South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

TODAY'S AGENDA

- Welcome and Introductions
- 2008 Progress Report
- SBSP Project Science Program
- Shoreline Study Update
- Cultural Resources: Opportunities and Themes for Interpretation
- San Jose/Santa Clara Water Pollution Control Plant Master Plan
- What's Ahead in 2009
- Video Presentation

Restoring the Wild Heart of the South Bay

2008 Progress

- Working Groups
- Science Program
- Public Outreach
- Funding Approvals
- Permit Process
- Other Milestones

Restoring the Wild Heart of the South Bay

South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

Science Program Update

Cheryl M. Strong
Wildlife Biologist
Don Edwards San Francisco Bay National Wildlife Refuge
USFWS

Research highlights from 2008




Research 2008
Western Snowy Plover fledging success 2008


M. Kern

- Banded 83 chicks in South Bay
- 24 fledged (28.9%)

One chick banded at Eden Landing made it all the way to Santa Cruz

Research 2008

Experimental draw down of water levels at Pond A12

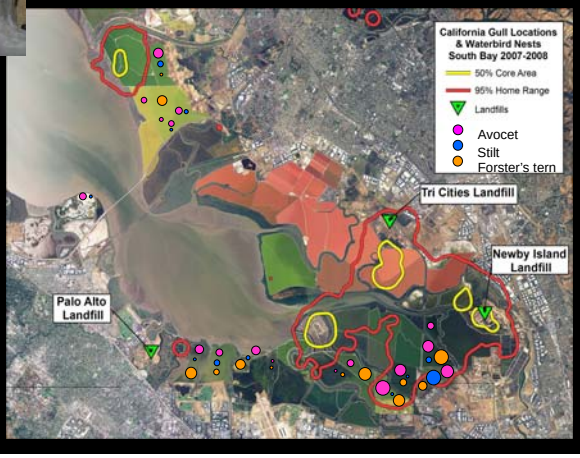
Provided habitat for ~300 avocet, ~40 Forster's tern, and a few stilt and plover nests

Research 2008

Synthesis of information on California Gulls with management recommendations for the Project

Research 2008

California Gull Movements in Relation to Breeding Waterbirds and Landfills



- Gulls spend ~20% of day at landfills
- Eat many stilt and avocet chicks
- Population doubled in last 5 years: 46,812

USGS

SAN FRANCISCO BAY BIRD OBSERVATORY

Research 2008

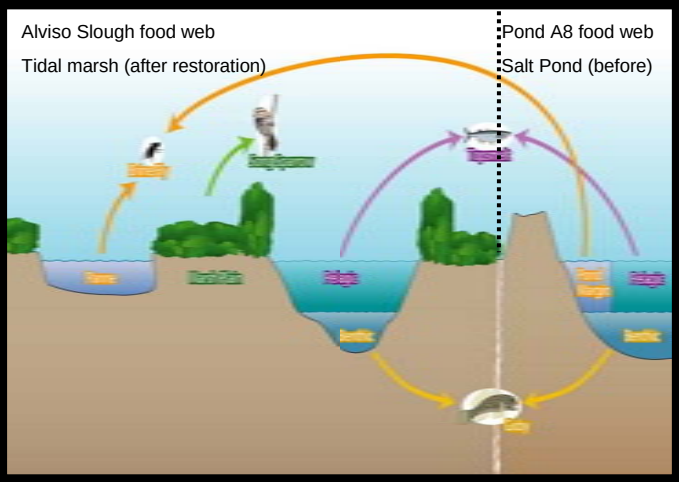
Wintering Duck Response to Trail Use at Managed Ponds

San José State University

- Ducks disturbed up to 120m from the levee
- Varied in response by species
- Used to make buffer zone recommendations for Project

Research 2008

Using mercury biosentinels for management of Pond A8



- Mercury in Pond A8 food web>Alviso Slough marsh food web
- Restored marsh in Pond A8 likely better than current mercury condition
- Probably not true for all ponds (e.g., A5, A7)

Research 2008

Projecting Change in San Francisco Bay - Development of a hydrodynamic model (SUNTANS) to predict results of :

- Climate Change
- Natural Variability
- Management Change Including Restoration

Research 2008

Wetland Sediment Dynamics at the Island Ponds

•Ponds accumulate sediment at a rapid rate: >20 cm in southern area in two years

•Plant recruitment is occurring at higher elevations within the pond

USF · Cal · San Francisco State University

Research 2008

Bat foraging behavior over the San Francisco Bay estuary

Guano analysis and acoustic monitoring to determine diet and forage areas of two species of bats

Santa Clara University · H.T. HARVEY & ASSOCIATES ECOLOGICAL CONSULTANTS

Research 2008

Bayland ecotone restoration: experimental project at the Environmental Education Center

Weed abatement and soil treatments to improve growing conditions for native plants in the wetland/upland interface

Midpeninsula Regional Open Space District

Research 2008

Water Quality: Refuge Alviso Ponds

- Previous 4 years of continuous data monitoring at all discharge points
- 2008: In order to understand conditions internal to pond:
  - A3W, A7, and A16 have 2-week intervals of continuous monitoring, 3x/year at shallow, borrow pit, and channels in ponds

Water Boards

2008 South Bay

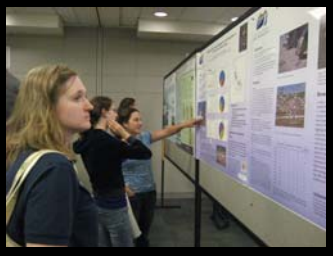
Science Symposium

2008 South Bay

Science Symposium

220 people attended presentations on:

- Climate change and restoration
- Wildlife use of changing landscape
- Wildlife and public access
- Invasive species and contaminants
- Hydrology and sedimentation



Continuing research to support the Project: 2009

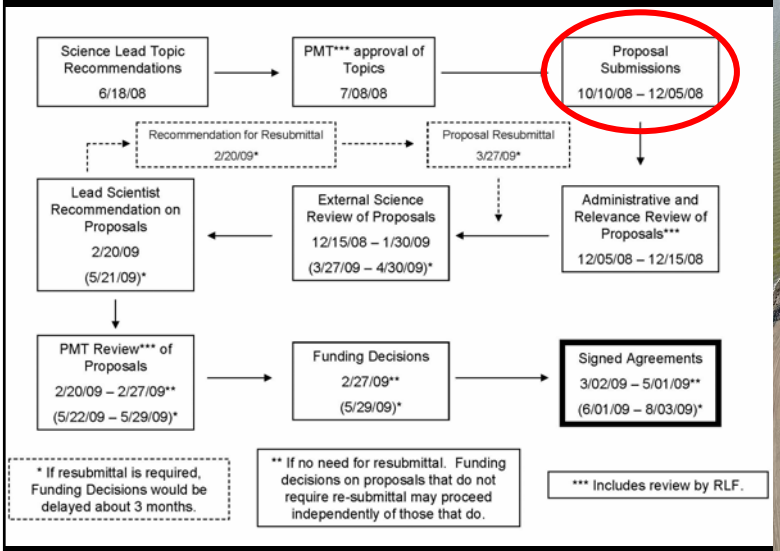
- Request for Proposals
- Directed Studies

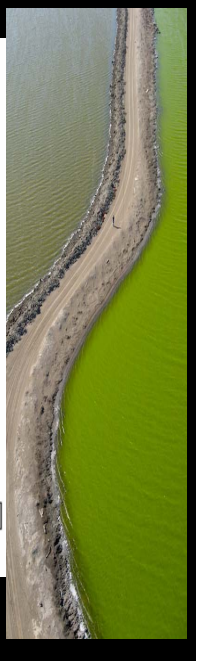
Request for Proposals (RFP)

Applied research projects to advance the understanding of, and guide management decisions regarding, the Project in the following nine areas:

- Habitat Evolution Utilizing Satellite Imagery
- Mercury Bioavailability
- Waterbird Nesting and Foraging in Managed Ponds
- Waterbird Response to Trail Use
- Pond, Slough, and Bay Water Quality Interactions
- Baseline Bird Data and Data Needs
- Effects of Restoration on Fish
- California Gull Displacement
- Call for Graduate Fellows

RFP Schedule





Funded Directed Studies

Study of waterfowl response to trail use at new Moffett Bay Trail

Funded Directed Studies

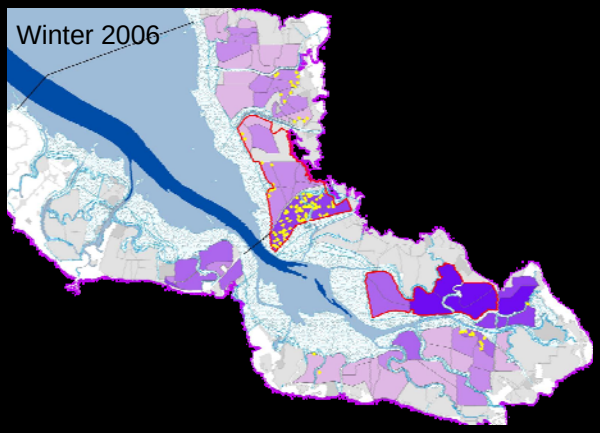
Western snowy plover nesting habitat enhancement

Funded Directed Studies

2008 San Francisco Bay shorebird census

Funded Directed Studies

Analysis and mapping of salt pond bird use



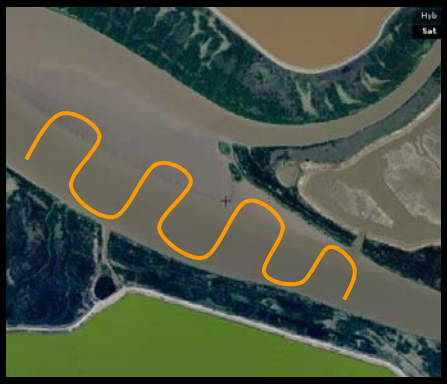
1 dot = 50 grebes

salinity (psu)

- 4 - 36
- 36 - 65
- 65 - 103
- 103 - 161
- 161 - 287

Funded Directed Studies

Island Pond sedimentation, vegetation growth, and hydrodynamics



SBSP Science information, reports, and presentations available at:

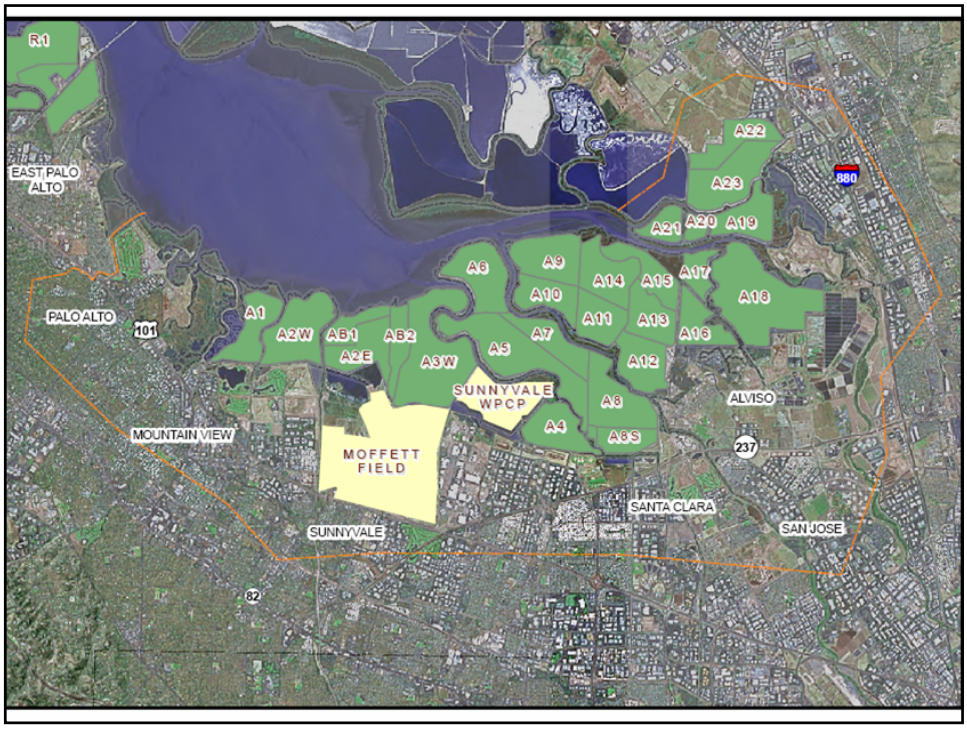
http://www.southbayrestoration.org/science/

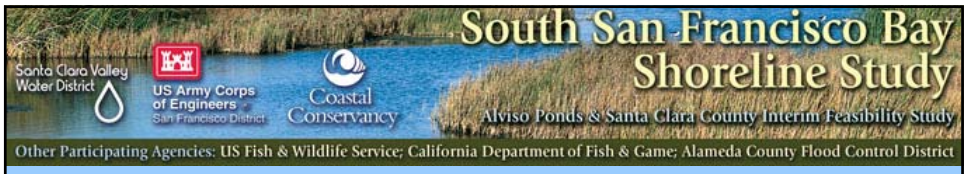
South San Francisco Bay Shoreline Study

Alviso Ponds & Santa Clara County Interim Feasibility Study

Other Participating Agencies: US Fish & Wildlife Service; California Department of Fish & Game; Alameda County Flood Control District

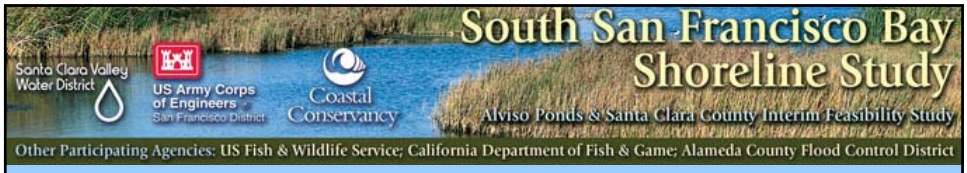
Shoreline Study Update





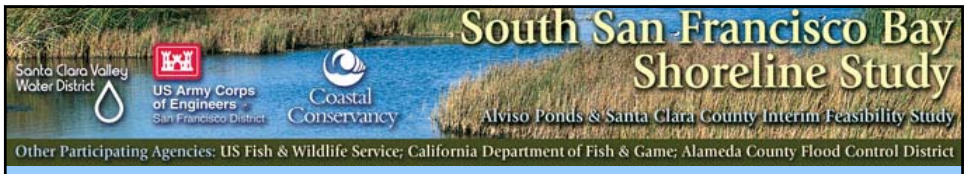
Study Schedule

- Floodplain Maps – March 2009
- Feasibility Scoping Meeting – Oct 2009
- Alternatives Formulation Briefing – Fall 2012
- Final Feasibility Report – Fall 2013
- Chief's Report (to OMB) – Spring 2014



Study Budget for 2009

- $1.4 million received under "Continuing Resolution" (thru March)
- Additional $400,000 requested (thru March)
- Beyond March 2009



Funding Status

- Corps has received less funding than needed to meet the desired project schedule
- Project delays

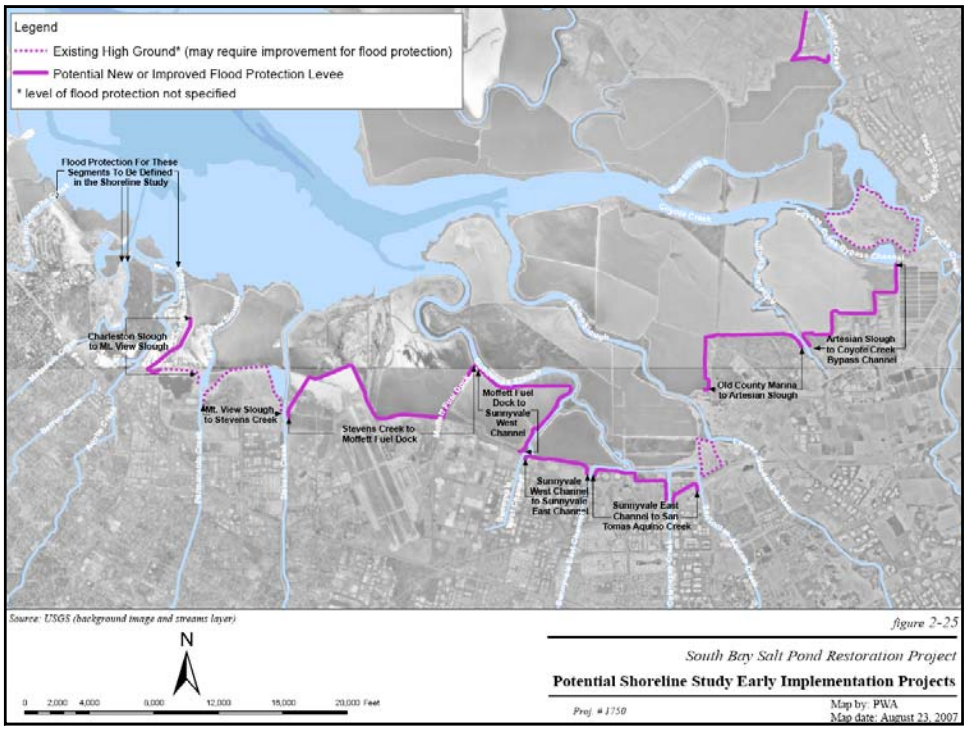
South San Francisco Bay Shoreline Study

Alviso Ponds & Santa Clara County Interim Feasibility Study

Other Participating Agencies: US Fish & Wildlife Service; California Department of Fish & Game; Alameda County Flood Control District

Early Implementation

- Start part of project before study is complete
- Requires non-Federal funding
- Receive credit from Corps for future project costs
- Need enough information from Shoreline Study to start (e.g. floodplain map)



South San Francisco Bay Shoreline Study

Santa Clara Valley Water District | US Army Corps of Engineers San Francisco District | Coastal Conservancy

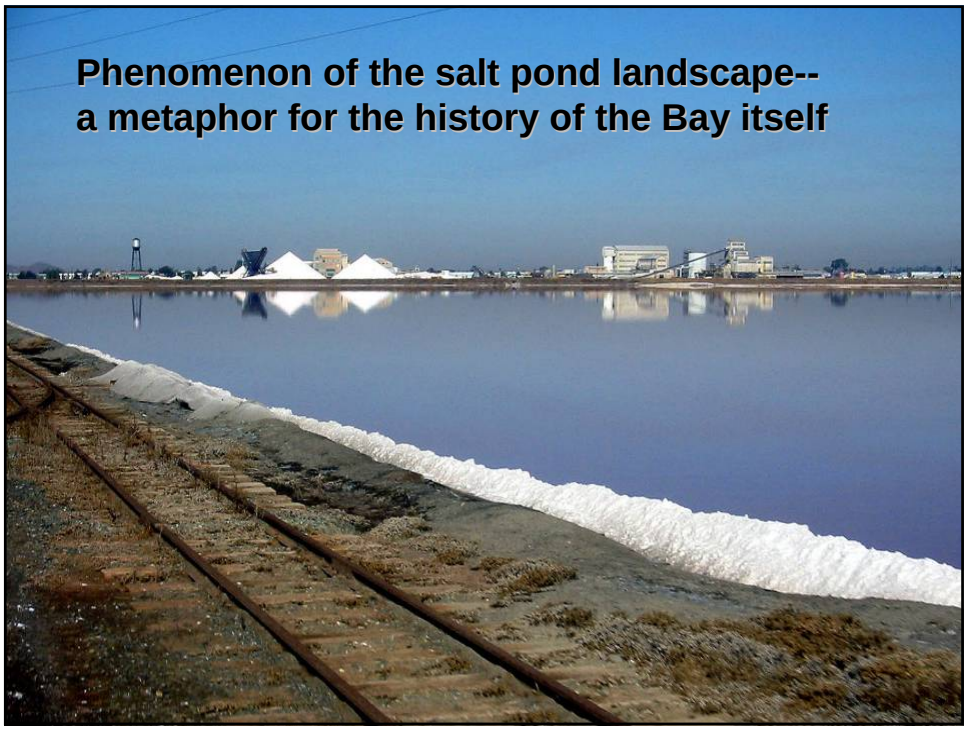
Alviso Ponds & Santa Clara County Interim Feasibility Study

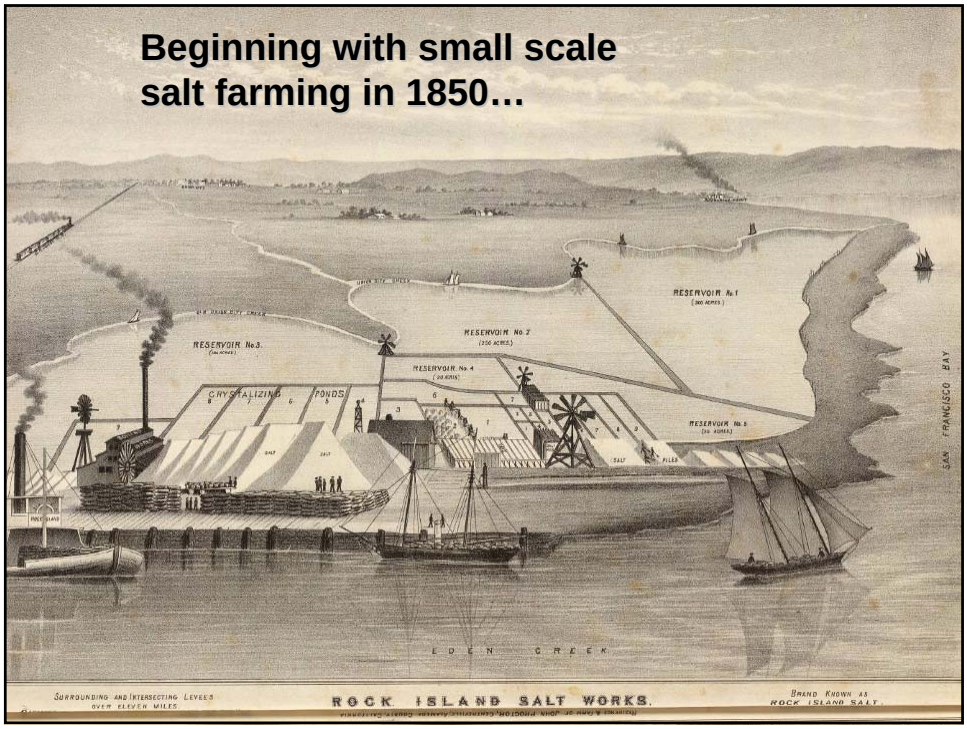
Other Participating Agencies: US Fish & Wildlife Service; California Department of Fish & Game; Alameda County Flood Control District

Contact Information

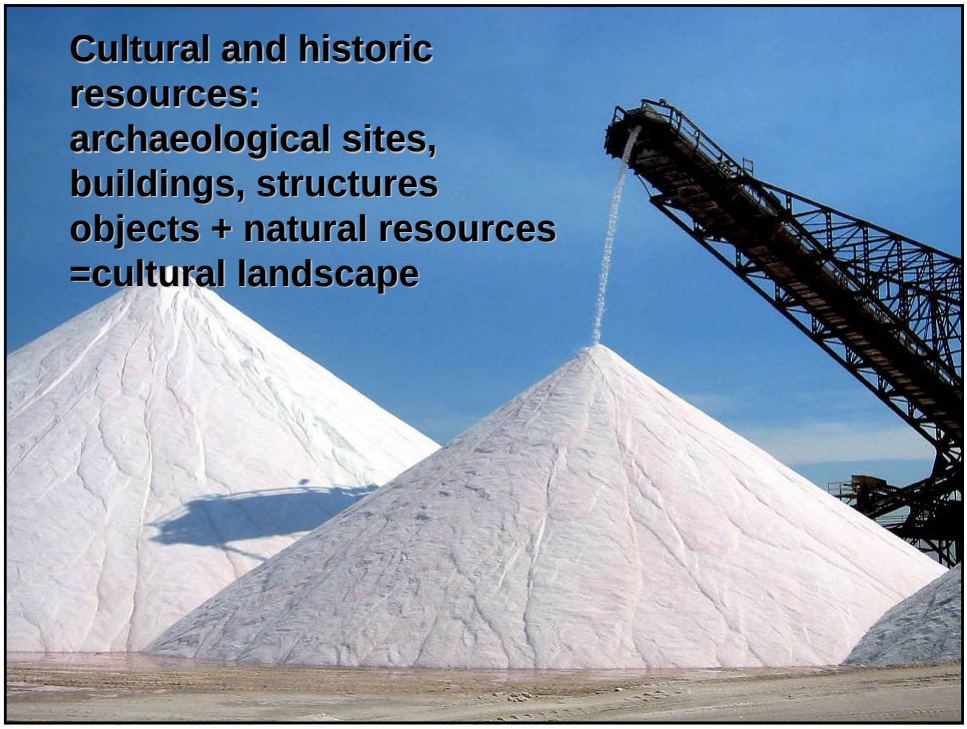
- Beth Dyer, Santa Clara Valley Water District, bdyer@valleywater.org
- Brenda Buxton, Coastal Conservancy, bbuxton@scc.ca.gov
- Yvonne LeTellier, US Army Corps of Engineers, Yvonne.C.LeTellier@usace.army.mil


Culture and nature have been linked here
for over 150 years.

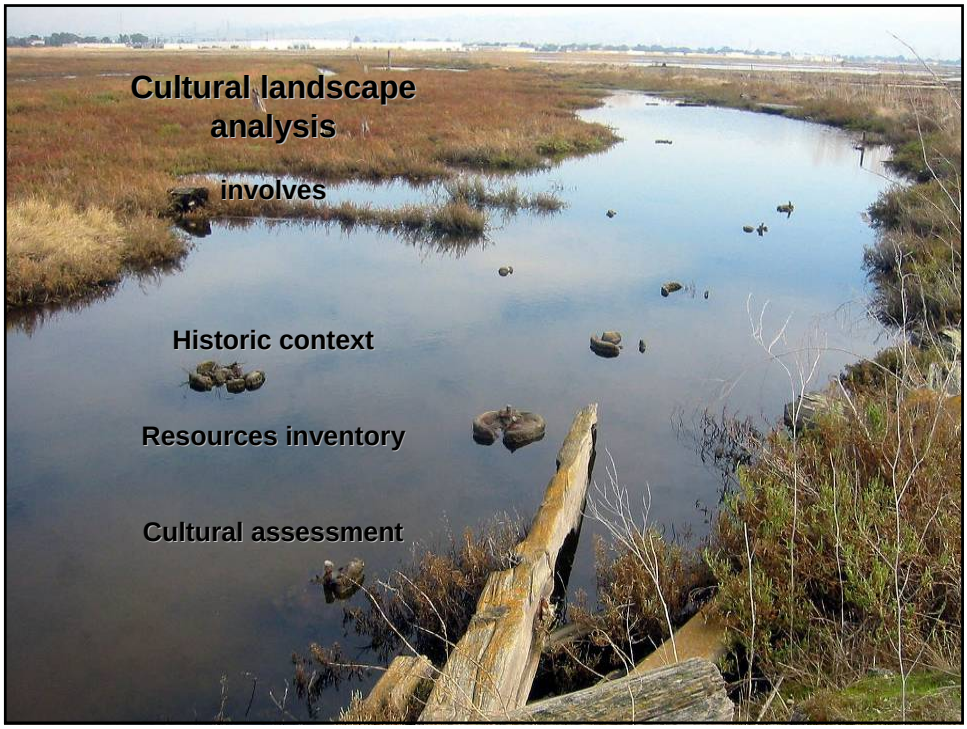

Phenomenon of the salt pond landscape--
a metaphor for the history of the Bay itself


Beginning with small scale
salt farming in 1850…
RESERVOIR No.1
RESERVOIR No.2
RESERVOIR No.3.
RESERVOIR No.4
CRYSTALIZING PONDS
RESERVOIR No.5
SAN FRANCISCO BAY
EDEN CREEK
SURROUNDING AND INTERSECTING LEVEES OVER ELEVEN MILES
ROCK ISLAND SALT WORKS.
BRAND KNOWN AS ROCK ISLAND SALT

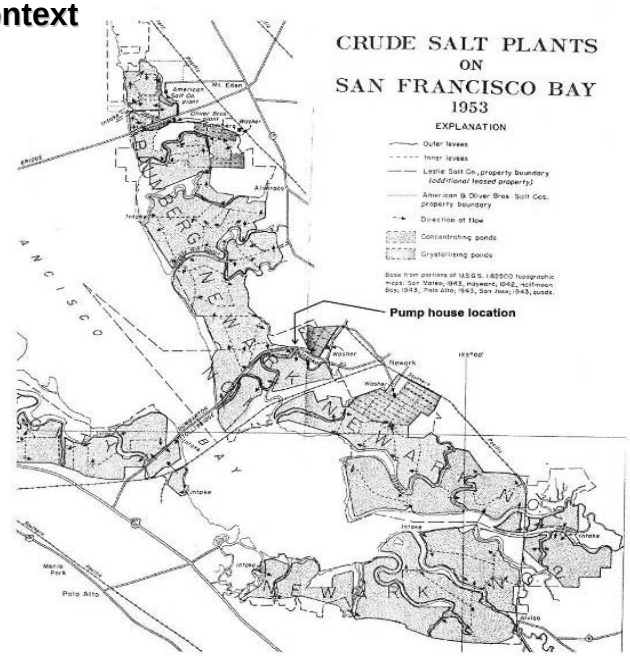

…evolving into a major industrial complex
by 1940


Cultural and historic resources:
archaeological sites, buildings, structures objects + natural resources =cultural landscape


Cultural landscape analysis
• A tool for critical thinking about peoples' lives, values and ideas
• Identify sites of historical events
• Understand national, social and economic forces shaping the landscape
• Cultural heritage, environmental tourism, and public interpretation



Historic context




Cultural Resources: Pilings, Archimedes Screw


Cultural Resources: Pilings, bricks, building foundations

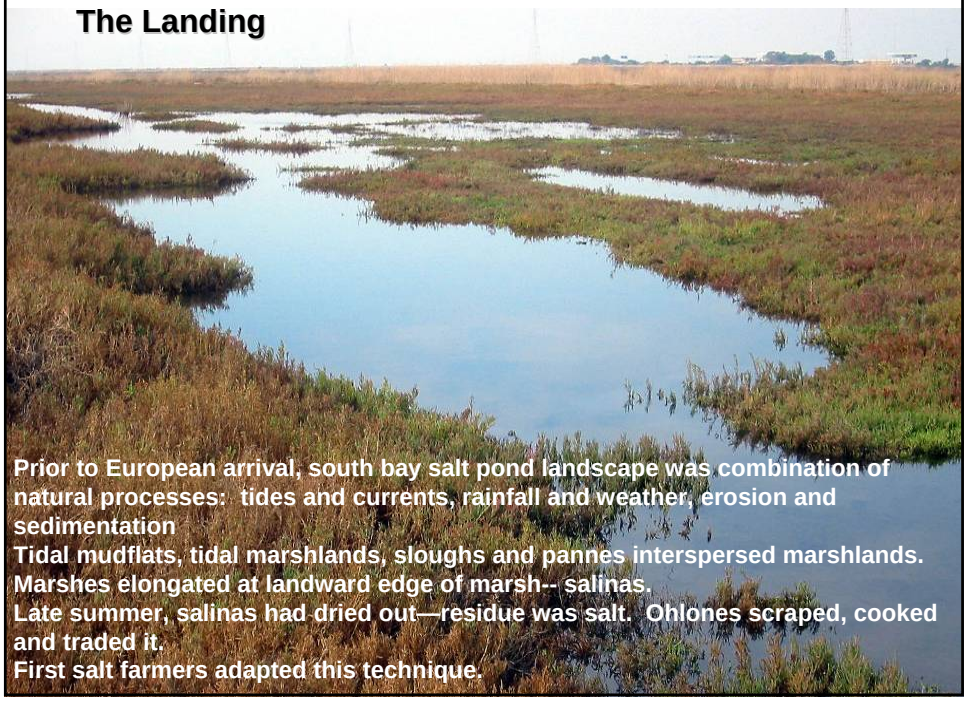

Cultural resources: Archimedes Screw


Cultural and natural resources: Drawbridge ghost shacks in marshes


Cultural and natural resources:
levees, plants

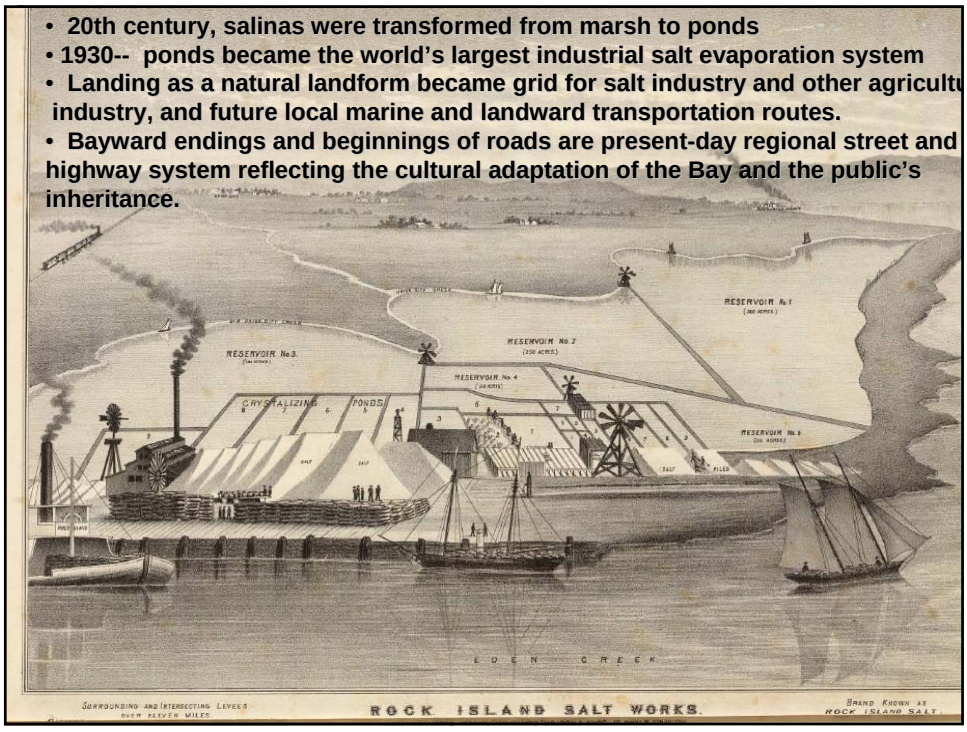

Cultural resources: archaeological sites;
discovering the tusk of a Columbian
mammoth 2006 dated 10,000 BCE

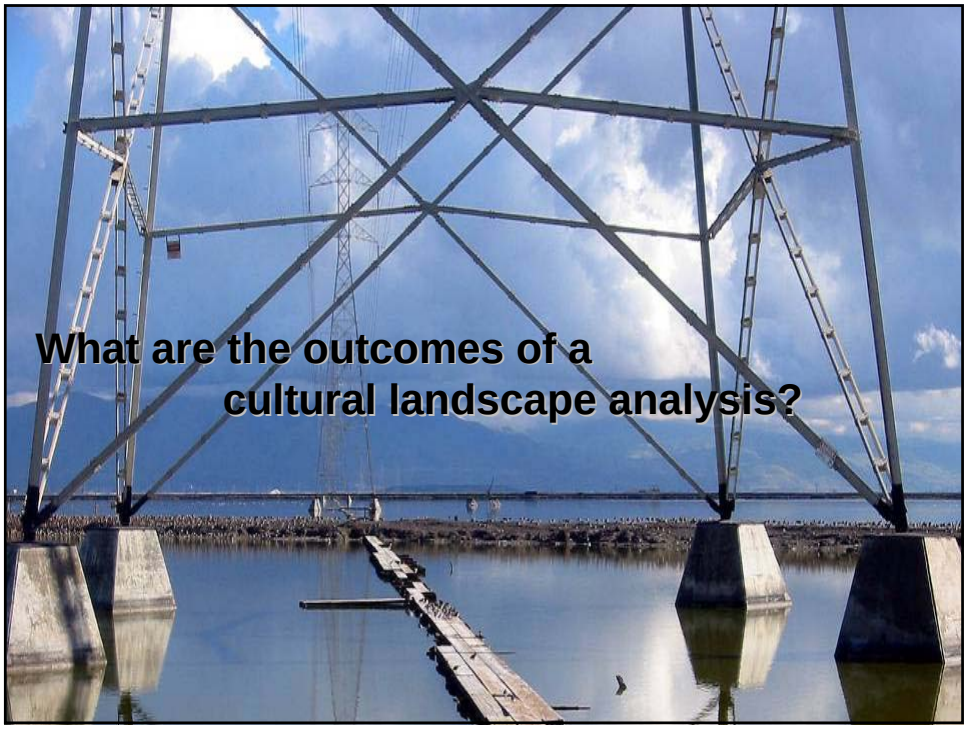
The Landing

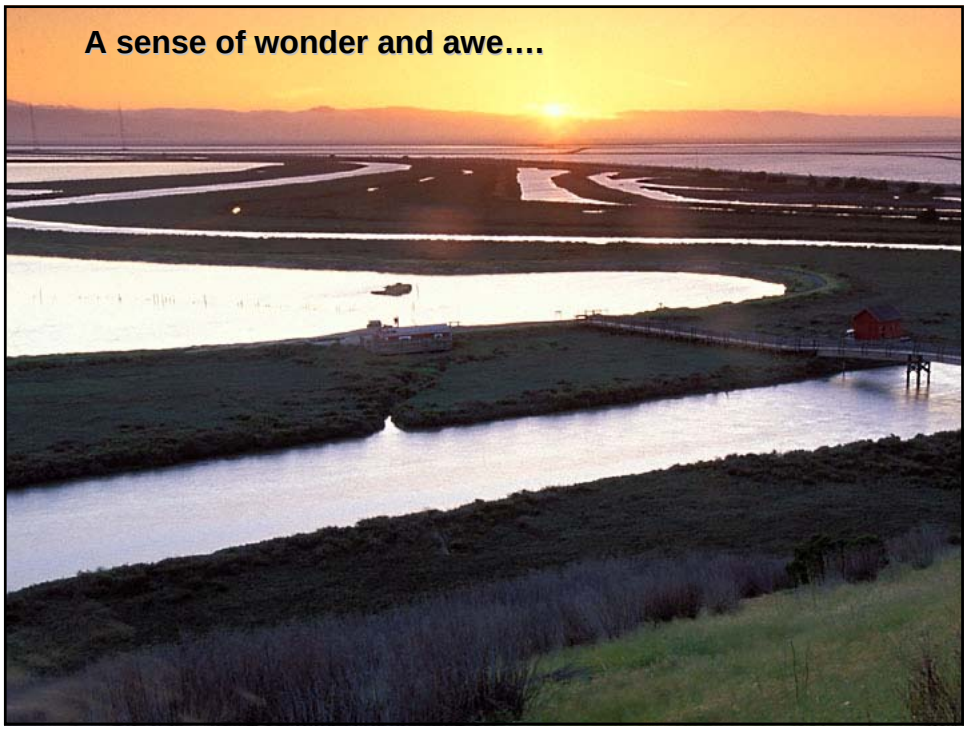


Prior to European arrival, south bay salt pond landscape was combination of natural processes: tides and currents, rainfall and weather, erosion and sedimentation
Tidal mudflats, tidal marshlands, sloughs and pannes interspersed marshlands.
Marshes elongated at landward edge of marsh-- salinas.
Late summer, salinas had dried out—residue was salt. Ohlones scraped, cooked and traded it.
First salt farmers adapted this technique.

- 20th century, salinas were transformed from marsh to ponds
- 1930-- ponds became the world's largest industrial salt evaporation system
- Landing as a natural landform became grid for salt industry and other agricultu industry, and future local marine and landward transportation routes.
- Bayward endings and beginnings of roads are present-day regional street and highway system reflecting the cultural adaptation of the Bay and the public's inheritance.




What are the outcomes of a
cultural landscape analysis?


A sense of wonder and awe….

Outcomes:

1. Help understand engineering basics for restoration design
2. Richer, more meaningful understanding of the historical process
3. Increased knowledge about valuable and disappearing resources—the last frontier
4. Public interpretation on S. F. Bay Trail
5. Inclusive approach to public land management for sustained use by people and wildlife.

Interpretation & Interpretive Signs

South Bay Salt Pond Restoration Project
Restoring the Wild Heart of the South Bay

Why is it important to you?

W ject important?

South Bay Salt Pond Restoration Project
Restoring the Wild Heart of the South Bay

Interpretation

…understands that once the visitor values or cares *about* a place, they are more likely to care *for* it.

…helps the visitor to find their own value in the resource.

…seeks to create opportunities for the visitor to connect to the physical resources and its inherent meanings.

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Restoring the Wild Heart of the South Bay

TOOLS

Programs

Brochures

Self-Guided Tours

Interpretive Signs

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Interpretive Sign Plan

A guiding document to aid site-level sign design and message development.

Will help us create a coherent message throughout the sites.

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Restoring the Wild Heart of the South Bay

Sign Plan Theme

Today's restoration projects are part of the South Bay's long story of change.

South Bay Salt Pond Restoration Project

Subthemes

Our changing relationship to the Bay.

The Bay's natural resources are unique and dynamic.

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Subtheme 1: Our changing relationship to the Bay

- Water as transportation
- Hunting
- Ohlone history
- Early European settlement
- Human uses of resources then and now
- Modern conservation history
- The history of salt making
- Modern day uses: recreation, industry, flood protection, wildlife habitat
- South Bay Salt Pond Project

South Bay Salt Pond Restoration Project
Restoring the Wild Heart of the South Bay

TOPICS

Subtheme 2: The Bay's natural resources are unique and dynamic

- Adaptive Management
- A16 and SF2 – Science and monitoring
- Pacific Flyway
- Endangered Species
- The importance of wetlands
- Fish and aquatic ecosystems
- Climate change
- Life in the tidal zone
- Bird adaptation and pond management

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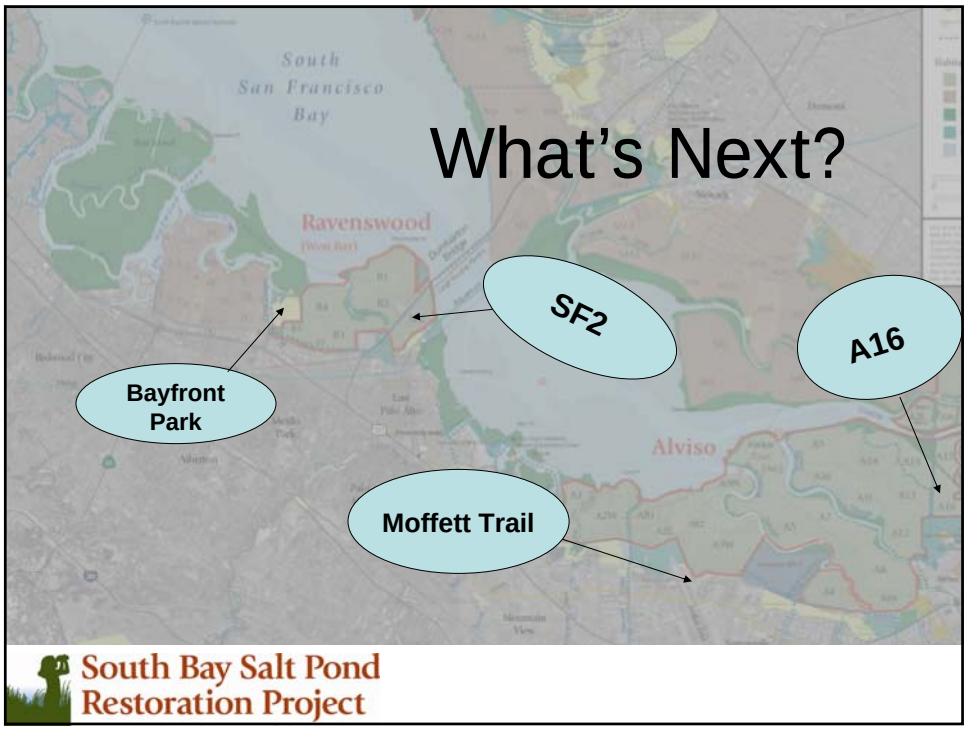
TOPICS



South Bay Salt Pond Restoration Project

We want your input!

1. Please take and fill out the worksheet.

2. Contact me with your ideas, questions, and contributions.

Jennifer Heroux,
Interpretive Specialist, USFWS
408-262-5513 x106
jennifer_heroux@fws.gov

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Restoring the Wild Heart of the South Bay

2009 View Ahead

Restoring the Wild Heart of the South Bay

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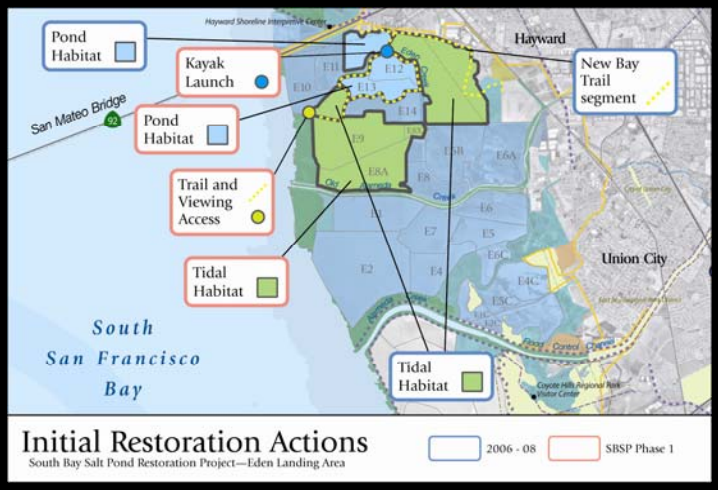

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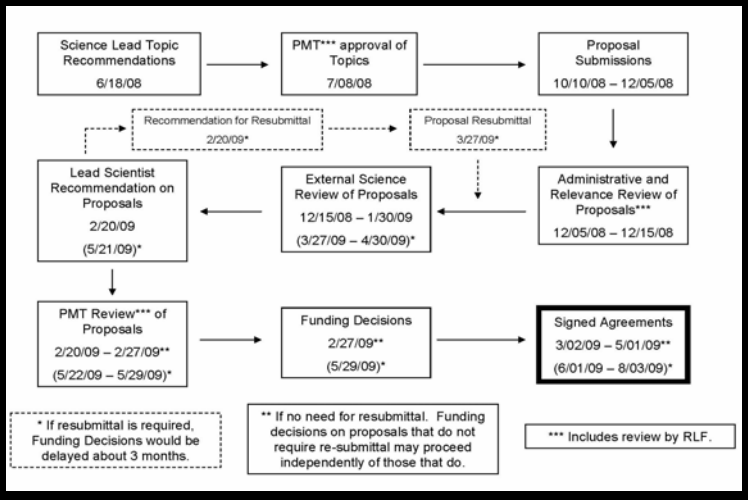
2009 View Ahead



Restoring the Wild Heart of the South Bay

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