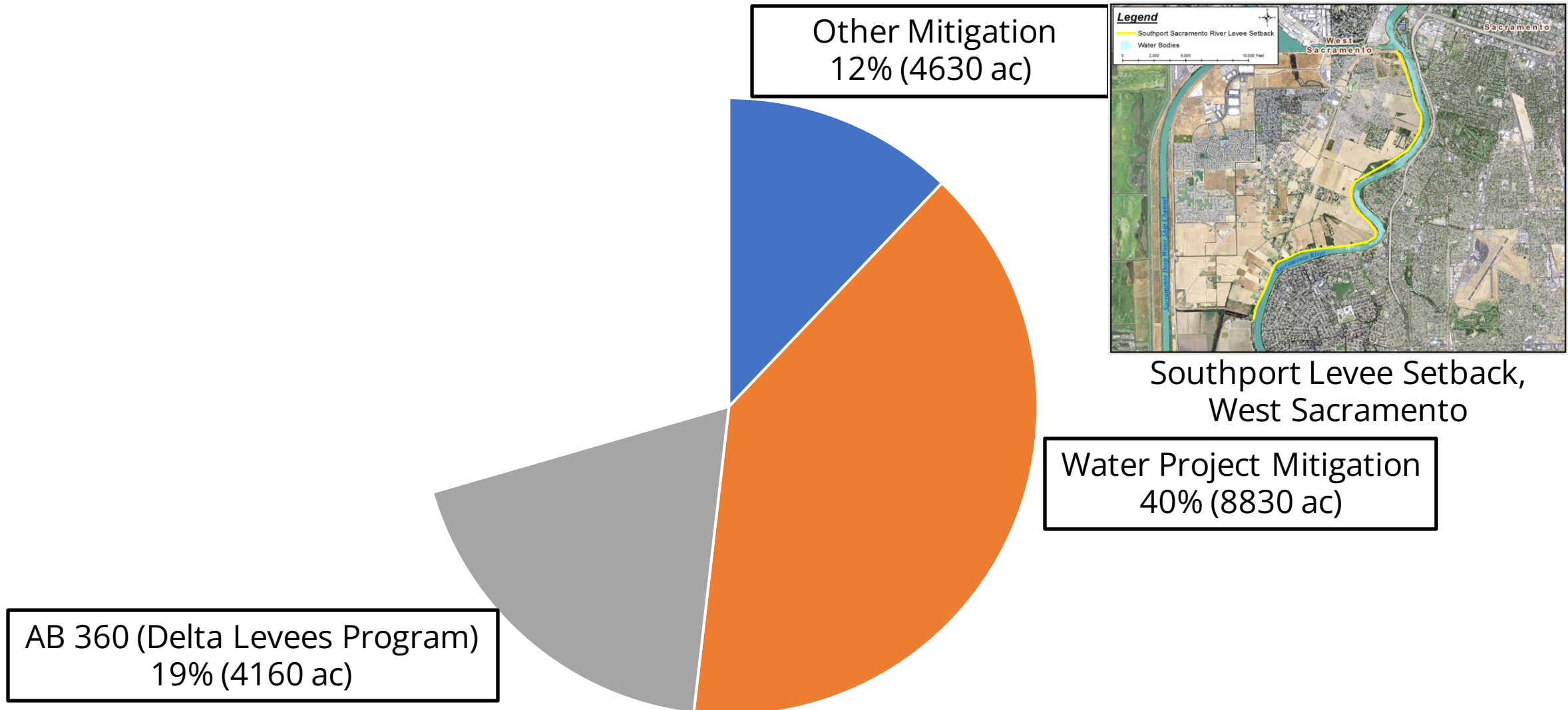
AB 360 (Delta Levees Program)  
19% (4160 ac)



Water Project Mitigation  
40% (8830 ac)

Planned, In Progress, and Completed

# Restoration Motivations



**Planned, In Progress, and Completed**

# Restoration Motivations

Green Infrastructure  
20% (4630 ac)

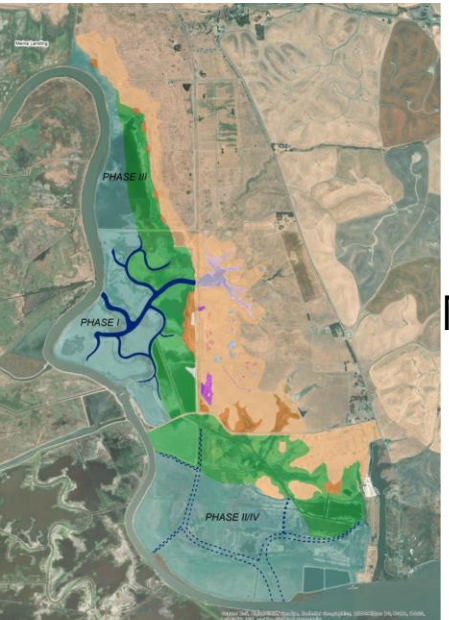
Other Mitigation  
12% (4630 ac)

Water Project Mitigation  
40% (8830 ac)

Montezuma  
Wetlands,  
Suisun  
Marsh

AB 360 (Delta Levees Program)  
19% (4160 ac)

**Planned, In Progress, and Completed**



# Restoration Motivations

Non-Mandated Restoration  
9% (1930 ac)

Other Mitigation  
12% (4630 ac)

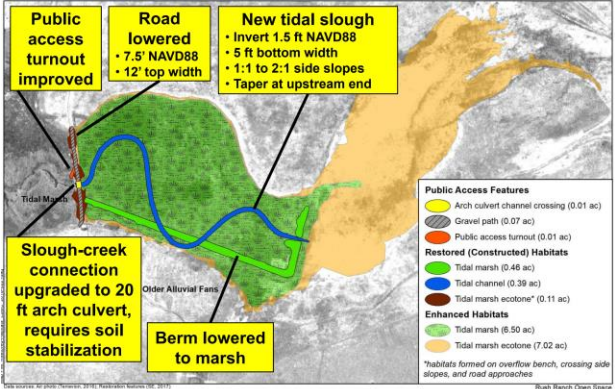


Figure 5  
Restored and Enhanced Habitats and Public Access Features, LSBC

Lower Spring Branch Creek,  
Suisun Marsh

Green Infrastructure  
20% (4630 ac)

Water Project Mitigation  
40% (8830 ac)

AB 360 (Delta Levees Program)  
19% (4160 ac)

Planned, In Progress, and Completed

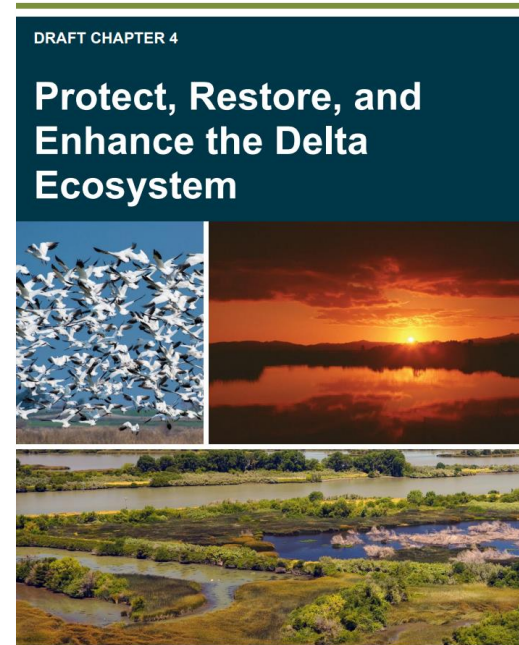
# Related Efforts

- Delta Plan Chapter 4 and DPIIC Restoration Subcommittee
- System-level ecosystem restoration adaptive management
- Delta Adapts Adaptation Strategy scenario planning
- Delta Plan Restoration Performance Measures

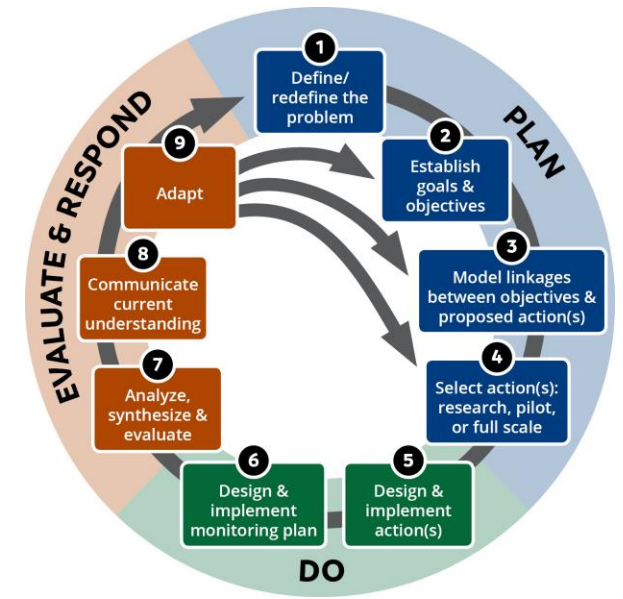


Delta Plan Interagency  
Implementation  
Committee

DELTA STEWARDSHIP COUNCIL



DELTA STEWARDSHIP COUNCIL  
*Delta Plan Performance Measures*



Delta Adapts:  
Creating a Climate  
Resilient Future

# Thank you

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# Data Sources

## EcoAtlas

- Projects clipped to Legal Delta and Suisun Marsh
- Initial projects: **n=178**
- Projects meeting scope: **n=64**

## Other Sources

- Agency reports
- DSC Covered Actions
- Expert Interviews

## Documents

- CEQA documents
- EcoRestore project fact sheets
- Bond Accountability reports
- If no official documents available: online articles, press releases, other media

