



South Bay Restoration: What can we learn from history?

***Presentation to South Bay Salt Pond Restoration
Habitat Restoration Work Group
March 26, 2004***

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Environmental Scientist**

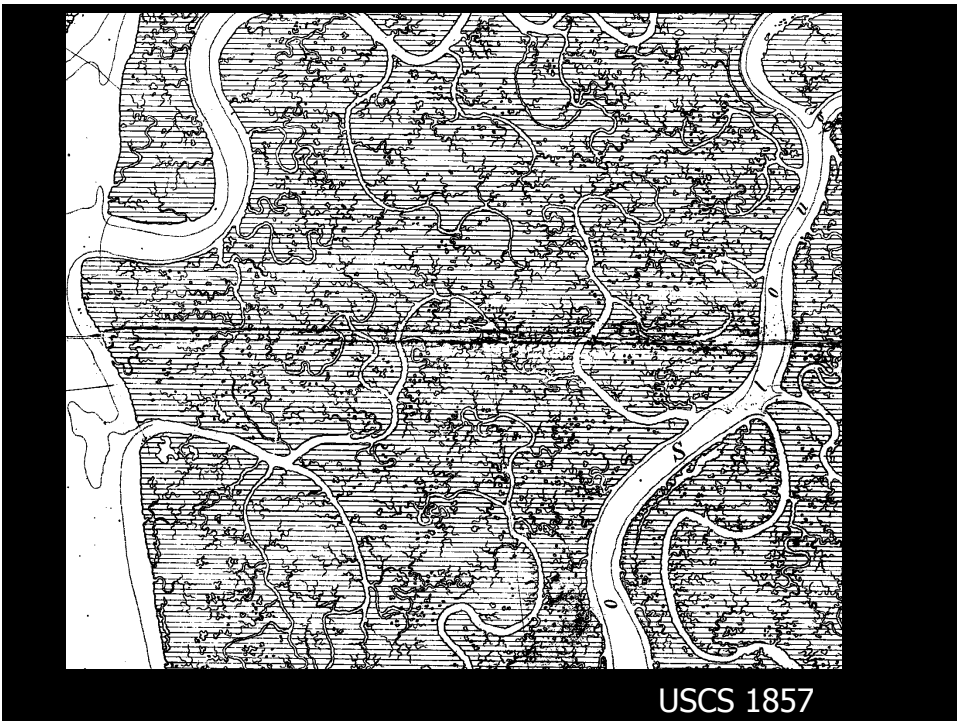
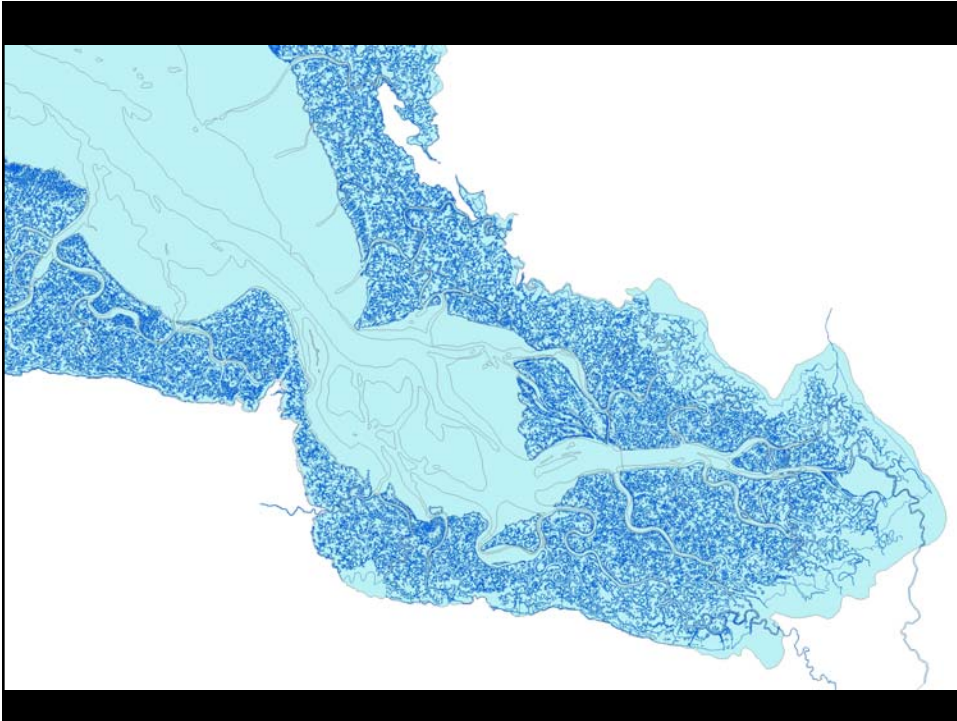
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Sponsors of this work:

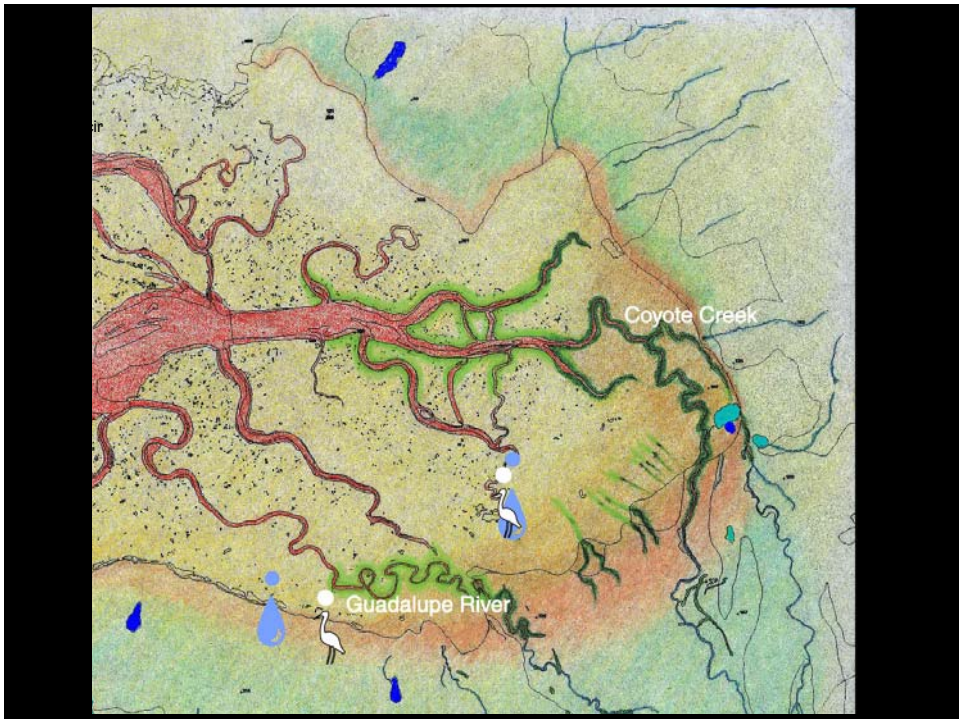
***Santa Clara Valley Water District
City of San Jose
Oakland Museum
USFWS
Alameda County Flood Control
SFEP-USEPA
City of Palo Alto
City of Sunnyvale
and others***

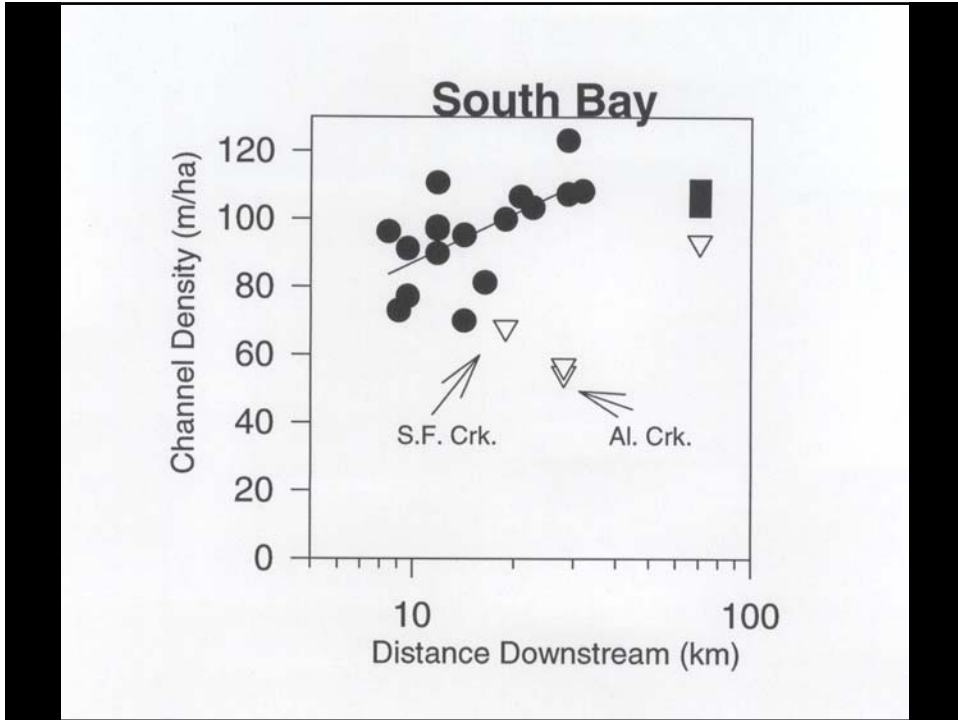
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	F	B	S
Higher Order Channel Density (m/ha)	20 (10-30)	70 (60-85)	105 (100-110)
Ratio of Drainage Divide Area to Drained Area	17 (7-26)	2 (1-3)	1 (0.9-1.2)
Higher Order Sinuosity	1.25 (1-3)	1.5 (1.3-1.8)	1.8 (1.7-2.0)
Mean Pond Size (ha)	0-2	0.2 (0.05-0.3)	0.015 (0.013-0.02)
Pond Density (percentage total system area)	0-15%	5% (3-8%)	2% (1-4%)

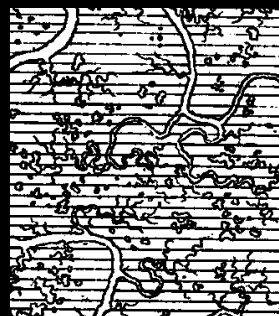
"Typical" Marsh Plan Form



FRESH



BRACKISH

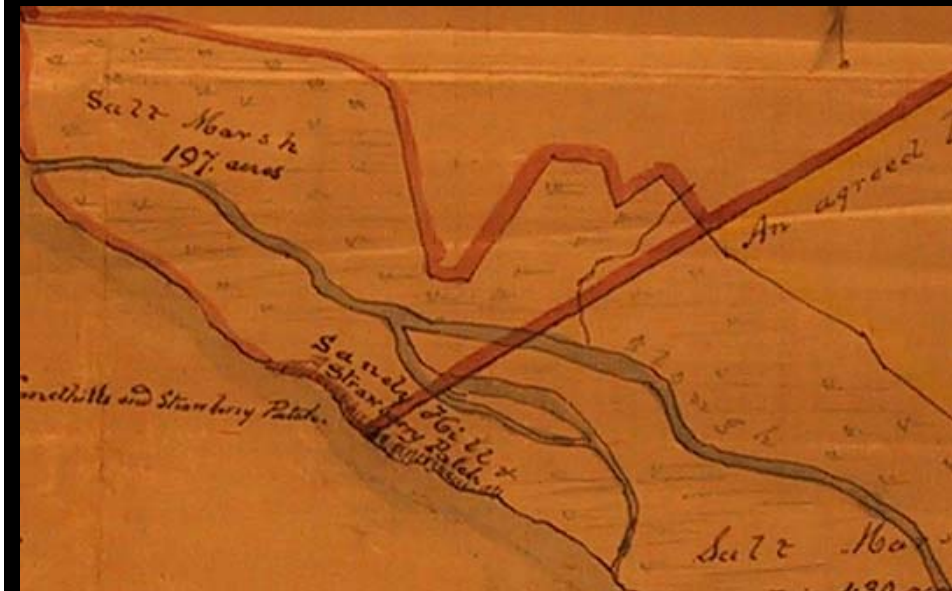


SALINE

**What kinds of edge habitats should
we be thinking about?**

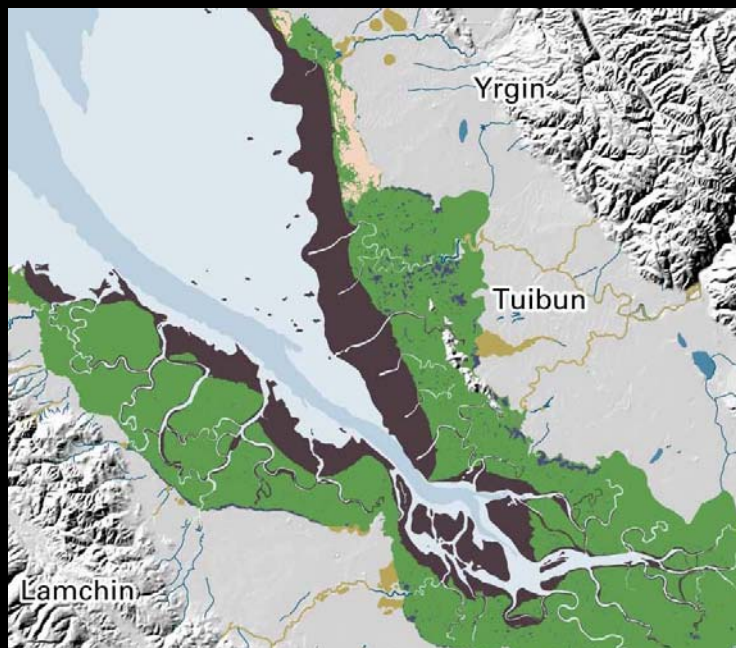


Foreshore margin: sandy beach

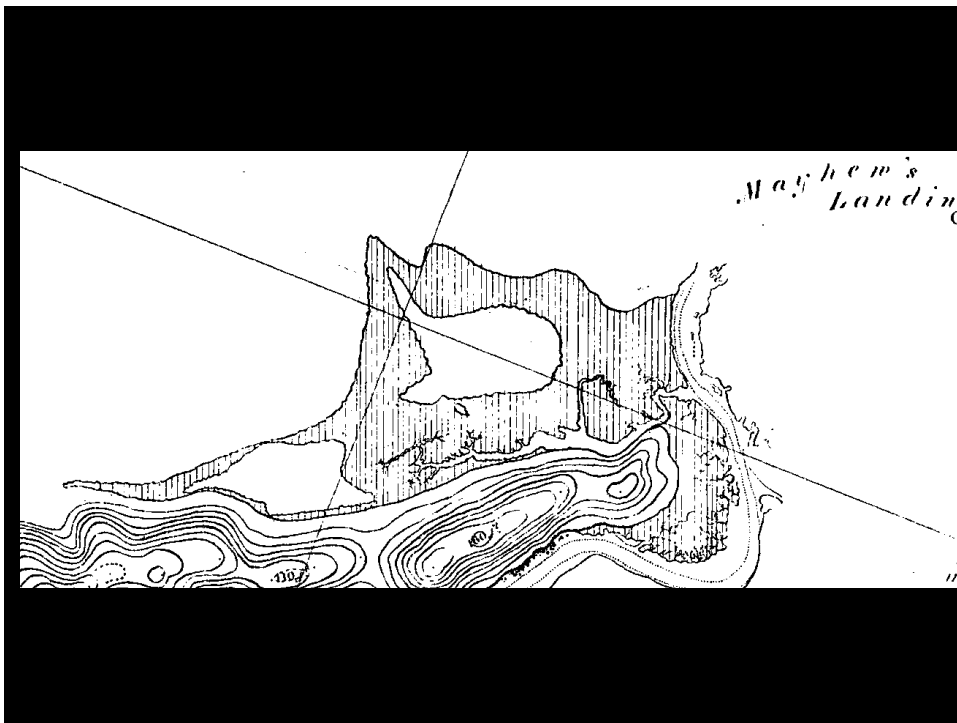
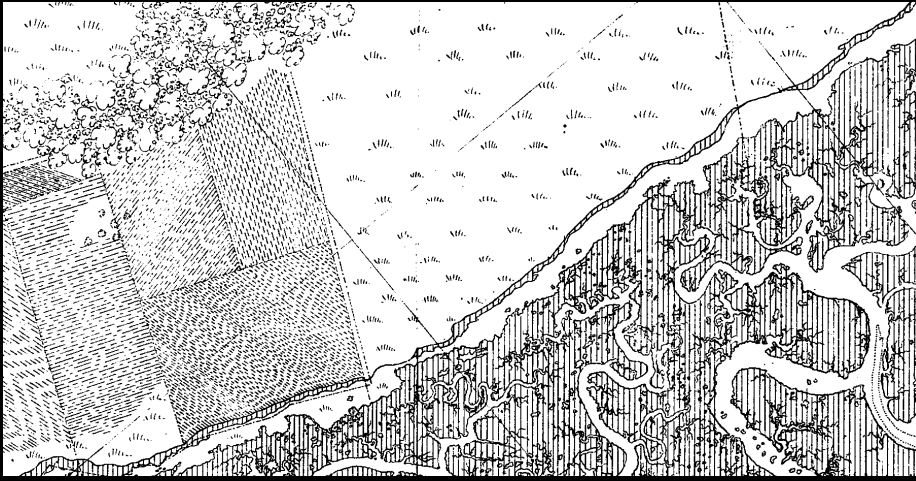


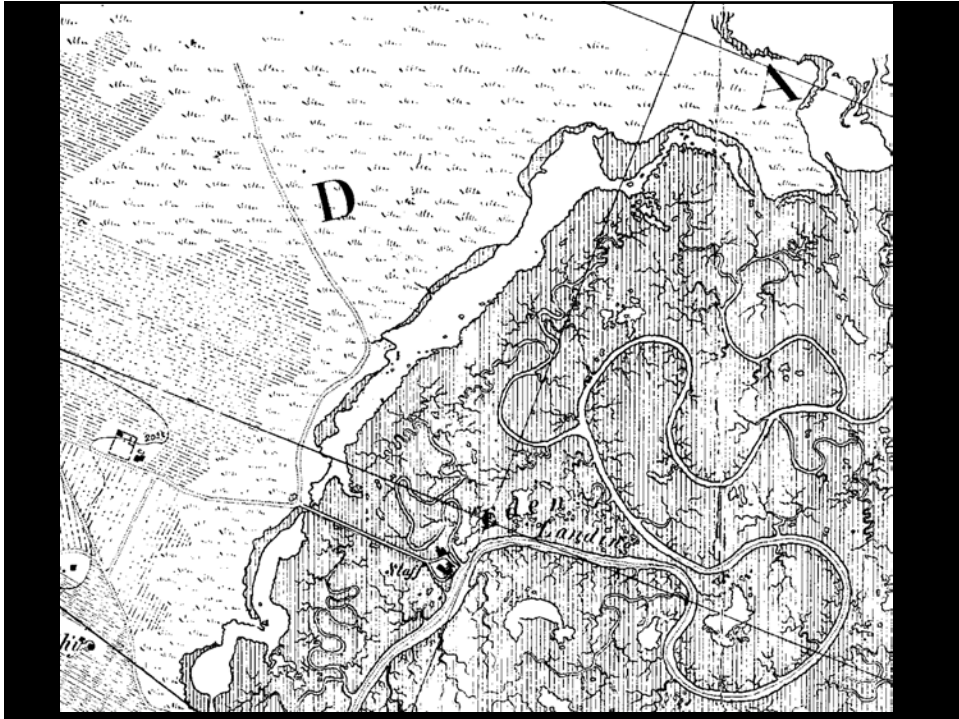
Gray 1855

Foreshore margin: tidal flats and shallow bay



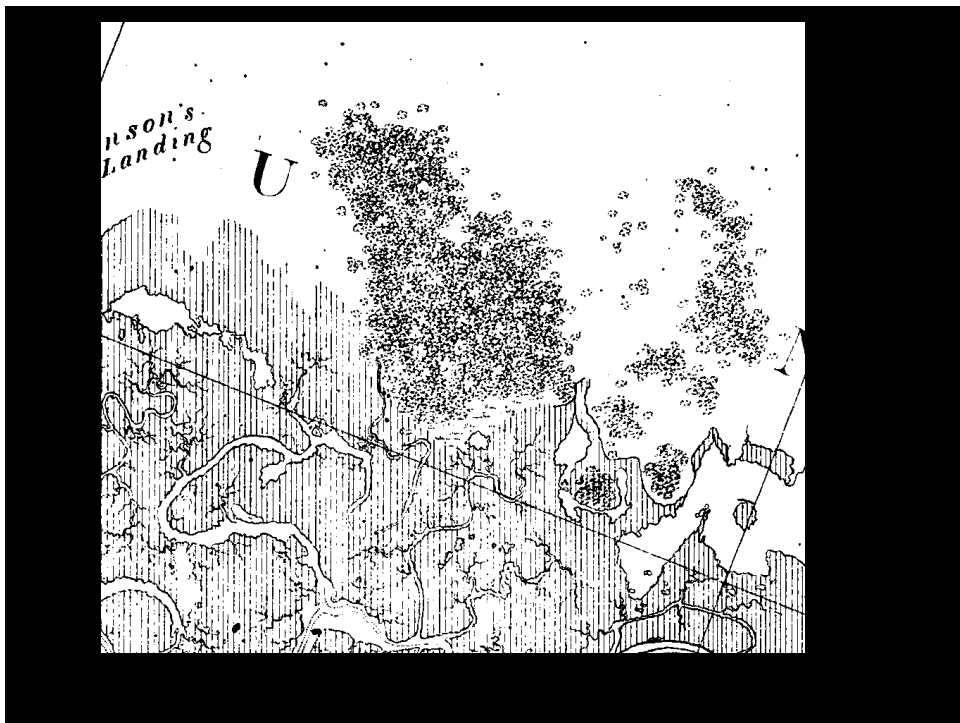
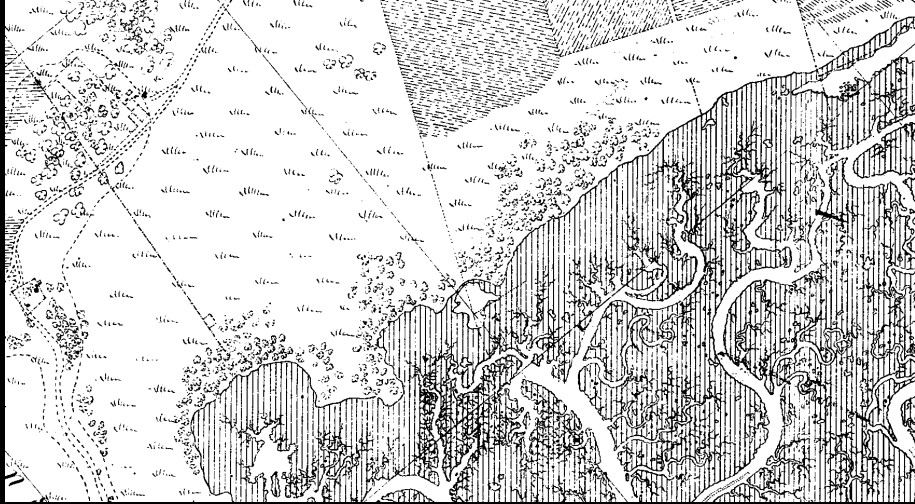
Backshore margin: ponds





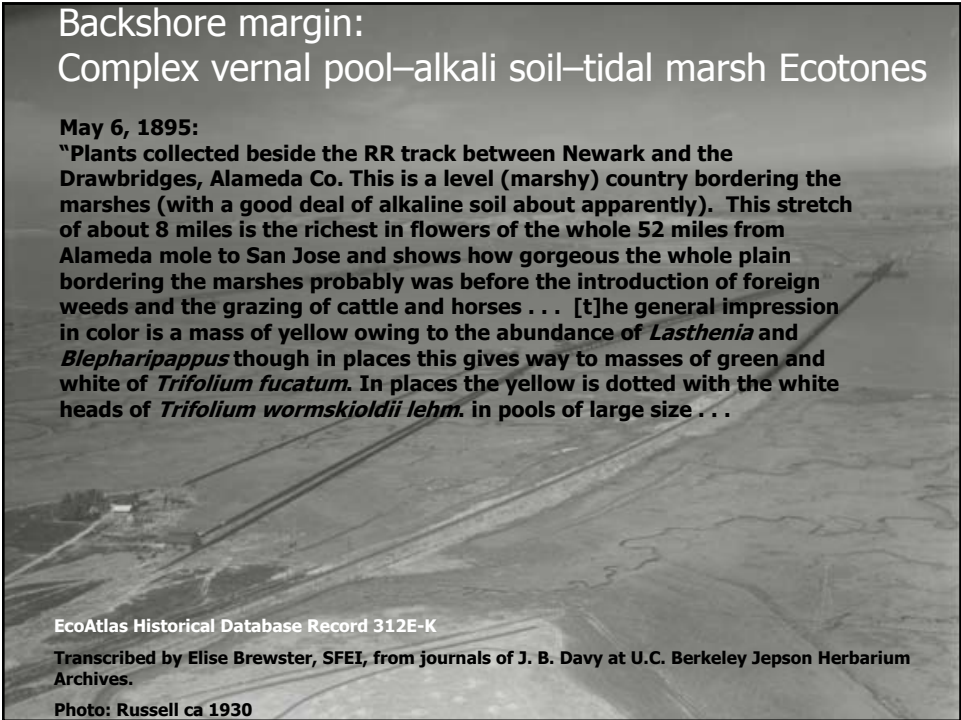
Forbes 1847

Backshore margin: Willow marshes



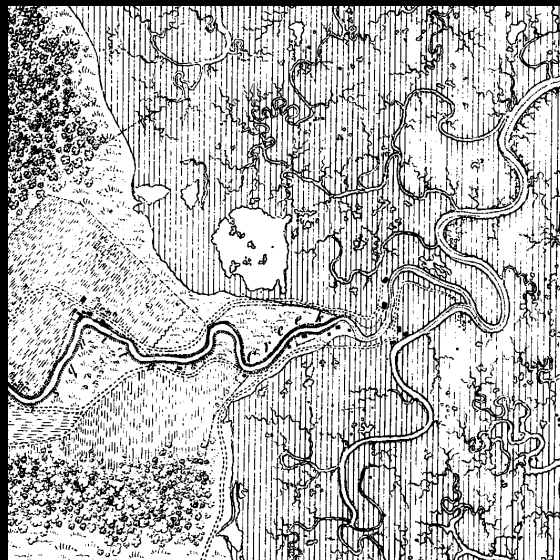
**Backshore margin:
Complex vernal pool–alkali soil–tidal marsh Ecotones**

May 6, 1895:
"Plants collected beside the RR track between Newark and the Drawbridges, Alameda Co. This is a level (marshy) country bordering the marshes (with a good deal of alkaline soil about apparently). This stretch of about 8 miles is the richest in flowers of the whole 52 miles from Alameda mole to San Jose and shows how gorgeous the whole plain bordering the marshes probably was before the introduction of foreign weeds and the grazing of cattle and horses . . . [t]he general impression in color is a mass of yellow owing to the abundance of *Lasthenia* and *Blepharipappus* though in places this gives way to masses of green and white of *Trifolium fucatum*. In places the yellow is dotted with the white heads of *Trifolium wormskioldii* lehm. in pools of large size . . .

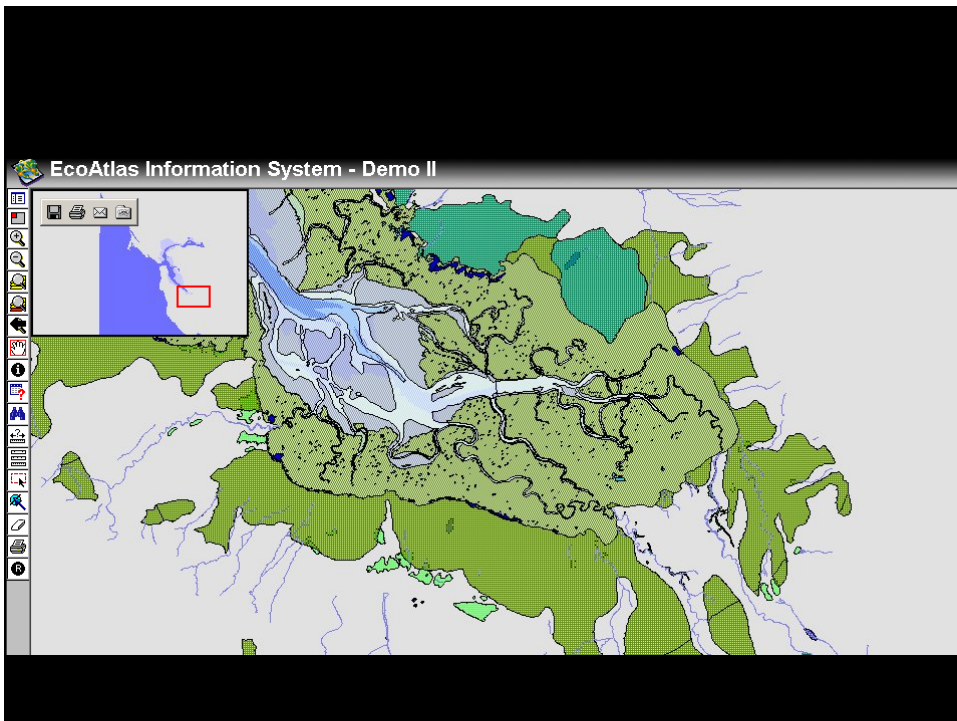
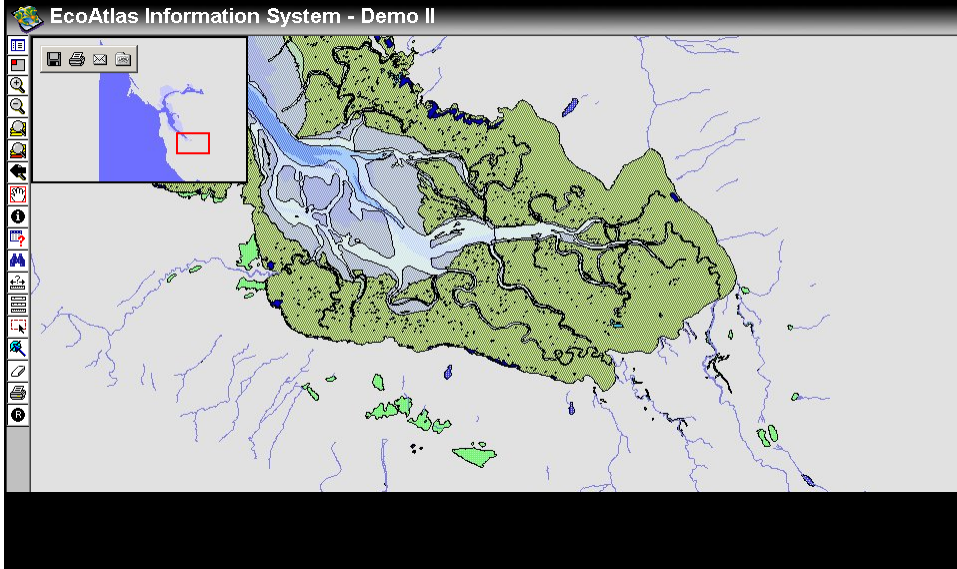


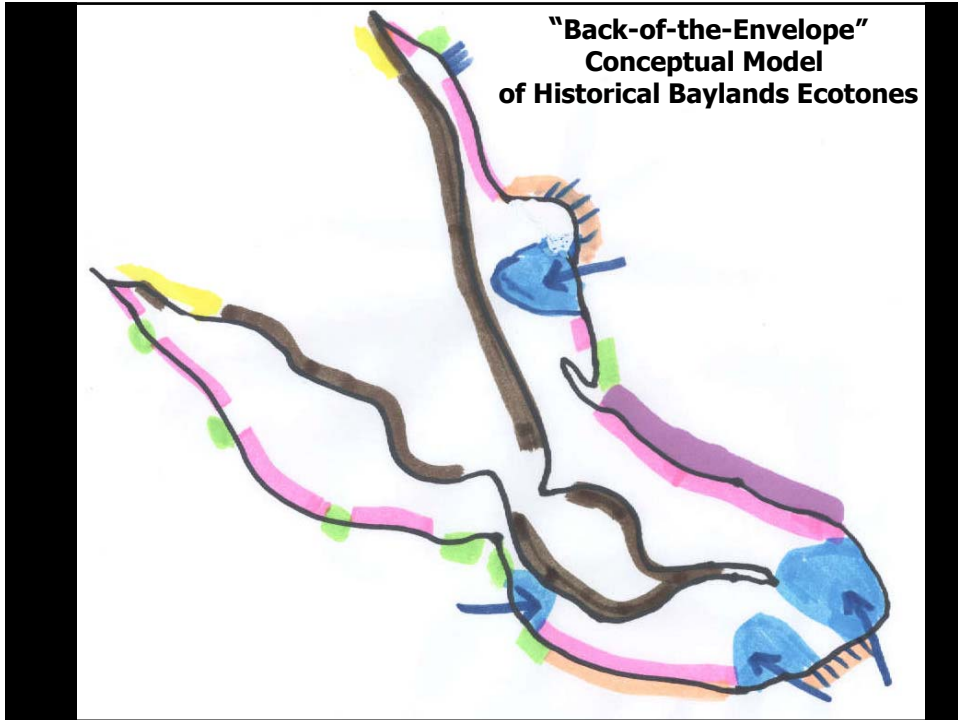
EcoAtlas Historical Database Record 312E-K
Transcribed by Elise Brewster, SFEI, from journals of J. B. Davy at U.C. Berkeley Jepson Herbarium Archives.
Photo: Russell ca 1930

Backshore margin: stream channels



Backshore margin: discontinuous channels

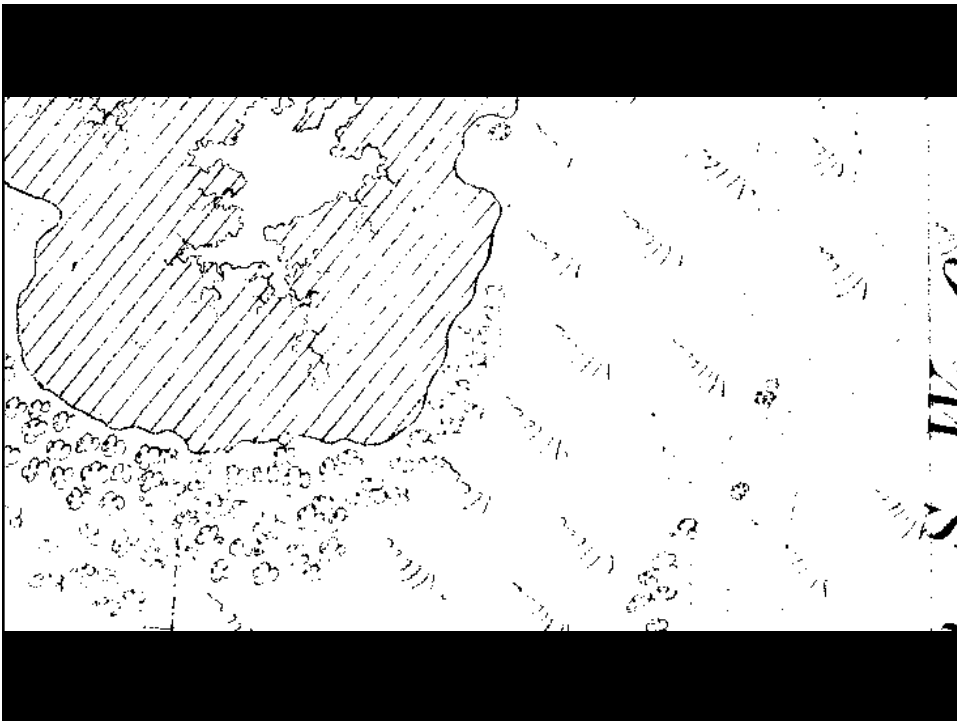




Are there valuable ecological remnants?

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A blue-themed graphic with a background of stylized fish and grasses. In the top right corner, there is a circular logo with the letters 'SCEI' and a fish. The text 'Can we learn anything from the waterfowl hunting history?' is centered in yellow. At the bottom, the text 'San Francisco Estuary Institute' is written in white.

**Can we learn anything from the
waterfowl hunting history?**

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"A good day's bag."



USGS 1915



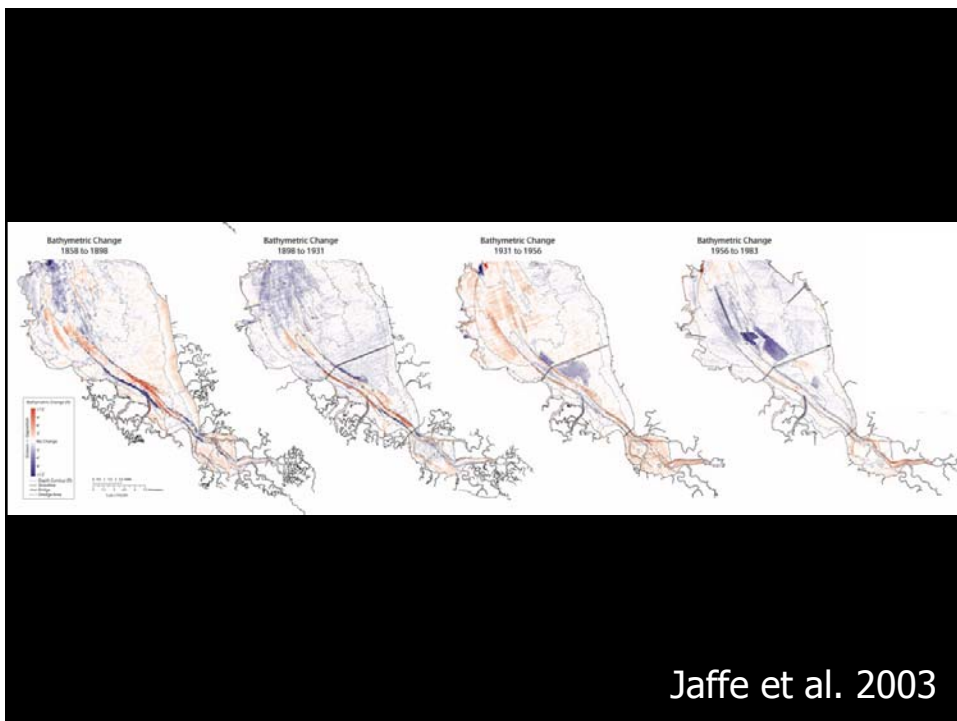
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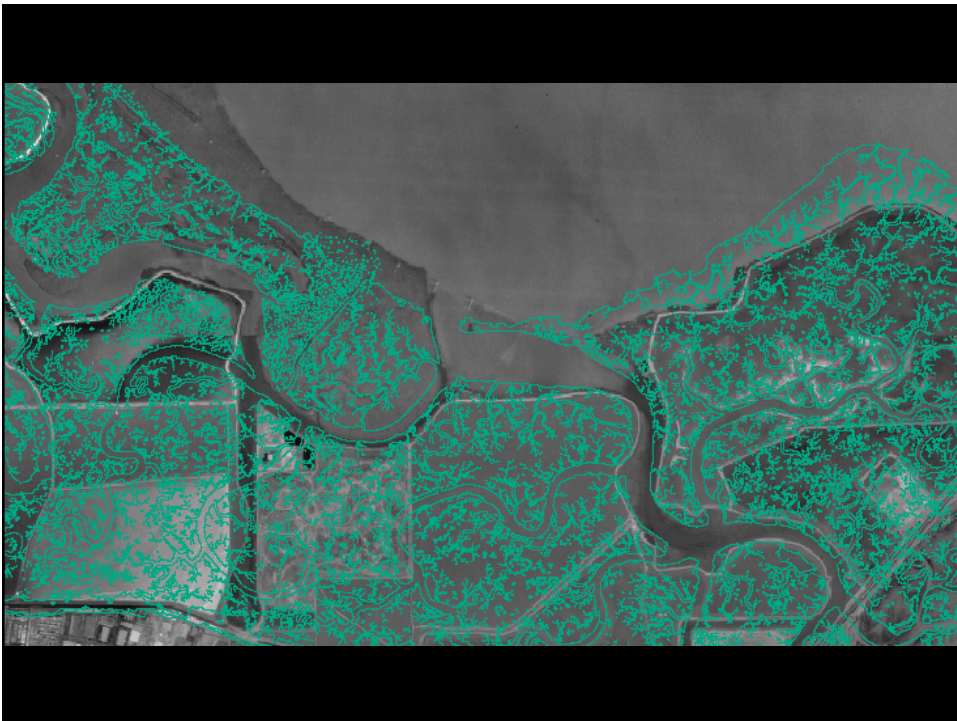


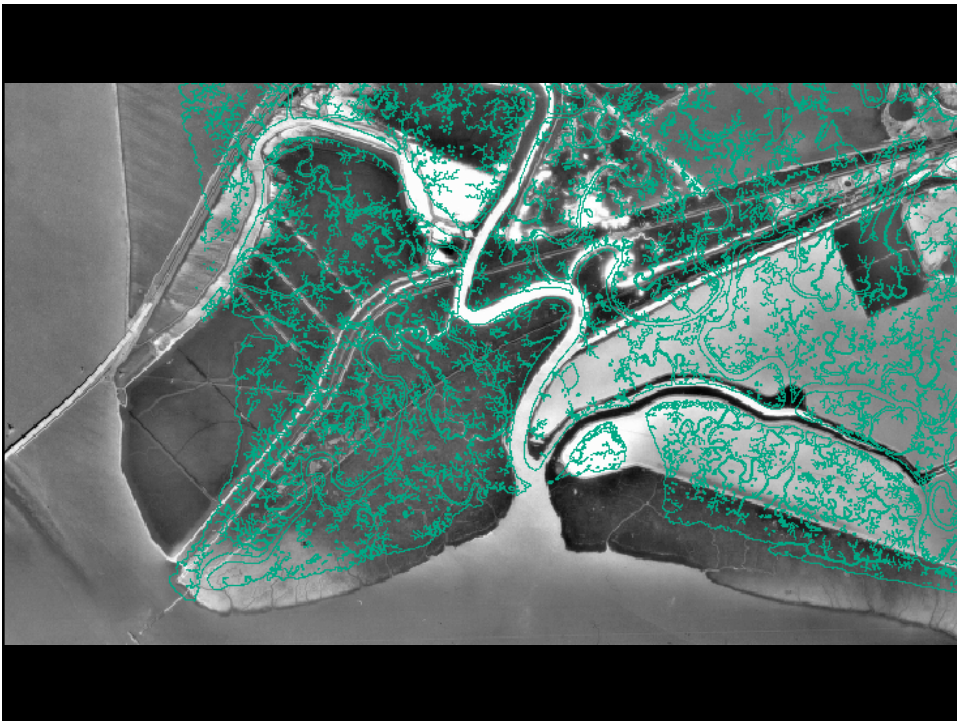


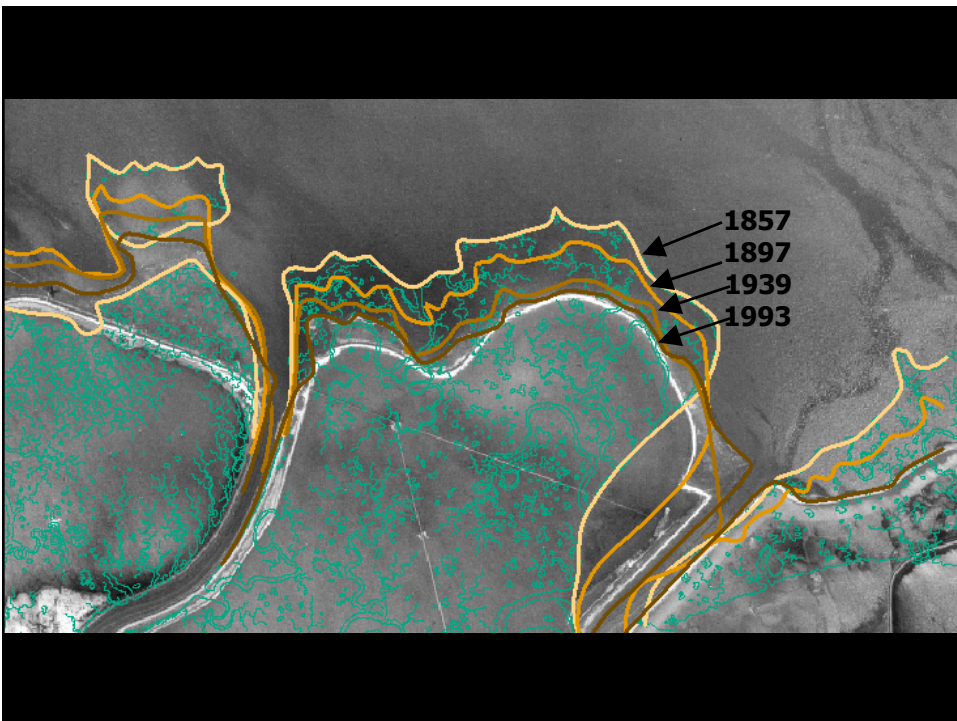
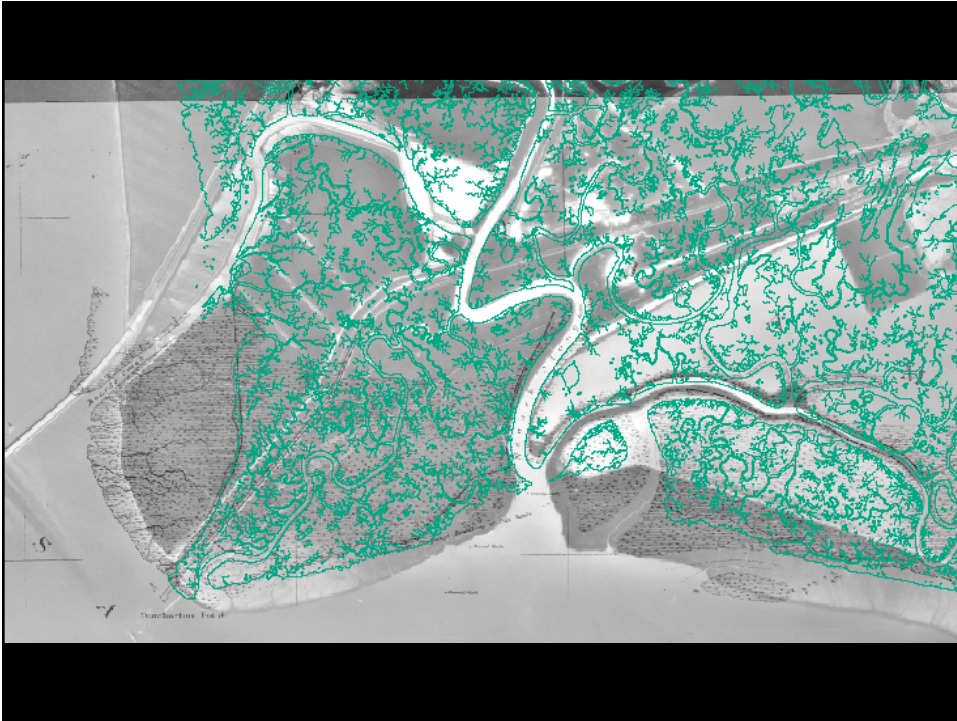
What are the recent and historical trends in the shoreline?

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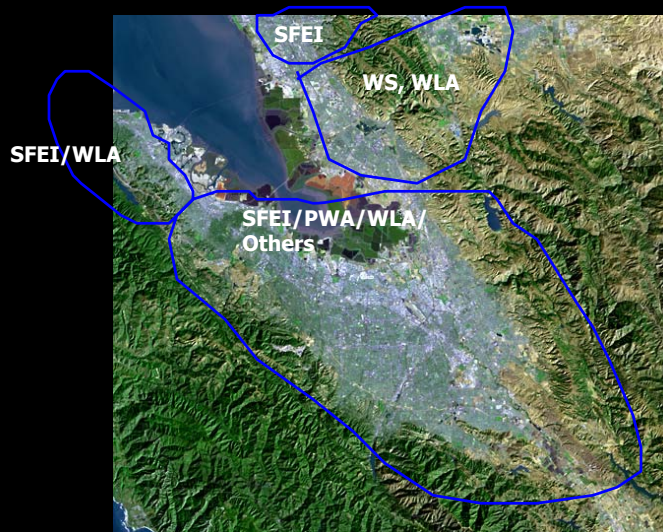








Watershed change studies completed or underway by SFEI and/or colleagues



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www.sfei.org