Sears Point Wetland and Watershed Restoration Project

Climate Smart Actions for Natural Resource Managers

November 29, 2012

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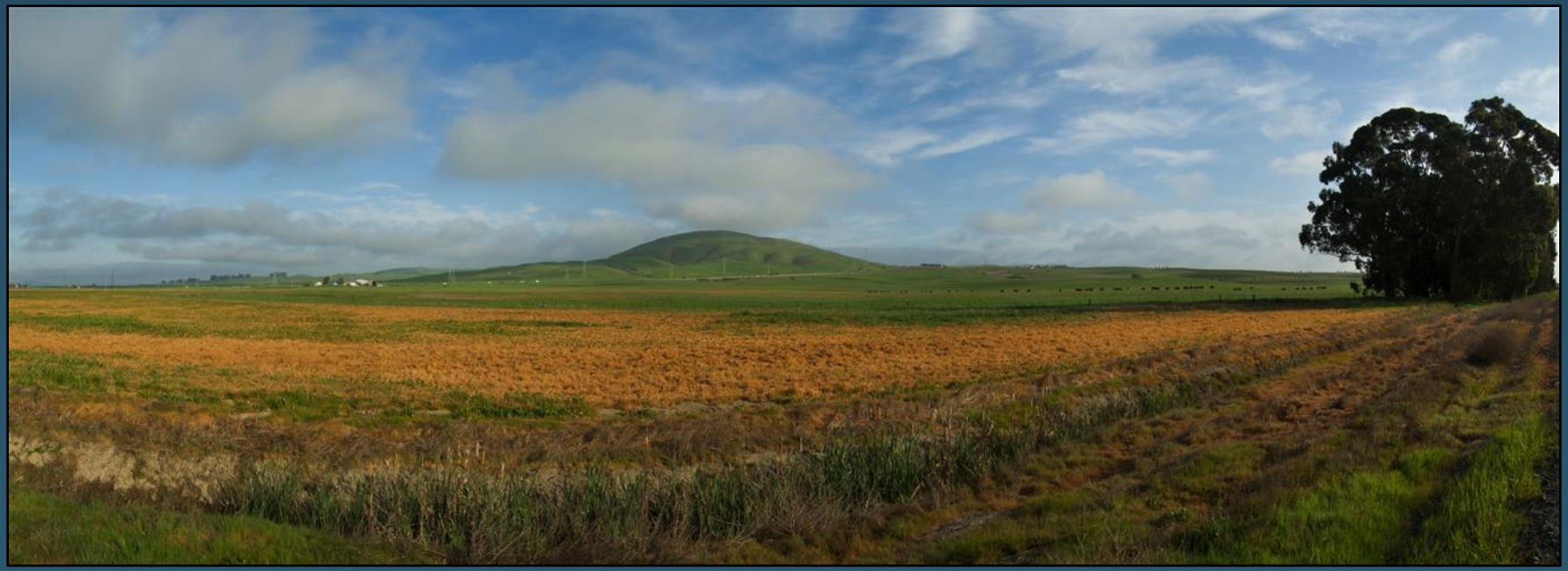
Baylands Program Manager
Sonoma Land Trust


San Pablo Bay
Suisun Bay
Central Bay
South Bay

Presentation Overview

- Project Background and Context
- Key Vulnerabilities
- Climate Smart Actions
- Closing Thoughts

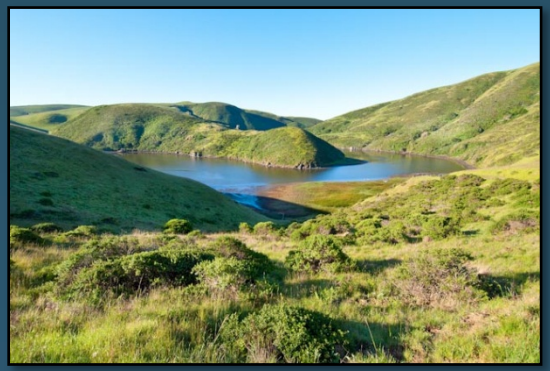


Sonoma Land Trust

Conserving the scenic, natural, agricultural, and open land for the future of Sonoma County

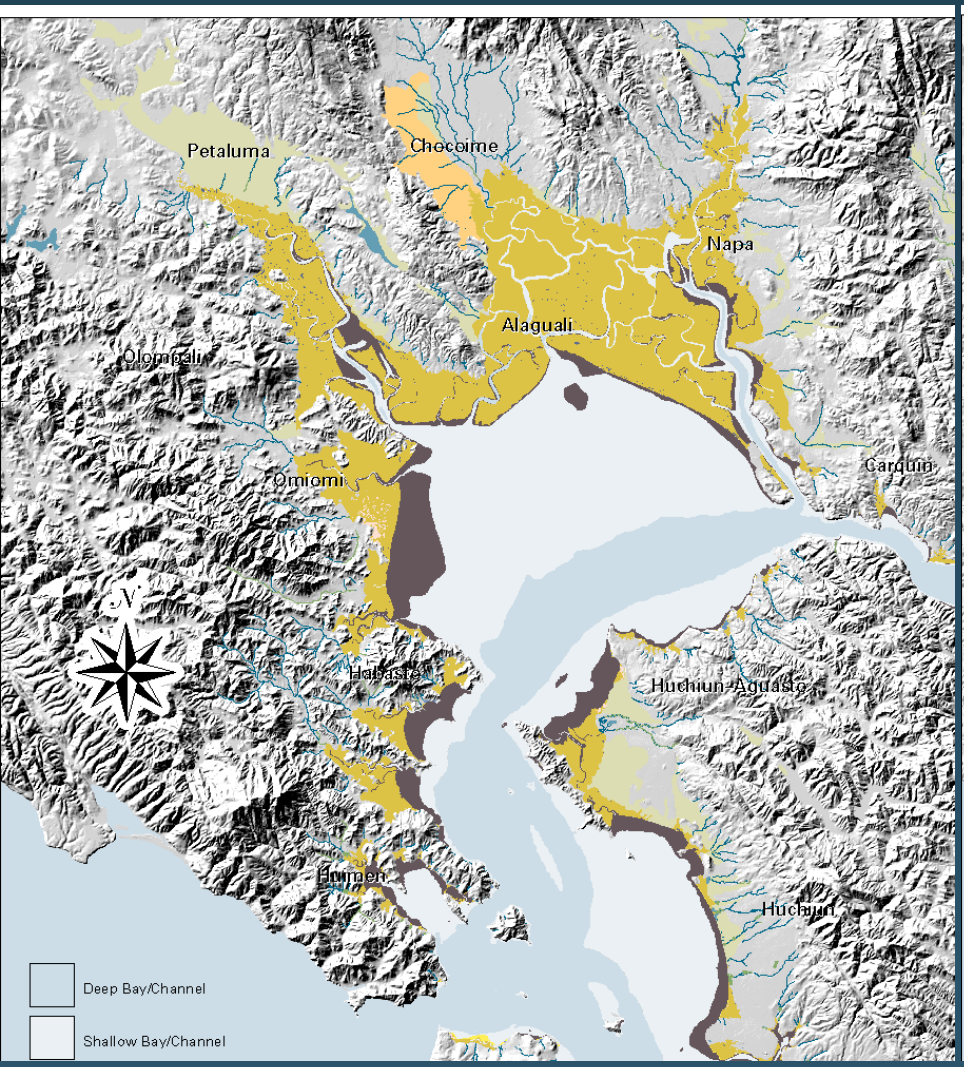
SONOMA LAND TRUST

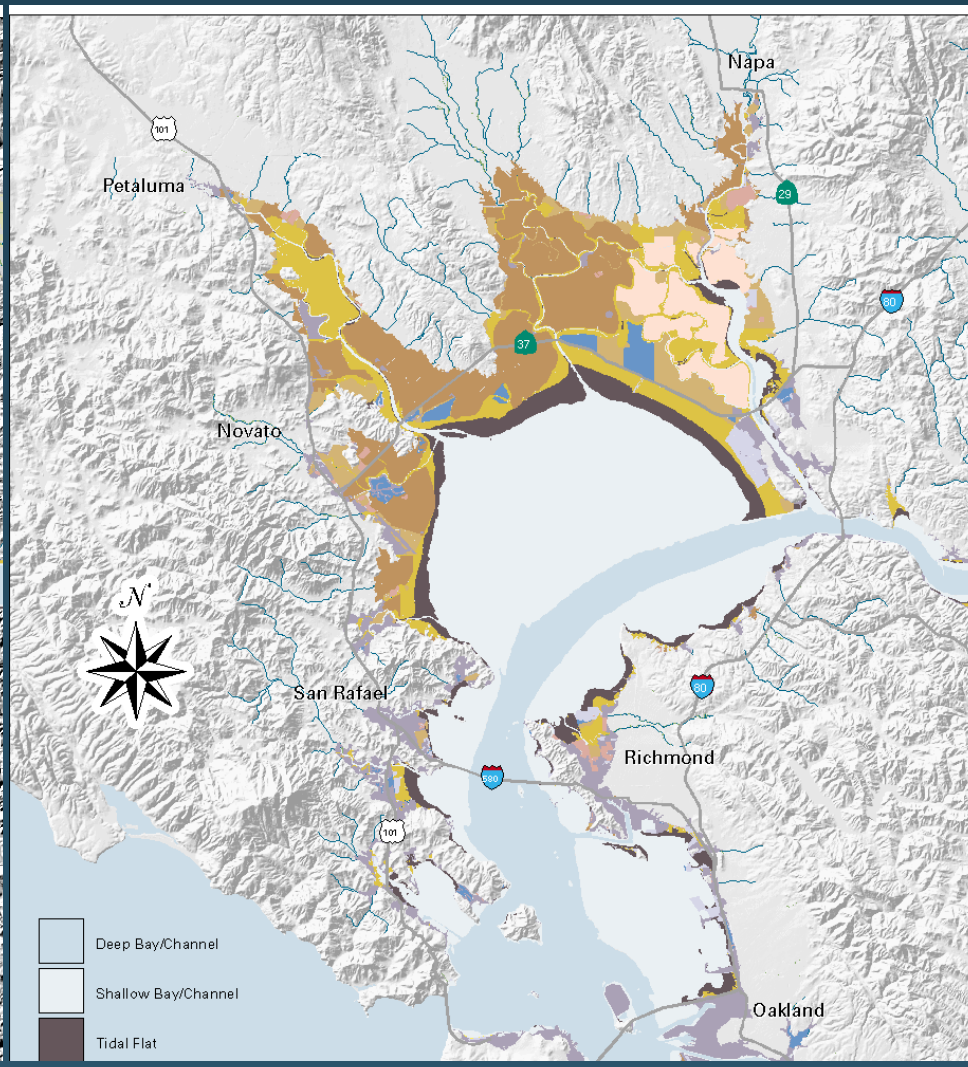
...to protect the land forever




Sonoma Land Trust
CONSERVATION REGIONS
Mendocino County
Lake County
Napa County
Marin County
Solano County
Pacific Ocean
San Pablo Bay
NORTH COUNTY/ MAYACAMAS
NORTH COAST/ REDWOODS
WEST COUNTY
LAGUNA de SANTA ROSA
SONOMA VALLEY & MOUNTAIN
SONOMA BAYLANDS
Cloverdale
Healdsburg
Windsor
Santa Rosa
Petaluma
Sebastopol
Sonoma
Cotati
Bodega Bay
Jenner
Guerneville
Gualala
Russian River
Lake Sonoma
Austin Creek
Sonoma Creek
N
0 2.5 5 10 Miles
SONOMA LAND TRUST
05/09 Data Sources: Sonoma County GIS, ESRI, SLT GIS

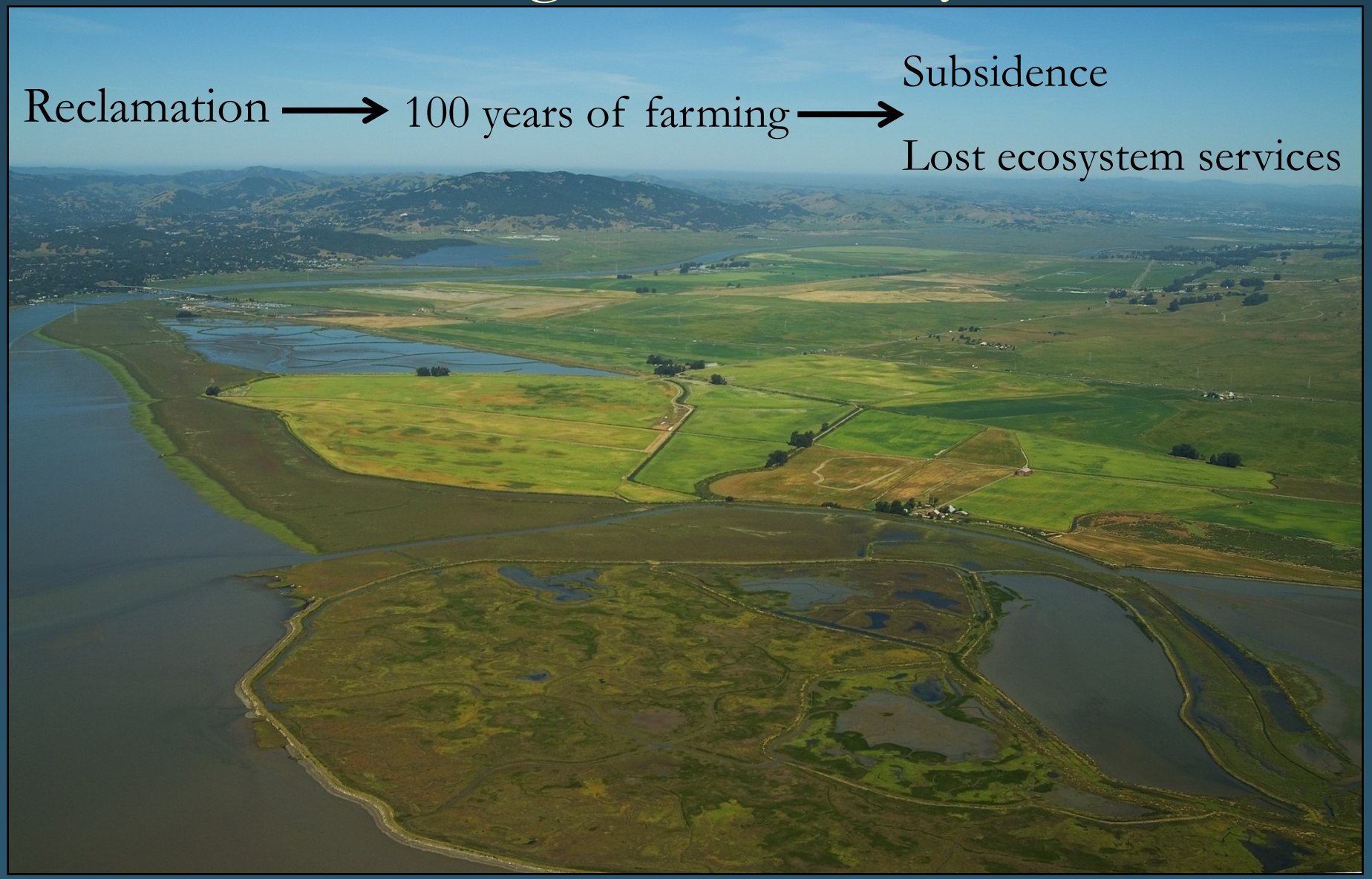
San Pablo Bay: Past and Present



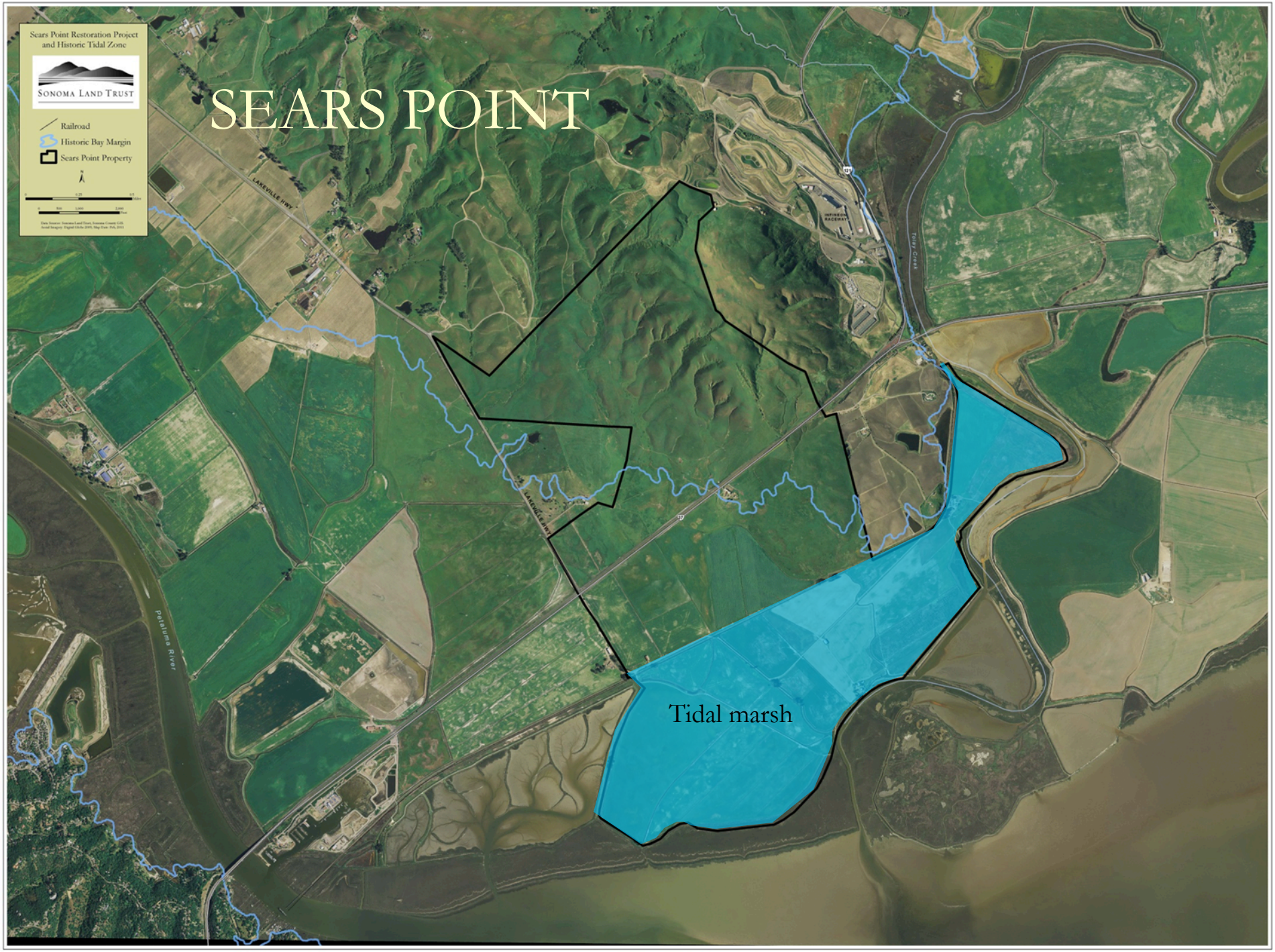


Over 85% of the Bay's and 82 % of the North Bay's historic tidal wetlands have been lost.

Diked Agricultural Baylands



Regional Context


Sears Point Restoration Project and Historic Tidal Zone
Sonoma Land Trust
Railroad
Historic Bay Margin
Sears Point Property
SEARS POINT
Lakeville Hwy
Petaluma River
Tidal marsh

Key Vulnerabilities

1. Can we restore a marsh that will keep pace with sea level rise?

2. Can we provide refuge from extreme events?

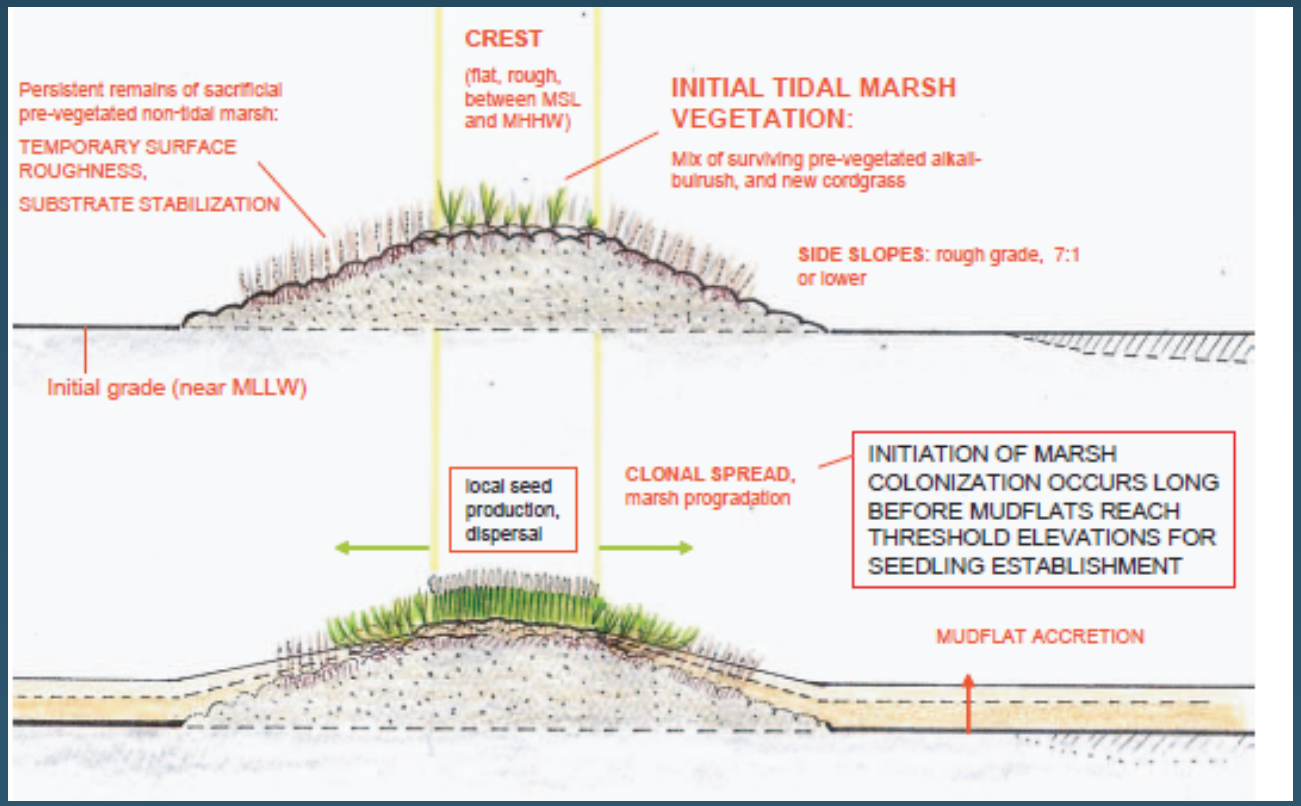
3. How do we anticipate the level of flood protection needed to protect the highway, railroad, and neighboring lands from rising seas?

Keeping pace with sea level rise

Climate Smart Actions

- Marsh mound topography

- Accelerate accretion/marsh development
  - Suppress wind waves
  - early vegetation colonization sites



Climate Smart Actions

Pre-vegetation

- increase surface roughness to slow currents and capture and stabilize sediment

Key Vulnerabilities

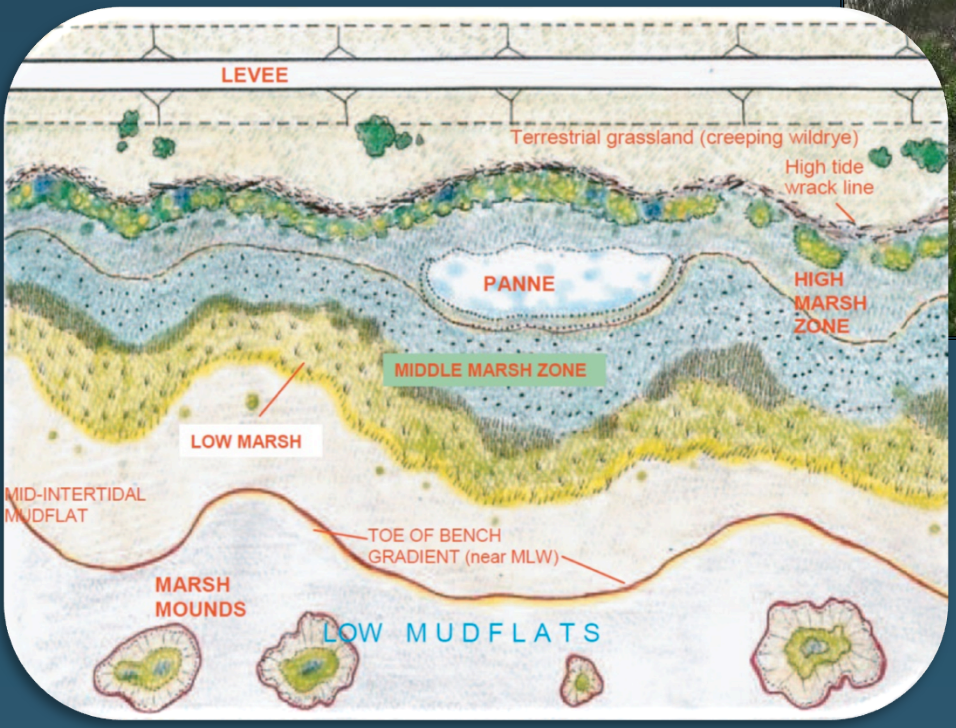
1. Can we restore a marsh that will keep pace with sea level rise?

2. **Can we provide refuge from extreme events?**

Climate Smart Actions

Habitat levee

- high tide refuge
- marsh transgression
- resistance to erosion



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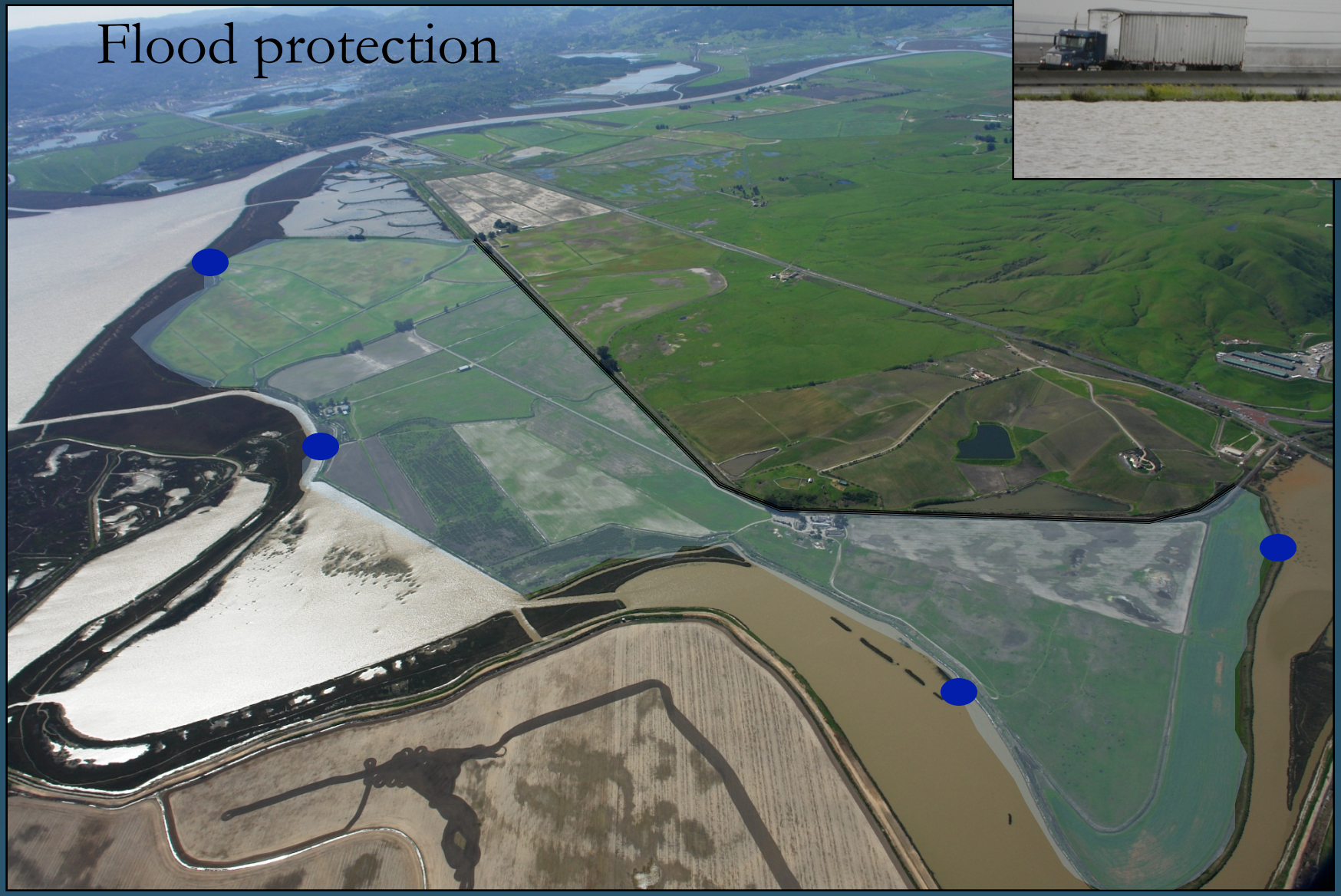
Climate Smart Actions

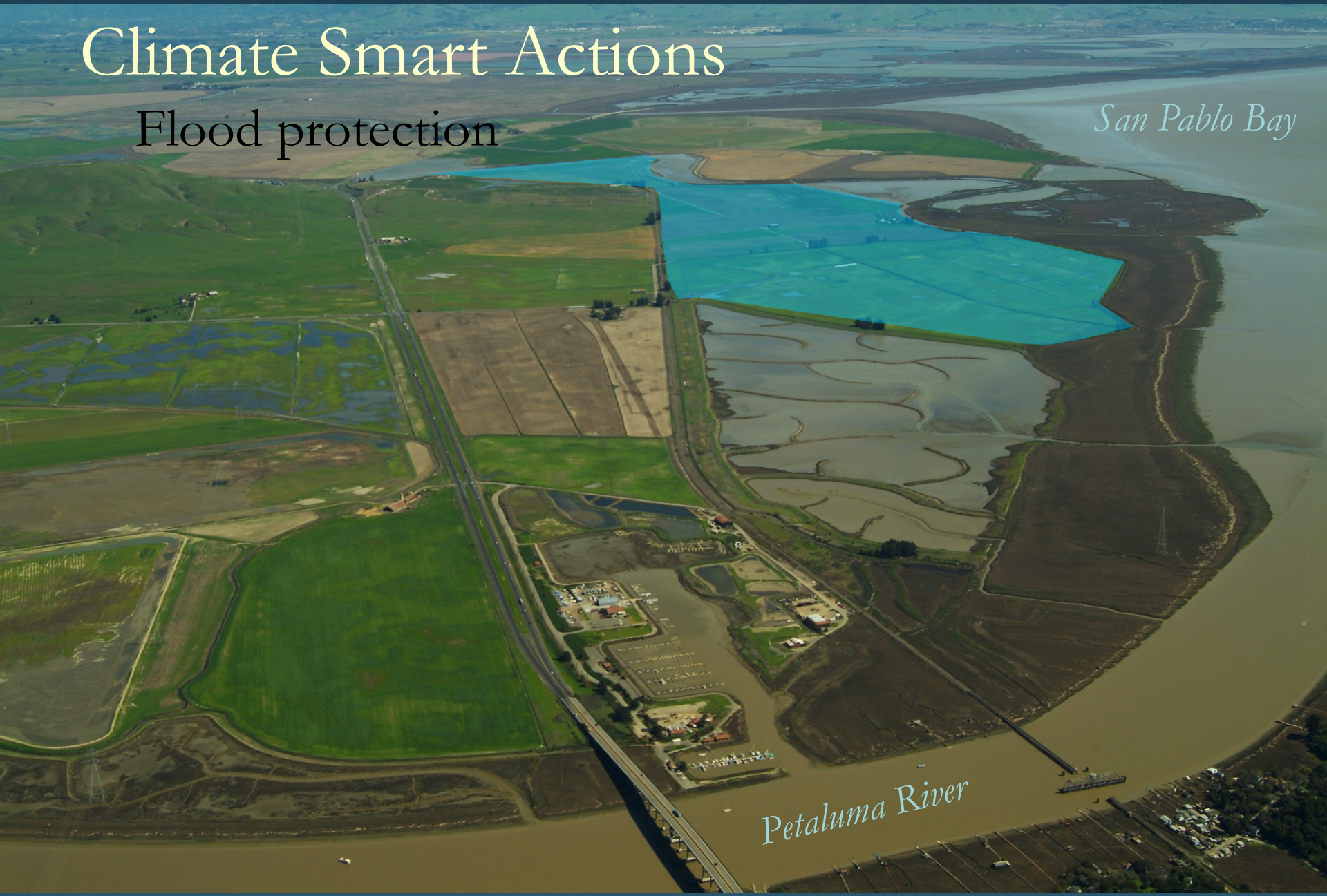


Climate Smart Actions

Flood protection

Climate Smart Actions

Flood protection



Closing Thoughts

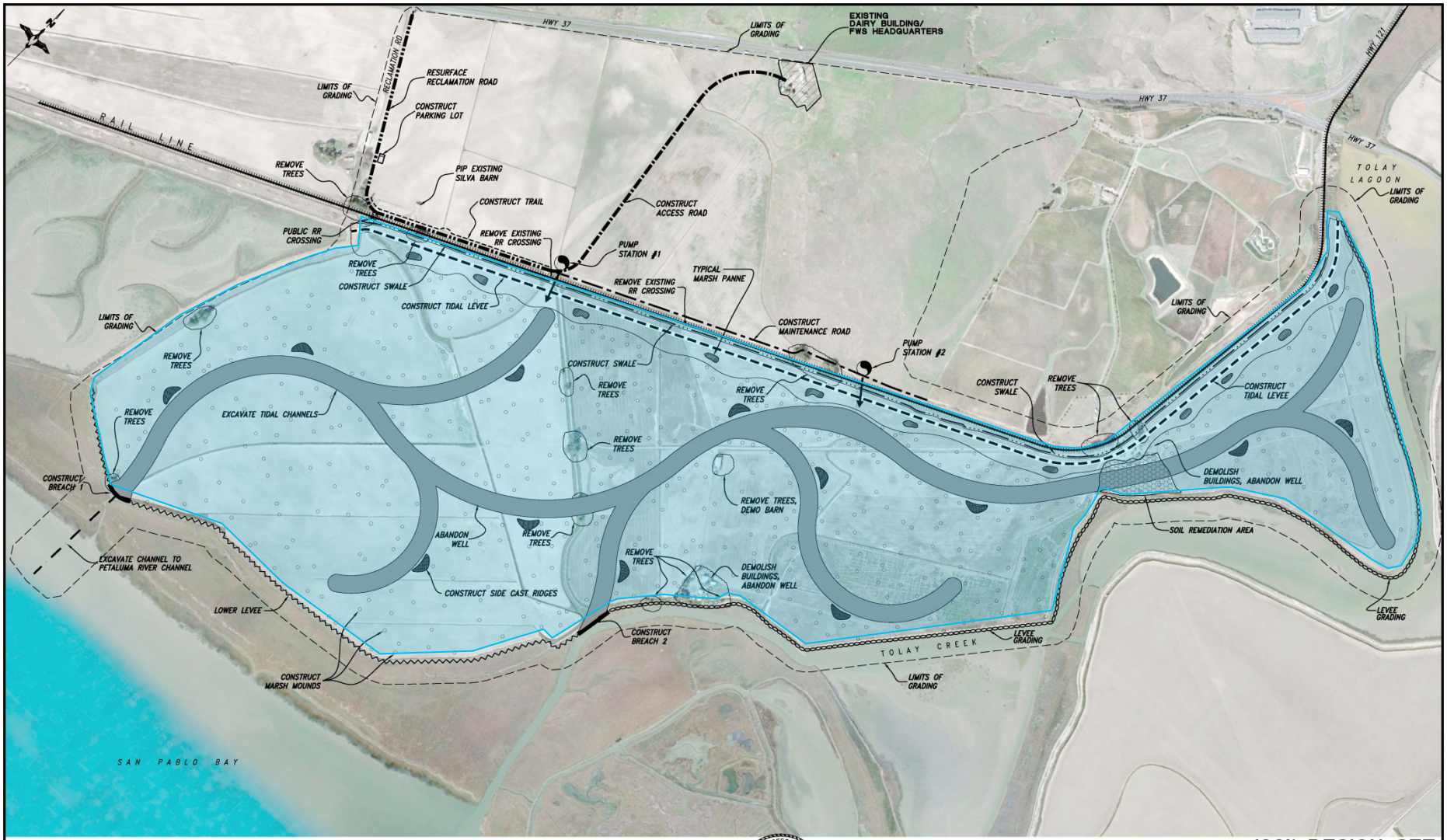
- Uncertainty seems to be the rule. Smartest actions work under multiple climate change scenarios
- Grant availability and timelines will dictate how much preparation we can actually do
- Time sensitivity – don't wait for all the information

Support

ABAG Bay Trail
CA Coastal Conservancy
CA Department of Water Resources
CA Wildlife Conservation Board
Ducks Unlimited
Environmental Protection Agency
Federated Indians of the Graton Rancheria
Gordon and Betty Moore Foundation
National Oceanic and Atmospheric Administration
Sonoma Ag and Open Space District
U.S. Army Corps of Engineers
U.S. Federal Highway Administration
U.S. Fish and Wildlife Service

Project Developers

Wetlands and Water Resources
Ducks Unlimited
FarWest Restoration Engineering
Vollmar Natural Lands Consulting
My predecessors and colleagues at Sonoma Land Trust
…and many more



BAR SCALE
0 500 1000 1500
US FEET

UNAUTHORIZED CHANGES & USES
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

REGISTERED PROFESSIONAL ENGINEER
AUSTIN PAYNE
NO. C71212
EXP. 06/30/13
CIVIL
STATE OF CALIFORNIA

100% DESIGN SET

REVISIONS			
REV. NO.	DESCRIPTION	DATE	APPROVED
1			
2			
3			
4			
5			

DUCKS UNLIMITED INC.
WESTERN REGIONAL OFFICE

PROJECT NO. US-CA-461-1
SEARS POINT WETLAND RESTORATION PROJECT OVERVIEW
DATE: 8.15.12
SHEET NO. 3 OF 32
APPROVED BY:
APPROVED BY:
DESIGNED BY: AP
DRAWN BY: JS
SURVEYED BY:
CHECKED BY: