

# DELTA ISLAND ADAPTATIONS

Sacramento Environmental Commission Presentation

April 25th, 2022

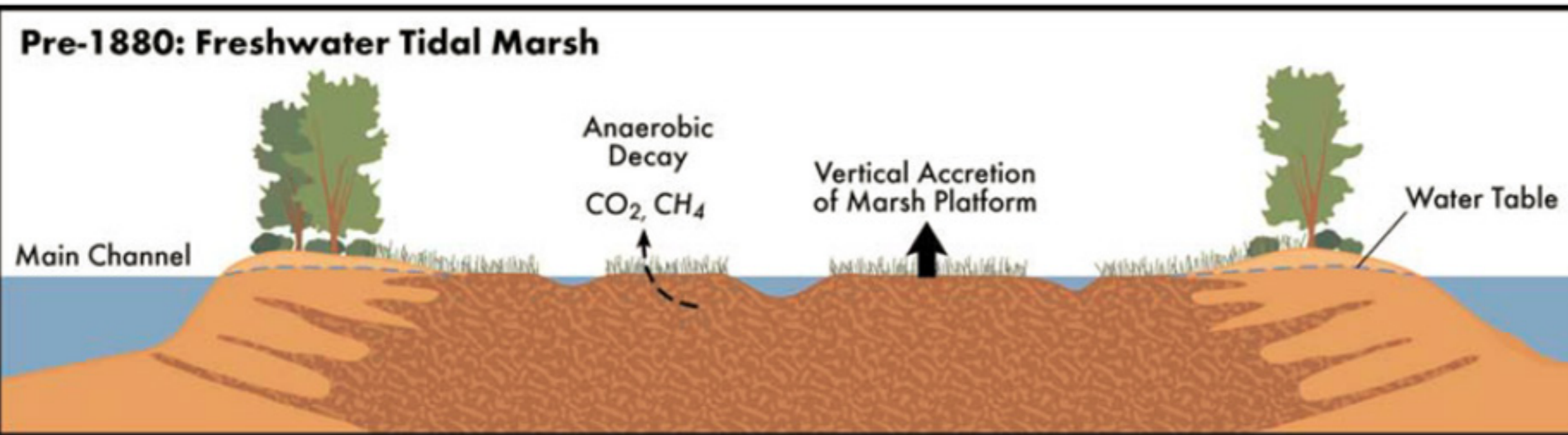


## **DIA PROJECT GOALS + DESCRIPTION**

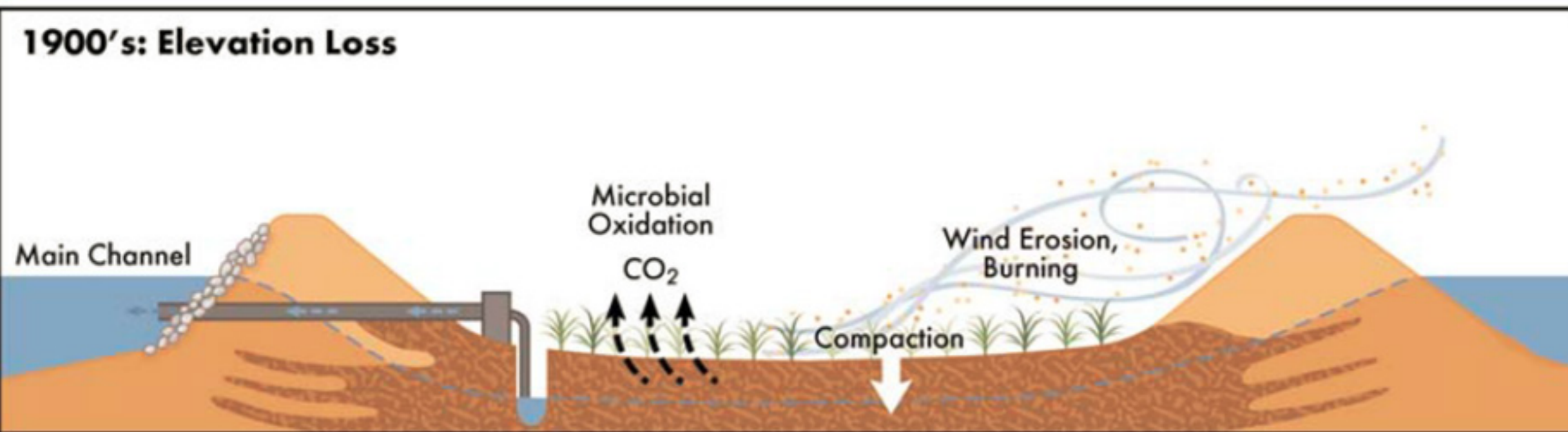
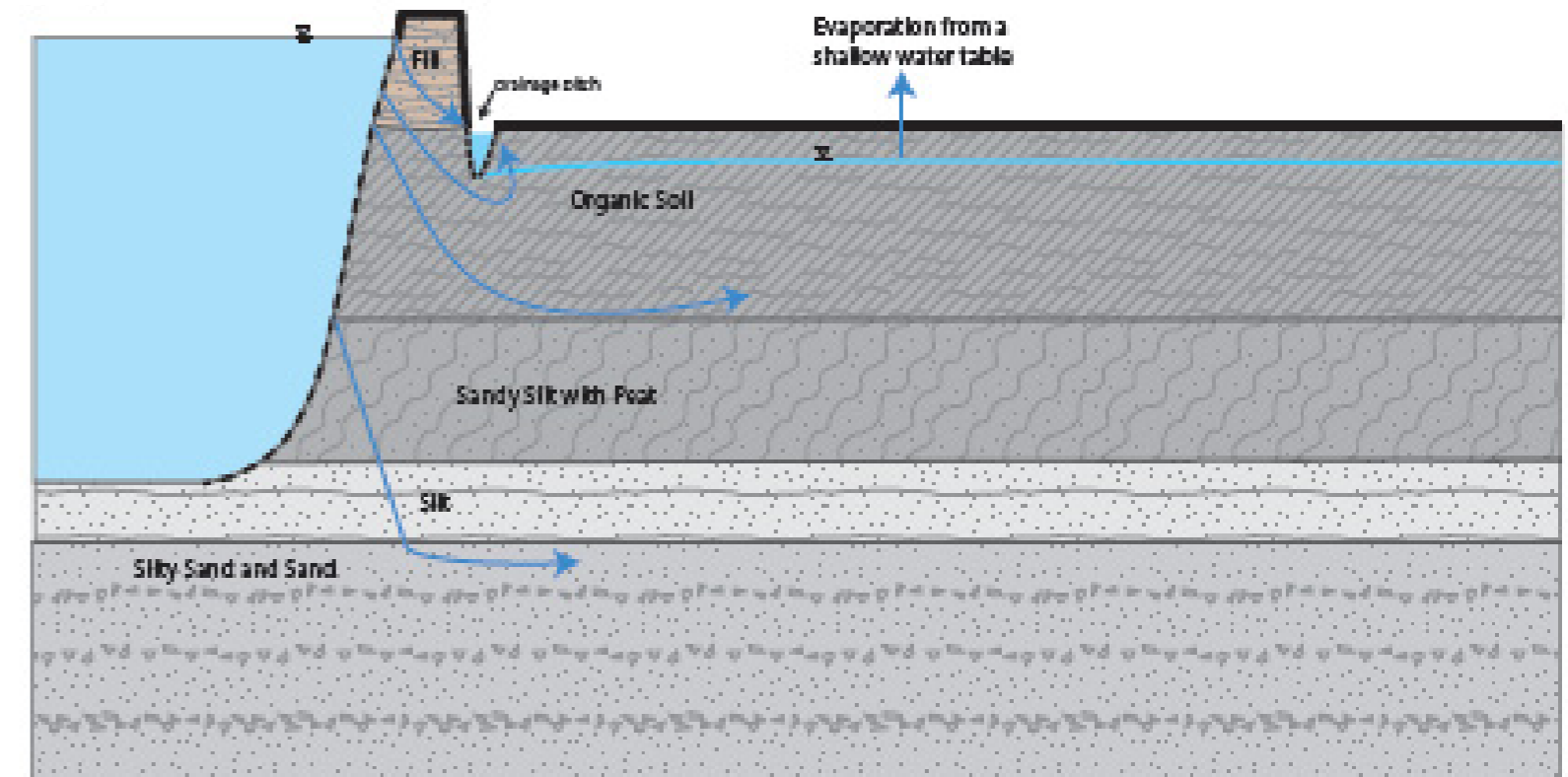
To make progress toward improving the resilience and sustainability of the islands in California's Sacramento-San Joaquin Delta owned by Metropolitan Water District (MWD). These lands face adaptation challenges similar to many other reclaimed tracts in the Central Delta, and are crucial to meeting the State's co-equal goals of ecosystem restoration, water supply reliability for California, and valuing the Delta as an evolving place for those who live, work and recreate within it.

**PROJECT WEBSITE:** <https://deltaislandadaptations-ucdavis.hub.arcgis.com/>

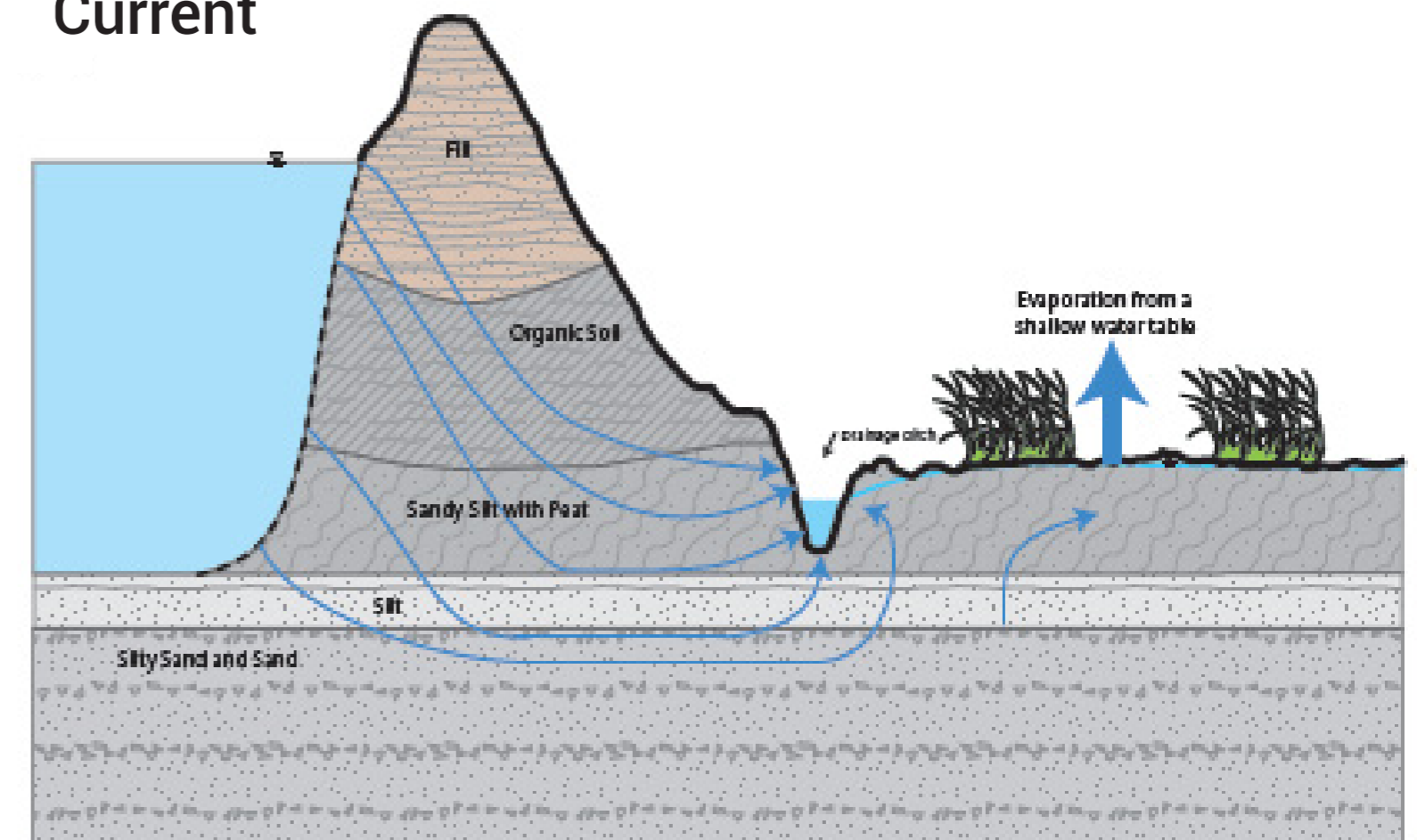
# DELTA SUBSIDENCE



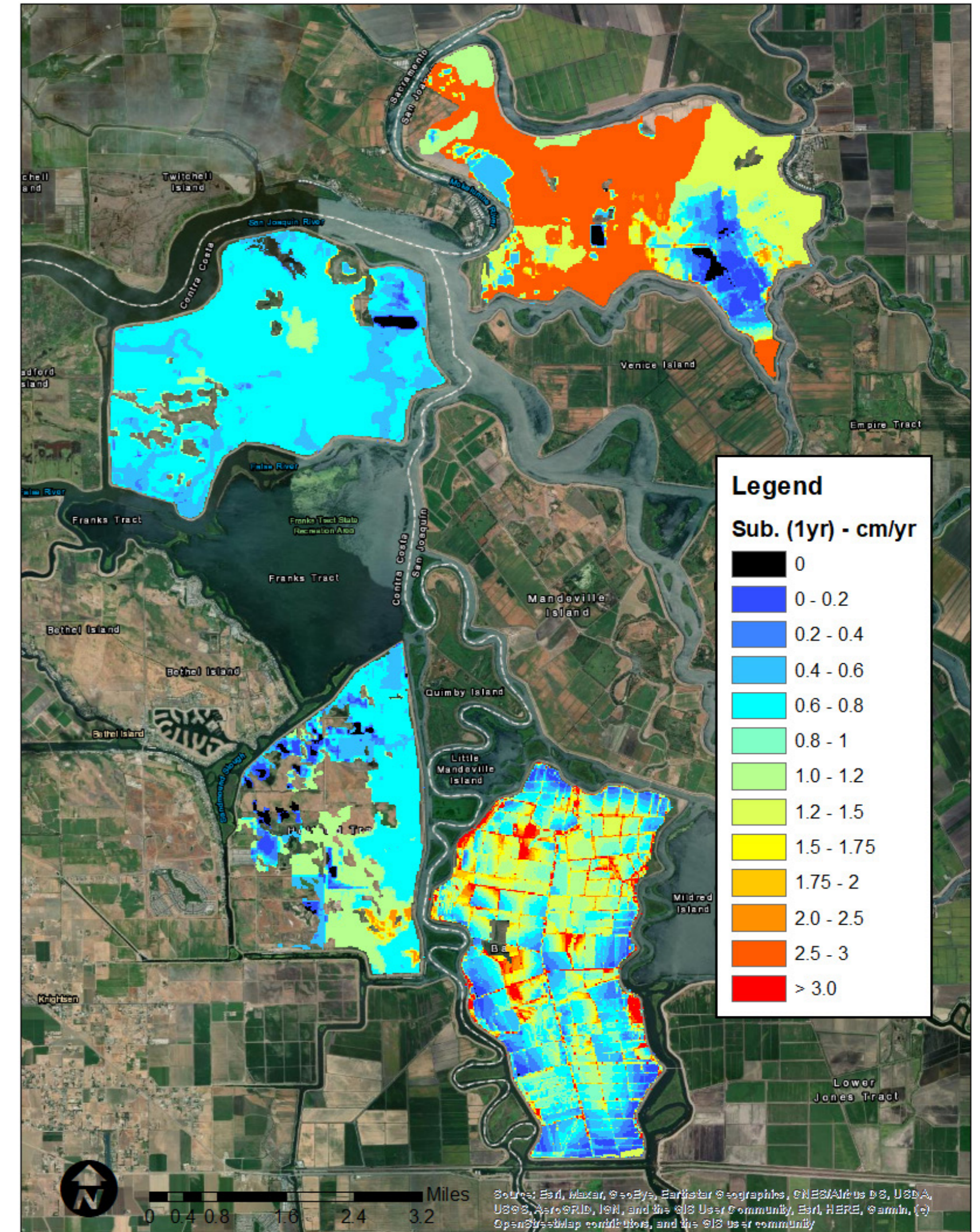
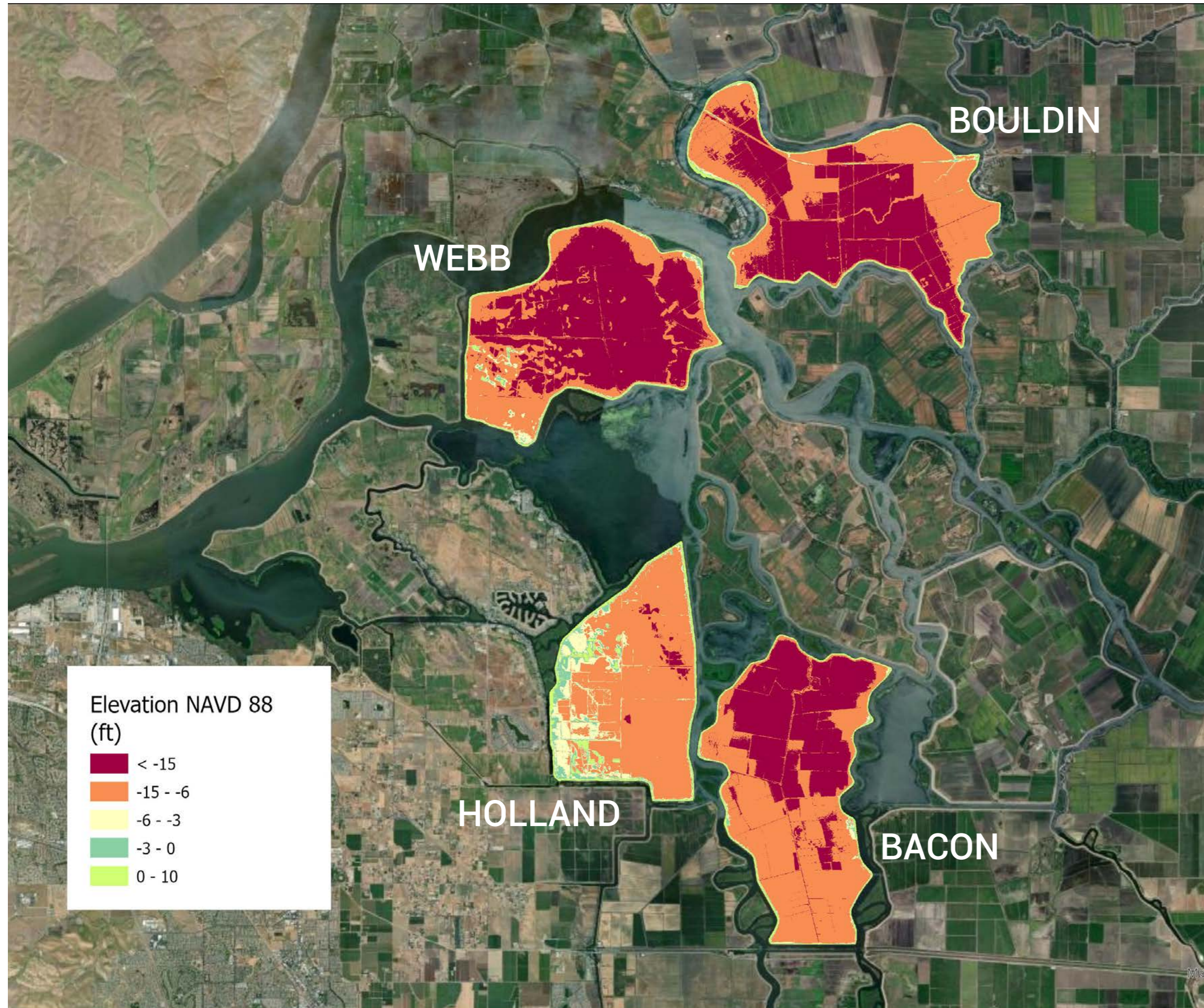
### Early Reclamation



### Current



# LAND ELEVATION + RATES OF SUBSIDENCE



# **GRANTOR (Prop 1 Watershed Restoration Grant Q2096022)**

**California Department of Fish and Wildlife**

**Hilde Spautz**

**Steven Rodriguez**

**Mitsuko Grube**

**Carl Wilcox**

**Laura McLean**

**Stacy Sherman**

# PROJECT TEAM

Project manager: Russell Ryan  
Metropolitan Water District of Southern California

Hydrology + ecology: Steve Deverel, Jose Diaz and Marc Olds  
Hydro Focus Inc.

Structured decision making: Dan Ohlson and Elan Failing  
Compass Resource Management

Outreach, co-design and design integration: Brett Milligan and Alejo Kraus-Polk  
UC Davis, Metamorphic Landscapes Lab

# **TECHNICAL ADVISORY COMMITTEE**

**Campbell Ingram - Delta Conservancy**

**Dawit Zeleke - The Nature Conservancy**

**Aaron Will - Ducks Unlimited**

**Jake Messerli - California Waterfowl Association**

**Randy Mager - Department of Water Resources**

**David Bradshaw - Metropolitan Water District of Southern California**

**Dylan Chapple - Delta Stewardship Council**

**Chelsea Batavia - Delta Stewardship Council**

**Letitia Grenier - San Francisco Estuary Institute**

**Erik Vink - Delta Protection Commission**

## EXPERT CONSULTANTS (also TAC)

Nate Hershey - MBK Engineers

Curt Schmutte - Curt Schmutte Consulting

Tom Zuckerman - Farmer/Land Owner

Will Horwath - UC Davis

David Bradshaw - MWD

Steven Kaffka - UC Davis

Josué Medellín-Azuara - UC Merced

Cork McIssac - Agricultural Industries

Jennifer Williamson Burt - GEI Consultants

Don Hankins - CSU Chico

Austin Stevenot - Riverpartners

Mike Moran - East Bay Parks

Levee/Flood Risks

Habitat Restoration Strategies

Farming/Carbon Mitigation Techniques

Greenhouse Gas (GHG) Dynamics

Agriculture & Rice Farming

Paludiculture

Economics

Delta Farming

Tidal Wetlands

Ecocultural Restoration

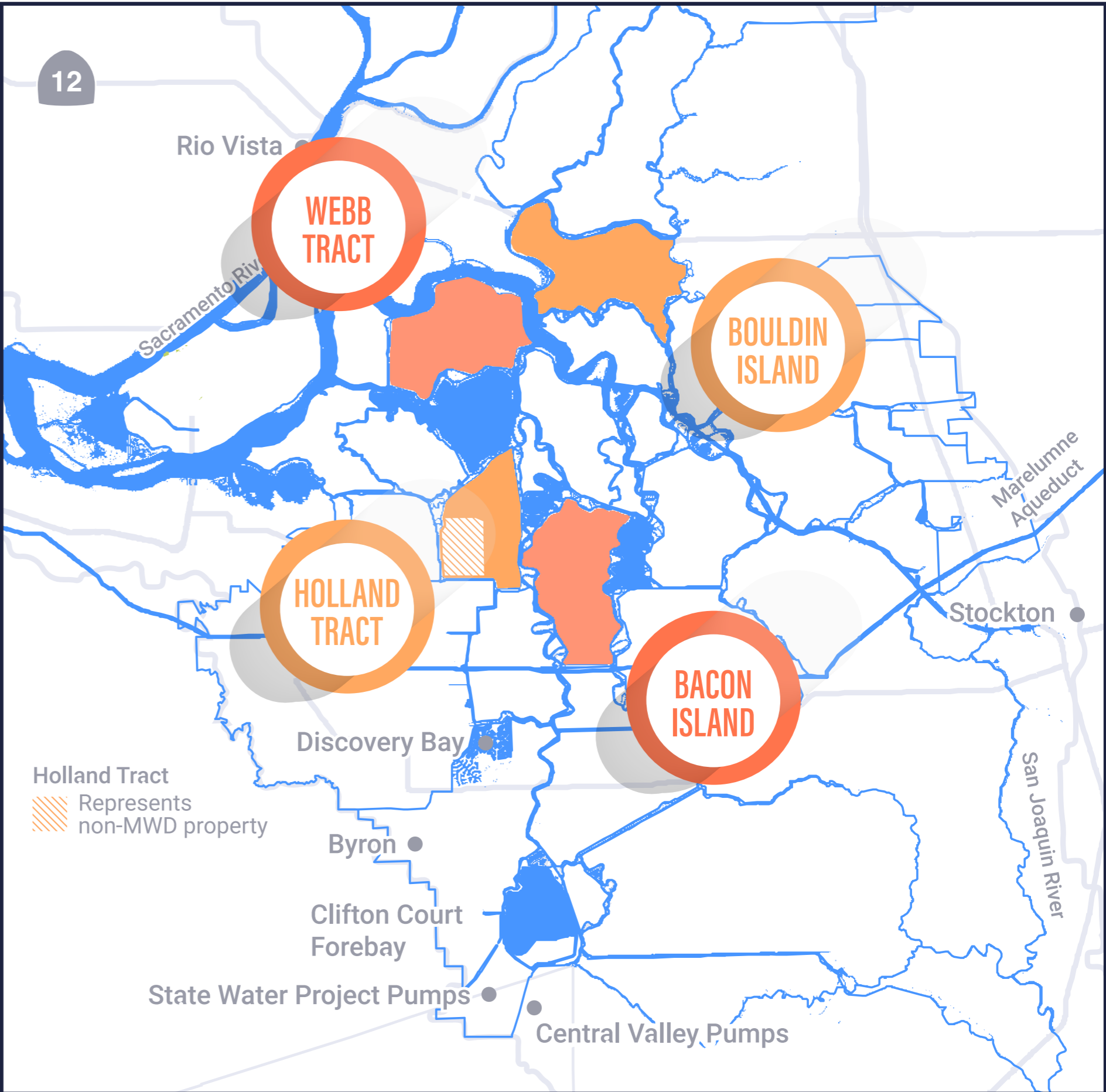
Ecocultural Restoration

Recreation

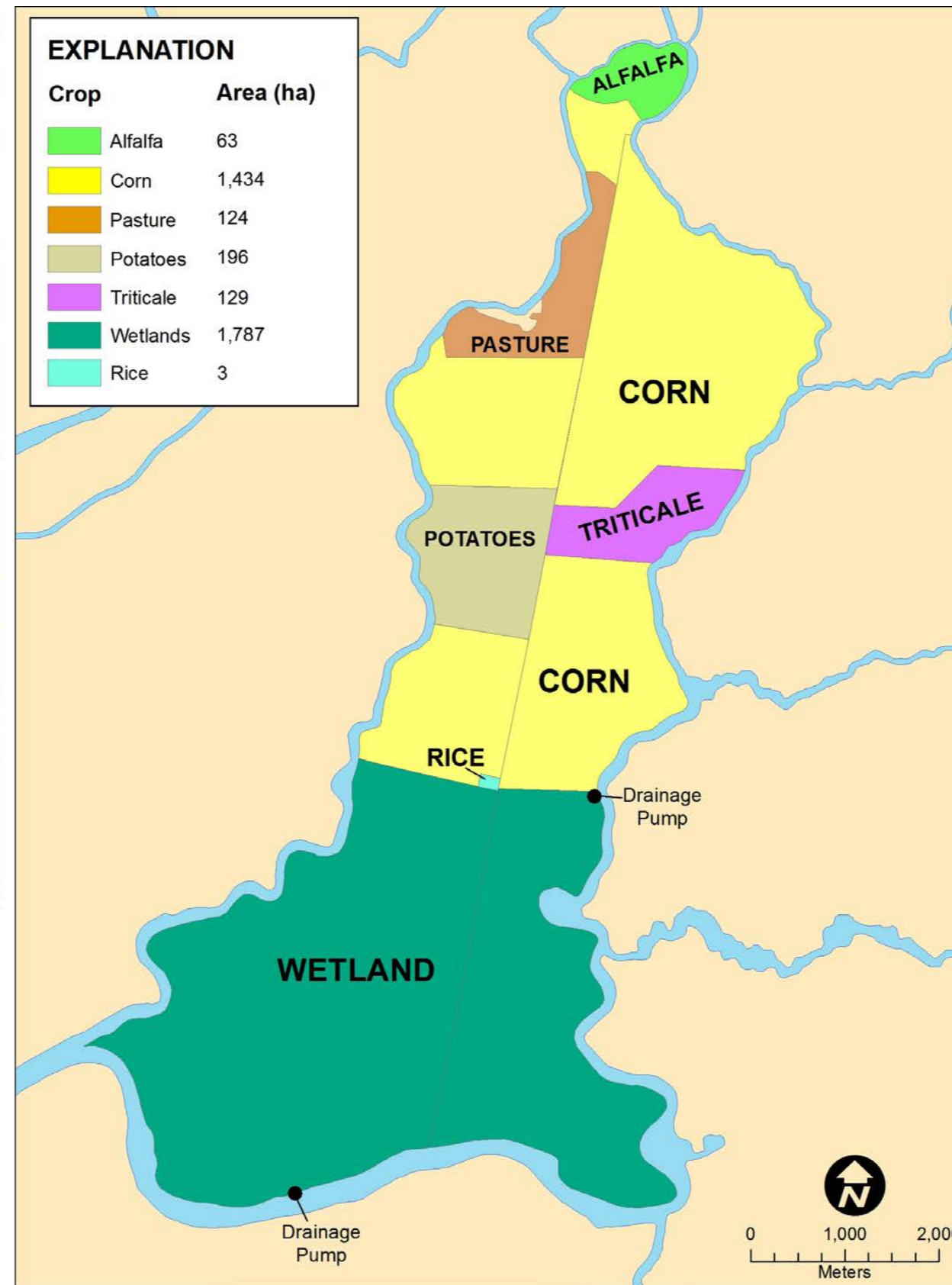
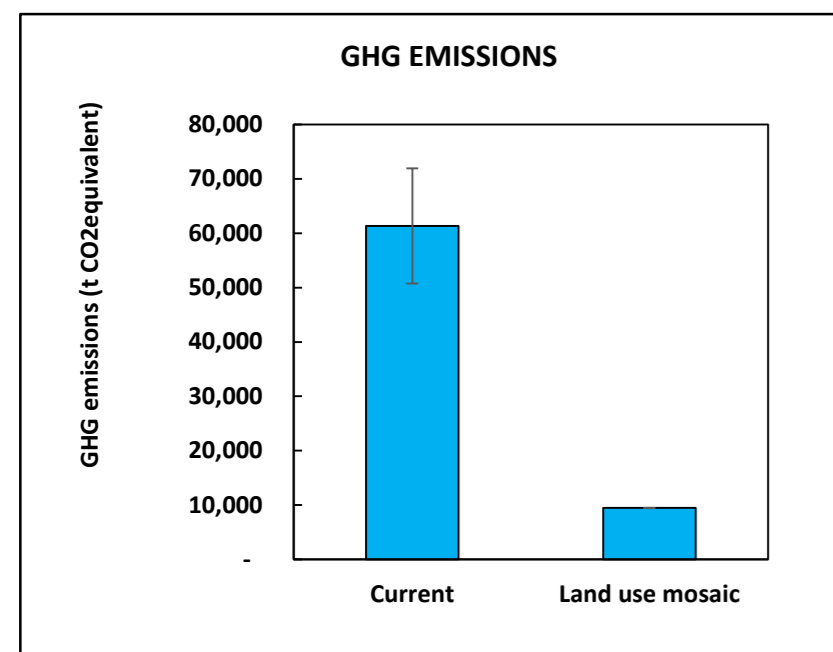


# TWO PROJECT PHASES, APPROACHED THROUGH A CO-DESIGN PROCESS:

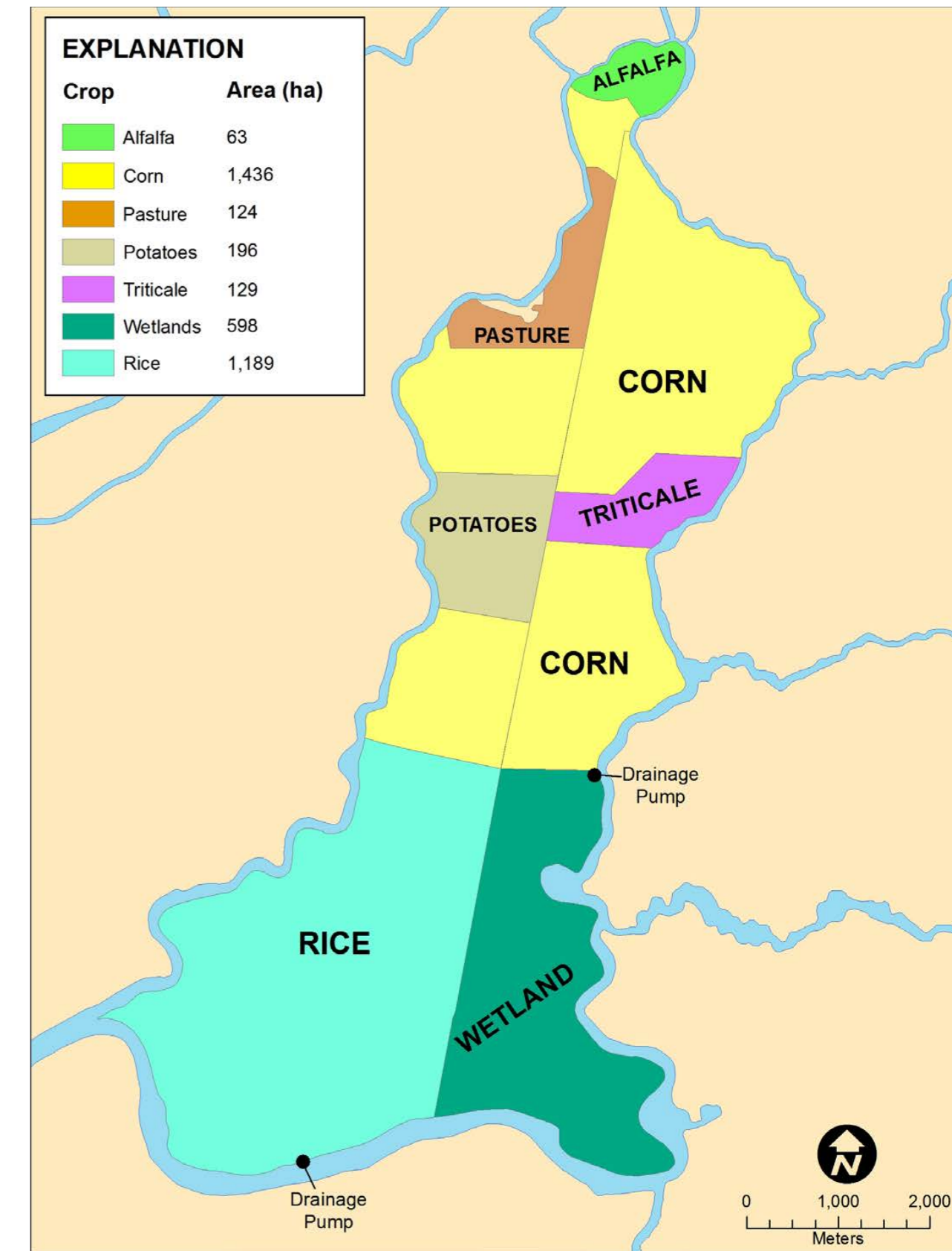
- 1) Select a preferred island for detailed study
- 2) Develop and evaluate mixed use landscape scenarios for the selected island



# MIXED USE LANDSCAPE MOSAIC SCENARIOS



Staten Island Scenarios

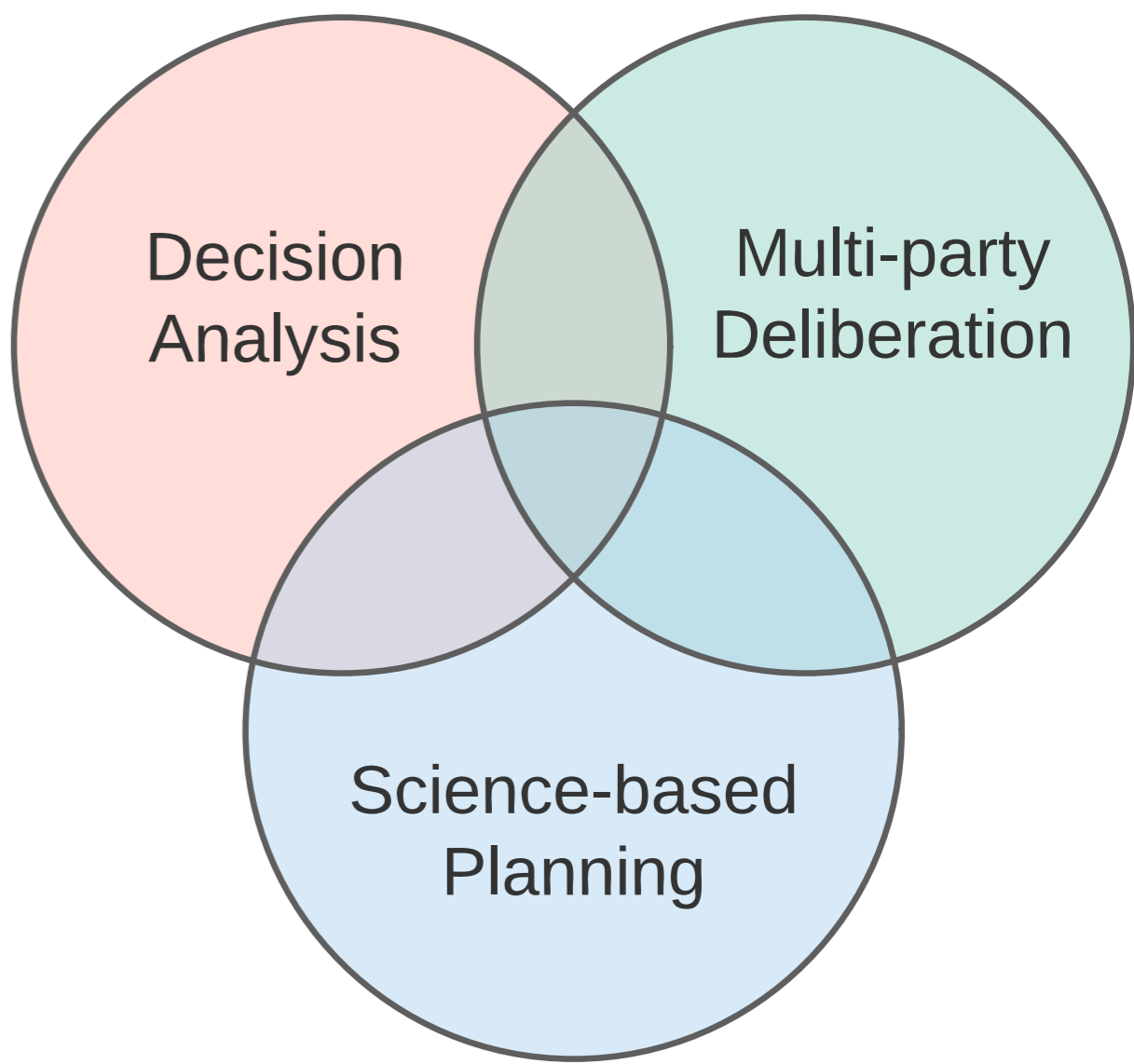
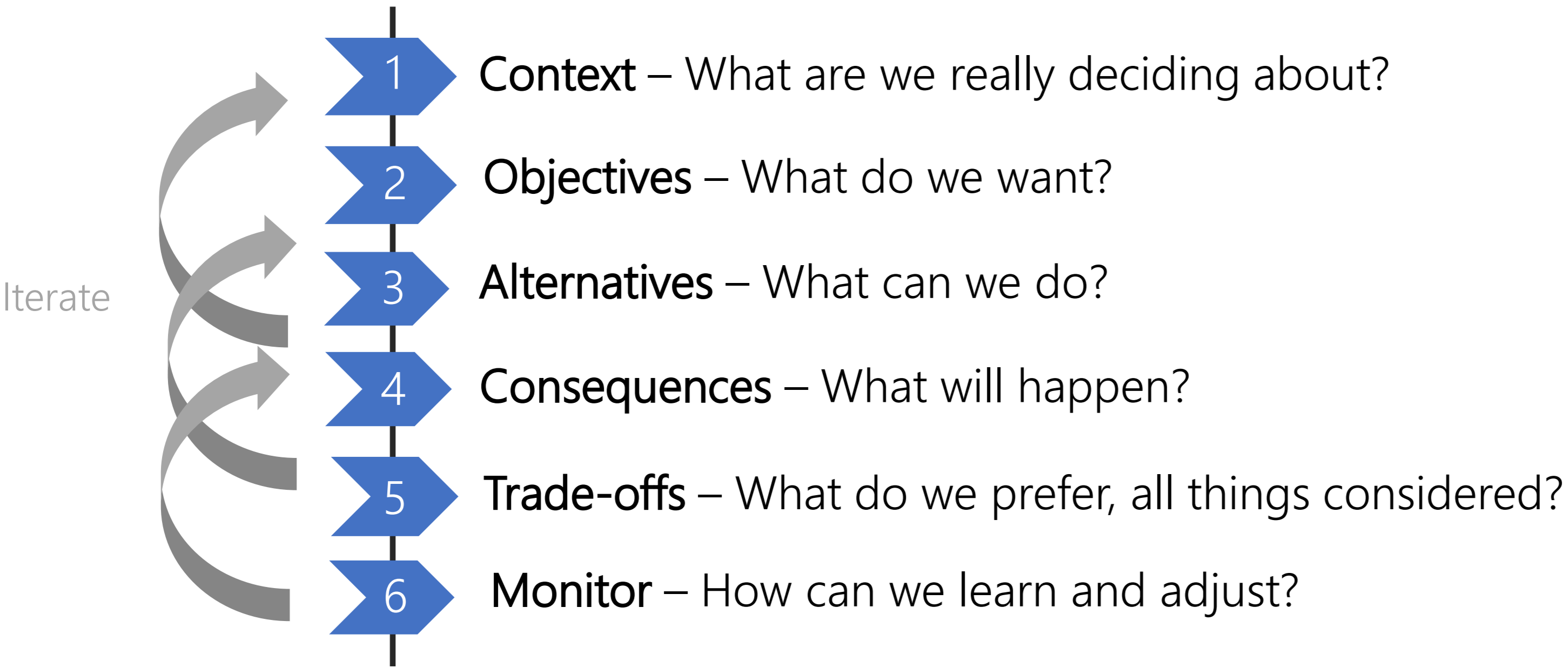


# CO-DESIGN PROCESS

**Collaborative problem solving and innovation outcomes achieved through an inclusive and equitable design process.**

- Collaborative in the sense of involving all who might be affected by a plan, decision, policy, or technical design.
- Collaborative in integrating knowledge from a range of experts - such as scientists, conservationists, engineers and regulators - as well as the place-based knowledge of residents, land owners and recreationists.
- Design is broadly conceived as intentional and creative ways of bringing about desired change from a given condition, whether it be the design of new management practices, policies, infrastructure, or physical changes to landscapes.

# STRUCTURED DECISION MAKING



## IN PROJECT SCOPE

- Integrative co-design process with multiple opportunities for public and stakeholder engagement.
- Development and evaluation of comprehensive restoration and adaptation planning scenarios for the chosen island over 40-50 years.
- Full consideration of a No Action or "business as usual" alternative.
- Evaluation of a wide range of land use opportunities and adaptations targeted toward subsidence reversal, greenhouse gas emission reductions, sustainable agriculture practices and fish and wildlife habitat enhancements.
- Exploration of opportunities for co-benefits in levee improvements, recreation, water supply reliability, indigenous land stewardship and more.
- Consideration of alternatives representing a variety of government, stakeholder and community interests.

## OUT OF SCOPE

- Water export operations decisions.
- Water quality standards decisions.
- Levee investment prioritization decisions.
- Local area infrastructure planning (roads, etc.).

# PHASE 1 SCHEDULE (SEPT 2021 - MAY 2022)

	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07
TAC and Public Engagement	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	22	23	23	23	23	23	23	23
Island Selection																							
Outreach and Awareness Building																							
TAC Meeting #1			1																				
TAC Meeting #2				2																			
Public Meeting #1					1																		
TAC Meeting #3							3																
MWD Decision Maker Meeting #1								1															

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# PHASE 2 SCHEDULE

## (SEPT 2022 - MAY 2023)

	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	
<b>TAC and Public Engagement</b>	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	22	23	23	23	23	23	23	23	23
<b>Landscape-Scale Scenario Planning</b>																								
Outreach and Awareness Building																								
TAC Meeting #4																								
Public Meeting #2																								
TAC Meeting #5																								
Public Meeting #3																								
TAC Meeting #6																								
MWD Decision Maker Meeting #2																								

# 10 (DRAFT) PROJECT OBJECTIVES

- Stopping and reversing subsidence
- Reducing greenhouse gas emissions
- Implementing sustainable and regenerative agriculture
- Improving ecological habitats and functions
- Fostering regional and delta-wide ecological benefits
- Fostering ecocultural restoration and Indigenous land use
- Increasing recreational and place-making opportunities
- Fostering learning, partnerships, and collaboration
- Maintaining water quality and supply
- Sustainable project economics

# Subsidence

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## *Stopping and reversing subsidence:*

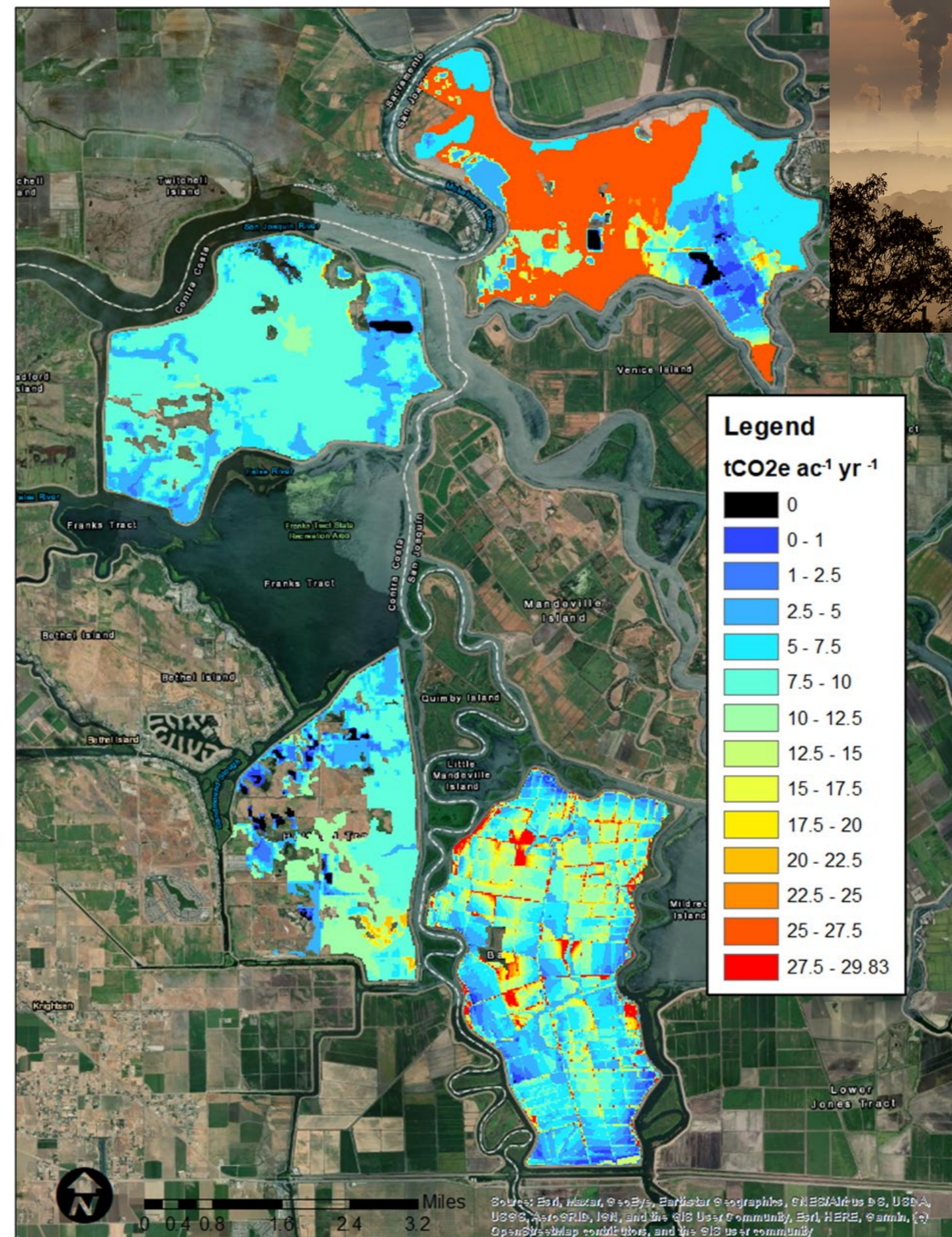
- Decrease oxidation of organic or peat deposits.
- Increase soil formation and accumulation (e.g., wetland accretion, sediment importation).
- Minimize risk of levee failure due to seepage and hydraulic gradient.



# GHG Emissions

## Reducing GHG emissions:

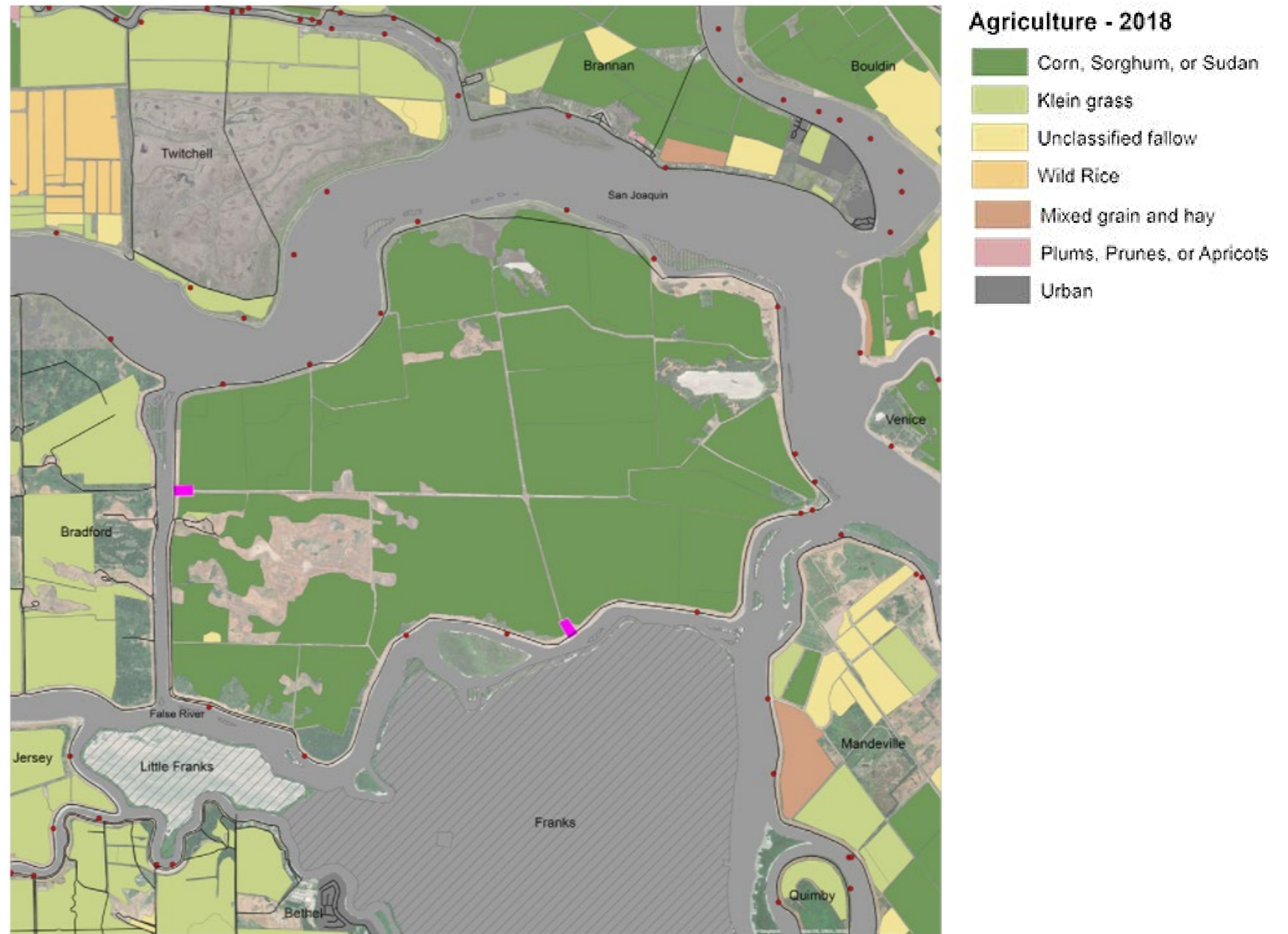
- Decrease oxidation of organic or peat deposits.
- Minimize decomposition of organic or peat soils through flooding.



# Agriculture

## *Implementing sustainable & regenerative agriculture:*

- Explore agricultural practices that provide sufficient net income while stopping or reducing subsidence
- Opportunities include: paludiculture, rice, regenerative agriculture, organic agriculture



Agriculture on Webb Tract (Source: <https://deltaislandadaptations-ucdavis.hub.arcgis.com/> )

# Ecology

## *Improving ecological habitats and functions:*

- Provide sufficient quantity and quality of habitat and forage for native fish and wildlife species
- Habitat types include: floating and non-tidal wetlands, tidal wetlands, and upland and upland transitional areas.



### Current Habitat Type (SFEI)



Habitats, land use, recreation and protected areas on Webb Tract (Source: <https://deltaislandadaptations-ucdavis.hub.arcgis.com/> )

# Broader Ecological Benefits

*Fostering regional and delta-wide ecological benefits:*

- Increase synergistic benefits in combination with other Delta islands and regions
- Increase habitat and hydrological connectivity



Aerial view of a tidal marsh restoration site (Source: Jonathan Wong / California Department of Water Resources)

# Ecocultural Restoration

*Fostering ecocultural restoration and Indigenous land use:*

- Recognize interconnected nature of ecosystem restoration and revitalization of Indigenous culture
- Integrated practices: selective plant gathering / use of fire
- Inclusion and guidance of Indigenous Tribal representatives





# Recreation

*Increasing recreational and place-making opportunities:*

- Increase access to recreational areas
- Increase quality and quantity of recreational features (e.g., levee conditions, trails, boat launches and ramps)



# Water Quality and Supply

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*Maintaining water quality and supply:*

- Reduce risks of salinity intrusion
- Improve quality of island drain water discharged into adjacent open water channels



# Economics

## *Sustainable project economics:*

- Achieve environmental and cultural benefits from land-use conversion by the most cost-effective means
- Explore mixed-use landscape mosaics that minimize impacts to net revenues on the island.



# Learning and Collaboration

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*Fostering learning, partnerships, and collaboration:*

- Explore opportunities to partner with local orgs (e.g., Indigenous groups, community-based orgs, government agencies, planning groups)
- Engage in joint learning and identify synergies across objectives and activities



# DELTA ISLAND ADAPTATIONS



## Public Survey

<https://new.maptionnaire.com/q/3lgd6adk2sx3>

The goal of the Delta Islands Adaptation (DIA) Project is to improve the resilience and sustainability of the islands in California's Sacramento-San Joaquin Delta owned by The Metropolitan Water District of Southern California (MWD) by the most cost-effective means. The four islands considered in the study include Webb Tract, Bouldin Island, Bacon Island, and Holland Tract. The DIA planning effort consists of 2 phases: (1) Island selection and (2) detailed landscape mosaic scenario planning and design for the selected island. The survey will close on May 1st, 2022.

This survey is intended to solicit public input on the DIA project objectives and potential opportunities that exist on the islands, and to integrate this input into the planning process. All survey responses will remain anonymous, and results will be made public and posted on the project's website, where you can view a recording of the March 15th public workshop and find more detailed information about the project:

<https://deltaislandadaptations-ucdavis.hub.arcgis.com/>

# DIA PUBLIC ON-LINE SURVEY: <https://new.maptionnaire.com/q/3lgd6adk2sx3>



**Introduction**

The goal of the Delta Islands Adaptation (DIA) Project is to improve the resilience and sustainability of the islands in California's Sacramento-San Joaquin Delta owned by The Metropolitan Water District of Southern California (MWD) by the most cost-effective means. This goal will be pursued through planning for a mix of land uses, known as a landscape mosaic. A strategic combination of land uses - such as rice production, paludiculture, and wetlands - can help meet project objectives that include ecological restoration, elimination of GHG emissions, stopping and reversing subsidence, all while maintaining revenue streams. While project planning is confined to island boundaries, there are potential regional benefits and implications, and lessons learned could have applicability to the central Delta as a whole. The four islands considered in the study include Webb Tract, Bouldin Island, Bacon Island, and Holland Tract. The DIA planning effort consists of 2 phases: (1) Island selection and (2) detailed landscape mosaic scenario planning and design for the selected island.

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This survey will take approximately 20 minutes to complete, but there is no time limit and you can be as detailed as you wish in your responses. The survey can be completed in more than one sitting. Thanks in advance for your participation!

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