

# Ecosystem-based Management Initiative

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**Monterey Bay National Marine Sanctuary**



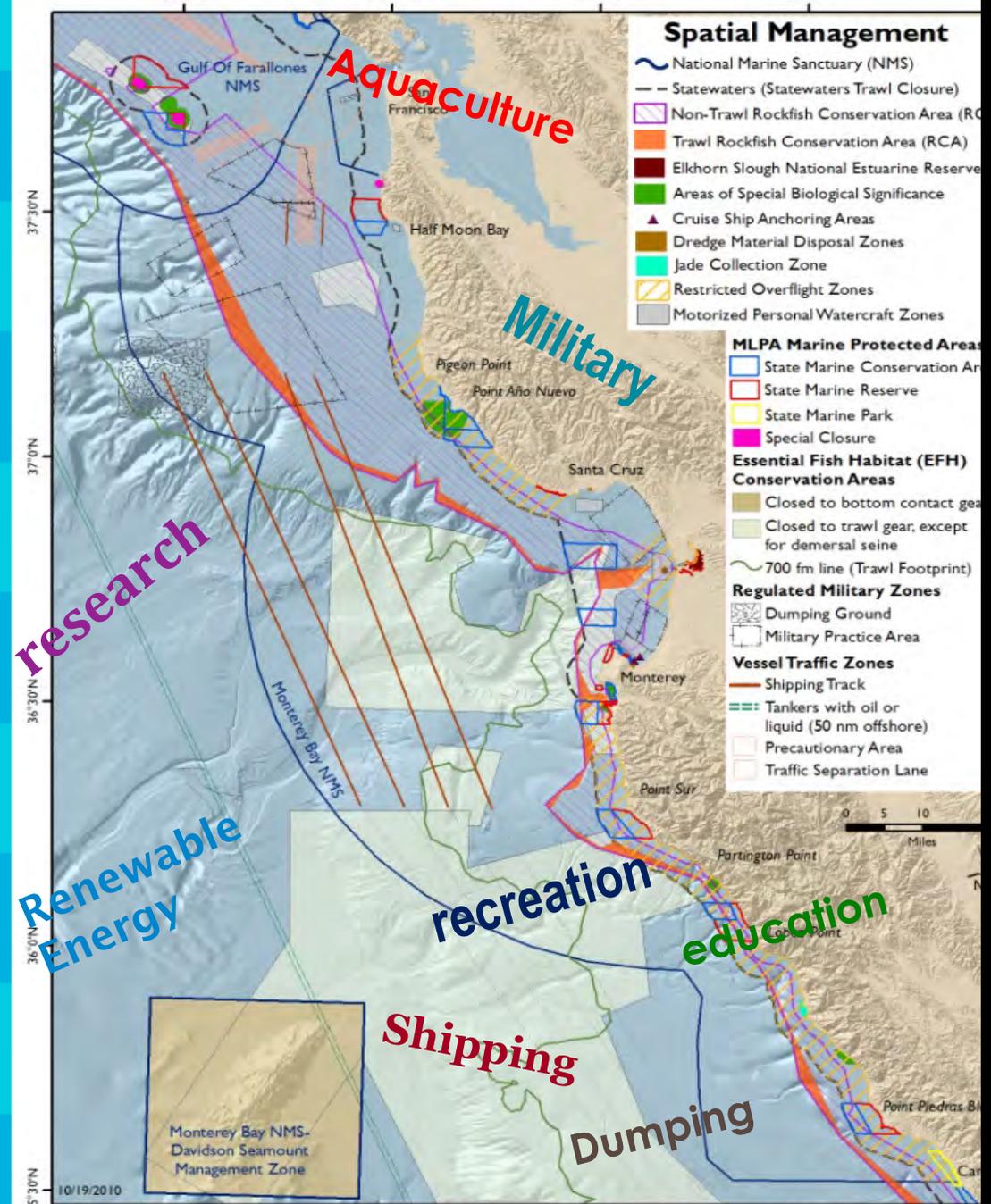
NATIONAL MARINE  
SANCTUARIES

MONTEREY BAY



# MBNMS Today

- >25 agencies & authorities
- Zones created in isolation:
  - Shipping lanes
  - Essential Fish Habitat
  - Dredge Disposal areas
  - Military zones
  - Areas of Biol Significance
- Overlapping jurisdictions
- Sector by sector
- Emerging demands
- Global threats



# EBM Initiative

**GOAL:**  
To enhance ecosystem-based management by applying the best available science and integrating and coordinating with partner agencies

## Ecosystem Based Management Initiative (EBMI)



## Why an EBMI?

25 different management zones and regulations

7 different regulatory agencies

8 million stakeholders with different interests

24 locally-based research institutions

The ocean is essential to all life. Many of our local economic activities depend on ecosystem services the ocean provides. Globally, the ocean is facing increasing demands and impacts on marine life. Locally, MBNMS can benefit from a collaborative multi-sector management approach, to address existing and potential threats.

**Integrate**  
existing criteria, approaches,

**Proactive**  
measures to prevent harmful

**Stakeholders**  
and their multiple uses of the ocean will

# EBM Initiative Objectives

- 1) Maintain/restore marine ecosystem health and function;
- 2) Ensure protection of unique and rare features;
- 3) Facilitate research to differentiate between natural variation versus human impacts;
- 4) Facilitate ecologically and economically sustainable uses, including fisheries.

# Information Gathering

Objective

Primary Tool

Timeline

Lead

## Ecosystem Health



Integrated Ecosystem Assessment/ workshop

2011-2012

NOAA Fisheries

## Unique/Rare Features



Workshop & RAP follow-up

May-Oct 2011

MBNMS

## Facilitating Research



Workshop & Conservation Series Report

Oct 2010-2012

MBNMS

## Sustainable Uses



Collaboration /Workshops

2011-2012

Partners/  
Collaborations

# Objective 1. Maintain and restore ecosystem health..

## Progress to date

1. Integrated ecosystem assessment
2. Scoping
3. Risk assessment
4. Management strategy evaluation



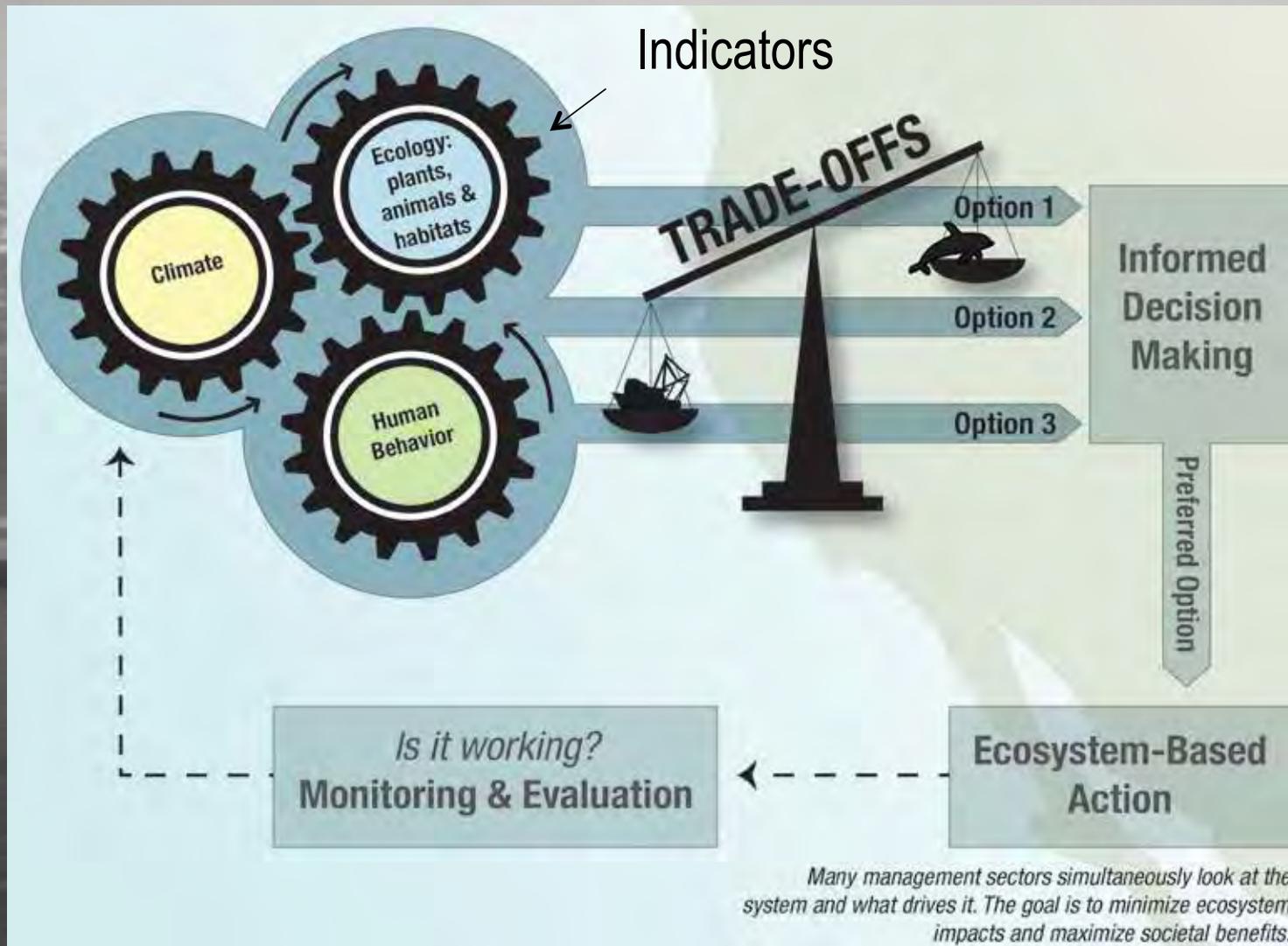
# **Integrated Ecosystem Assessment**

The Science Needed for a Healthy California Current



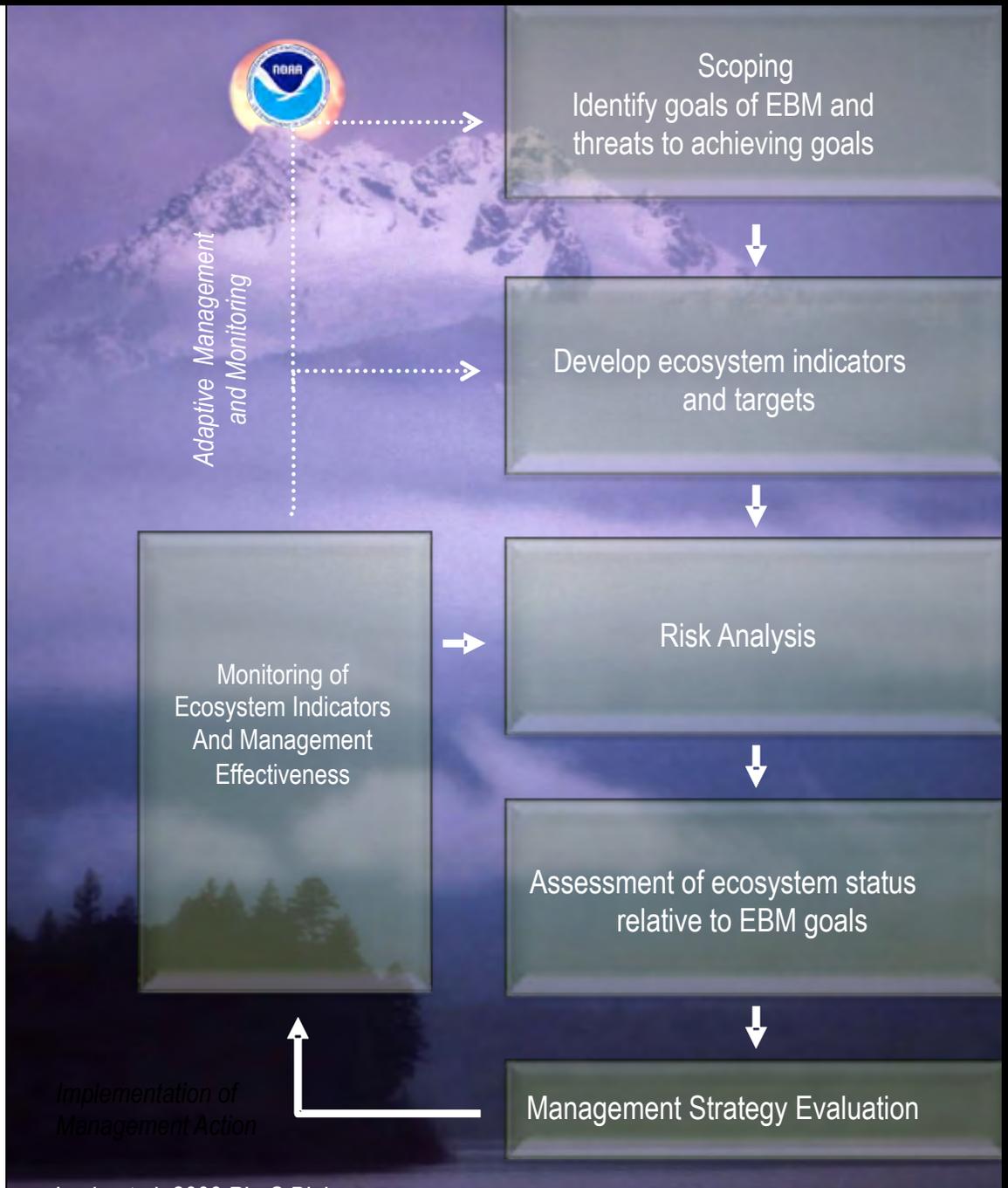
<http://www.nwfsc.noaa.gov/publications/>

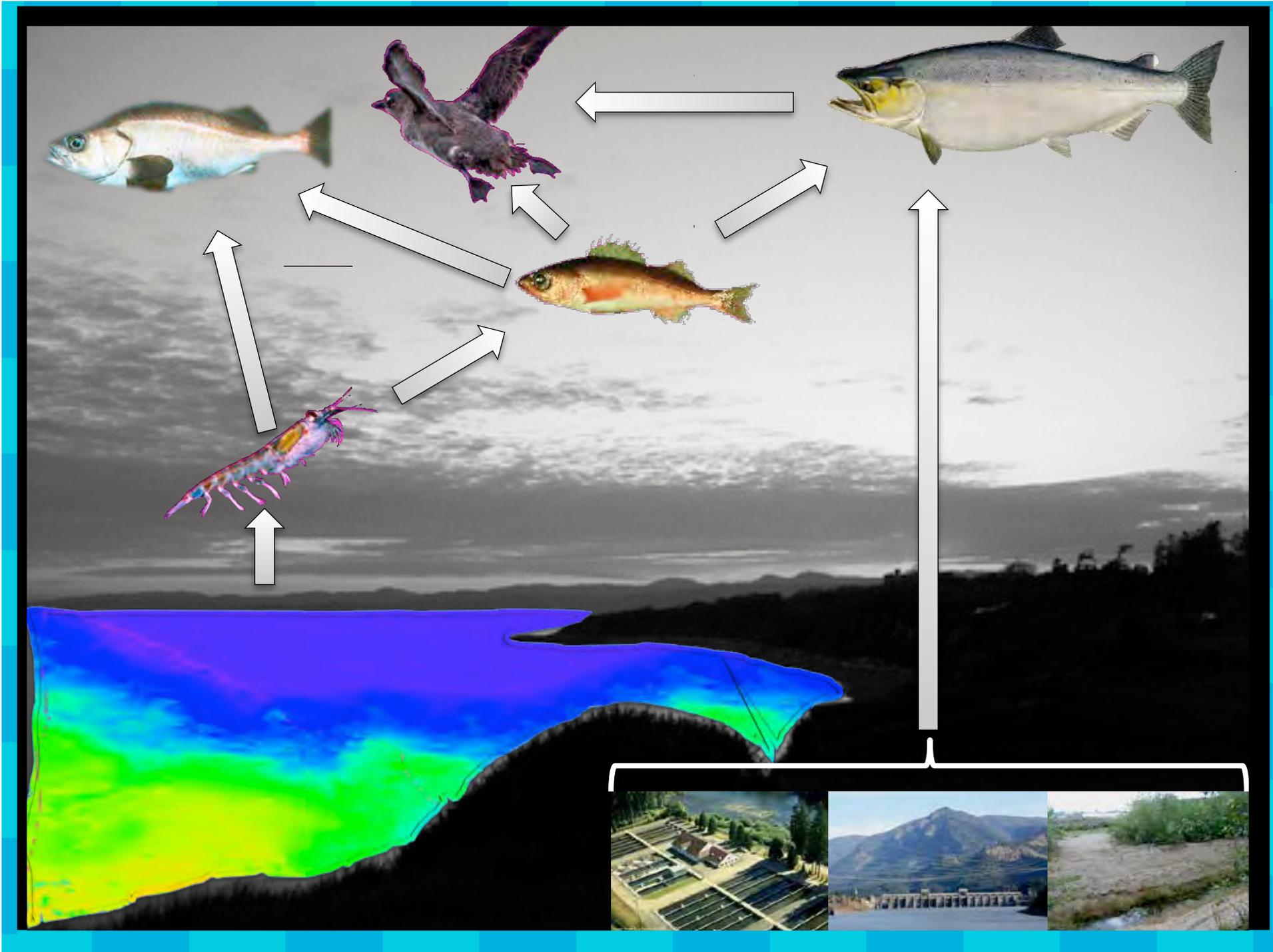
# Integrated ecosystem assessment



# Integrated Ecosystem Assessment

5 major steps

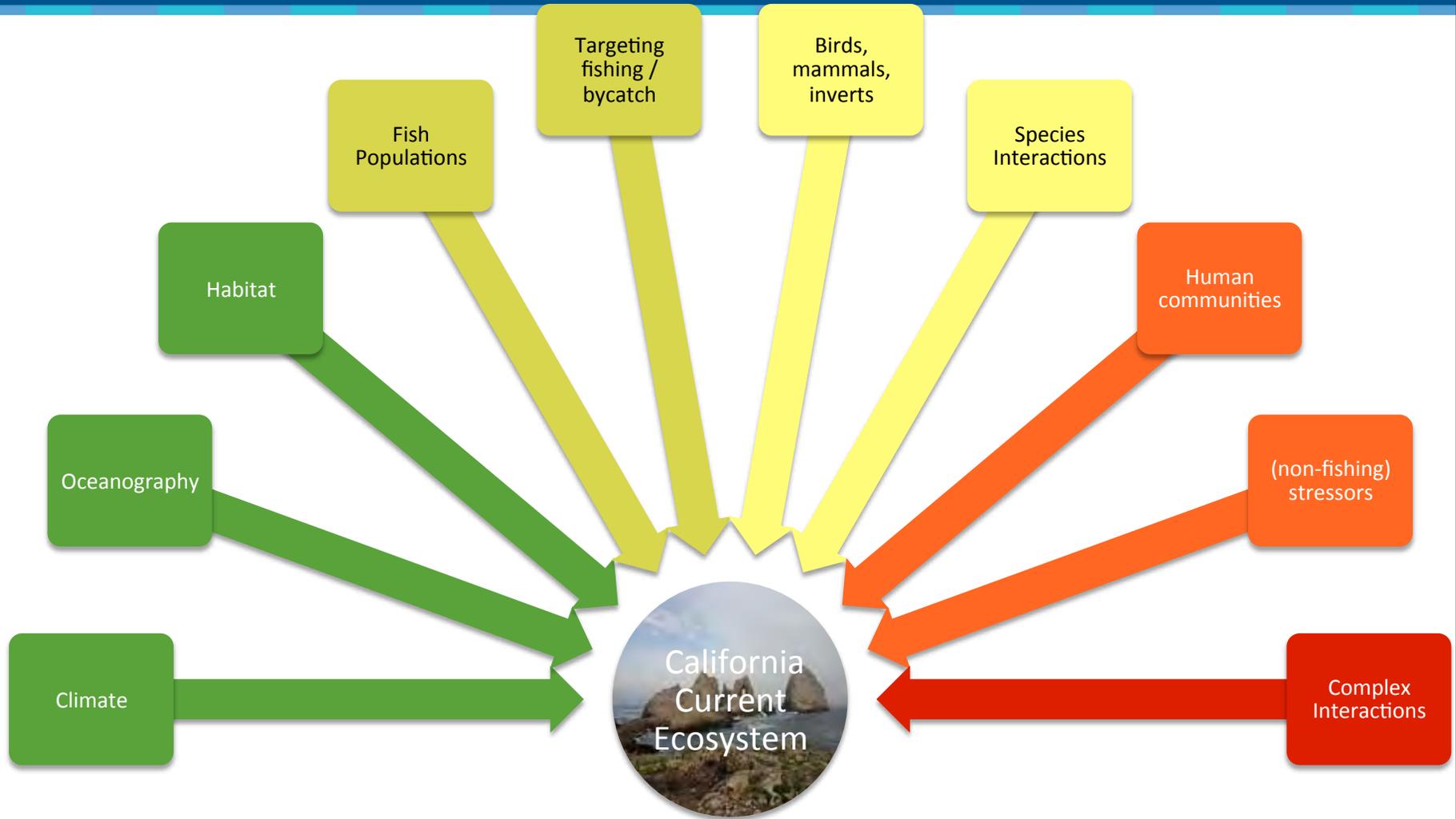




RESILIENT AND ECONOMICALLY VIABLE  
COASTAL COMMUNITIES  
HEALTHY ECOSYSTEMS



# Integrated Ecosystem Assessment: Pulling together the best information available for the California Current and the Monterey Bay



# IEA Time line

## ■ Year 1

- Ecosystem health
- Fisheries
  - Groundfish
  - Salmon
- Protected Species
  - Salmon
  - Green sturgeon

## •Year 2

- Ecosystem health
- Fisheries
  - Groundfish
  - Salmon
- Coastal Pelagic Species**
- Protected Species
  - Salmon
  - Green sturgeon

## •**Marine mammals, birds**

## •**Coastal Communities**

## ■ Year 3

- Ecosystem health
- Fisheries
  - Groundfish
  - Salmon
  - Coastal Pelagic Species
- Protected Species
  - Salmon
  - Green sturgeon
  - Marine mammals, birds
- **Coastal Communities**
- **Habitat**
  - Biogenic
  - Physical
  - Water quality
- **Seafood**

# Objective 1. Maintain/restore ecosystem health

Progress to date...

## SCOPING

- Monterey Bay pilot
- Spring 2012
- Collaborative effort
- Stakeholder involvement: *a defining feature of scoping*

Asks:

- 1) What are your management priorities?
- 2) What are your objectives for ocean management ?
- 3) What indicators are understandable and meaningful?
- 4) What are your targets for ecosystem condition?
- 5) What are your thresholds for specific indicators?
- 6) What management alternatives should be modeled?

# Objective 1. Maintain/restore ecosystem health

## Progress to date...

### SCOPING



NOAA FISHERIES:  
Office of Science & Technology



[Directorate](#) | [Fisheries Statistics](#) | [Assessment & Monitoring](#) | [Economics & Social Analysis](#) | [Science Information](#) | [Marine EcoSystems](#)

Educational materials

Web site being built

Video in development

## NOAA's Integrated Ecosystem Assessment Program

### [IEA Quick Links](#)

[Home](#)

[California Current Regional Ecosystem](#)

[Gulf of Mexico Regional Ecosystem](#)

[Northeast Shelf Regional Ecosystem](#)

[Pacific Island Regional Ecosystem](#)

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### California Current

The California Current (CC) is known for strong seasonal upwelling that yields local areas of high productivity capable of supporting a wide variety of important commercially harvested shellfish and fish as well as sea birds and large marine mammals. Interannual variability in this system is influenced by two main climate drivers, the El Niño Southern Oscillation and the Pacific Decadal Oscillation. Health and productivity of this system is affected by commercial and recreational fishing, pollution, habitat degradation, shoreline alteration, logging, agriculture, urbanization, grazing, and energy production. The California Current Ecosystem (CCE) is the first in eight of the USA's Large Marine Ecosystems (LMEs) to implement NOAA's Integrated Ecosystem Assessment (IEA)

Objective 1. Maintain/restore ecosystem health  
Progress to date...  
Scoping for indicators...



I only want ONE  
indicator for food  
webs!



But you need 700

# Objective 1. Maintain/restore ecosystem health

## Progress to date...

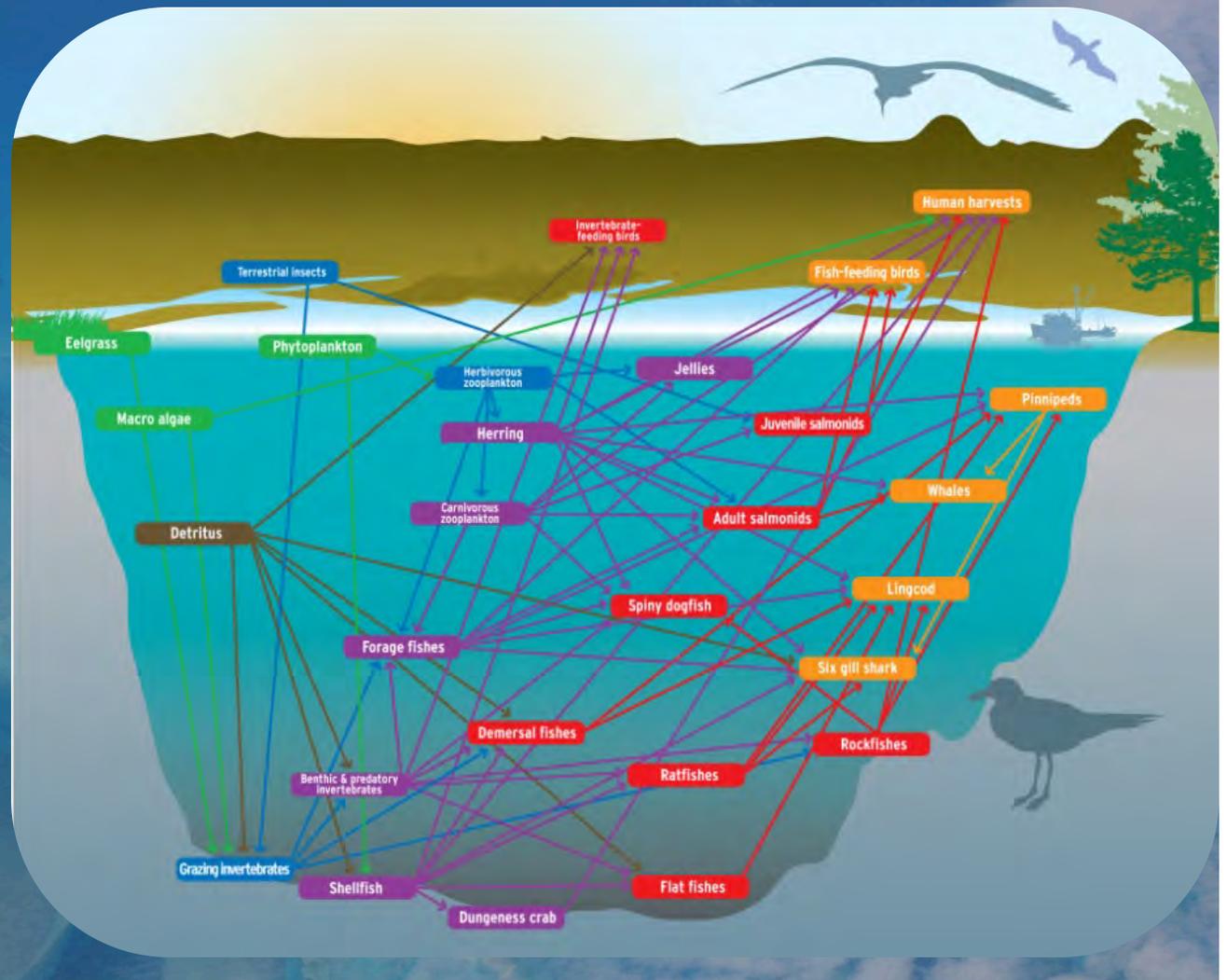
### Risk Assessment

- Quantify the risk of a particular ecosystem component to due to different human activities.

- What is the risk of reaching or remaining in an undesirable state?

- *Exposure- of different components to stressors*

- *Sensitivity of each component to*

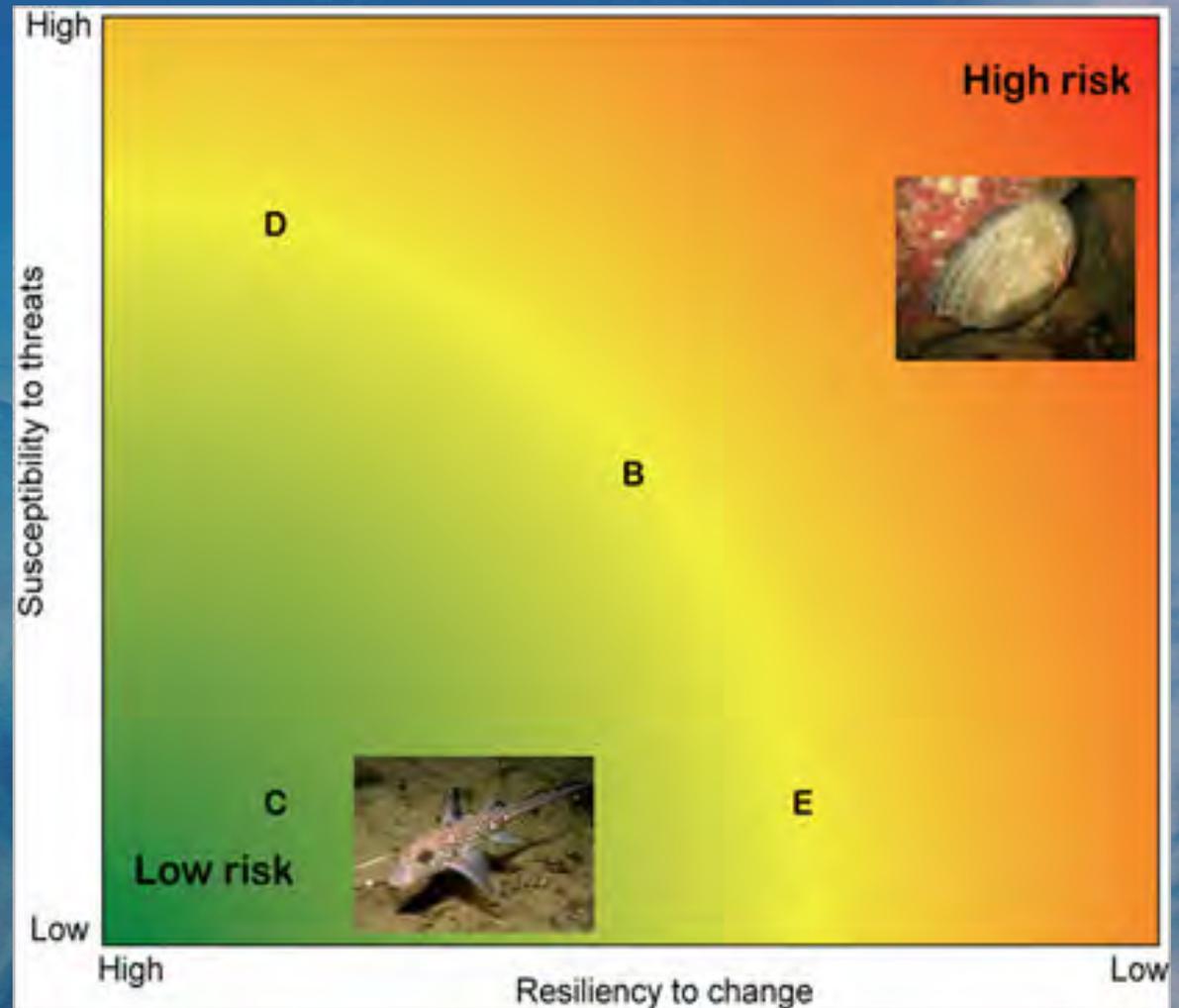


# Objective 1. Maintain/restore ecosystem health

## Progress to date...

### Risk Assessment

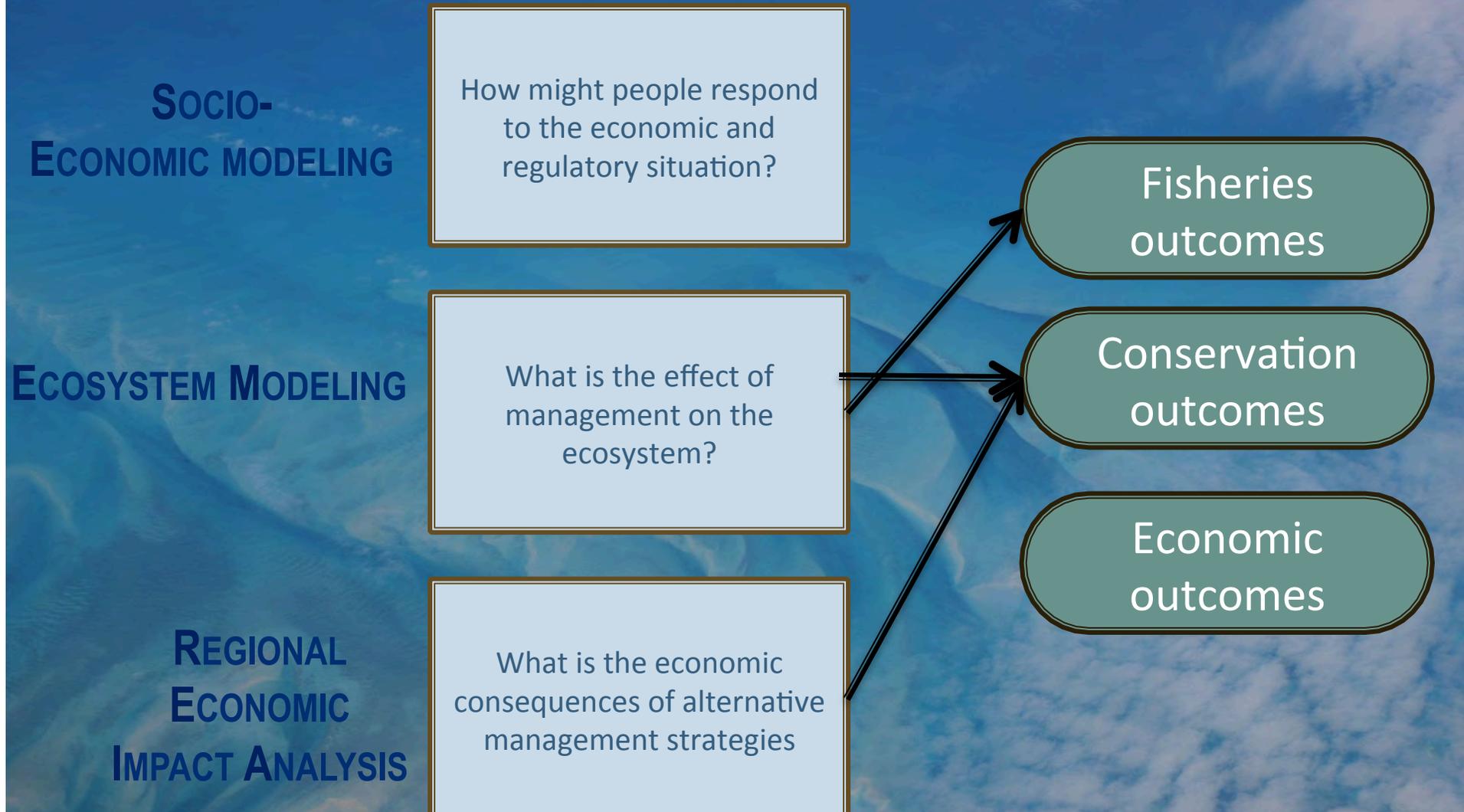
1. Planning process
2. Data gathering
3. Expert working groups will be developed



# Objective 1. Maintain/restore ecosystem health

## Progress to date...

### Management strategy evaluation



# Objective 1. Maintain/restore ecosystem health

## Progress to date...

### Socio-economic profile

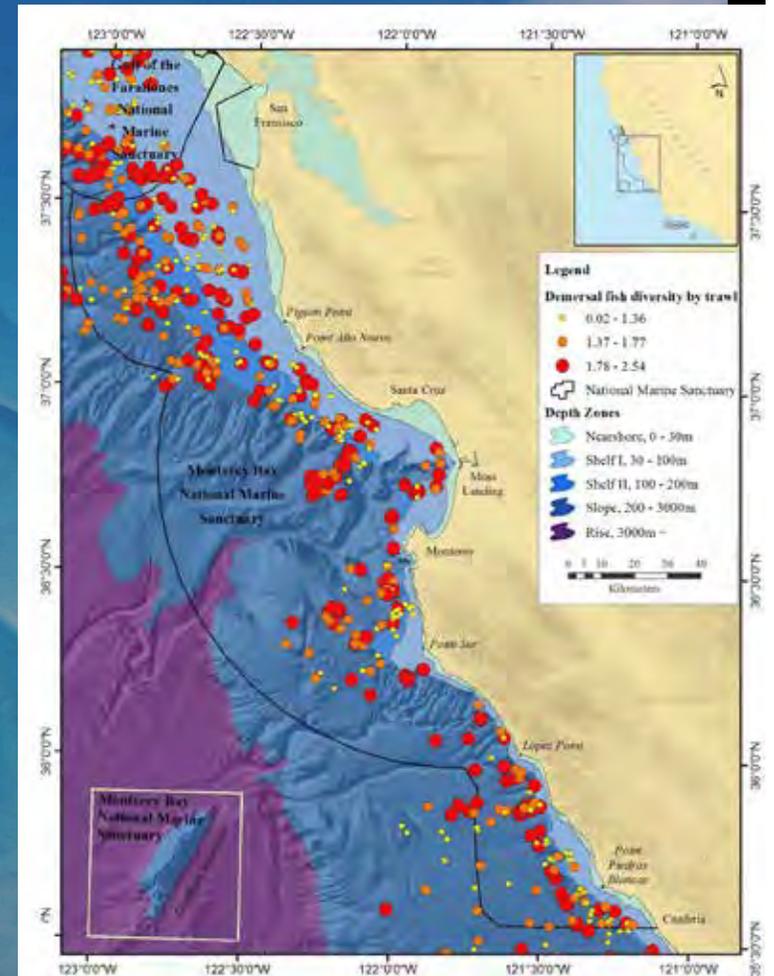
1. What is the economic value of different human uses around Monterey Bay?
2. What has happened to recreational and commercial fishing landings over time?
3. How are the different fisheries/fleets doing?



# Objective 2. Protect unique and/or rare features..

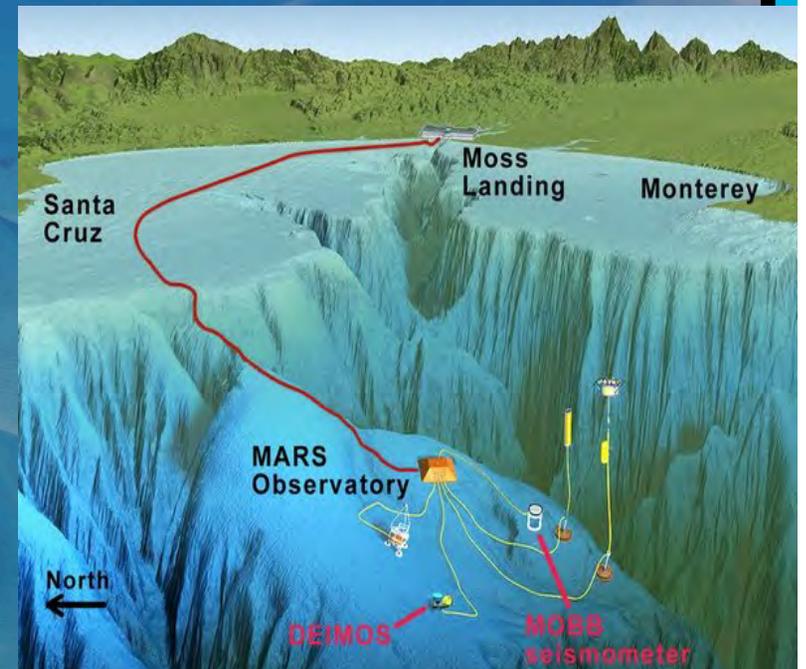
## Progress to date

1. Expert workshop May 2011
2. Summary of workshop underway
3. Follow up data collection on unique/rare features



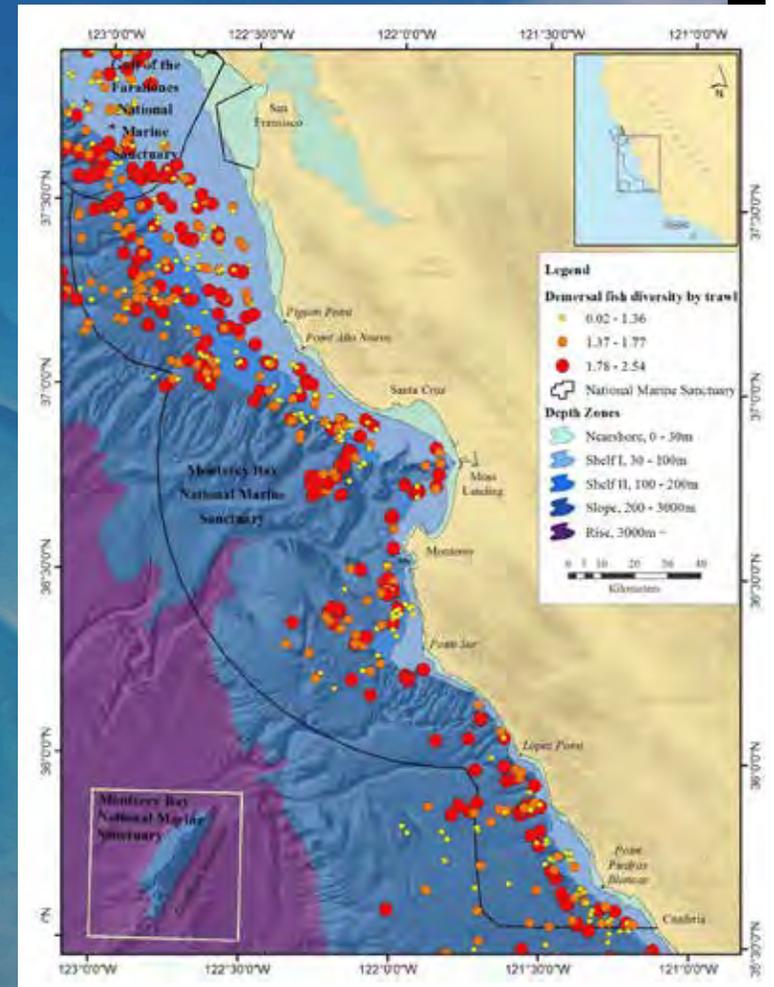
## Objective 3. Facilitate research ... Progress to date

1. Expert workshop October 2010
2. Proceedings submitted to National Marine Sanctuary Conservation Series
3. Revising based on reviews
4. Research Activities Panel working group



# Objective 3. Facilitate research ... Next Steps

1. Expert working group meetings
2. Investigate permitting options
3. Sentinel Site evaluation
4. PFMC meeting September
5. Explore collaborative opportunities to meet research needs



## Objective 4. Facilitate sustainable uses... Progress to date

1. National Geographic Speaker Series – 3 events with yacht clubs
2. Dinner round table discussions planned- fall 2011
3. Local Catch – community supported fishery
4. Halibut research design study
5. Hook and line (halibut) study



## Objective 4. Facilitate sustainable uses...

### Progress to date: Speaker Series

1. Santa Cruz Yacht Club, Elkhorn Yacht Club, Monterey Yacht Club
2. Hosted over 175 people
3. Collaboration with Save our Shores
4. Questions about dredging permits, climate change, toxic paint substitutes, recreational fishing regulations, and concern over nets taking bait fish



# Objective 4. Facilitate sustainable uses...

## Progress to date: Local Catch Monterey

HOME Why Should I Join? How Does the CSF Work? Sustainability For Fishermen NEWS SIGN UP / Contact Us



HOME

Comments Off

24  
March  
2011

**Local Catch Monterey is a CSF (Community Supported Fishery).**

**We offer CSA-style weekly shares of fresh local fish to our members.**



# Video on Local Catch KION News



# Objective 4. Facilitate sustainable uses...

## Progress to date: Halibut Research Design

1. Initiated 2010, Bill Monning supported
2. GOAL: Evaluate the potential socio-economic and marine ecosystem impacts of trawling and hook-line based fishing for halibut in MB
3. How? By organizing studies that evaluate the economic and ecological sustainability of different gear types
4. Proposal developed, needs funding
5. Socio-economic study underway



Chronicle / Craig Lee

# Objective 4. Facilitate sustainable uses...

## Progress to date: Halibut Research Design

### Organizations Involved

- Commercial fishermen (SF to SB)
- Sport Fishing Conservancy
- National Marine Fisheries Service
- Department of Fish and Game
- Monterey Bay National Marine Sanctuary
- City of Monterey
- Oceana
- Ocean Protection Council
- California Sea Grant
- Monterey Bay Aquarium
- California State University Monterey Bay
- University of California Santa Barbara
- The Nature Conservancy
- Assemblyman Monning's office
- People United for American Commercial Fisheries

#### **Attention Fishermen, WE NEED YOUR HELP!**

The Halibut Research Design Project (HRDP) is a group convened by Assemblyman Bill Monning in 2010. Participants have included commercial and recreational fishermen, scientists and representatives from local government, fisheries management and non-governmental organizations. The goal of the HRDP is to:



*Evaluate the potential socio-economic and marine ecosystem impacts of trawling and hook-and-line based fishing for halibut in Monterey Bay to inform stakeholder group discussions and decision makers*

The strategy of the HRDP is to organize studies that evaluate the economic and ecological sustainability of these different gear types.

#### **Targeting Halibut with Hook and Line Gear**

The first HRDP study aims to assess hook and line fishing for halibut. Our objective is to learn more about the potential for increased landings of halibut using hook and line methods in Monterey Bay. We hope to conduct a small experimental fishing project this summer to look at catch rates and by-catch in the hook and line fishery at various times throughout the season. Data will be collected by observers.



#### **We Want to Learn from Your Experience**

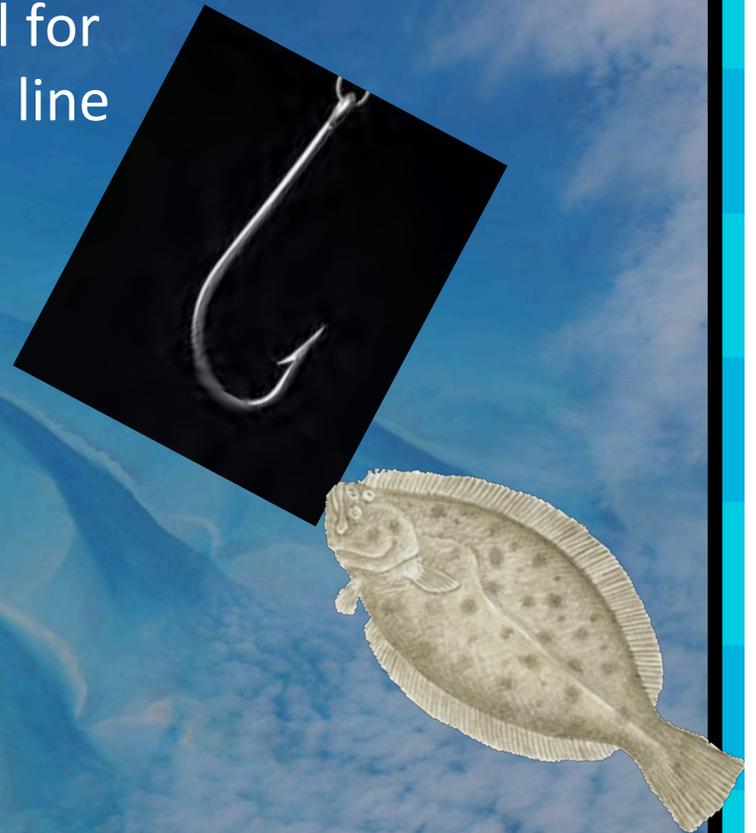
To properly design our hook and line study, we need to understand the nature of the halibut hook and line fishery in Monterey Bay at this time. We need your help in filling out a quick questionnaire that will provide this baseline information. Your assistance will enable us to learn more about how we can increase landings in this fishery. If you have questions or would like additional copies of the questionnaire, please contact Oren Frey, California Sea Grant State Fellow, at 831-647-4228.

## Objective 4. Facilitate sustainable uses... Progress to date: Hook & Line Study

Objective: To learn more about the potential for increased landings of halibut using hook and line methods in Monterey Bay

### Approach:

- Small experimental project to look at catch rates and by-catch in hook and line fishery
- Data collection by observers
- Underway at present



# Basic steps of EBM Initiative

1. Information gathering

2. Propose & implement strategies

3. Monitor, adapt, assess

2011

2012

2013

2014

2015



# External processes that influence our EBM Initiative

2011

Gathering information



Facilitating  
Research

Unique Rare

Sustainable use

Ecosystem health

2012

**EFH REVIEW**

**MLPA REVIEW**

**Areas of Biological Significance – Regional Water Control Boards**

2013

**Port Access Route Study**

**ECOSYSTEM Fisheries Management Plan**

What are we working toward?



*Enhanced ecosystem protection*



Thank you for your time.

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