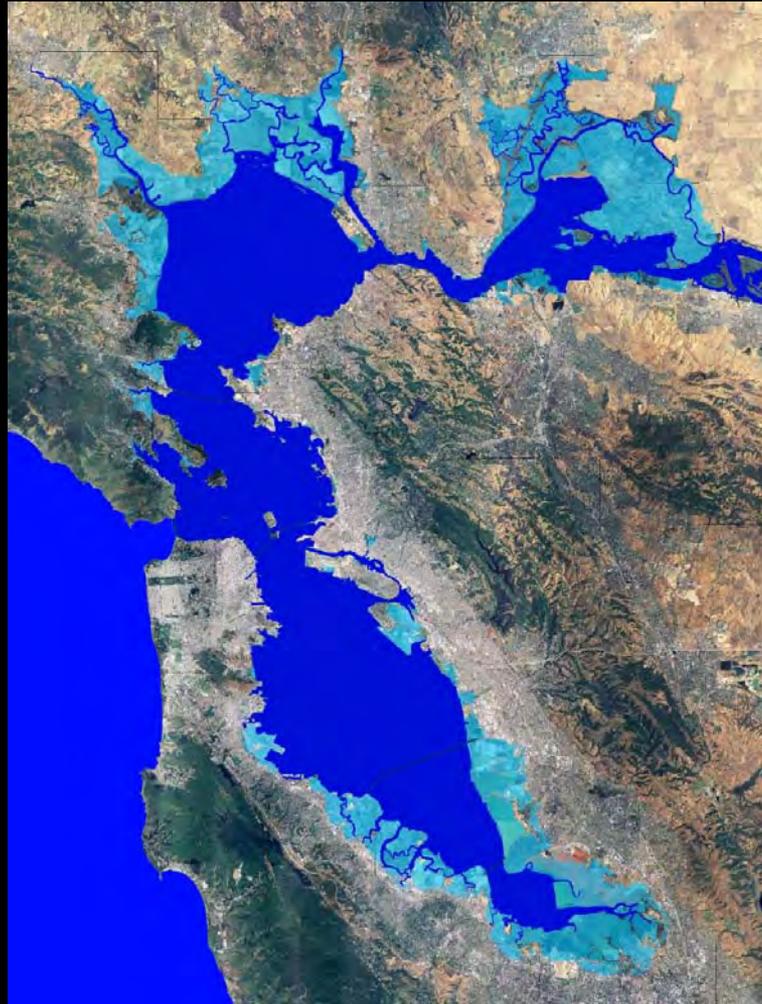


# Climate Change Research Needs: San Francisco Bay and the Shoreline



San Francisco Bay Conservation and Development Commission

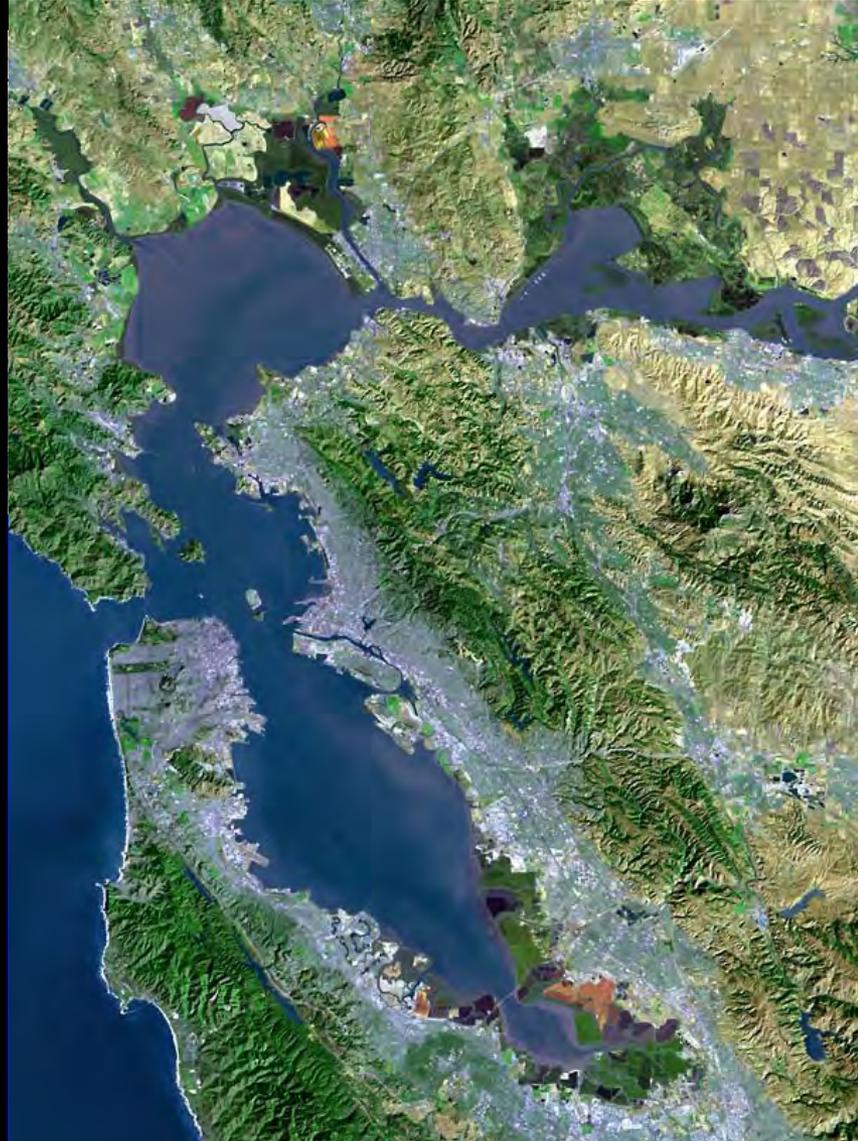




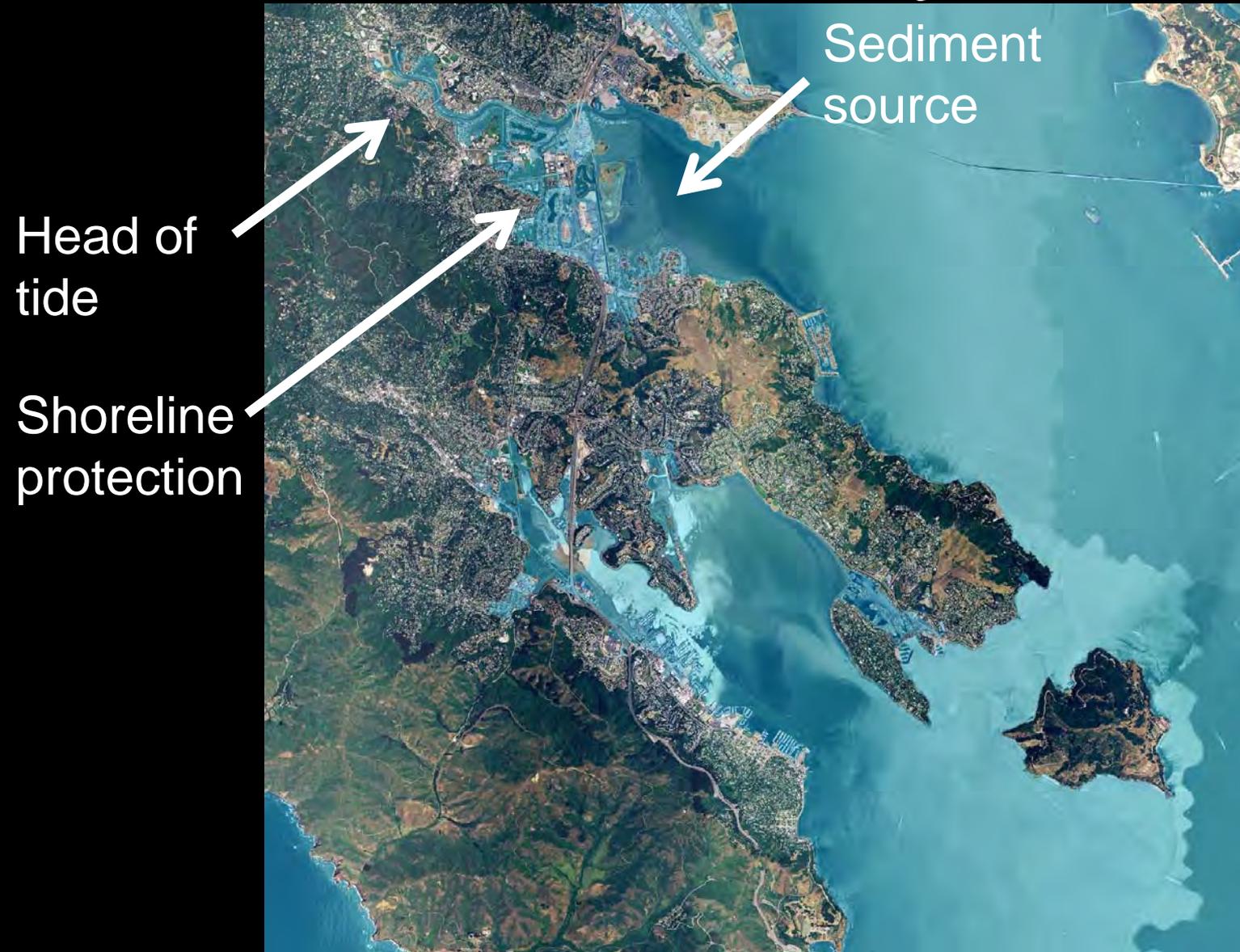
# Research Needs

- Different scales of research
- Integration of research
- Dissemination of research

# Regionwide Analysis



# Local Analysis

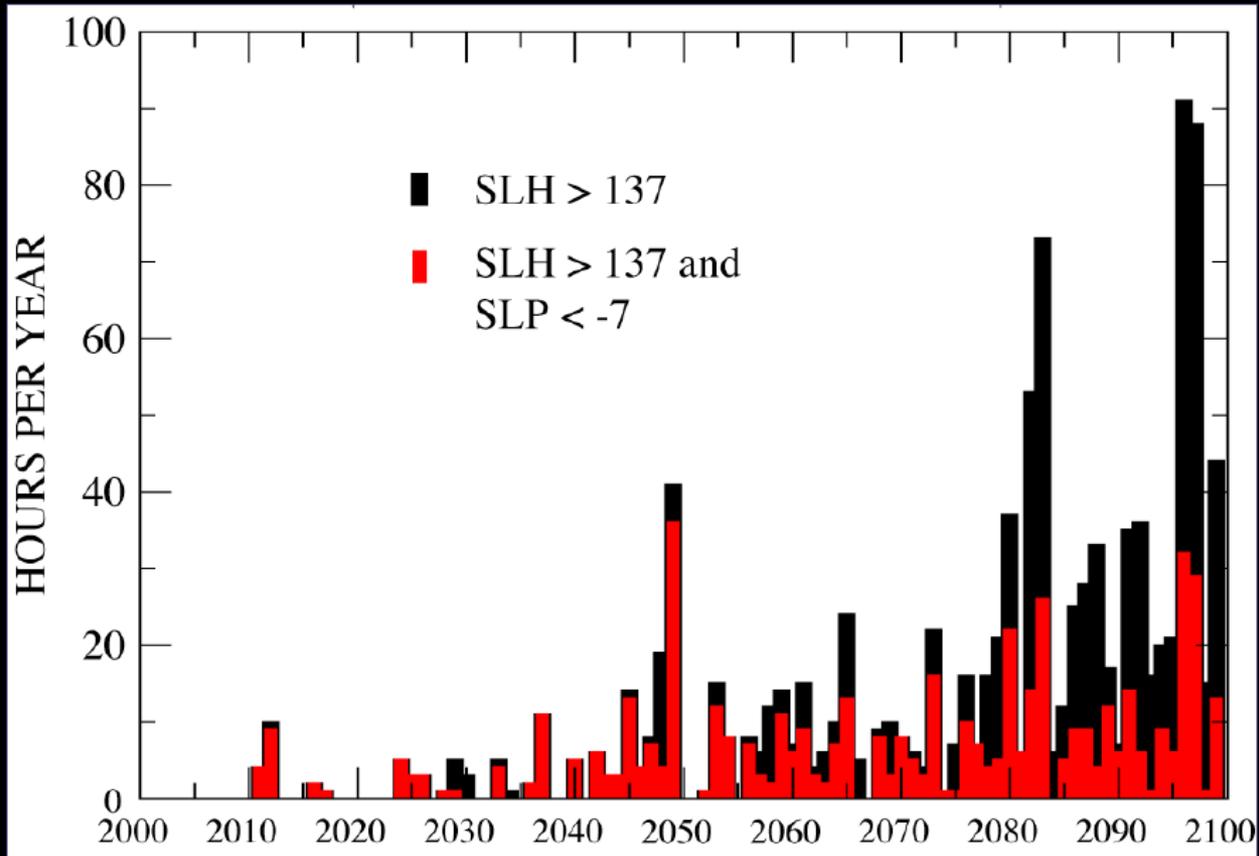


# Regionally Significant Infrastructure

-  55-inch Rise in Sea Level
-  Airport
-  Waterfront Park
-  Railroad
-  BART



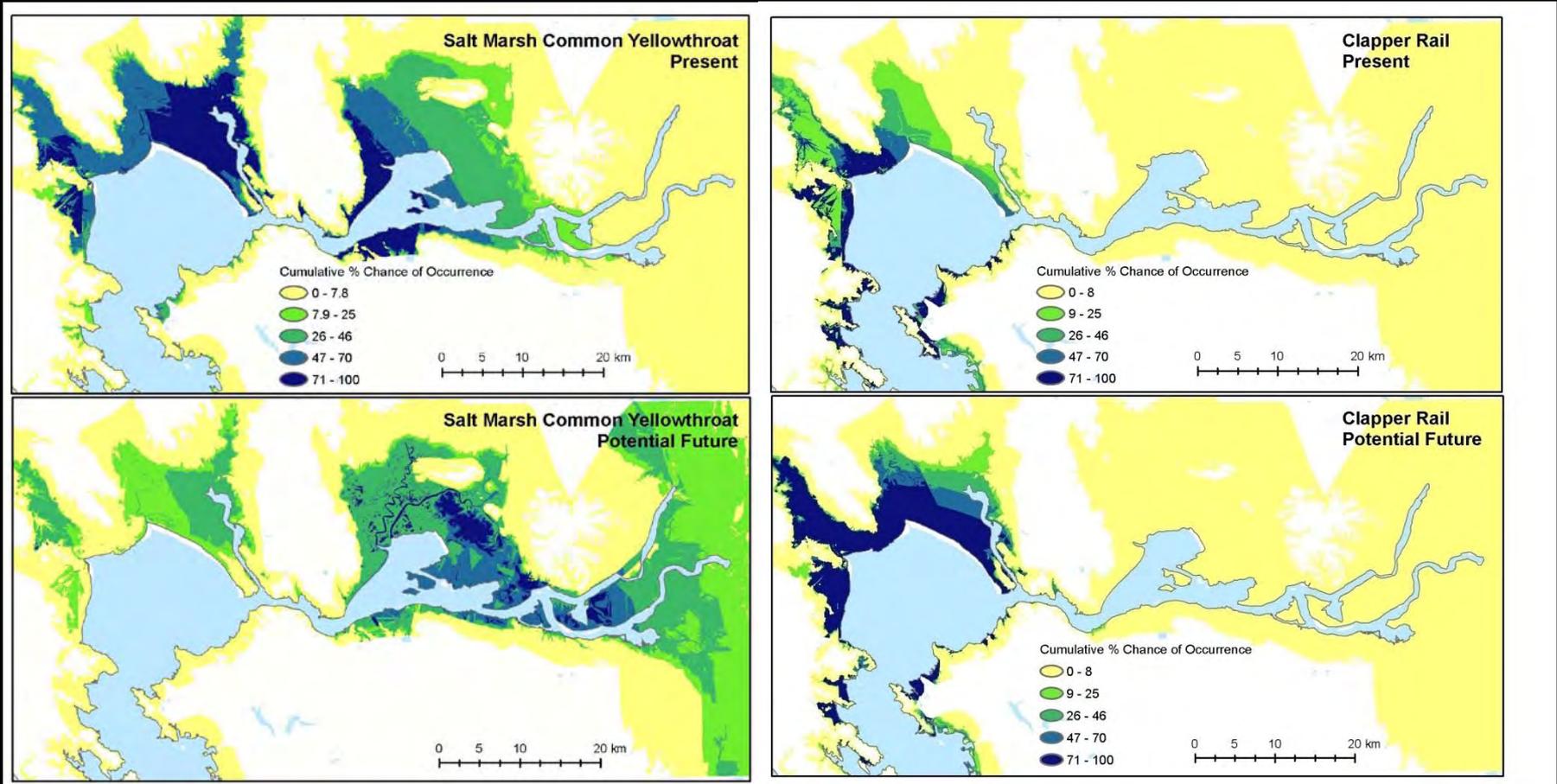
# Projections of Future



Scripps &

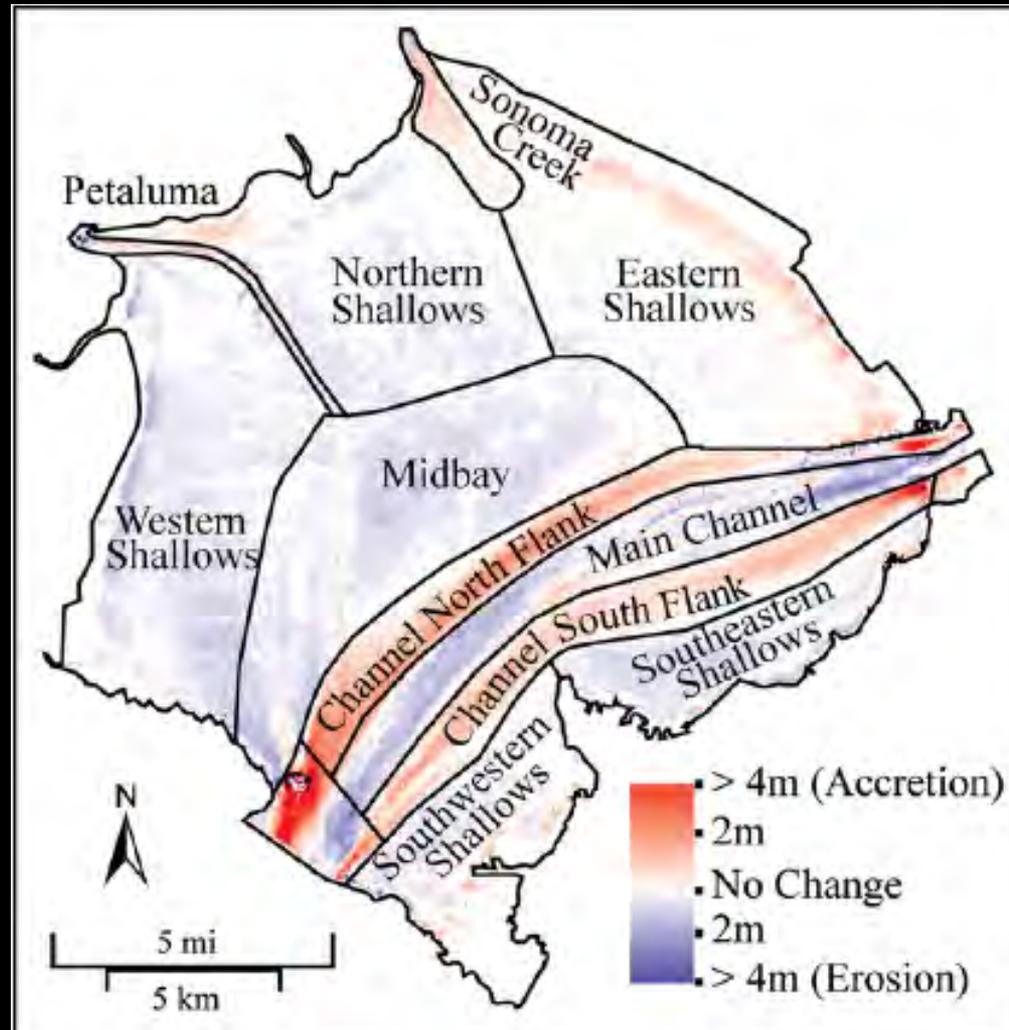


# Species Response to Habitat Change/Loss



Preliminary modeled responses to 1-m SLR and salinity increase from Knowles and Cayan (2002) (Stralberg et al., PRBO)

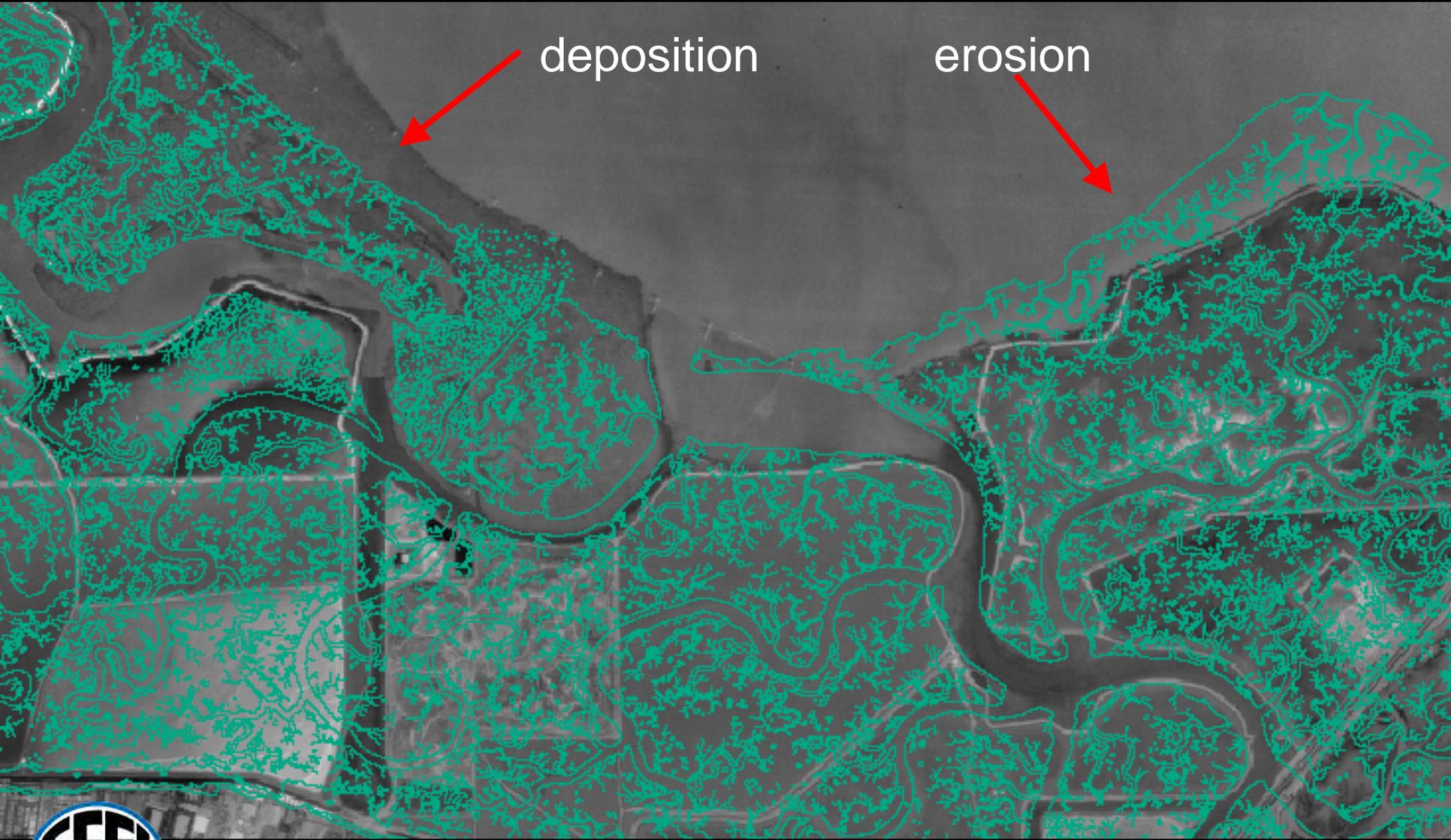
# Monitoring the Present



# Historic conditions

deposition

erosion

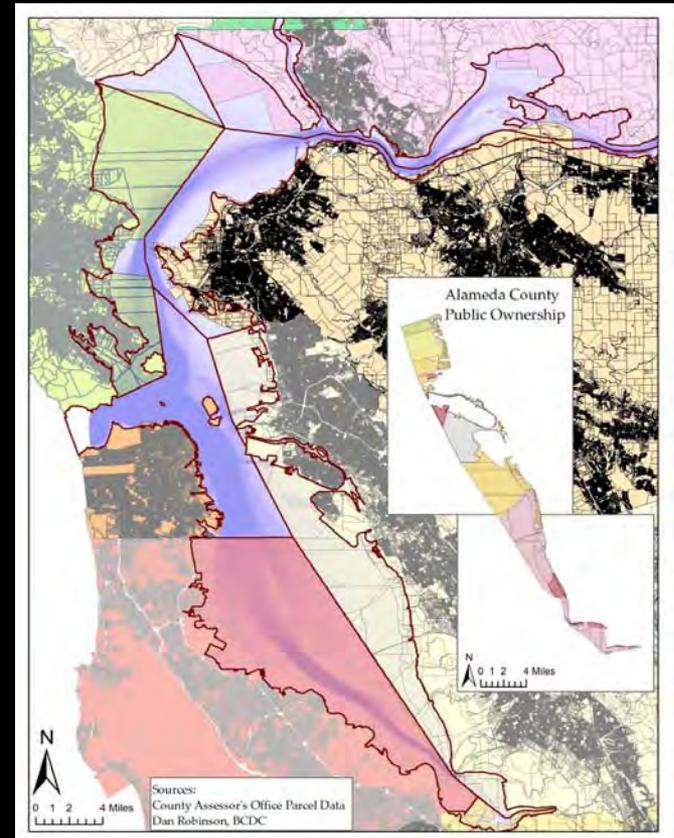


# Placed-Based Management

## Ecosystem Boundaries



## Institutional Boundaries



# Dissemination of Research

SFBCDC - Climate Change

http://www.bcdc.ca.gov/planning/climate\_change/climate\_change.shtml

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## Climate Change

The goals of BCDC's Climate Change Planning Project are to:

1. identify and report on the impacts of climate change on San Francisco Bay;
2. identify strategies for adapting to climate change;
3. develop a regional task force to inform and coordinate local governments, stakeholders, and land use planning bodies in the Bay area regarding the potential Bay-related impacts of and approaches for adapting to global climate change;
4. identify the findings and policies in the San Francisco Bay Plan pertaining to climate change, such as the findings and policies on sea level rise, and update other relevant Bay Plan policies to incorporate new information about the impacts of climate change.

### Sea level rise

Historical records show that sea level in San Francisco Bay has risen 18-20 cm (7 inches) over the past 150 years. The Intergovernmental Panel on Climate Change and the 2006 California Climate Action Team Report project that mean sea level will rise between 10 and 90 cm (12 and 36 inches) by the year 2100. Sea level rise models indicate that a 30 cm (11.8 inch) rise in sea level would shift the 100-year storm surge-induced flood event to once every 10 years. With each flood event, the Bay Area stands to lose valuable real estate, critical public infrastructure, and natural resources.

Through the sea level rise mapping project, BCDC employed geographic information system software to identify the shoreline areas likely to be most impacted by sea level rise. The sea level rise maps are generally consistent with the projections in the 2006 California Climate Action Team Report. They illustrate an impact scenario in which sea level rises one meter by the year 2100. Limitations in the geospatial data may effect accuracy. Therefore, they are illustrative and should not be used for small-scale planning purposes. The maps are based on USGS 2005 Urban Areas digital elevations and National Agriculture Imagery Program 2004 aerials.

### Shoreline areas impacted by sea level rise - maps

[Index map](#) (click marked areas for viewing)

- San Francisco [ [301 Kb](#) ] / [ [904 Kb](#) ]
- San Francisco Airport [ [212 Kb](#) ] / [ [904 Kb](#) ]
- Oakland Airport [ [572 Kb](#) ] / [ [1.15 Mb](#) ]
- Westshore South Bay [ [196 Kb](#) ] / [ [629 Kb](#) ]
- South Bay [ [196 Kb](#) ] / [ [1.05 Mb](#) ]
- Eastshore South Bay [ [337 Kb](#) ] / [ [1.05 Mb](#) ]
- Central South Bay [ [228 Kb](#) ] / [ [1.4 Mb](#) ]
- Corte Madera / San Rafael [ [337 Kb](#) ] / [ [869 Kb](#) ]
- Richmond/Brooks Island [ [267 Kb](#) ] / [ [813Kb](#) ]
- Richmond [ [272 Kb](#) ] / [ [803 Kb](#) ]

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### Featured Links

- ▶ Bay Area License Plate
- ▶ Your Wetlands
- ▶ The San Francisco Bay Shoreline Access webGuide
- ▶ FOCUS
- ▶ Saving the Bay video
- ▶ Clean Air Plan Community