South Bay Salt Pond Restoration Project

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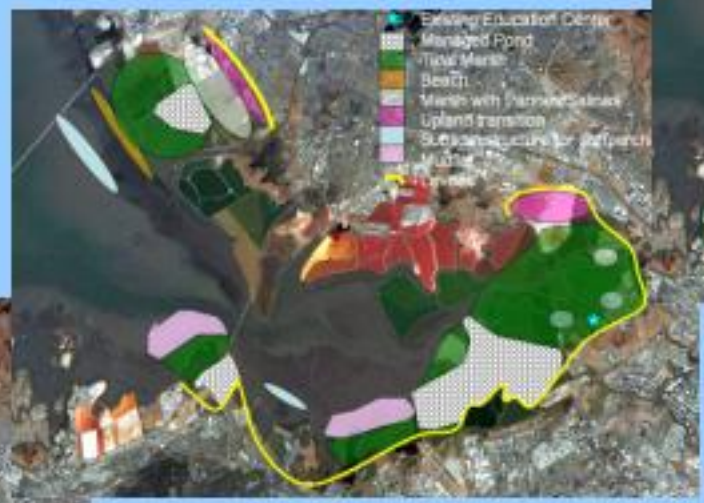
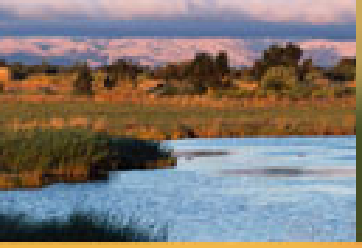
Landscape Visions of the South Bay



Lynne Trulio

June 13, 2005



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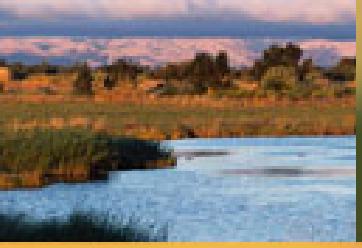
Topics covered…

- Landscape Visions of the South Bay
- Scientific Basis of the Project Objectives
- Using Charette Results



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Project Alternatives as Landscape Visions

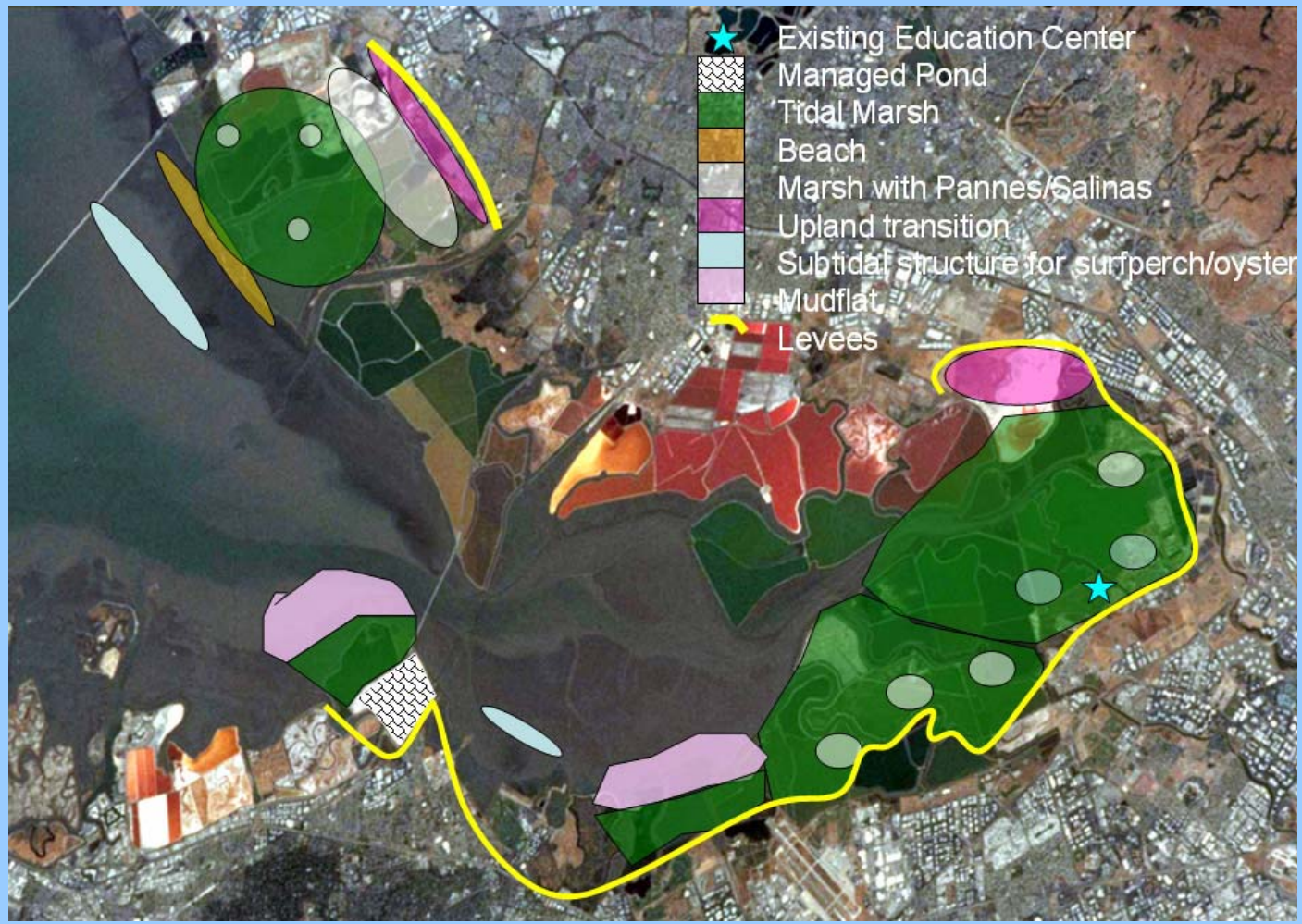
- ISP Operation (No Action)
- 50% full tidal action (tidal marsh)/ 50% managed pond
- 75% tidal action/ 25% managed pond
- 90% tidal action/ 10% managed pond

Charette Landscape Visions

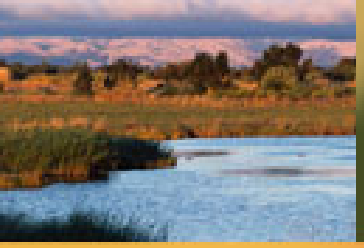
Charette Goals:

- Develop a vision for 2050
- Identify key uncertainties
- Target areas for early action

Charette Vision 1



Charette Vision 2



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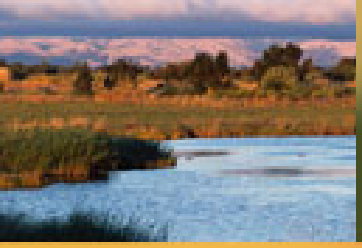
Scientific Basis of the Project Objectives:
Can all the Project Objectives be Achieved?

- Developed by the Science Team using the Science Syntheses, Workshop results, Charette, Consultant modeling and reports and other authoritative information
- **NOT the official position of the PMT**
- For use by the PMT and Stakeholders in evaluating Alternatives and setting restoration targets



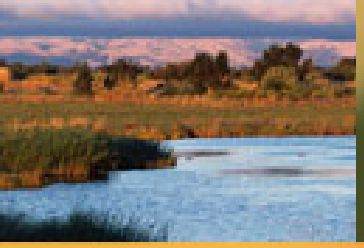
Goals of the Analysis

- Provide an answer to these questions:
  - What are the minimum conditions needed to achieve the Project Objectives?
  - Where are there conflicts between Project Objectives that represent challenges?

- Looked at all the Project Objectives, but rare species and migratory birds were the drivers in this analysis.

A few assumptions

- Project will provide all habitat needed to meet the South Bay recovery goals for rail and mouse, and ½ needed for the plover.
- Project area will support migratory bird diversity found at the pre-ISP level.
- Ponds will be managed per ISP or as reconfigured under the Project.
- *Spartina* and invasive species will be controlled.



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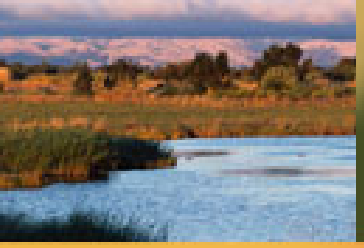
A few results

- Rail and Mouse--~7,400 acres of tidal marsh
  (1984 Recovery Plan, now under revision; Weiss, pers. comm.)
- Plover--between 500 and 3,000 acres of seasonal pond nesting habitat for 125 pairs
- Pre-ISP migratory bird numbers supported on half the current pond acreage
- 50% tidal marsh/50% managed pond is a good, conservative place to start



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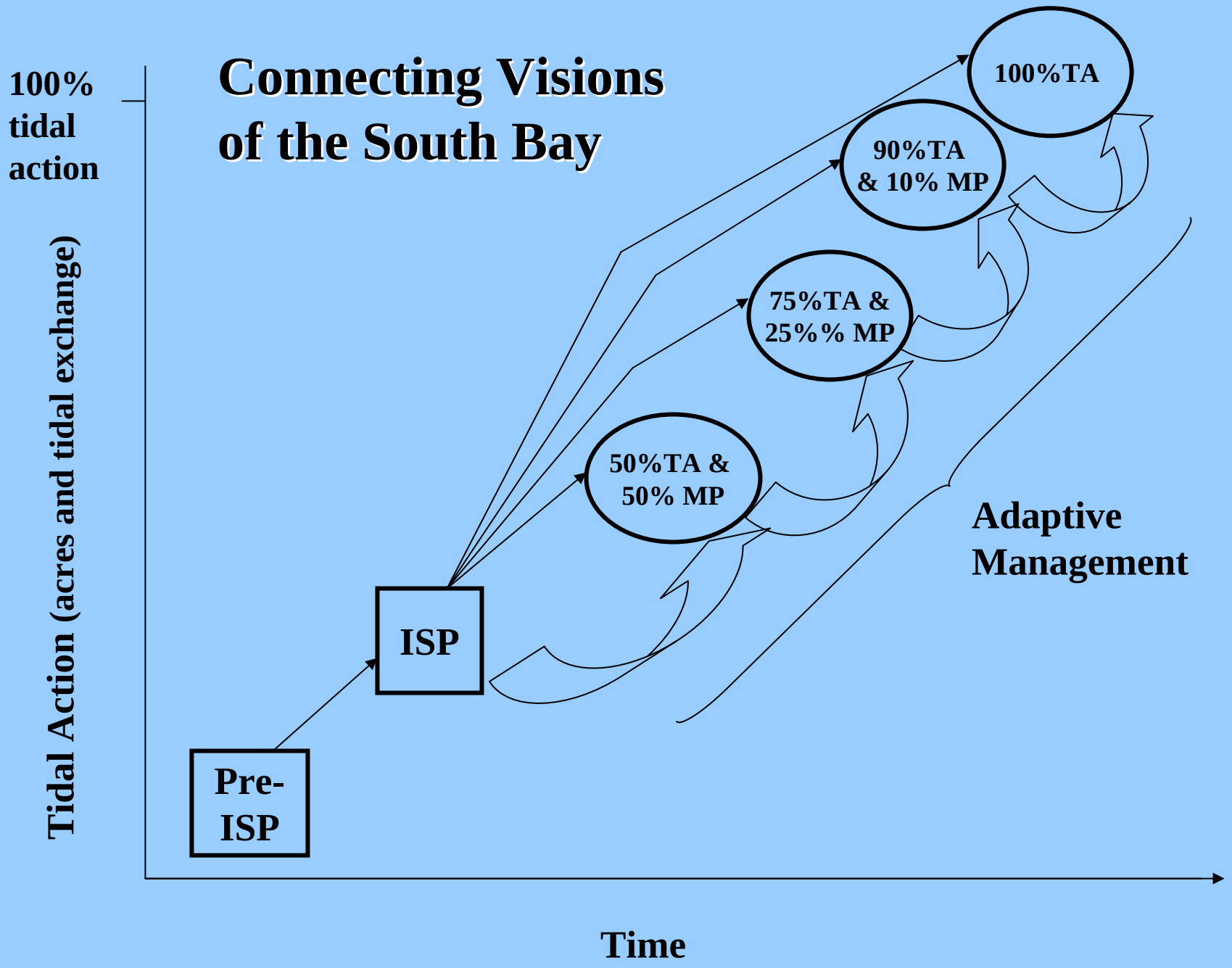
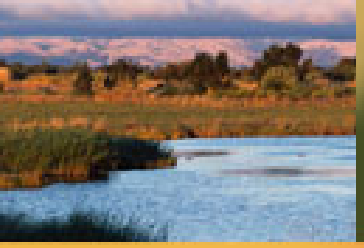
Project Challenges

- Plover habitat vs. tidal marsh and migratory bird habitat
- MeHg and tidal marsh restoration
- Public access and wildlife diversity
- Tidal marsh/pond habitats and mosquitoes
- *Spartina* and invasive species control


Connecting Visions of the South Bay
100% tidal action
Tidal Action (acres and tidal exchange)
Pre-ISP
ISP
50%TA & 50% MP
75%TA & 25%% MP
90%TA & 10% MP
100%TA
Adaptive Management
Time



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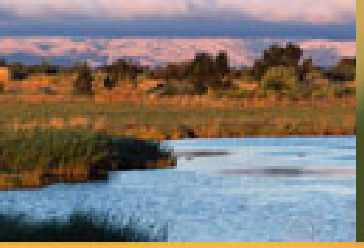
Two things to avoid:

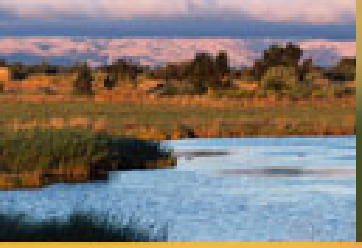
- Undertaking irreversible actions that move the Project to far toward tidal marsh—i.e., carefully plan each Phase to the limits of our knowledge.

- Implementing Project actions that preclude reaching a full or nearly full tidal marsh—i.e., small projects that short-circuit more complete tidal marsh restoration.



There are many uncertainties…

- Bird use of tidal marsh and managed habitats, MeHg, *S. alterniflora* and other problem species, sediment, social dynamics
- **We cannot know the final configuration**
- ***Adaptive Management***—Will tell us how far along the tidal marsh continuum we can go and still reach the Project Objectives



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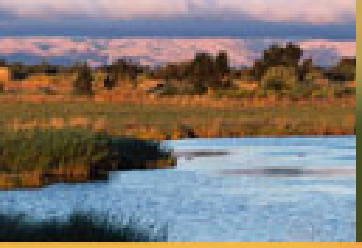
Adaptive Management is based on…

- Thorough understanding of the system
- Predictions of system response to change
- Monitoring to assess response
- Study to improve predictions and understand unexpected responses



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Science Sections of the Draft AMP

- **Restoration Targets** from literature, field data, modeling, compliance standards
- **Monitoring** to assess progress toward targets and early warning—parameters and protocols
- **Applied Studies** to reduce uncertainties—focus on MeHg, bird use, sediments, problem species, social dynamics, large-scale issues.

Charette's Uncertainties List for Applied Studies

- Mercury
- Sediment Dynamics/Mudflats
- Bird Use of Different Habitats, esp. tidal marsh ponds/pannes
- Non-avian benefits
- Socio-economic dynamics
- Very large scale issues

Target Areas for Early Actions

- *Eden Landing*—ISP Studies
  - Bird use study: Ponds 10/11, 14/15/16, 8
    - See Applied Studies in *Draft AMP*
    - MeHg response in food chain
  - Sediment dynamics study: North Creek and Mt. Eden Creek Breaches
    - See Applied Studies in *Draft AMP*
    - MeHg response in food chain
    - Bird community response to change

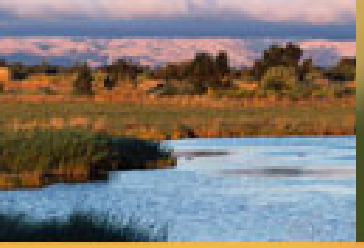
Target Areas for Early Actions

- *Alviso Complex*—ISP Studies
  - Sediment dynamics: Island Ponds
    - See Applied Studies in *Draft AMP*
    - MeHg mobilization in the food chain
    - Vegetation response
    - Species responses, esp. fish and birds
  - MeHg study for Pond A8 Actions
    - Study in prep by SFEI and USGS
    - Sediment dynamics
    - Bird use responses

Target Areas for Early Actions

- *ISP Studies and Monitoring*
  - Assess pond discharge effects
  - Develop data on bird use of Bay tidal flats

- *Restoration Project Study Opportunities*
  - Eden Landing: Panne creation; transitional habitat development; *Spartina* and invasive species control
  - Alviso: Island creation; MeHg mobilization; invasive species control
  - Both: Oyster reef, eelgrass bed establishment



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Thanks to the Science Team

- writing the Syntheses
- comments on Scientific Basis of the POs
- comments on AMP
- developing Applied Studies