

Aligning Socio-Economic and Ecological Condition Valuation

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Overview

- Indicators as Communication and Education Tools Capable of Changing Societal and Policy Paradigms
- The Challenge of Day-Lighting Tradeoffs
- The Concept of “Watershed Health”
- Currently Missing Ingredients
- Steps Forward
- Case Studies





All the policies, programs, and
projects for species recovery,
flood control,
fire control, erosion control,
water quality, water supply,
air quality, wildlife protection,
land use ...

What do they add up to?

A photograph of a misty forest landscape. In the foreground, there is a grassy hillside. The middle ground is filled with numerous evergreen trees, some of which are partially obscured by a thick mist or fog. The background shows more trees and a hazy sky. The overall tone is soft and atmospheric.

If we were to fix
all the environmental problems,
obey all the environmental laws,
what would the world look like?

A photograph of a suburban neighborhood. In the foreground, there is a large field of tall, dry grass and some green shrubs. A paved road or driveway curves through the bottom left corner. In the background, there are several houses of various colors (white, yellow, blue) and styles, some with red roofs. A large, dark green tree stands out among the houses. The sky is clear and blue. The overall scene suggests a mix of natural habitat and human development.

What *should* it look like?

How much of what kinds of habitats, including “habitats” for humanity, are needed where, and why?

What Is “Watershed Health?”

Societal construct, ideally informed by science, of desired ecosystem support services required to sustain biodiversity and human activities

How Do We Measure Watershed Health?

- Find appropriate indicators capable of tracking desirable physical, chemical, biological, and socio-economic conditions
- Compare to quantifiable goals or targets

What are Indicators?

- Combined measurements that have broader meaning and significance than individual measurements by themselves
- Indicators simplify data into readily usable information that can be used to show trends or changes in a particular environmental or socio-economic condition

The Challenge:

- How do we develop a “tracking system” capable of day-lighting tradeoffs between conflicting goals?
- What data do we need to evaluate risks to restoration projects from unaddressed upstream causes of impairment?
- How do we merge the parallel universes of socio-economic and ecosystem indicators?

Parallel Universes Centered on:

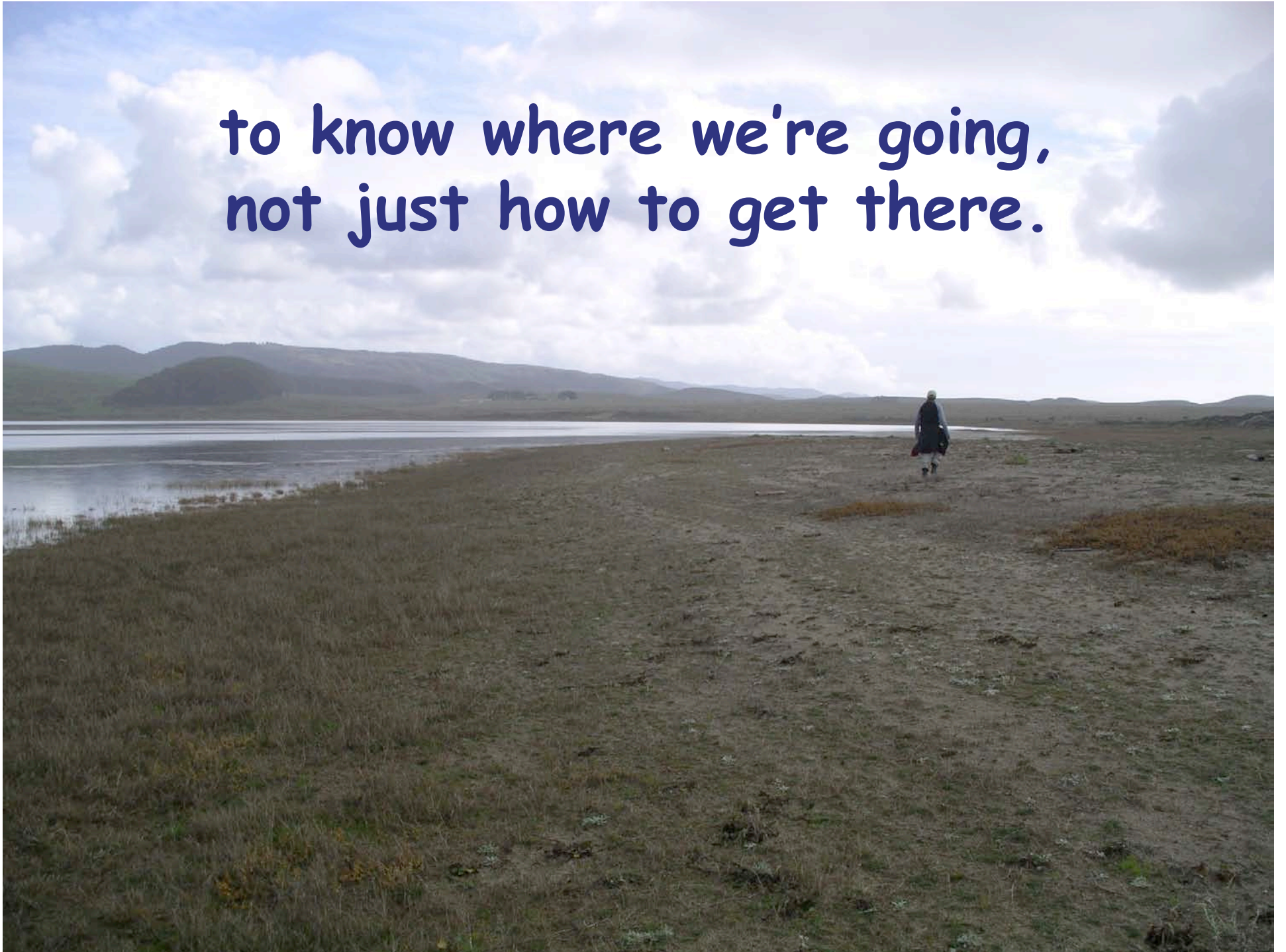
- Human Activities, Needs, and Short-Term Values
- Faulty Economic Paradigms
- Growing “Externalities”
- Natural Systems Excluding Homo “sapiens” from Consideration
- Faulty Ecological Paradigms



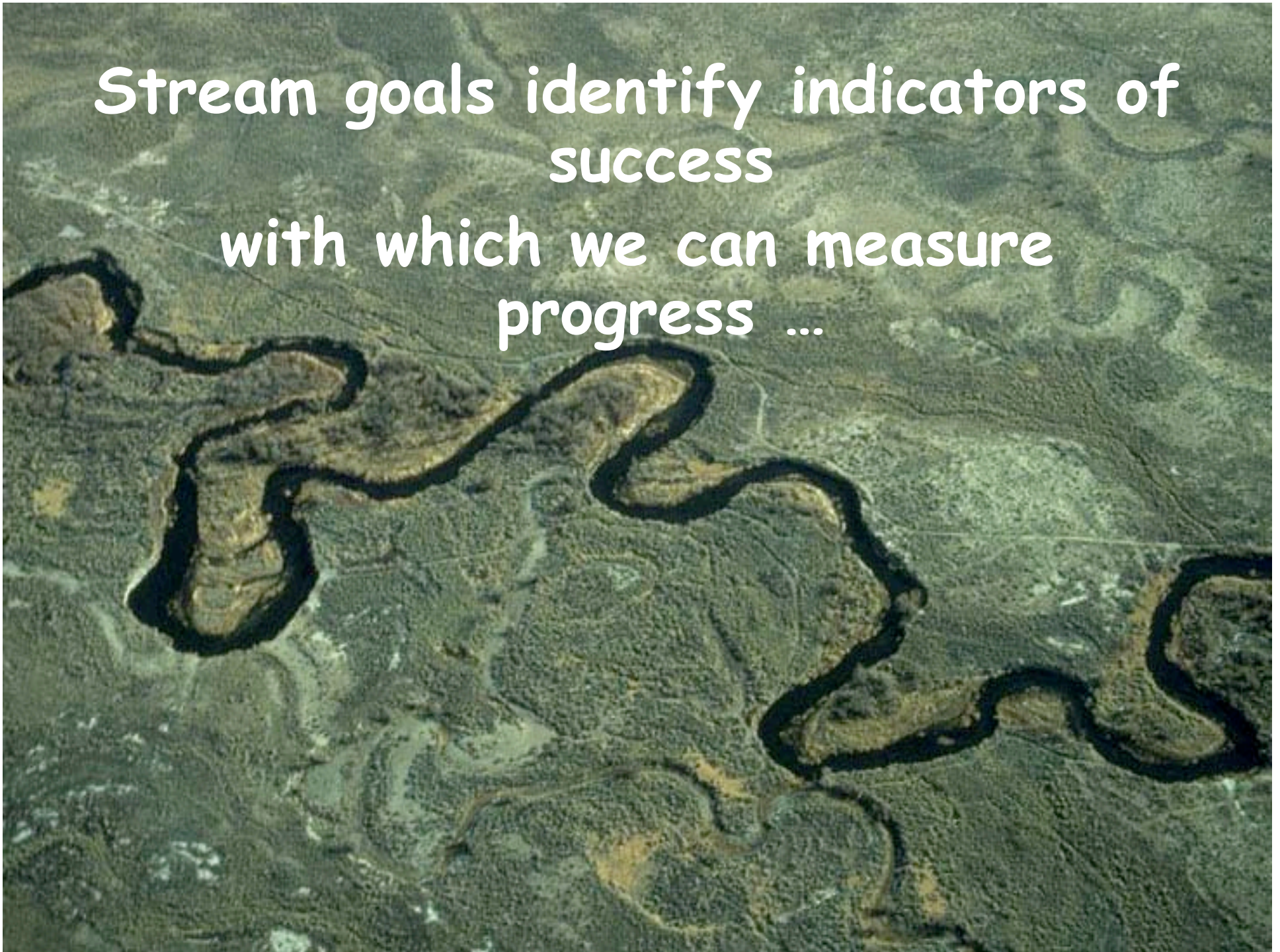
Possible Solution:

We need stream goals ...

to know where we're going,
not just how to get there.



Stream goals identify indicators of
success
with which we can measure
progress ...




to account for all the
resources spent ...

on watershed planning,
protection, and restoration ...



while we sort out
good ideas
(those that move us
toward our goals)
from everything else.





The whole of government
and society
needs the same set
of stream goals

to assure that the various policies,
programs, and projects are
adequately coordinated to protect
the land and life it should support.

Proven Path to Stream Goals

1. Understand the Past
2. Understand the present
3. Understand change
4. Envision the Goals
5. Turn policies, programs and projects into ways to achieve the goals
6. Monitor progress toward the goals, using indicators that directly relate to them
7. Adjust the goals for new understanding

Different Problems at Different Scales

Regional Examples Involve Many Streams

- Anadromous fish recovery
- Sea level rise (upstream migration of tide)
- "Landscape Resistance" to restoration
 - Regional transportation and utility corridors disrupt stream-bay-ocean connections
 - Subsided and contaminated lands
- Regional, State and Federal coordination of policies and programs to address problems

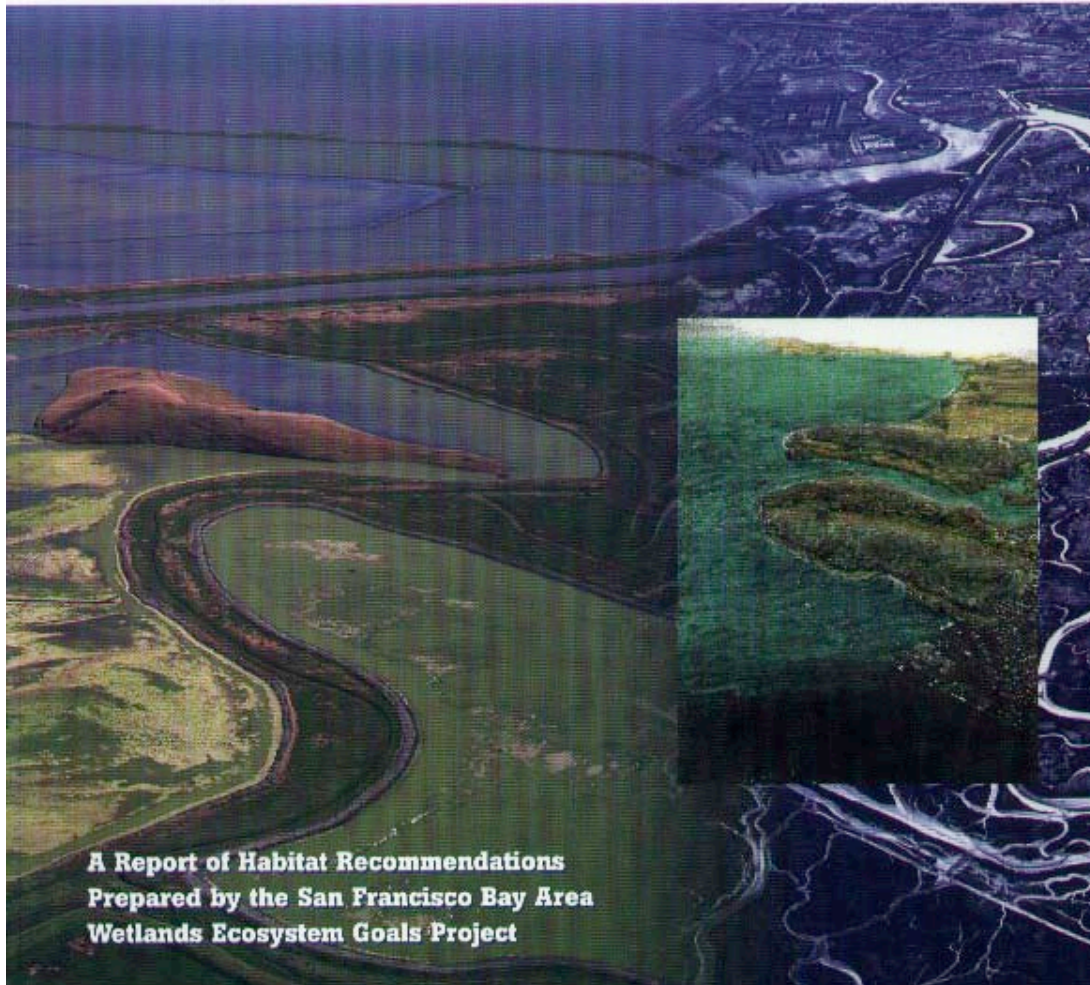
Different Problems at Different Scales

Examples for Local Watersheds

- Physics
 - Chronic stream incision/sedimentation
 - Non-point source pollution
- Ecology
 - Anadromous fishery declines
 - Riparian habitat loss and invasion
- Consumptive competition for water and land
 - Flood control, irrigation, ecological service



Habitat Goals

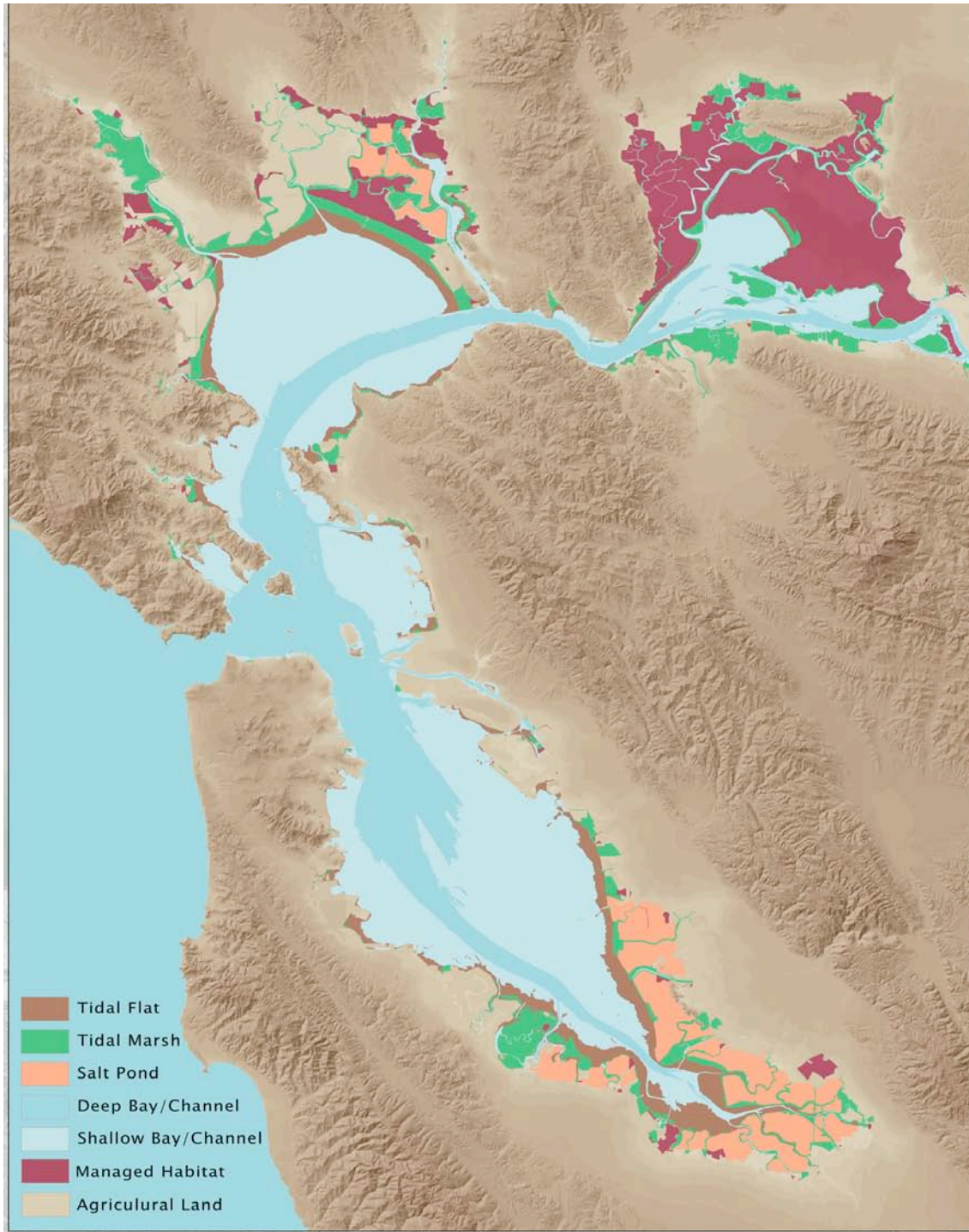


Lessons from the Baylands Habitat Goals Project



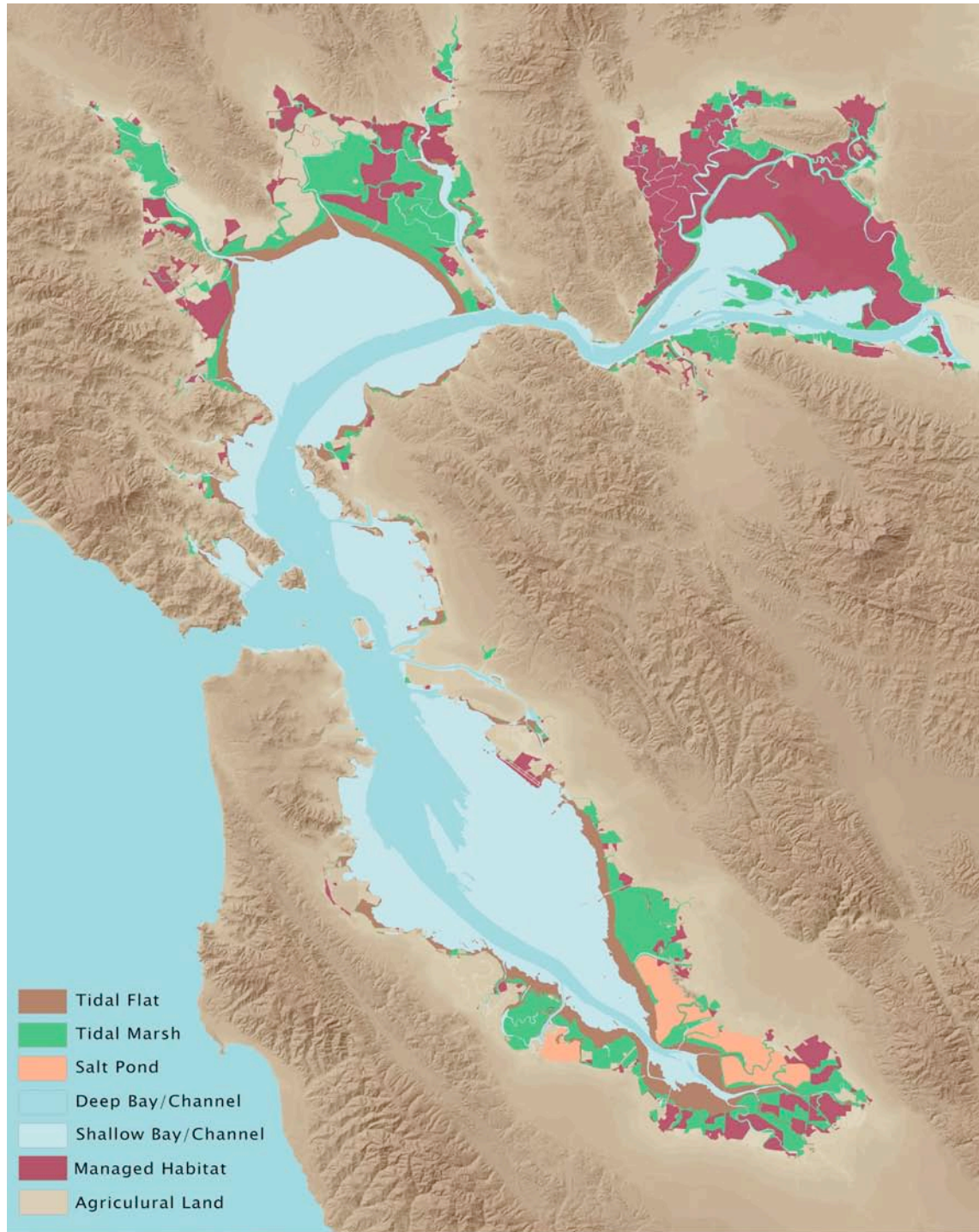
Understand
the past

An
authoritative
picture of
Historical
Ecology can be
produced



Understand the present

Standard
methods have
been developed
to classify and
map existing
habitats



Understand
change and
envision the
future

It's possible for
responsible people
to agree on what
should be

A group of people, including men and women, are standing outdoors in a line, looking towards the right. They are wearing various hats and casual clothing. In the background, there is a body of water, a fence, and a clear blue sky. The text is overlaid on the image in a dark blue, serif font.

The product is not a plan,
it's a process.

*Ecosystem management is
public debate based on enough
scientific information
to manage uncertainty
and make hard decisions.*

The background of the slide is a close-up photograph of water ripples. The water is a warm, golden-brown color, and the ripples create a complex, organic pattern of light and dark patches across the entire frame.

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

Ecosystems don't care; people do.

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

So ...

what would stream goals look like?



Possible Regional Goals

- Allocation of fisheries restoration efforts among watersheds;
- Baylands Goals Version 2: intertidal restoration to accommodate sea level rise;
- Coupling stream and bayland restoration to infrastructure maintenance and upgrades.



Expected Local Goals

- Reach-specific recommended hydrograph to optimize among watershed objectives;
- Land use design recommendations to achieve chosen hydrograph
- Reach-specific restoration templates to accommodate chosen hydrograph

Example #1: Napa River Watershed

- New County General Plan Contains Broad Goals and Policies for Agricultural Preservation, Community Character, Conservation, Economic Development, and Recreation
- Community-Based Development of Watershed Health Indicators Linked to Goals and Policies

Example #2: Miller Creek, Marin County

- Support a watershed stewardship group
- Assist in articulating how much of what kind they want where
- Identify broad set of indicators that fit the watershed condition framework
- Incorporate watershed condition indicators into county planning and flood protection activities for performance tracking

Thank You

