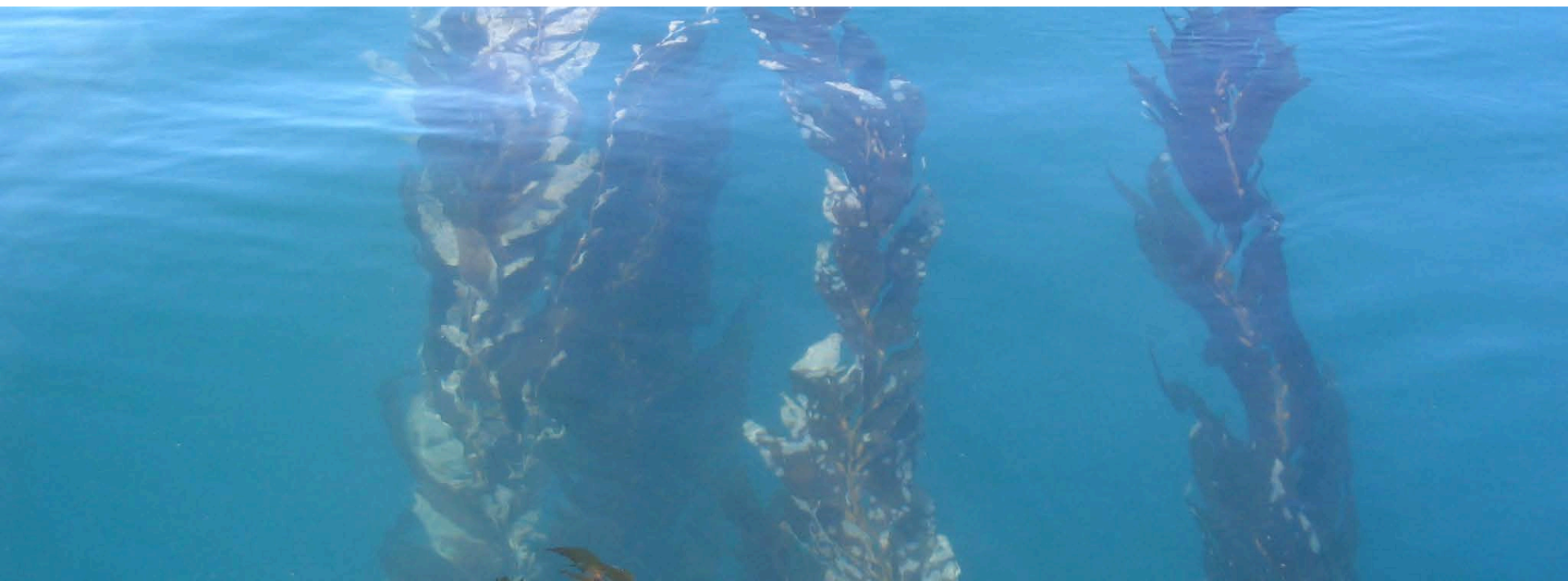


# How are we doing?

## Taking the pulse of California's MPA network

*Clare Waldmann, California Ocean Protection Council*

*Erin Meyer, California Ocean Science Trust*

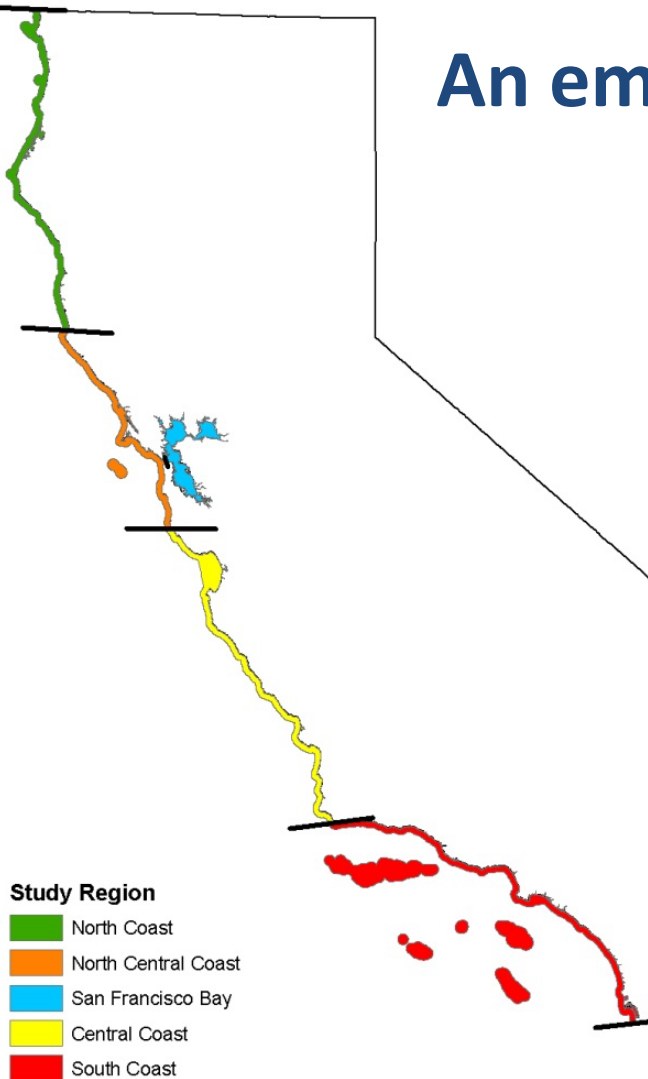


# A California opportunity

## An emerging statewide network of MPAs

### MLPA Goals

1. Protect marine ecosystems structure, function, and integrity
2. Sustain, conserve, & protect marine life
3. Improve recreational, educational, & study opportunities
4. Protect marine natural heritage
5. Define clear objectives & management measures for MPAs
6. Design and manage MPAs as a network



# The policy context for monitoring

## “Are the MPAs working?”

Under the MLPA, monitoring should:

- Evaluate the MPA network’s performance relative to MLPA goals
- Facilitate adaptive management
- Improve understanding of marine systems



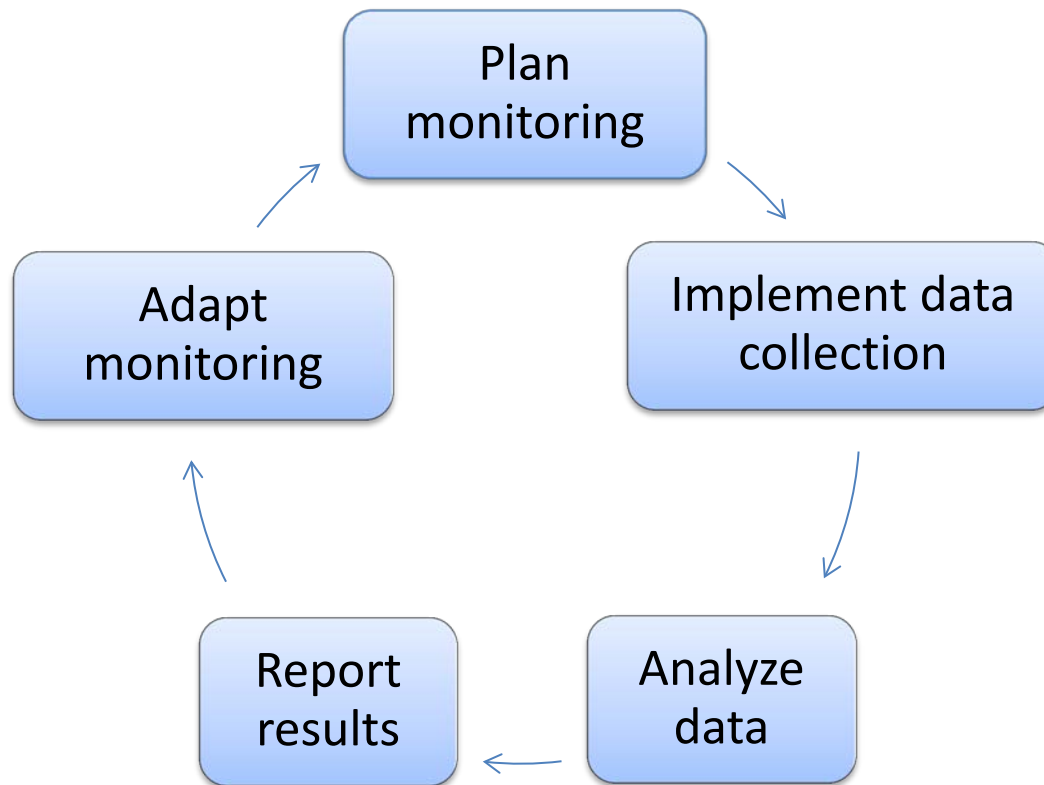
# Realizing a new approach



- Established in 2007 to lead development and implementation of impartial, scientifically rigorous and cost-effective MPA monitoring
- Program within the California Ocean Science Trust
- Not a decision-making body
- Provides objective, impartial and timely information to inform management decisions

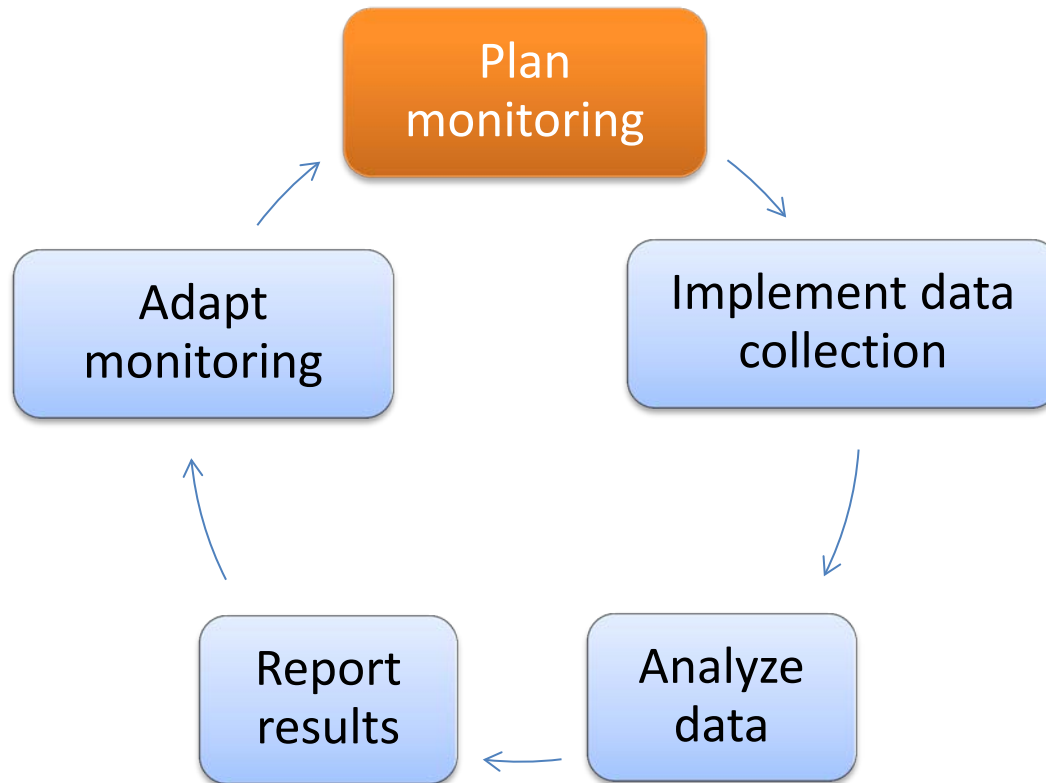
# The Monitoring Cycle

Providing useful information to inform decisions



# The Monitoring Cycle

Providing useful information to inform decisions

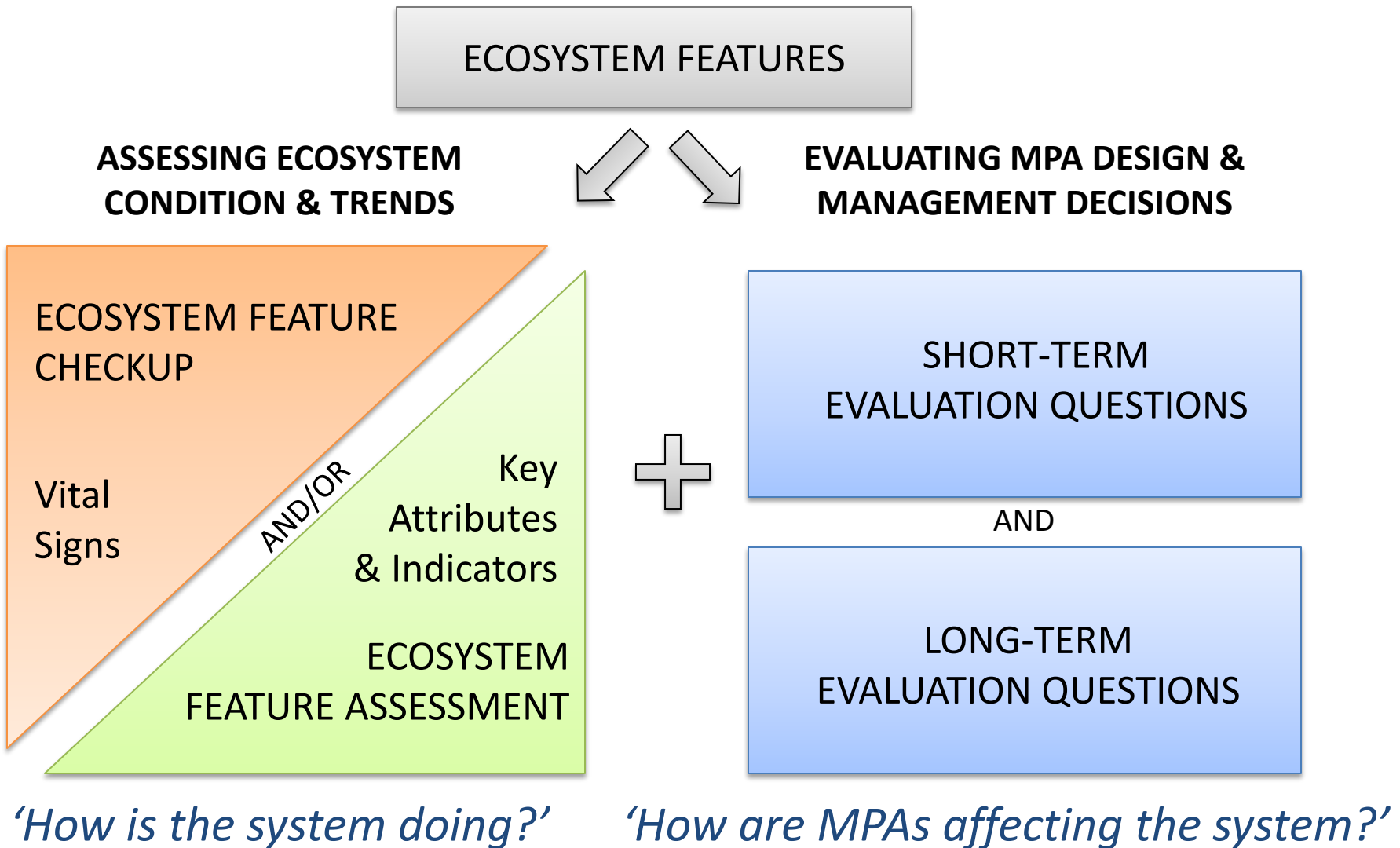


# A consultative process



- Focus on management needs
- Reflect stakeholder priorities
- Apply best-available science

# MPA Monitoring Framework





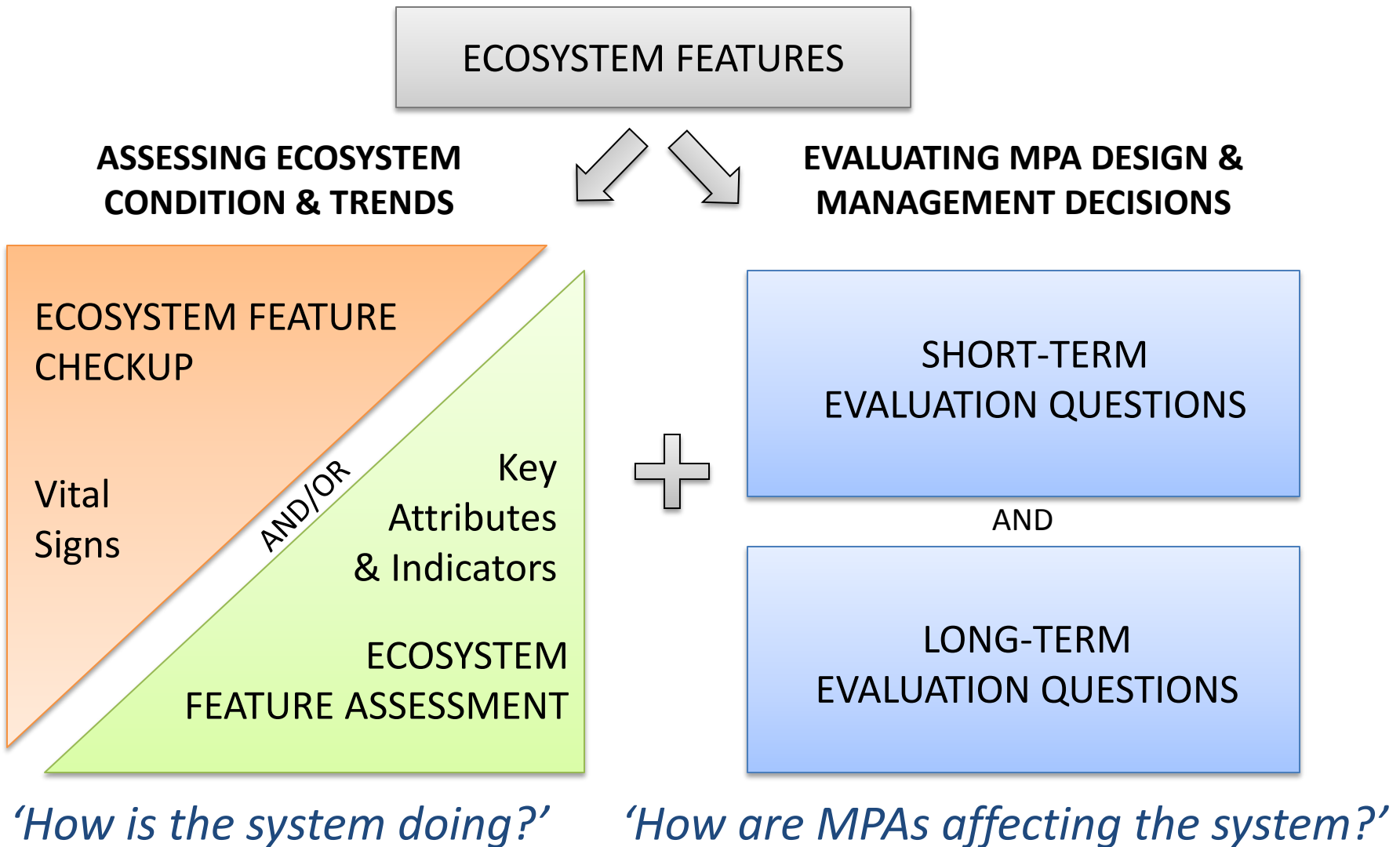
# What are Ecosystem Features?

A small number of targets for monitoring that collectively represent and encompass a region



- Together give a good sense of how the region is doing
- Encompass ecosystems and human uses

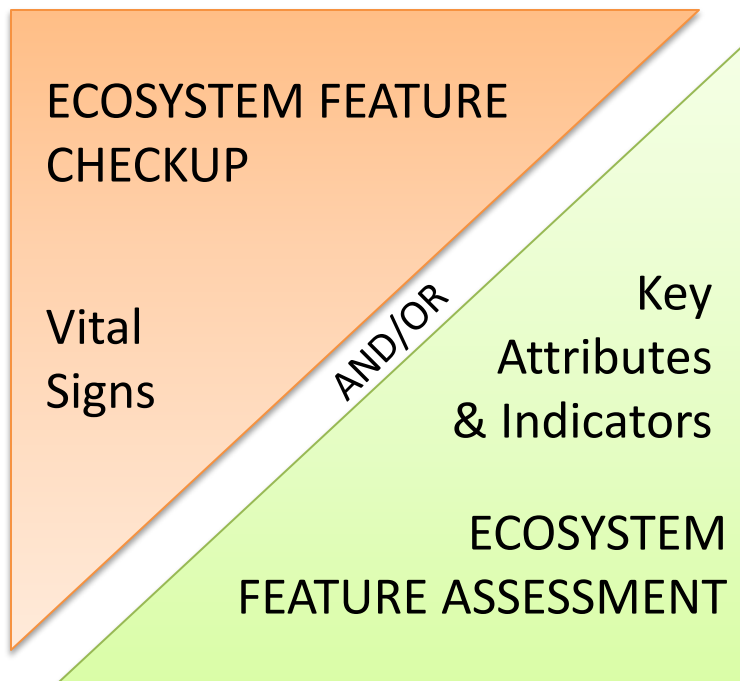
# MPA Monitoring Framework



# MPA Monitoring Framework

ECOSYSTEM FEATURES

ASSESSING ECOSYSTEM  
CONDITION & TRENDS



Taking the pulse of ecosystems

*'How is the system doing?'*

# MPA Monitoring Framework

ECOSYSTEM FEATURES



**EVALUATING MPA DESIGN &  
MANAGEMENT DECISIONS**

SHORT-TERM  
EVALUATION QUESTIONS

AND

LONG-TERM  
EVALUATION QUESTIONS

*Management  
action*



*Specific  
effect*

*'How are MPAs affecting the system?'*

# Example evaluation questions



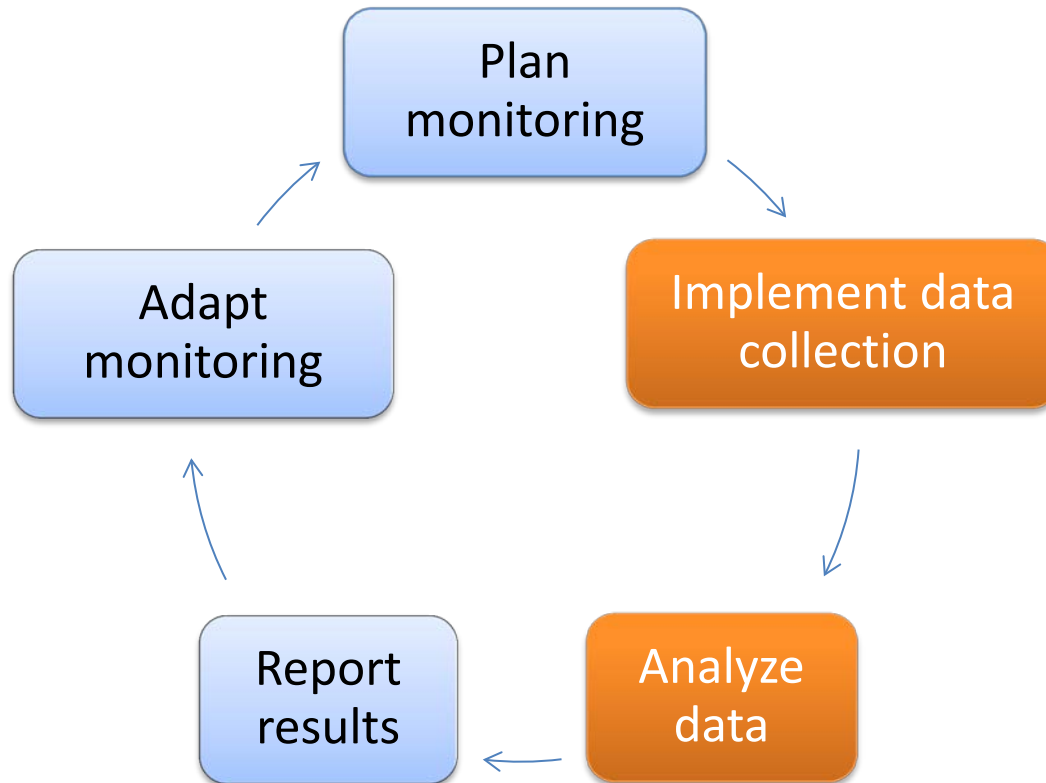
What are the effects of **visitation** on rocky intertidal ecosystems in MPAs?

What are the effects of **'splitting a reef'** on sustaining fisheries outside the MPA and protecting rockfish inside the MPA?



# The Monitoring Cycle

First step = baseline monitoring



# Baseline Program

## **Implemented as a collaboration among four organizations:**

California Ocean Protection Council, California Ocean Science Trust, California Sea Grant, and California Department of Fish & Wildlife

## **Baseline Program Purposes**

### *Baseline Characterization*

To provide a summary description, assessment, and understanding of ecological and socioeconomic conditions, or 'benchmark' in the North Central Coast region, inside and outside MPAs, against which future MPA performance can be measured

### *Assessment of Initial Changes*

To document initial ecological changes and the short-term net socioeconomic benefits or costs following MPA implementation

# Status of the Baseline Programs

## North Coast

Baseline Program Proposals under review  
Monitoring Planning ongoing

## North Central Coast

Baseline Program nearing completion

## Central Coast

Baseline condition reporting  
Updating monitoring planning  
Launching ongoing monitoring

## South Coast

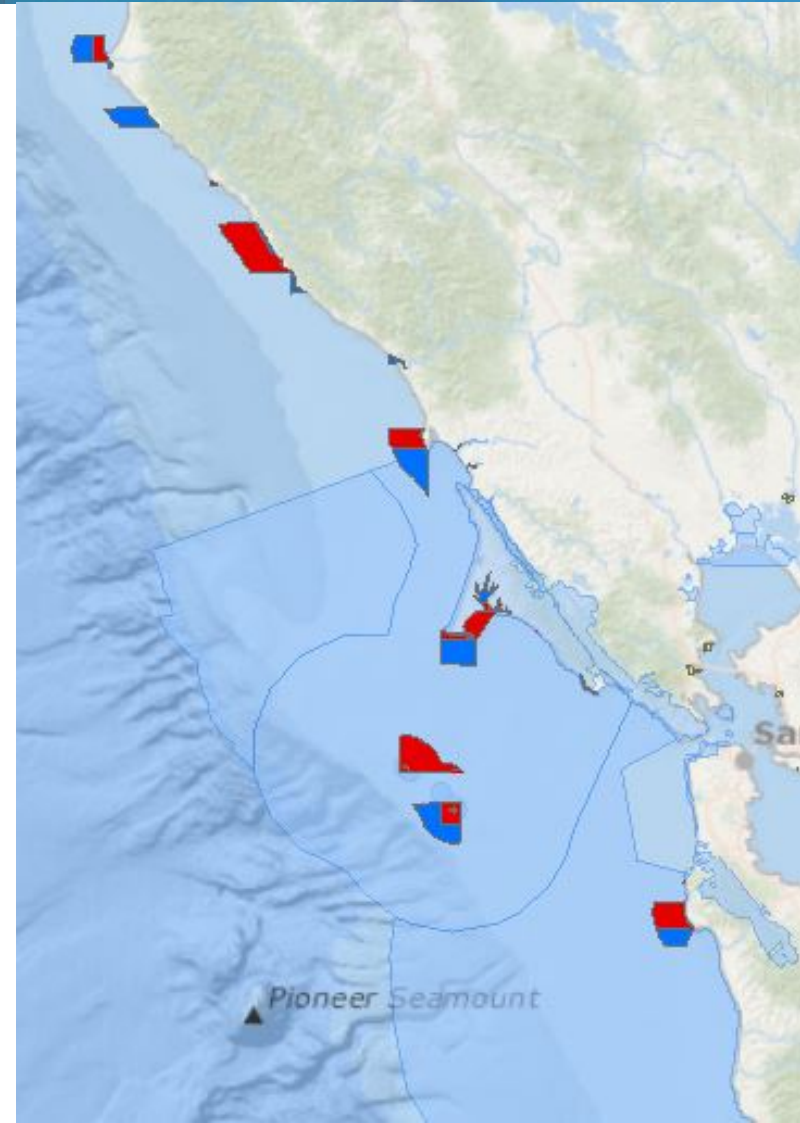
Baseline Program underway





# North Central Coast Region

- Alder Creek to Pigeon Point and Farallon Islands
- 25 new or modified areas covering approximately 20% of state waters in the region
- Overlap with boundaries of Gulf of the Farallones and Monterey Bay National Marine Sanctuaries



# Baseline Program projects

## Intertidal Ecosystem Features

### *Soft-bottom Intertidal and Beach Ecosystems*

Beach Watch (Kirsten Lindquist & Jan Roletto)

LiMPETS (Amy Dean)

Multiple institutions (Karina Nielsen, Steven Morgan & Jenny Dugan)

PRBO (Dan Robinette) & USFWS (Gerry McChesney) – *seabirds*



### *Rocky Intertidal Ecosystems*

LiMPETS (Amy Dean)

PISCO/UCSC (Pete Raimondi)



# Baseline Program projects

## Subtidal Ecosystem Features

### *Kelp and Shallow Rock Ecosystems*

PISCO/UCSC (Mark Carr)

PRBO (Dan Robinette) & USFWS (Gerry McChesney) – *seabirds*

Reef Check California (Jan Freiwald)



### *Subtidal Soft-bottom, Mid-depth Rock, and Deep Ecosystems*

CSUMB (Lindholm) & MARE (Rosen) – *ROV*

PRBO (Dan Robinette) & USFWS (Gerry McChesney) – *seabirds*

### *Nearshore Pelagic Ecosystems*

PRBO (Dan Robinette) & USFWS (Gerry McChesney) – *seabirds*

# Baseline Program projects

## Human Uses

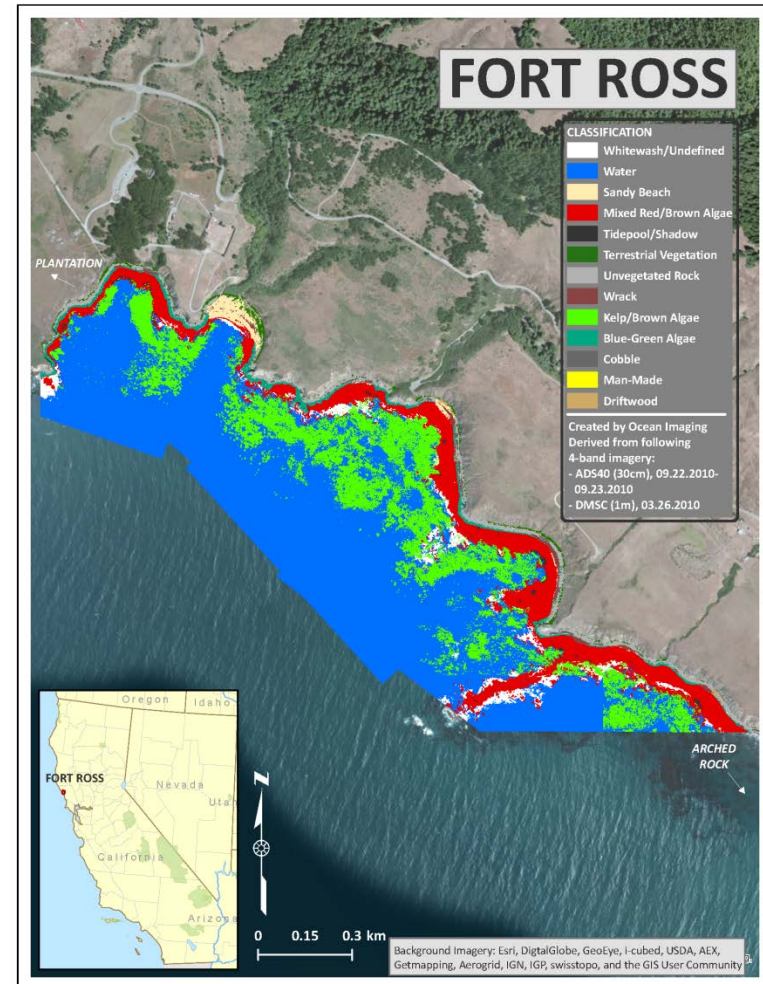
Ecotrust (LaFranchi, Sheeran, Steinback) – *consumptive and non-consumptive uses*

Beach Watch (Lindquist, Roletto) – *consumptive and non-consumptive uses*

## Other

Ocean Imaging Inc. (Jan Svejkovsky) – *habitat mapping*

Farallones Institute (Bill Sydeman) – *characterization and indicators of oceanographic conditions*



# Baseline Program Status

The screenshot shows the OceanSpaces website interface. At the top, there is a navigation bar with the OceanSpaces logo on the left and a search bar on the right. Below the search bar, there are several menu items: WELCOME, CONNECT, BLOG, LEARN, EXPLORE, and DATA. A user is logged in as 'Erin', and there are links for MY PROFILE, DASHBOARD, WORKSPACE, and UPLOAD DATA. The main content area is titled 'data on oceanspaces' and features a search bar, a list of 'baseline data' (North Central Coast, Central Coast, South Coast), and a section for 'projects with data'. The main text describes the MPA monitoring program and provides information on how to access and download data. At the bottom, there are logos for MPA Monitoring Enterprise and California Ocean Science Trust, along with a footer containing contact information and a list of links (FAQ, Site map, Photo credit, Privacy, Terms of use).

## Data

Data collection complete (2012)  
Submitted and reviewed (QA/QC)  
Publicly available on OceanSpaces

## Final technical reports

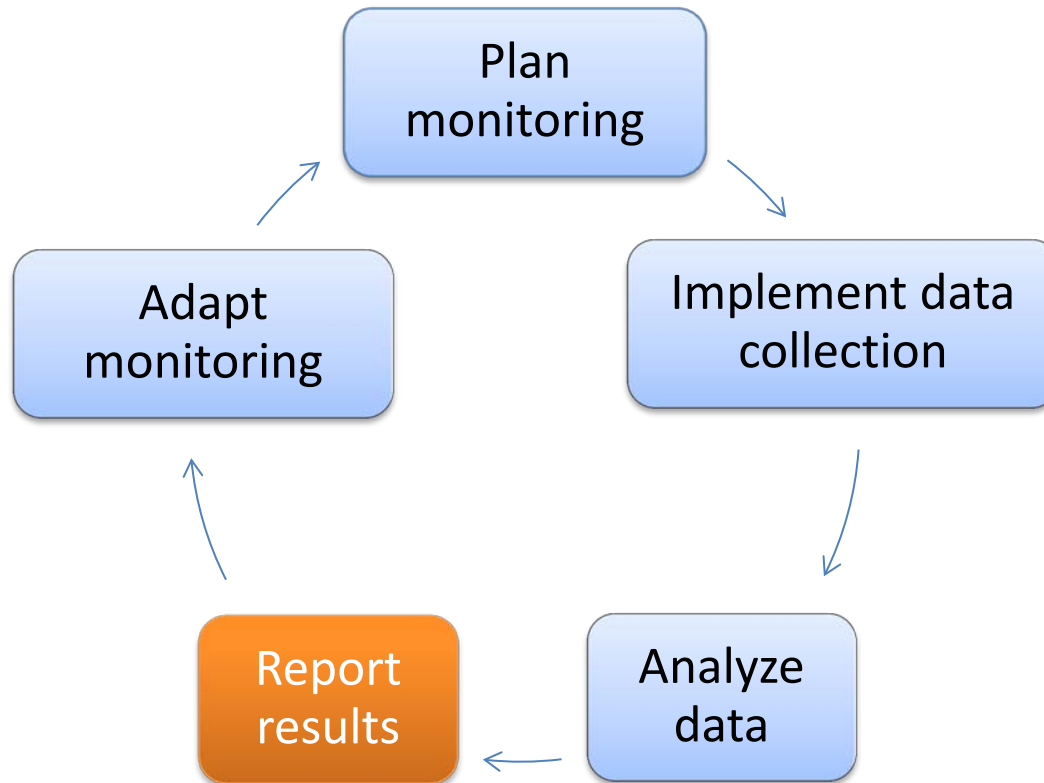
Submitted and peer-reviewed  
Report revisions ongoing

## Public reports

Summary report (early 2014)  
State of the Region report (2015)

# The Monitoring Cycle

Providing useful information to inform decisions



# Building a monitoring community

*“OceanSpaces is an online community that fosters new knowledge of ocean health. Here you'll find opportunities to communicate, create and share information among everyone with a stake in the health of California's oceans — scientists, fishermen, policymakers and citizens.”*

***A shared body of scientific knowledge becomes the basis for participation in ocean resource management and stewardship.***

The screenshot shows the OceanSpaces website with a navigation bar at the top containing 'WELCOME', 'CONNECT', 'BLOG', 'LEARN', 'EXPLORE', and 'DATA'. Below the navigation bar, there is a main content area featuring a 'Commercial Fishing Revenues by Port' chart, a map of the Central Coast MPA, and a 'New interactive e-book for the Central Coast MPA Baseline Monitoring Results now available' announcement. The website is organized into several sections: 'join oceanspaces!' with a description of the community, 'monitoring in action' with a video player, 'featured members' with a list of groups, 'new on oceanspaces' with a link to an e-book, 'explore mpas' with an interactive map, and 'community updates' with a list of recent news items. The footer includes the MPA Monitoring Enterprise logo, the California Ocean Science Trust logo, and copyright information for 2013.