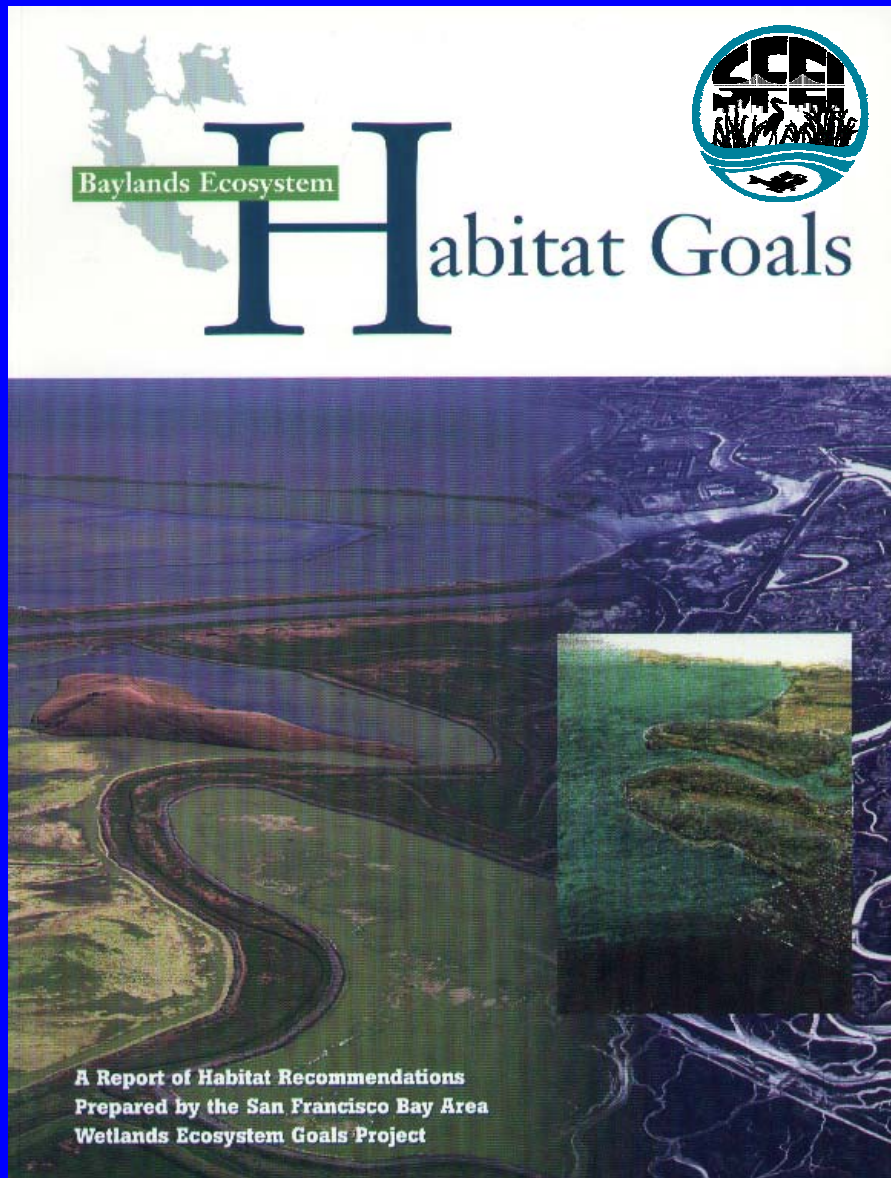


# Helping Put MAP on the Map?



San Francisco  
Bay Area

## Wetland Habitat Goals Project

Joshua N. Collins

San Francisco  
Estuary Institute  
[josh@sfei.org](mailto:josh@sfei.org)

# Serious Work & Abundant Help

Carl Wilcox, California Fish and  
Game, Region 3

Peggy Olofson, SF Bay Water Board

Mike Monroe, EPA Region 9

# 3 Steps to Regional Conservation

1. Set quantitative regional goals for how much of what kinds of habitat are needed where, and why.

*The scientific and engineering answers must relate directly to management issues that are clear and dominant.*

# 3 Steps to Regional Conservation

1. Set regional habitat goals.
2. Adjust policies, programs, and projects as tools to achieve the goals.

*Managers must be willing and able to change how they work and what they do.*

# 3 Steps to Regional Conservation

1. Set regional habitat goals.
2. Adjust policies, programs, and projects to achieve the goals.
3. Measure progress toward the goals (and adjust the goals for new ideas).

*Data fuel adaptive management, and good data are very cost-effective.*

# Goals Project Case Study

## History of Untenable Arguments

Every wetland can do everything for everyone all the time.

*Control flooding, Recharge Aquifers,  
Filter Water and Sediment, Control  
Erosion, Feed People, Provide Recreation,  
Look Good, Recover Endangered Species*

# Goals Project Case Study

## History of Untenable Arguments

Every wetland is precious.

*Every square foot of every wetland  
is precious.*

# The Two Main Wetland Types Are Mutually Exclusive



Tidal Marsh



Diked Marsh





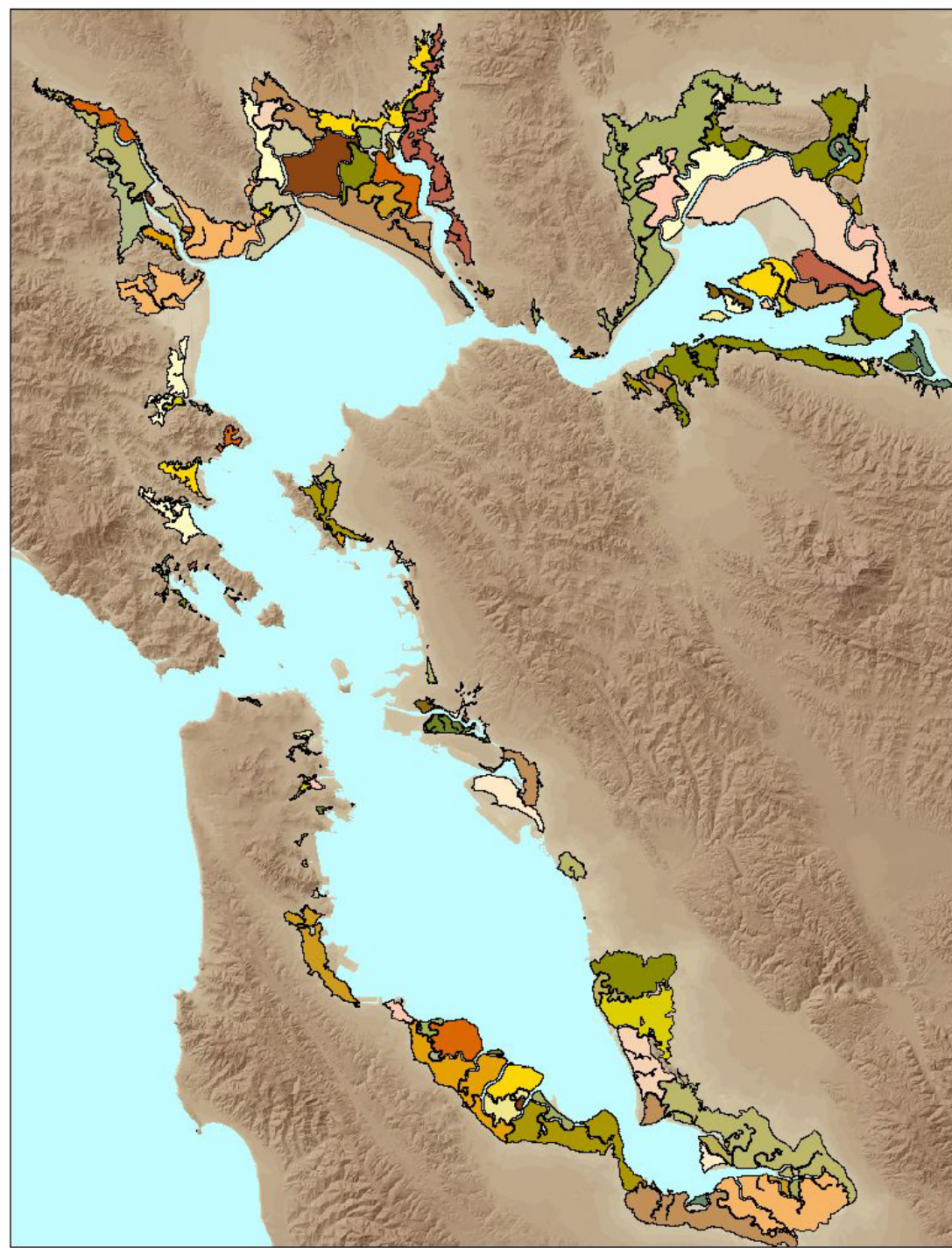
High Tide Inside  
The Golden Gate  
*Before*  
Euro-American  
Contact



High Tide Inside  
The Golden Gate  
*After*  
Euro-American  
Contact

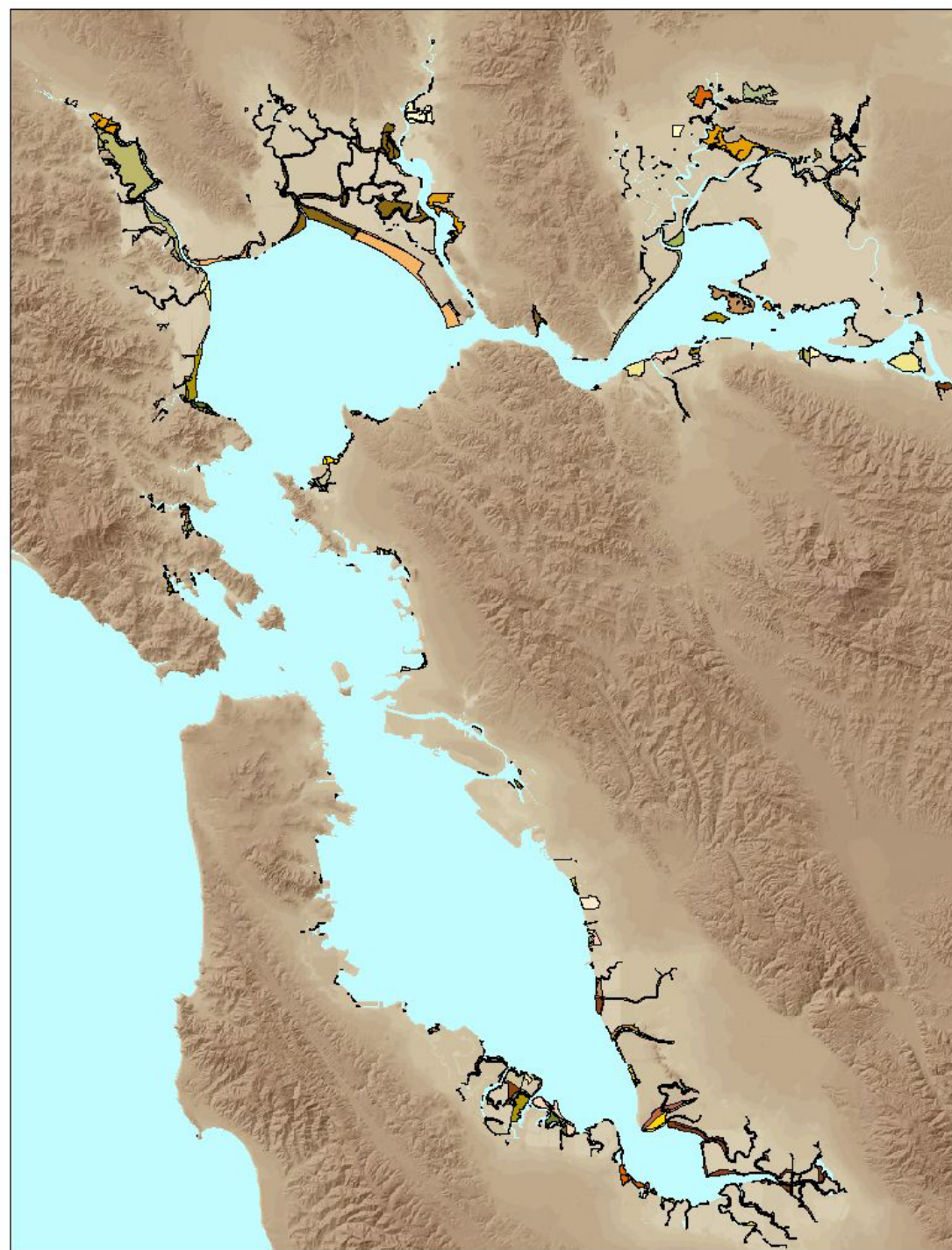
Tidal Marsh  
*Before*  
Euro-American  
Contact

200,000 acres



Tidal Marsh  
*Before*  
Euro-American  
Contact

40,000 acres



# Three Competing Views

Diked  
Marsh as  
*Real Estate*

Diked Marsh as  
*Seasonal  
Wetlands*

Diked Marsh  
as *Potential  
Tidal Marsh*

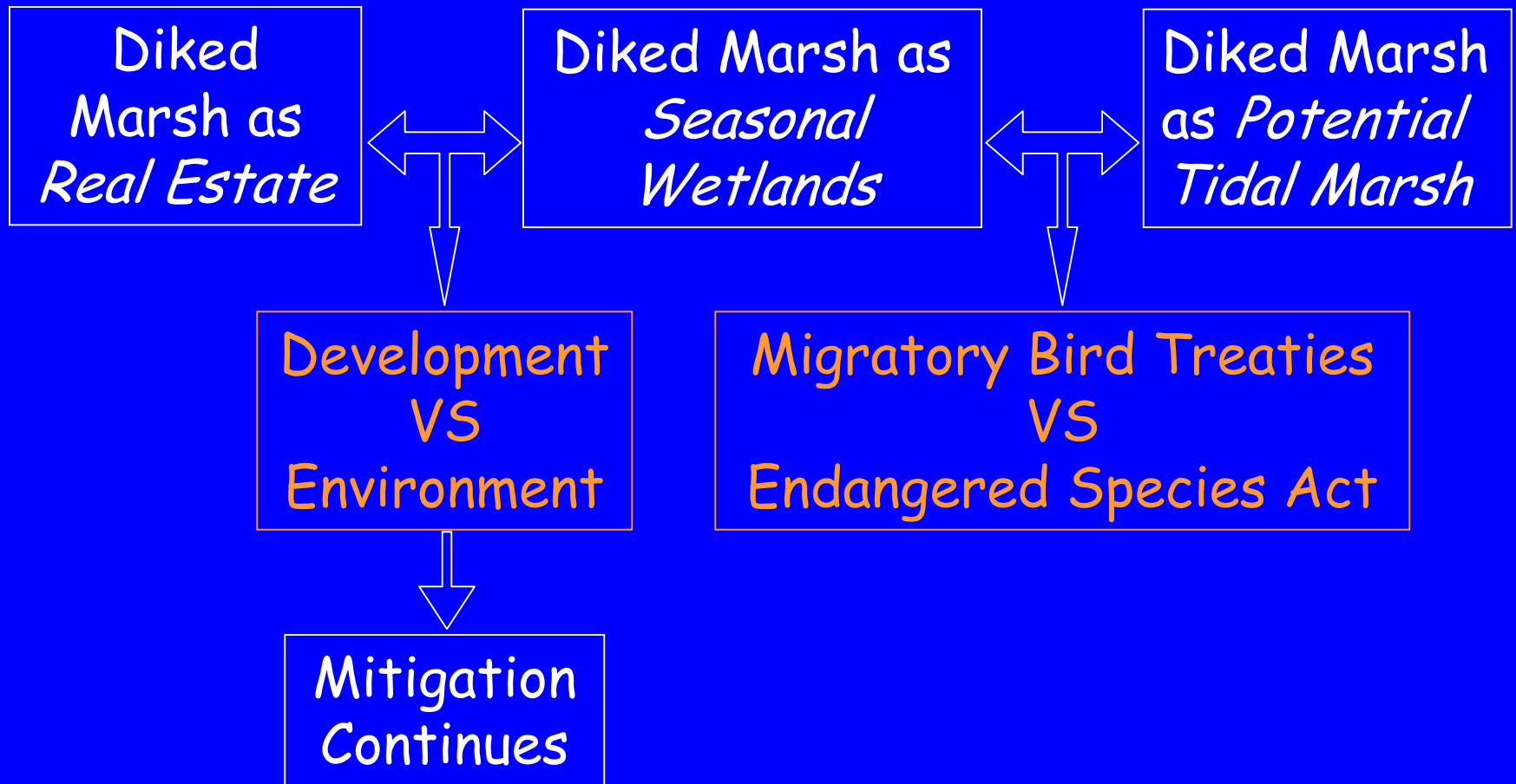
# Three Competing Views



# Three Competing Views

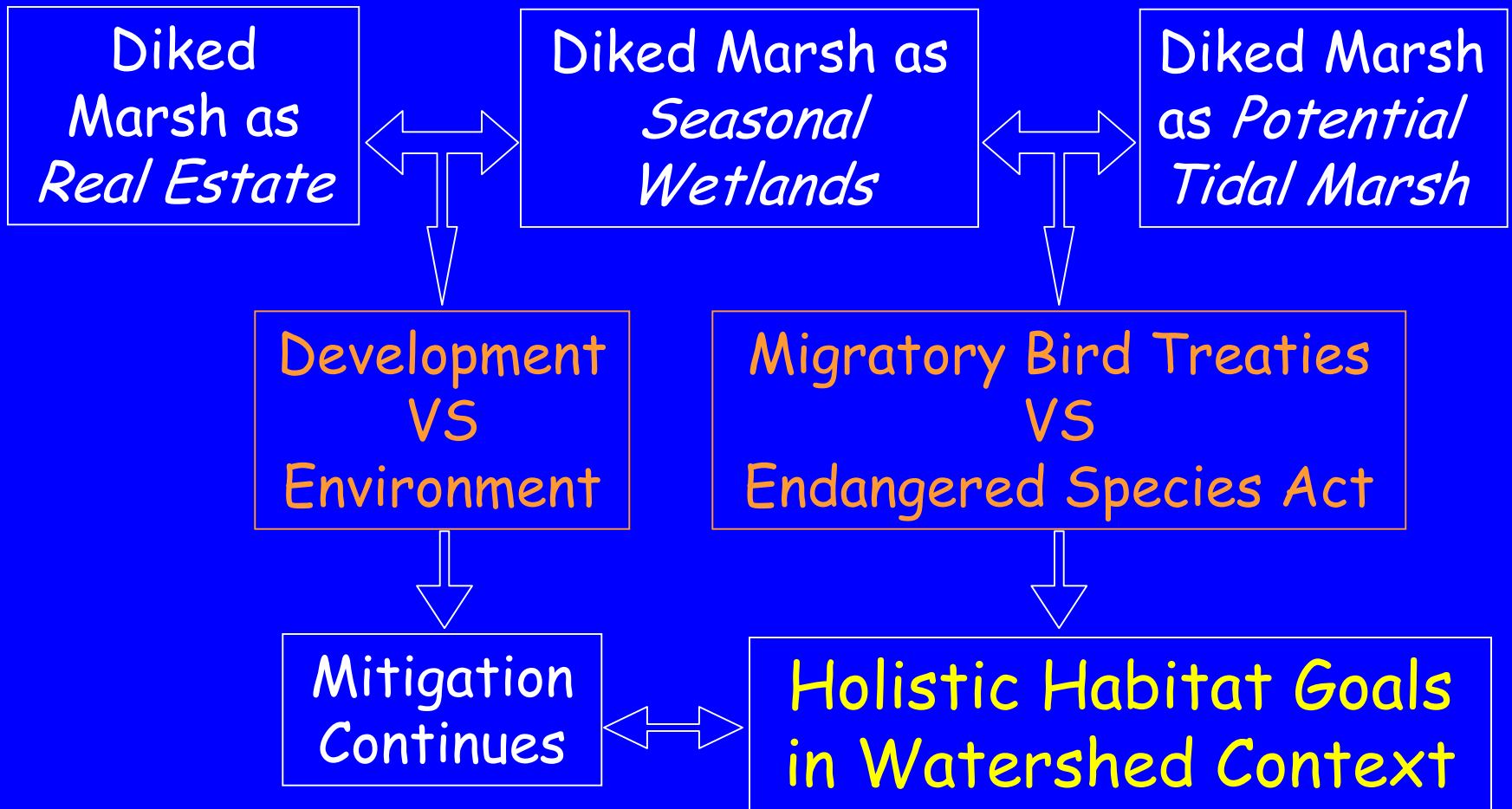


# Toward Resolution





# Toward Resolution



# How to Set Habitat Goals

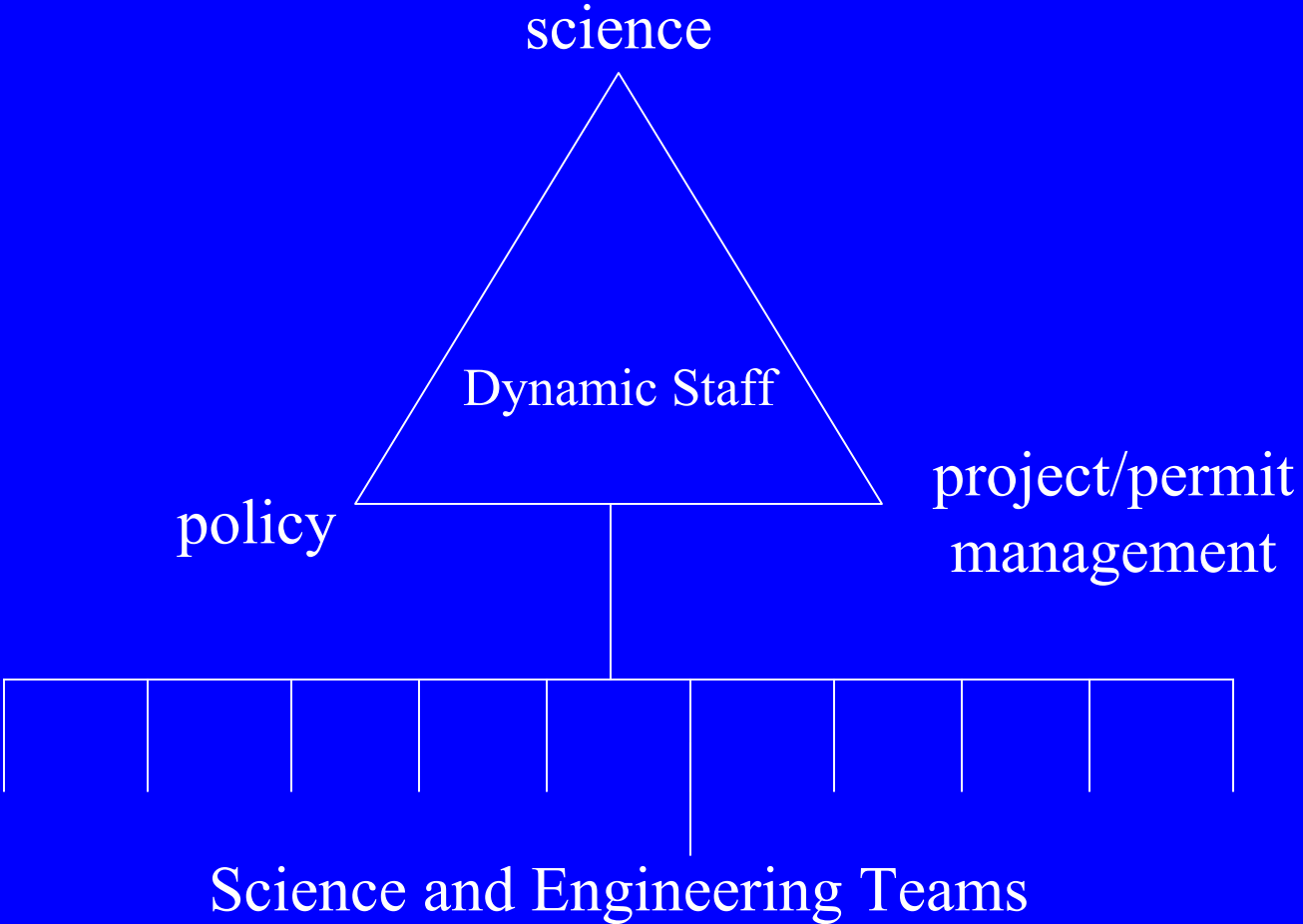
Assemble a team of environmental managers, scientists, and engineers.

*Find State and Federal leadership.*

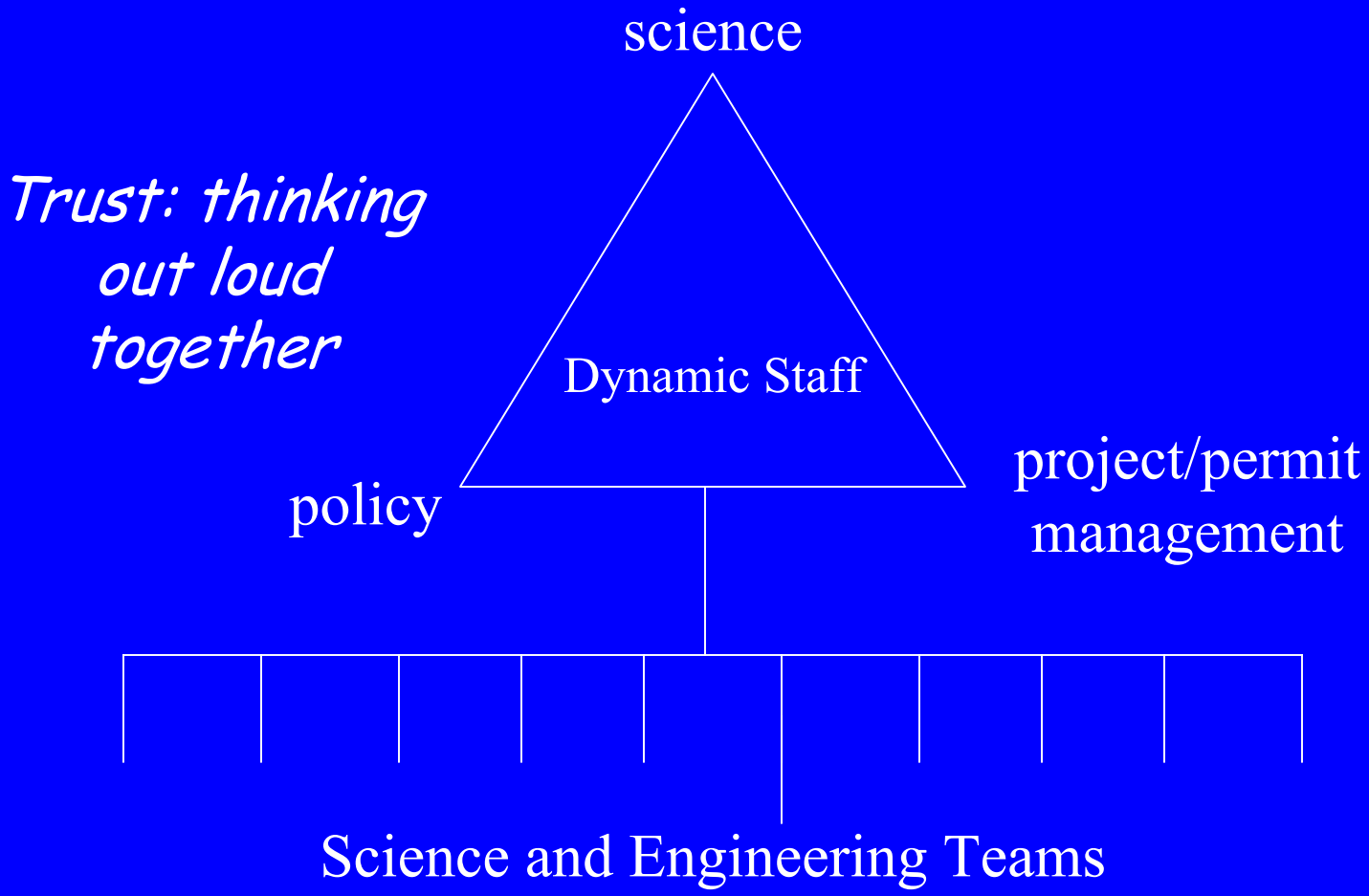
*Scientists need to be mindful of budgets and schedules.*

*Managers need to give scientists time to think.*

# Bosses with Purse Strings



# Bosses with Purse Strings



# How to Set Habitat Goals

Define the scope of the regional goals.

*Regions have natural, social, and practical dimensions.*

# How to Set Habitat Goals

Define the big problem and envision the ideal solution. Make choices.

*The problem-of-interest is the center of the practical ecosystem.*

*Things that directly affect the problem are part of the solution.  
Others things lead to other problems.*

# How to Set Habitat Goals

Understand the environmental past, the present, and change.

*History can explain the present and help us forecast the future.*

*History is common ground. The history of a place unites the people who live there.*

# How to Set Habitat Goals

Use everything anyone knows.

*Acknowledge what is known as fact, can be inferred from fact, or is mostly expert guesswork.*

*Guesswork by experts is useful.*



# How to Set Habitat Goals

It's OK to think ecologically.

*Materials cycle and energy flows across jurisdictional lines, fence lines, and even watershed boundaries.*

*Visualize functions that account for the problem that needs to be solved.*

# How to Set Habitat Goals

Make regional maps of the past, present, and needed future habitats.

*Maps help us think well together about the land and the life it should support.*

*Mapping the future makes goals real.*

*GIS makes zoom-lens thinking out loud together possible.*

# How to Set Habitat Goals

Have fun with conceptual models.

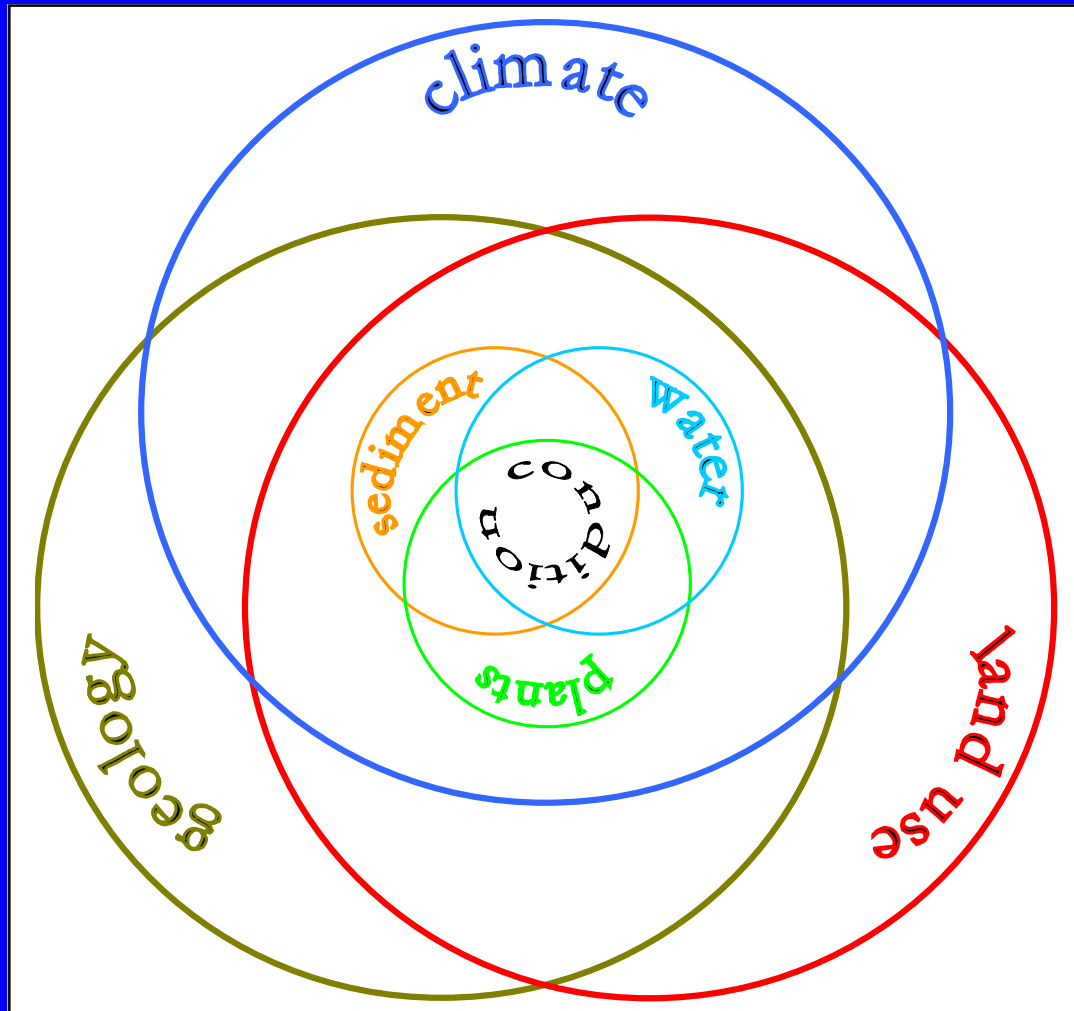
*Model what we know and don't know.*

*Model what we can and can't manage.*

*Try to separate natural history  
from human history.*

# Conceptual Model

## Wetland Form and Function



# Practical Points of View

Ecosystems don't care; people do.

*All natural resources are actively managed or passively impacted to some extent.*

*Knowledgeable people care, and caring people can change the world.*

# Practical Points of View

The role of environmental science is to advance public debate.

*Ecological health is a matter of culture, and culture is more than science.*

*Science is needed to define alternative possibilities and forecast their likely consequences.*

# Practical Points of View

Plan for implementation before the goals are set.

*Focus on project performance in the context of ambient status and trends.*

*Provide project design review to assure consistency with region goals.*

# Practical Points of View

How will we measure progress?

*Inventory what we have, monitor how it's doing, assess government response, survey public sentiment.*

*Link mitigation projects to impacted sites and track net habitat changes in watershed and regional context.*



# Bay Area Wetland Tracker

Wetlands Projects - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://shark.sfei.org/arcims/wprojects/viewer.htm> Go Links

**EcoAtlas**  
Information System

## Bay Area Wetland Project Tracker

[Introduction](#) [List all projects](#) [Feedback](#)

**Legend**

- Selected Features
- Modern roads
- Wetlands projects
  - Completed
  - Naturally Restored
  - Planned
  - Unknown
- The ocean
- High tide
- Color shaded relief

**Action**

- Zoom In
- Zoom Out
- Pan
- Identify Project

**Base Map**

- None
- Modern Habitats
- Historical Habitats
- Show Topo

Project	Counties	Total area
<a href="#">White Slough</a>	Solano	94.1 acres

\* includes files or web links

Map: 558016.9, 4216699.14 -- Image: 439, 165 -- ScaleFactor: 108.53346238938141

Internet

# Practical Points of View

Report frequently to the public.

*Everyone gets everything all the time.*

*Interim products (even incomplete answers) keep people interested.*

*Public involvement builds public support.*

# Criteria to Assess Regional Conservation Plan

## *Is it Relevant?*

- ✓ *Does it answers managers' questions?*
- ✓ *Have agency staff taken ownership?*
- ✓ *Is it funded (on 3-5 year cycles?)*
- ✓ *Does it provide for early success?*
- ✓ *Does it enjoy political good will?*

# Criteria to Assess Regional Conservation Plan

## *Is it Defensible?*

- ✓ *Does it reflect the consensus of scientific understanding?*
- ✓ *Is it consistent with natural processes?*
- ✓ *Is it sensitive to new understanding?*
- ✓ *Is it more self-contained than subject to externalities?*

# Criteria to Assess Regional Conservation Plan

*Will it be Valuable tomorrow?*

- ✓ *Does it inform land use and major infrastructure designs?*
- ✓ *Will it recover endangered species?*
- ✓ *Does it improve the efficacy of policies and programs?*
- ✓ *Does it evoke a sense of place and purpose?*

# In summary, a successful regional habitat plan:

Answers the question: how much of what kinds of habitat are needed where, and why ...

With an expert map regardless of jurisdiction or property lines ...

That inspires a caring community to turn public policies, programs, and projects into ways to achieve the goals.

# Thank You



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