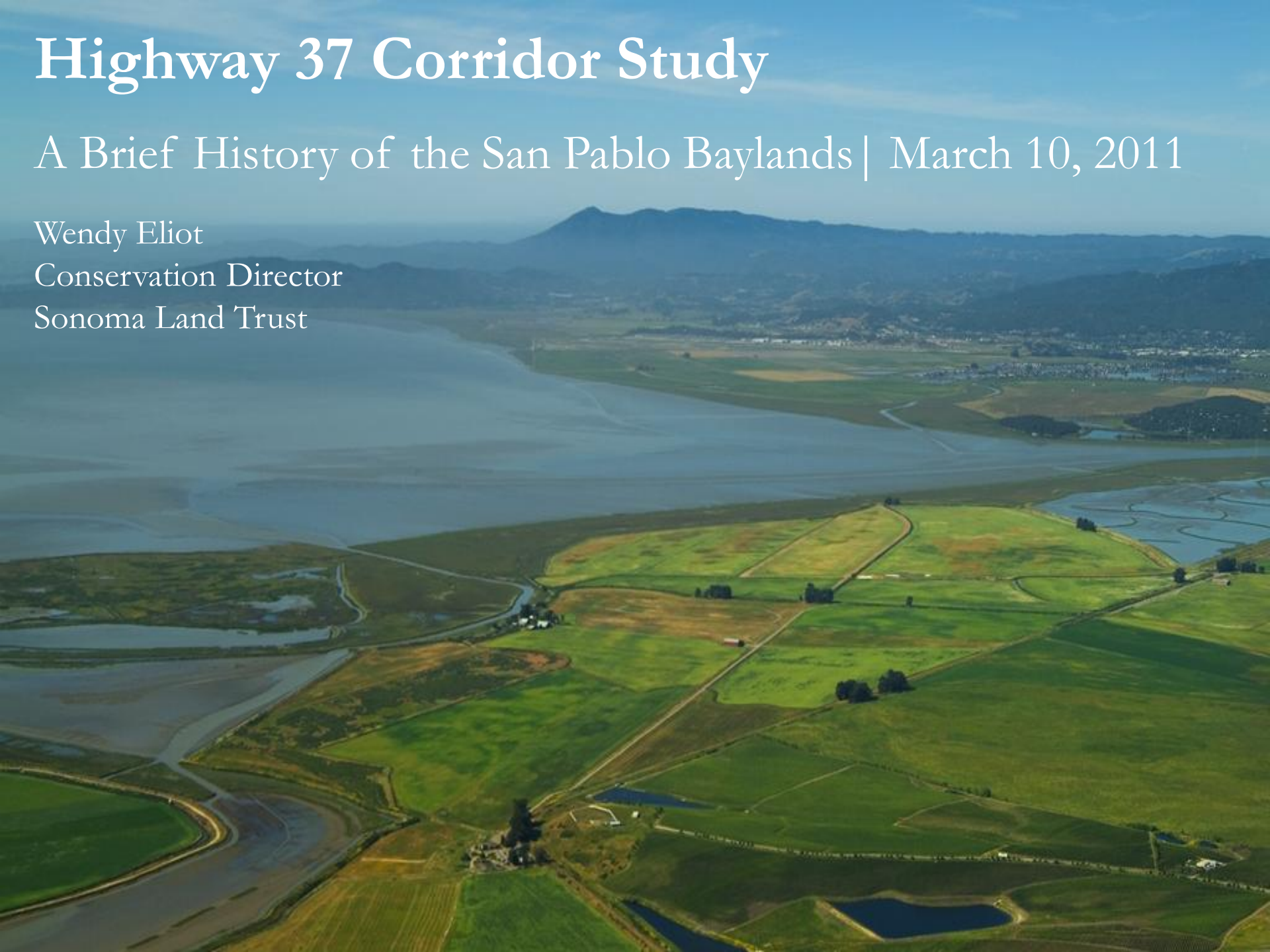


# Highway 37 Corridor Study

A Brief History of the San Pablo Baylands | March 10, 2011

Wendy Eliot  
Conservation Director  
Sonoma Land Trust







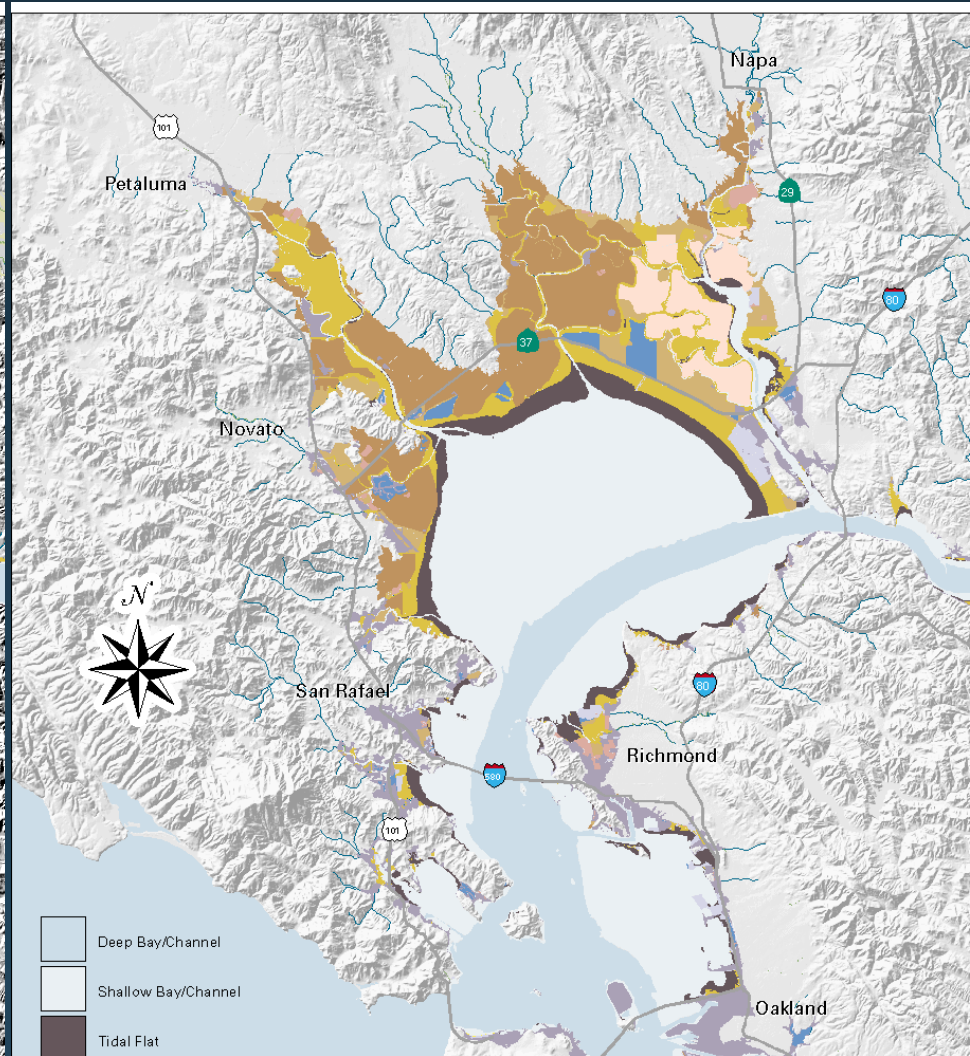
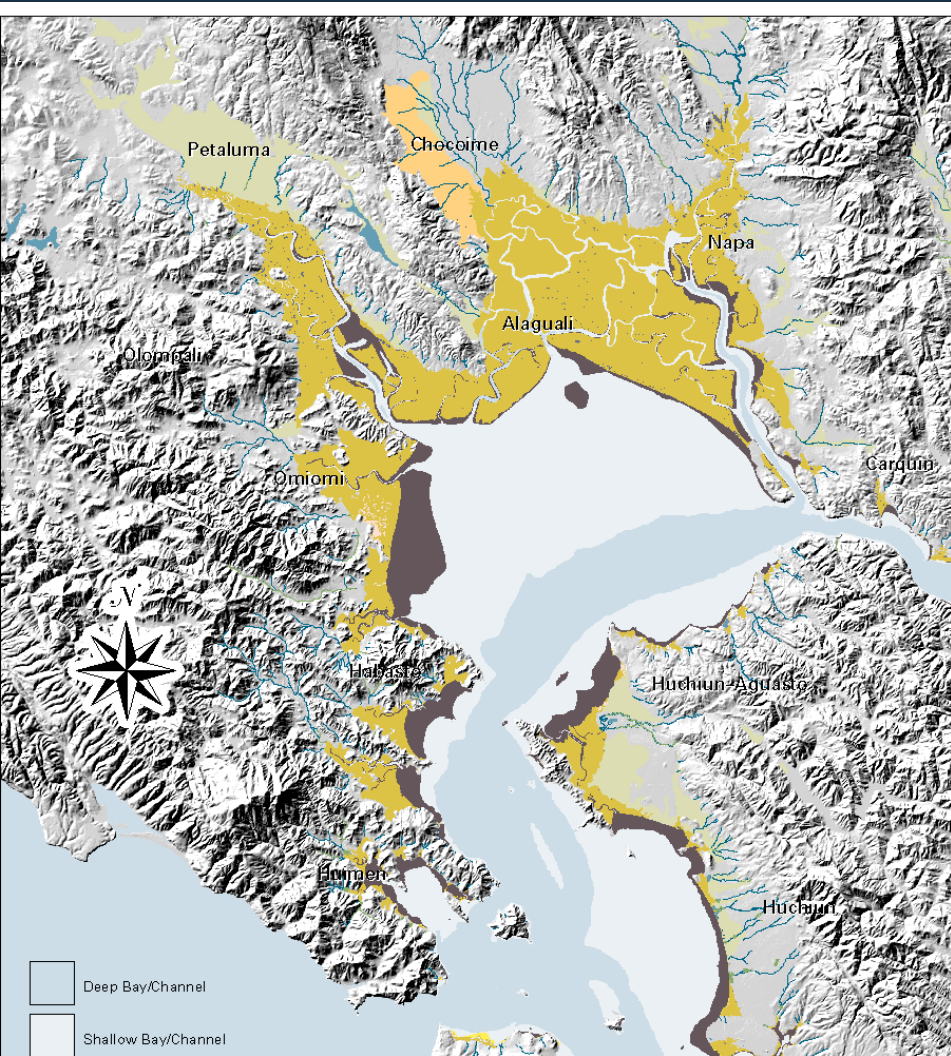


# Highway 37: the “Flyway Highway”





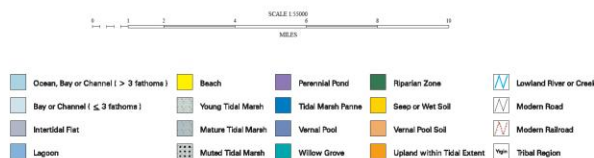
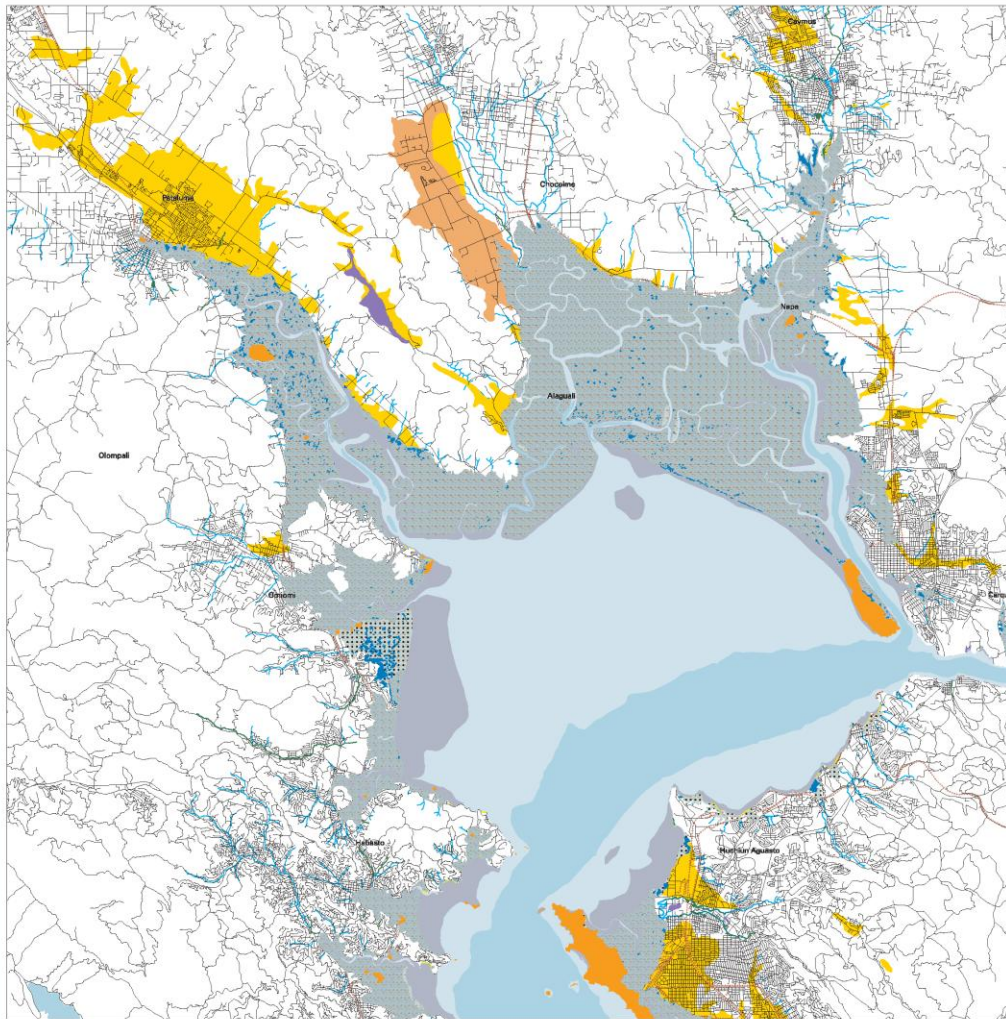
# San Pablo Bay: Past and Present



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



# Historical View of North Bay Subregion ca. 1770–1820 Based Upon Bay Area EcoAtlas Version 1.50pr4



Historical View Primary Sources:  
US Coast Survey, US Geological Survey, US Department of Agriculture, Spanish diaries, explorers' journals  
Tribal Regions courtesy of Randall Milliken

Projection:  
1983 North American Datum  
Universal Transverse Mercator Projection, UTM Zone 10

Production:  
Source coordination, GIS and Map Design by the San Francisco Estuary Institute  
Richmond, California <http://www.sfei.org> EcoAtlas 1.50 11/97 SFEI

## Historic North Bay

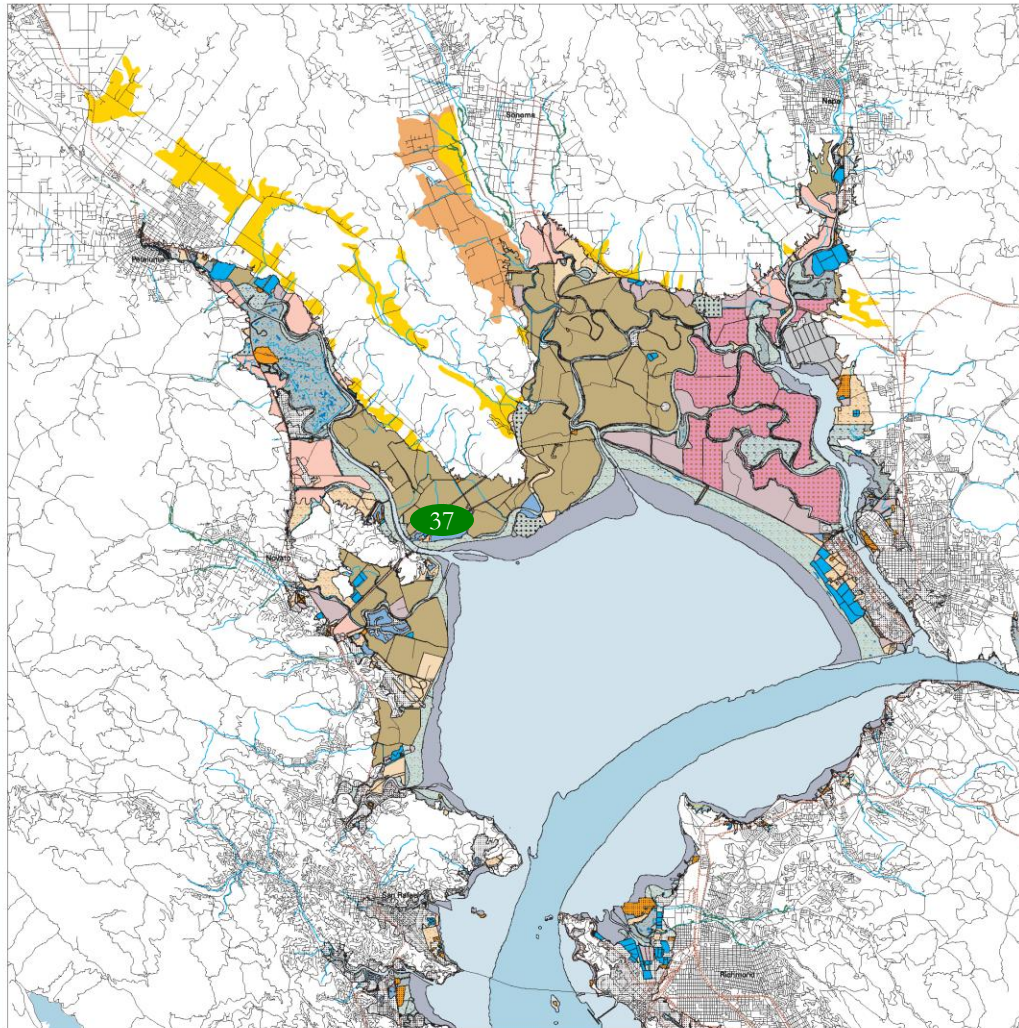
- Mosaic of 70,000 acres of tidal and seasonal linked to upland oak woodlands and grasslands
- Abundant and diverse animals ranging from grizzly bear to salt marsh harvest mouse





## Modern View of North Bay Subregion ca. 1997

Based Upon Bay Area EcoAtlas Version 1.50



Modern View Primary Sources:  
CA State Lands Commission, US Geological Survey, US Fish and Wildlife Service,  
US National Aeronautics and Space Administration, and local experts.

Projection:  
1987 North American Datum  
Universal Transverse Mercator Projection, UTM Zone 10

Production:  
Science coordination, GIS and Map Design by the San Francisco Estuary Institute  
Richmond, California <http://www.sfei.org> EcoAtlas 1.50.00 ©1997 SFEI



# Present North Bay

- Tidal marshes diked, drained and filled in late 1800s
- Land use mostly farming, ranching and salt production
- Marsh soils oxidized – land surface is below sea level.
- Transportation corridors – Hwy 37 and RR – are just above sea level (4 feet)



Hay headed for market in San Francisco



# Turning the Tide Back

## Baylands Ecosystem Habitat Goals Report

- Completed in 1999
- Past, present, future
- How much, what kind, and where?
- Includes specifics
  - *“Restore a continuous, wide band of tidal marsh from Tolay Creek to the Petaluma River”*
  - *Endangered species recovery is the key objective*





# San Pablo Bay: a unique opportunity

- Very little urban and industrial development
- Upland linkages are relatively intact
- Lots of sediment to build new marshes





# Protected Lands along the 37 Corridor

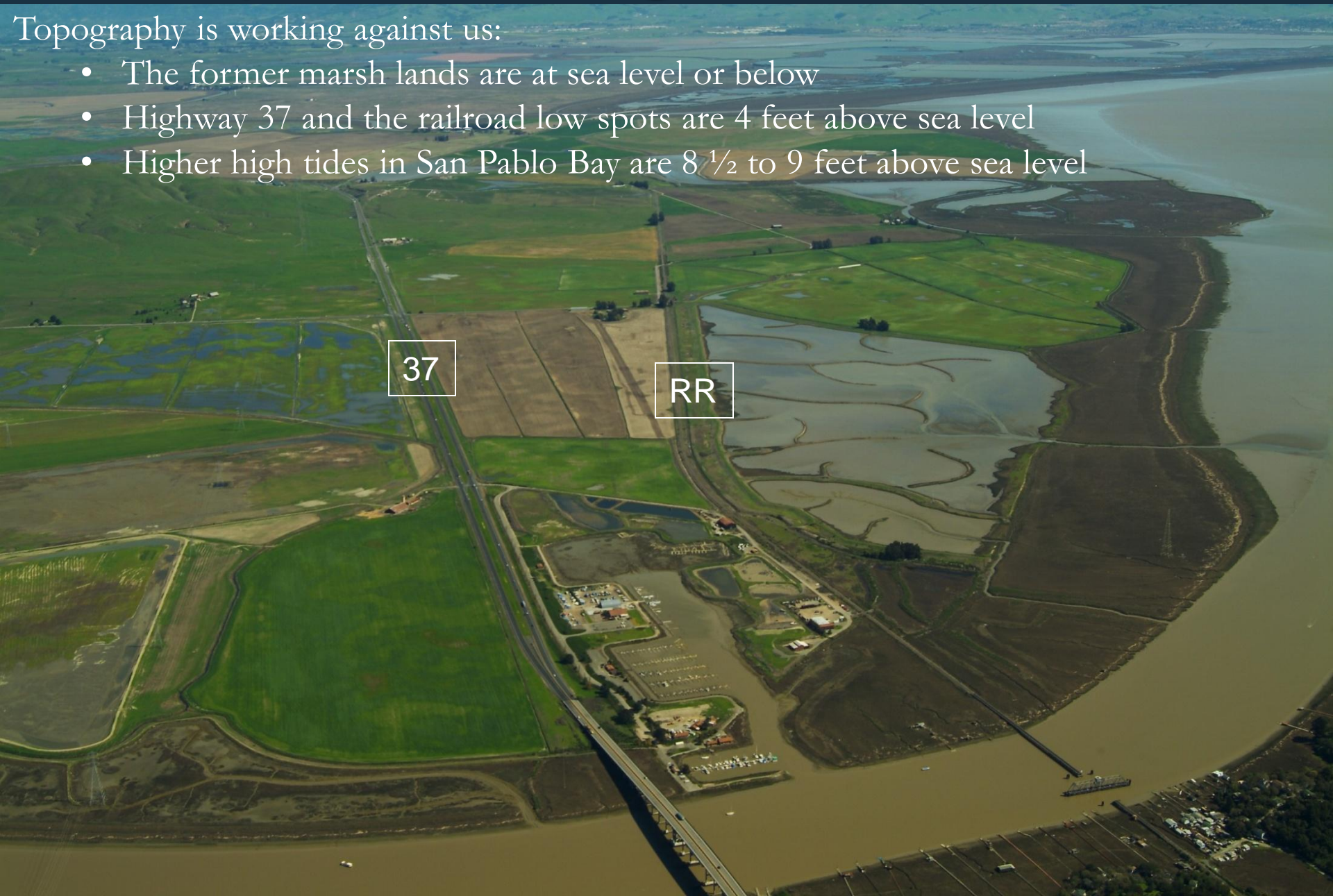




# Key Issues along the 37 Corridor

Topography is working against us:

- The former marsh lands are at sea level or below
- Highway 37 and the railroad low spots are 4 feet above sea level
- Higher high tides in San Pablo Bay are 8 ½ to 9 feet above sea level





# Key Issues along the 37 Corridor

- Flooding is prevented through active management of an aging system of levees and pumps to hold back the Bay and remove storm water.
- Costs of operation and equipment are borne by private landowners.
- Integrity of the system is uneven.

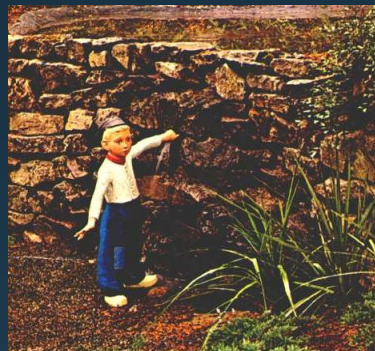






Erosion at Tolay Lagoon

Eroding levee along  
San Pablo Bay

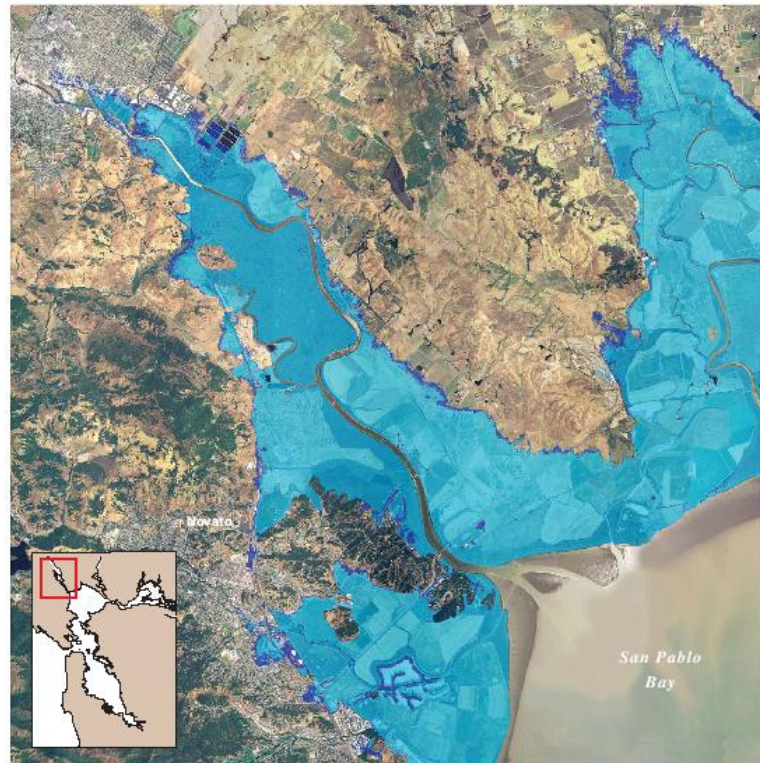


Highway 37 at Tolay Lagoon



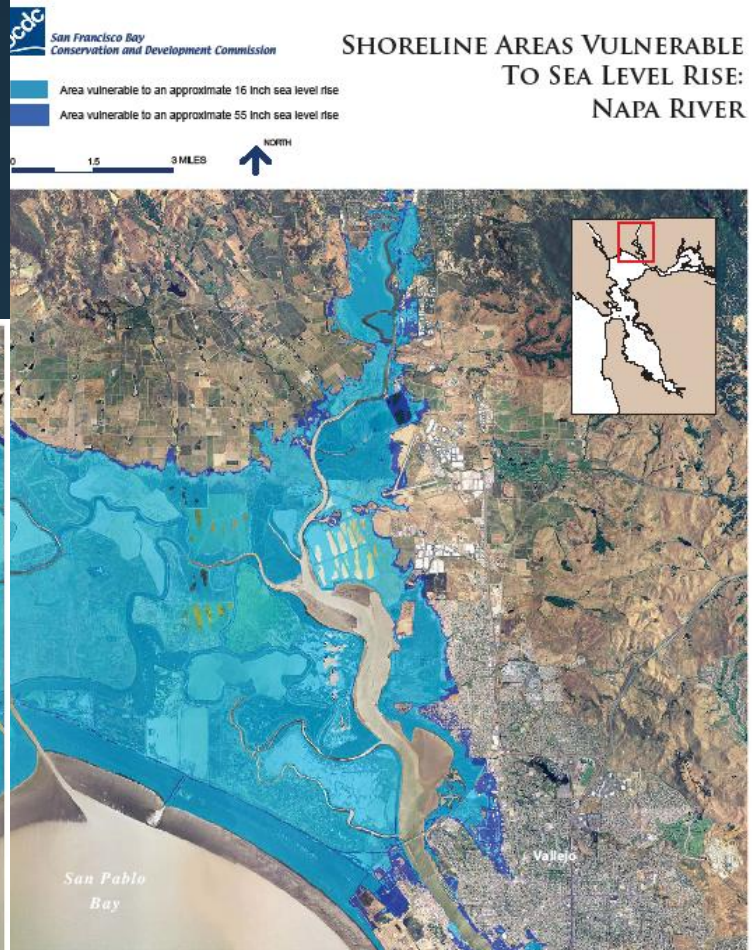
Levee breach during January storm





SOURCE: Inundation data from Knowles, 2008. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NAPP 2005 data.

DISCLAIMER: Inundation data does not account for existing shoreline protection or wave activity. These maps are for informational purposes only. Users, by their use, agree to hold harmless and acknowledge the State of California and its representatives and its agents for any liability associated with its use in any form. The maps and data shall not be used to assess actual coastal hazards, insurance requirements, or property values or be used in lieu of Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA).



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The Intergovernmental Panel on Climate Change predicts a 20-inch rise in sea level over the next half-century



# Closing Thoughts

Protecting infrastructure from flooding, will get more expensive with sea level rise and aging levees.

Burden of responsibility for keeping Highway 37 dry is mostly borne by private landowners and needs to be shared by all of us.

Solutions will arise from new partnerships (transportation planners, farmers, ranchers, conservationists, and others)

Restoring San Pablo Bay's marshes is part of the solution to buffer the impacts of sea level rise.









# Watersheds of the North Bay





