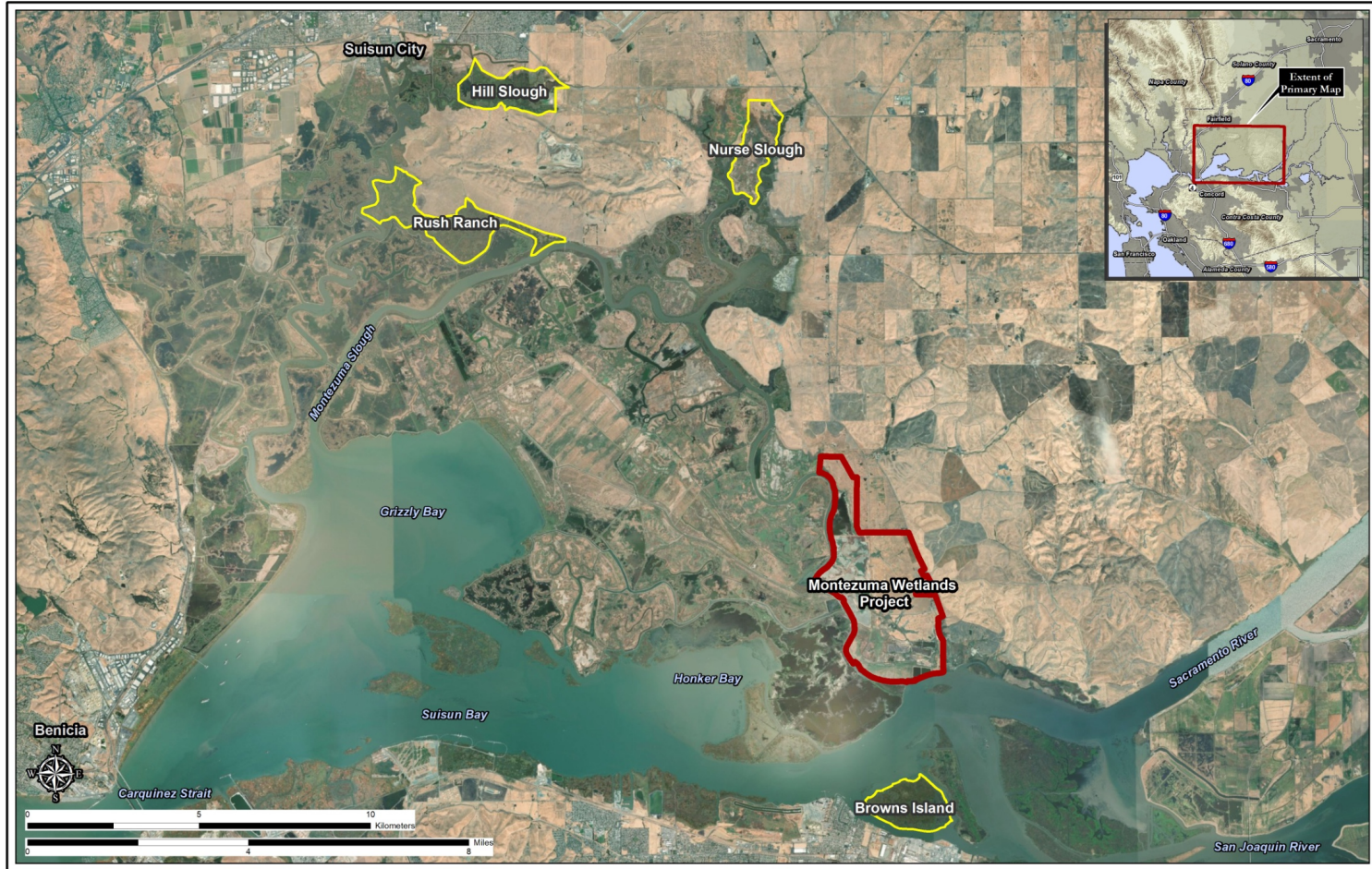
An aerial photograph of the Montezuma Wetlands, showing a complex network of winding water channels and marshes. The water is a deep blue, and the surrounding land is a mix of brown and green, indicating different types of vegetation and soil. The sky is a clear, light blue, suggesting a bright day.

Integrating Adaptive Management Across Project Phases at Montezuma Wetlands

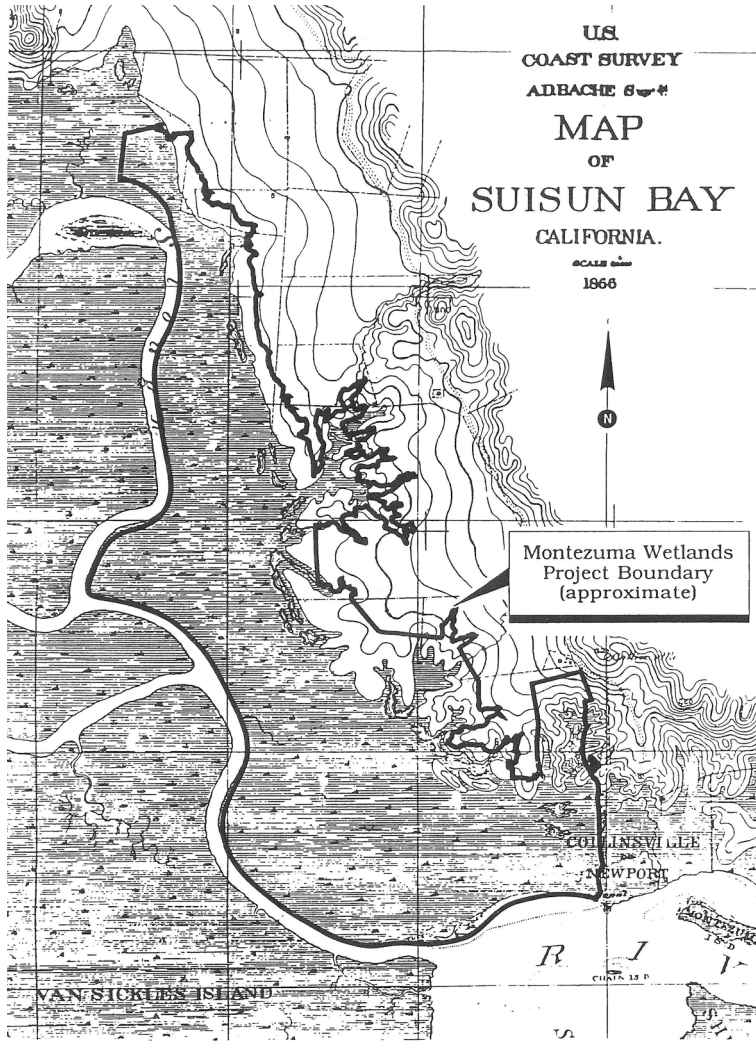
Adaptive Management Forum
February 4, 2021

Cassie Pinnell, Dr. Douglas Lipton, Roger Leventhal, James Levine

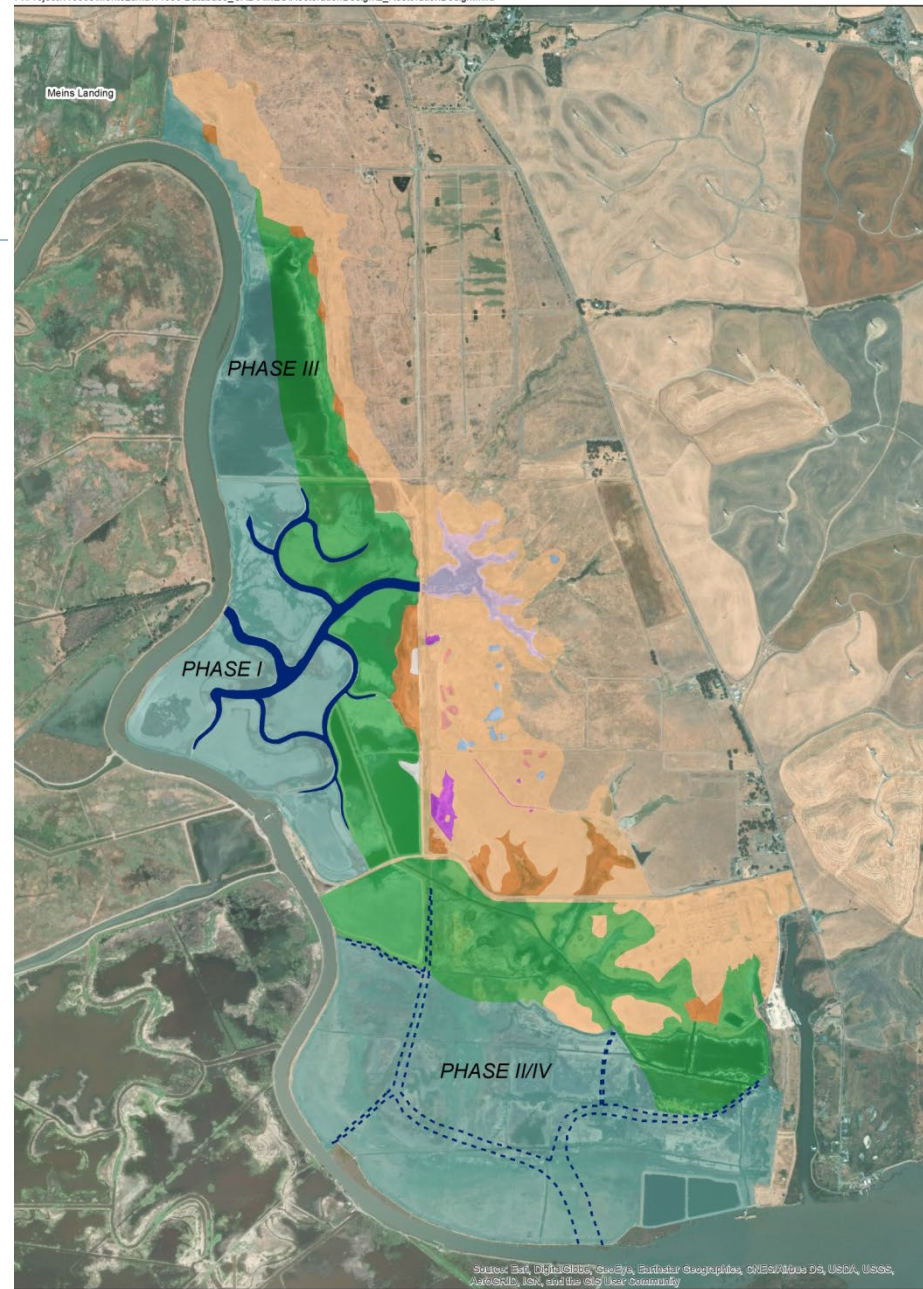
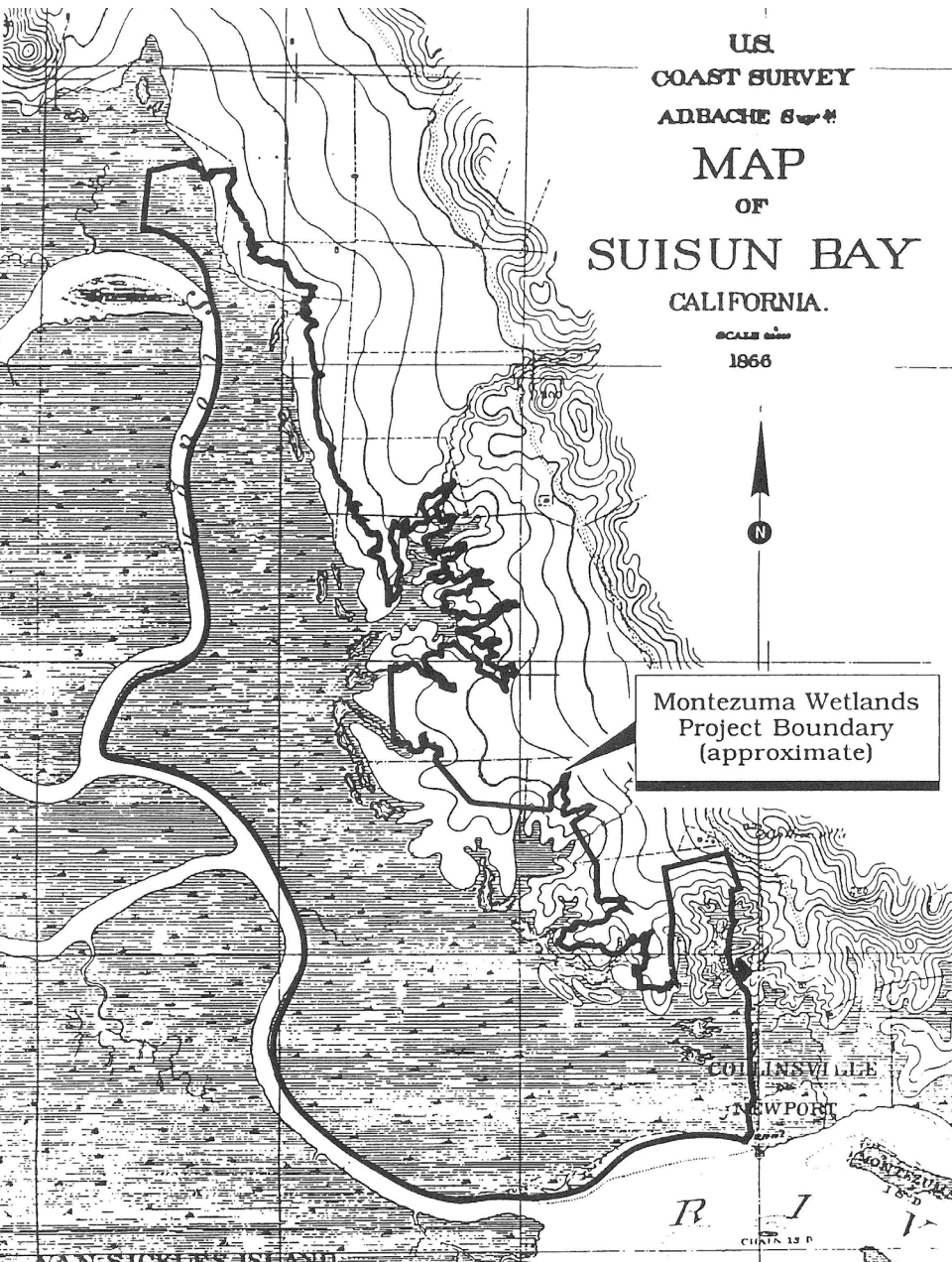
Site Location



Site History



Site Design



Explanation:

Clank Hollow	Avoided Vernal Pools
Intertidal Channels	Upland Transition and Buffer
Low Intertidal Marsh	Seasonally Wet Depressions
High Intertidal Marsh	Least Tern Areas
Created Vernal Pools	Anticipated Future Tidal Channels
Preserved Vernal Pools	

0 1,000
Feet

**RESTORATION DESIGN
PHASES I, II/IV AND III
Montezuma Wetlands Project**

Date: 01/04/2019 Project No. 11095

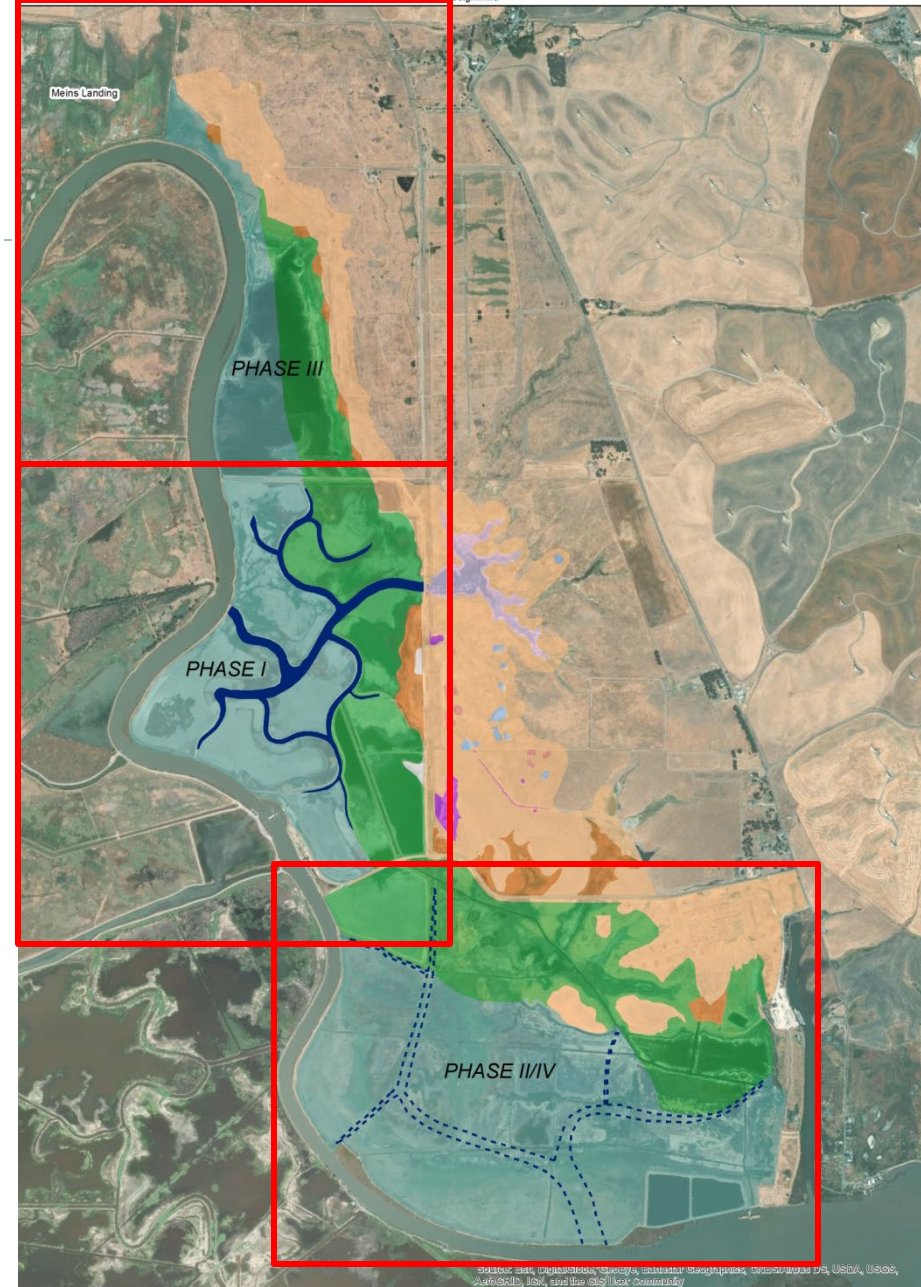
**Figure
2**

Sediment Offloading System



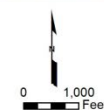
Temporal and Spatial Phasing

- ▶ Phases isolated
- ▶ Performance Criteria before next phase
- ▶ Designs revised based on lessons learned, and best available science
- ▶ Permits and Plans updated, as needed



Explanation:

- | | |
|------------------------|-----------------------------------|
| Clank Hollow | Avoided Vernal Pools |
| Intertidal Channels | Upland Transition and Buffer |
| Low Intertidal Marsh | Seasonally Wet Depressions |
| High Intertidal Marsh | Least Tern Areas |
| Created Vernal Pools | Anticipated Future Tidal Channels |
| Preserved Vernal Pools | |



RESTORATION DESIGN PHASES I, II/IV AND III
Montezuma Wetlands Project

Date: 01/04/2019 Project No. 11095



Figure 2

Framework: Adaptive Management

- ▶ **Science and Oversight**
 - ▶ Technical Review Team (chair: Josh Collins, SFEI)
 - ▶ Project Team (Sediment, Engineering, Biology, Chemistry)
 - ▶ Technical Specialists – Monitoring
 - ▶ Resource Agencies (Permits, Review, and Support)



Creation of CA Least Tern and Snowy Plover Habitat



Staged Tidal Restoration of Phase 1

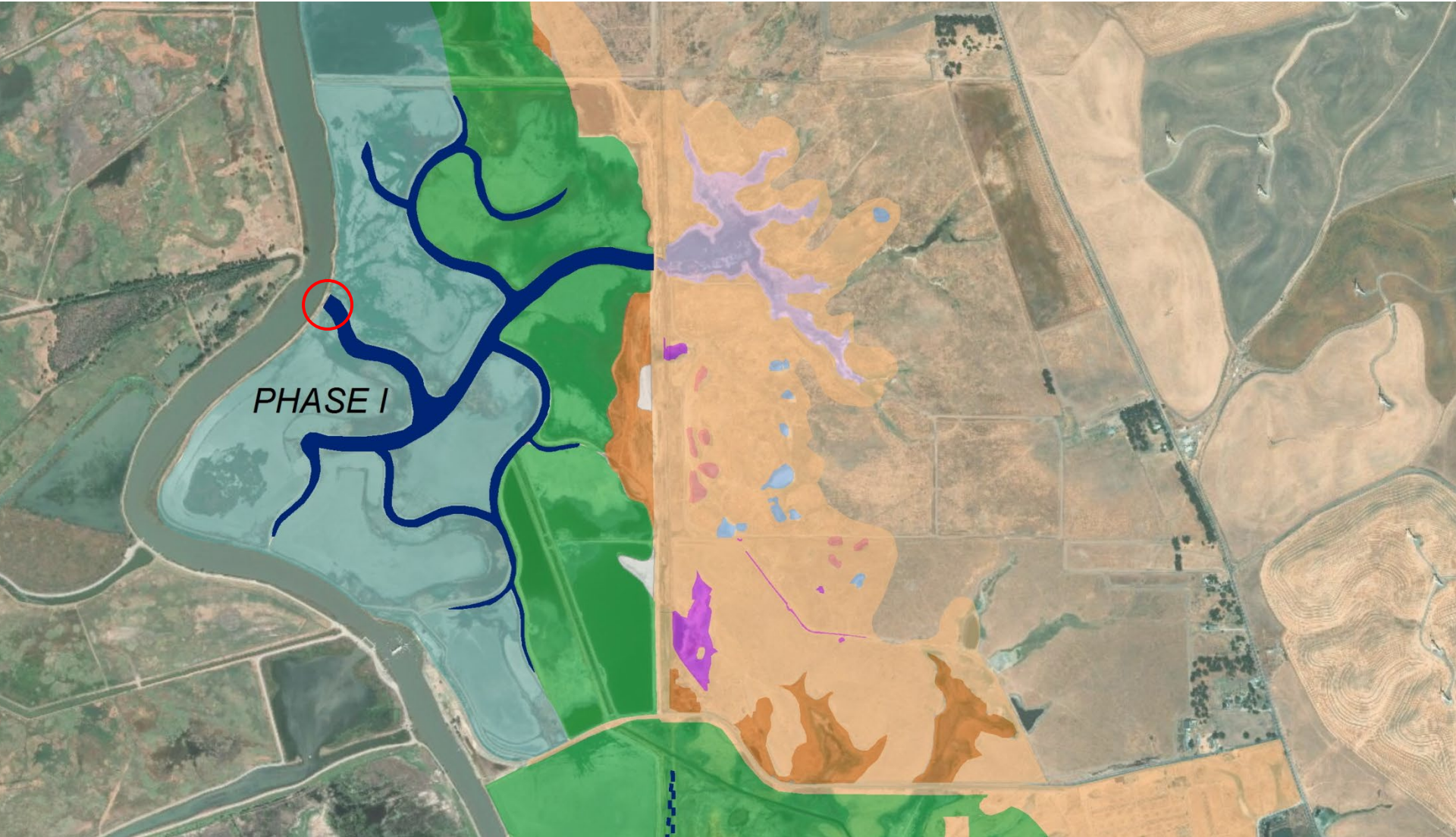


Modification of High Marsh Design for Salt Marsh Harvest Mouse



Photo credit: Joseph DiDonato

Phase 1 Breach: Oct 27, 2020



Phase 1 Breach: Oct 27, 2020



King Tide – November 16, 2020





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- ▶ Dr. Douglas Lipton: docterre@sonic.net