

# California's Marine Protected Area Monitoring Action Plan

Sara Worden, Environmental Scientist

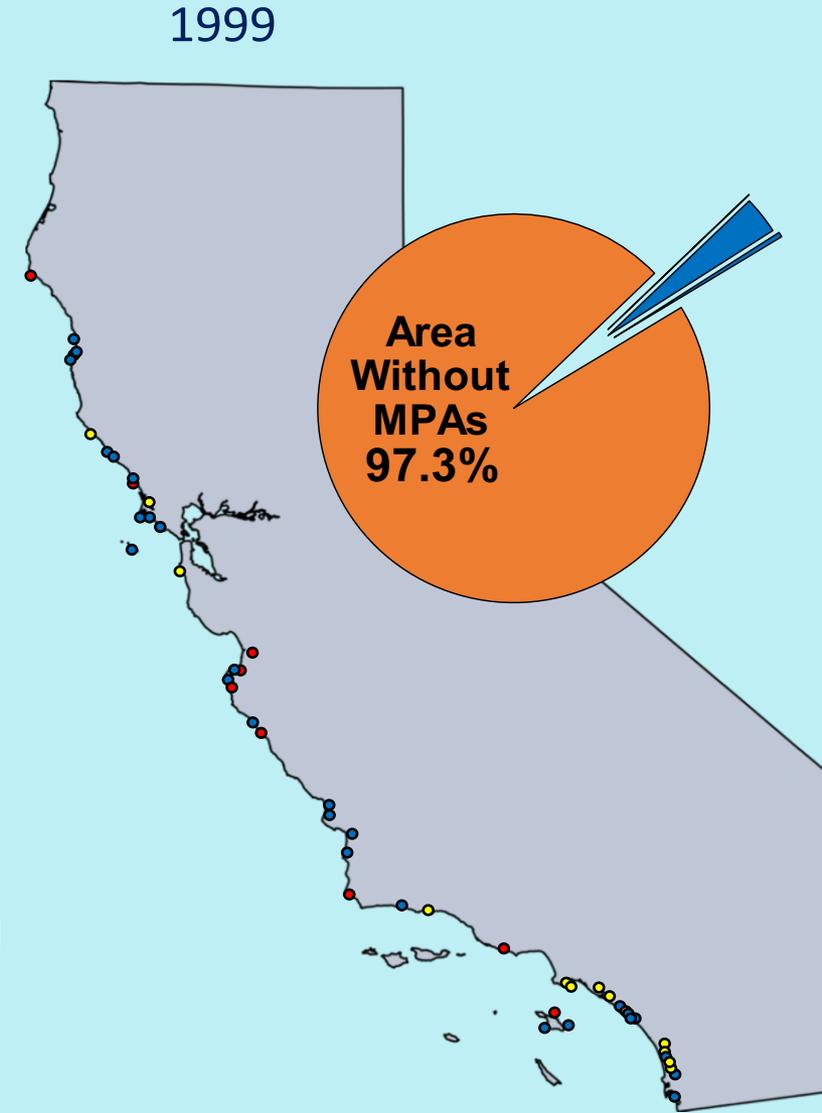
MBNMS Advisory Council Meeting, December 14, 2018  
Monterey, CA





# Marine Life Protection Act (MLPA)

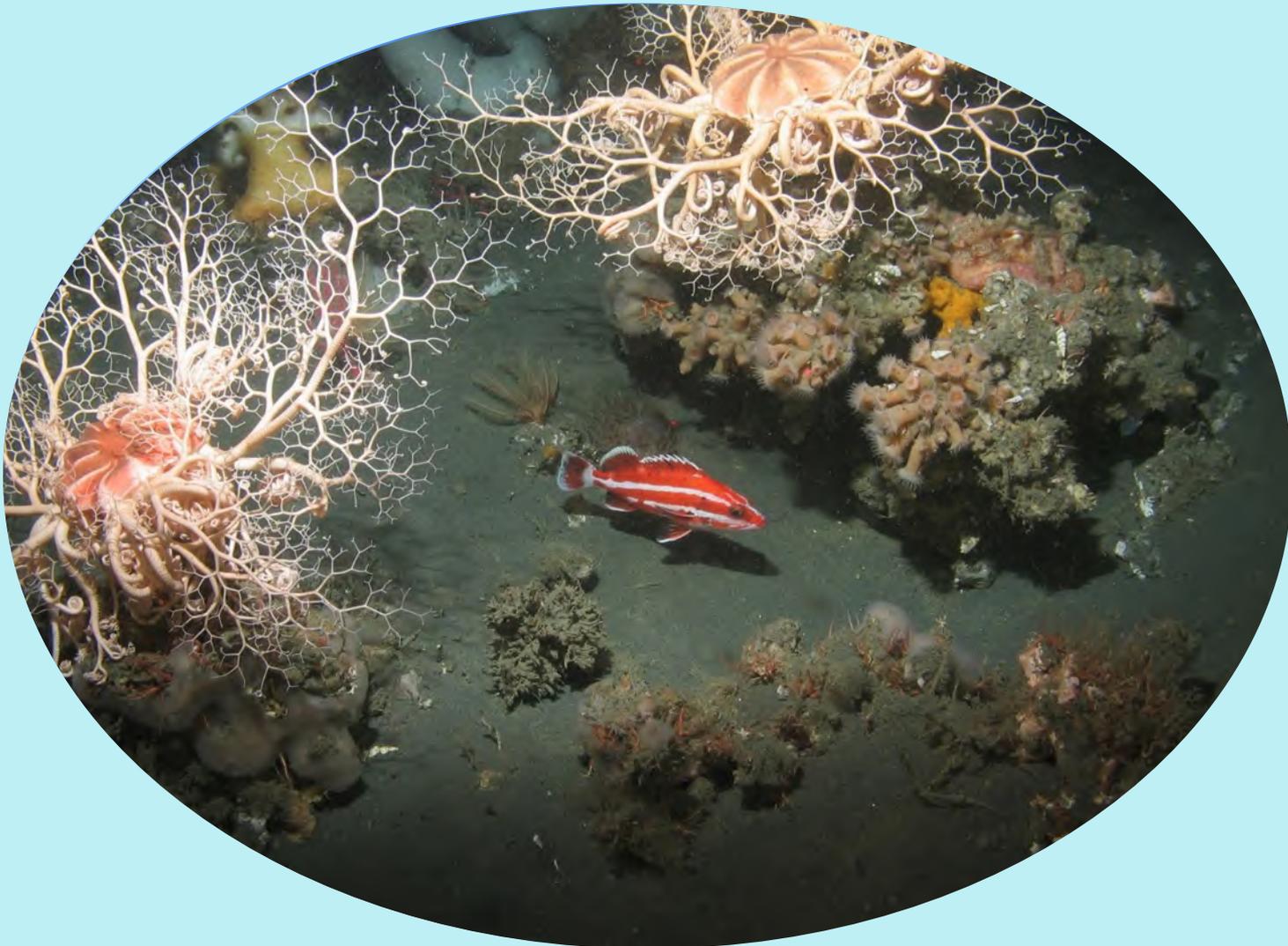
- Requires redesign of California's system of MPAs
- Applies to state waters (0-3 miles offshore), including offshore islands
- Fish and Game Commission authority to adopt MPAs





# Marine Life Protection Act (MLPA)

## *Ecosystem-based approach*





# MLPA Goals

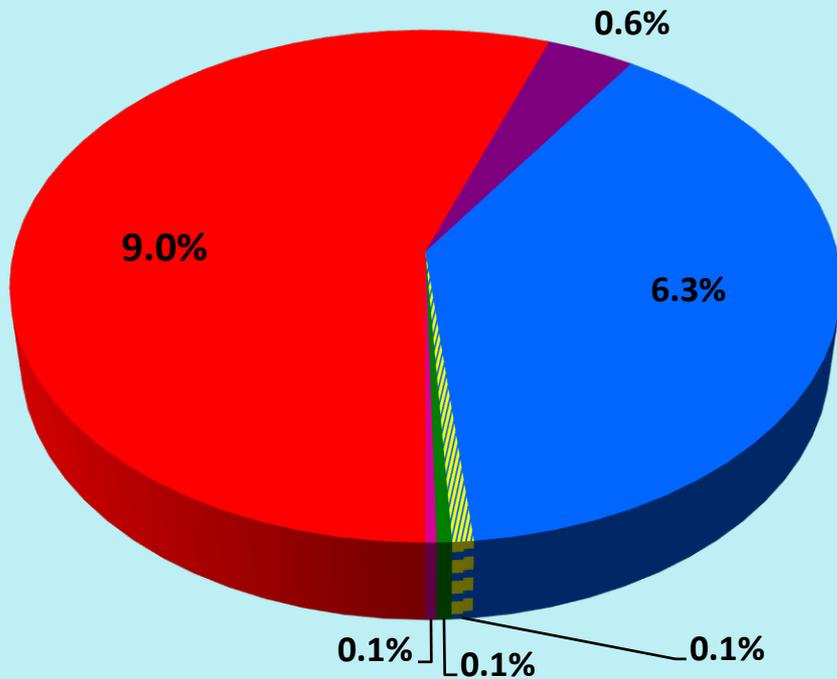
1. To protect the natural diversity and function of **marine ecosystems**.
2. To help **sustain and restore** marine life populations.
3. To **improve recreational, educational, and study opportunities** in areas with minimal human disturbance.
4. To protect representative and unique **marine life habitats**.
5. To ensure California's MPAs have clear objectives, effective management, adequate enforcement, and **are based on sound science**.
6. To ensure that MPAs are **designed and managed as a network**.



\* Note that this language paraphrases the MLPA goals, FGC § 2853



# California's MPA Network



- State Marine Reserve
- State Marine Conservation Area (SMCA)
- SMCA (No-Take)
- SMCA / State Marine Park
- State Marine Recreational Management Area
- Special Closures





# The MPA Management Program



Outreach and Education



Research and Monitoring



Enforcement and Compliance



Policy and Permitting



# Statewide MPA Monitoring Program

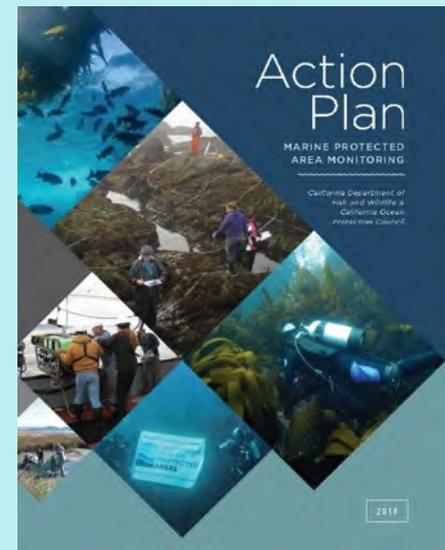
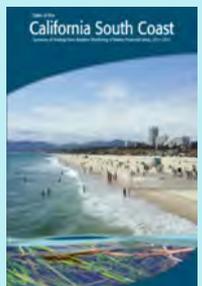
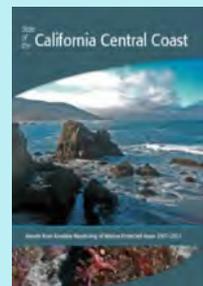
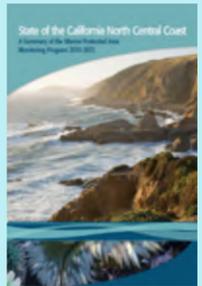
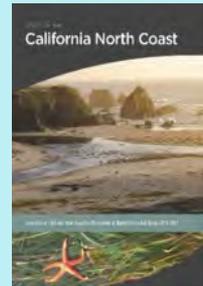
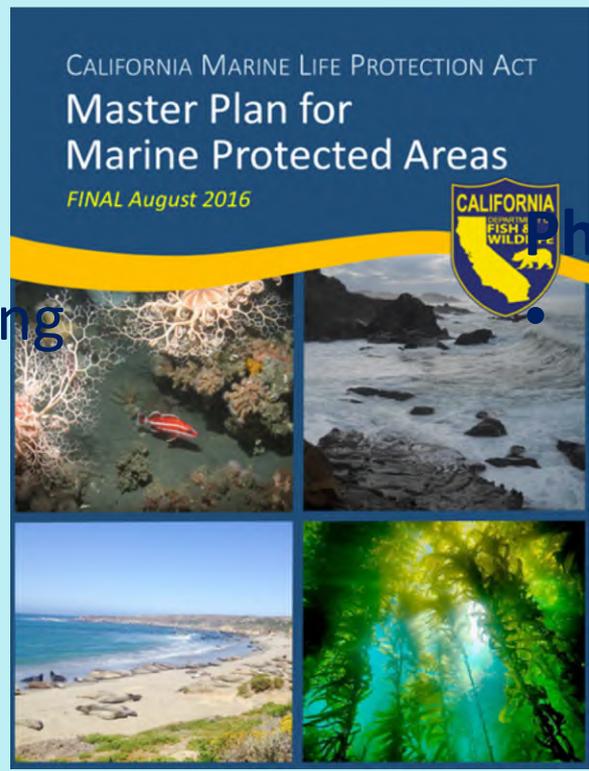
## Two-phase Approach

### Phase 1

- Baseline monitoring completed

### Phase 2

- Long-term monitoring in progress







# Key Components

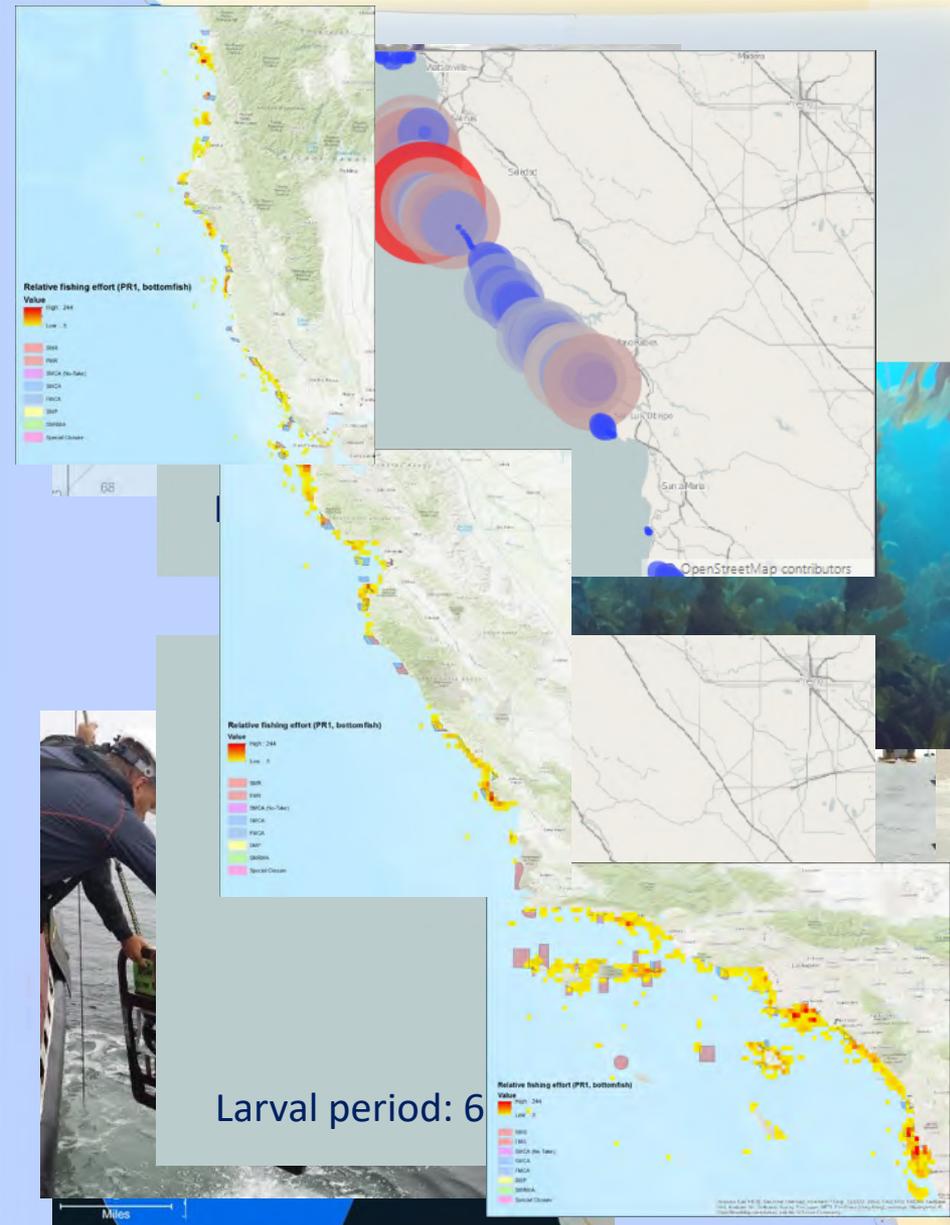
- Priority metrics to assess MPA performance
  - Species metrics
  - Community level metrics
  - Chemical and physical metrics
  - Human use metrics
- Tiered monitoring sites and species indicators
  - Index site selection
  - Indicator species selection





# Key Components: Site Selection

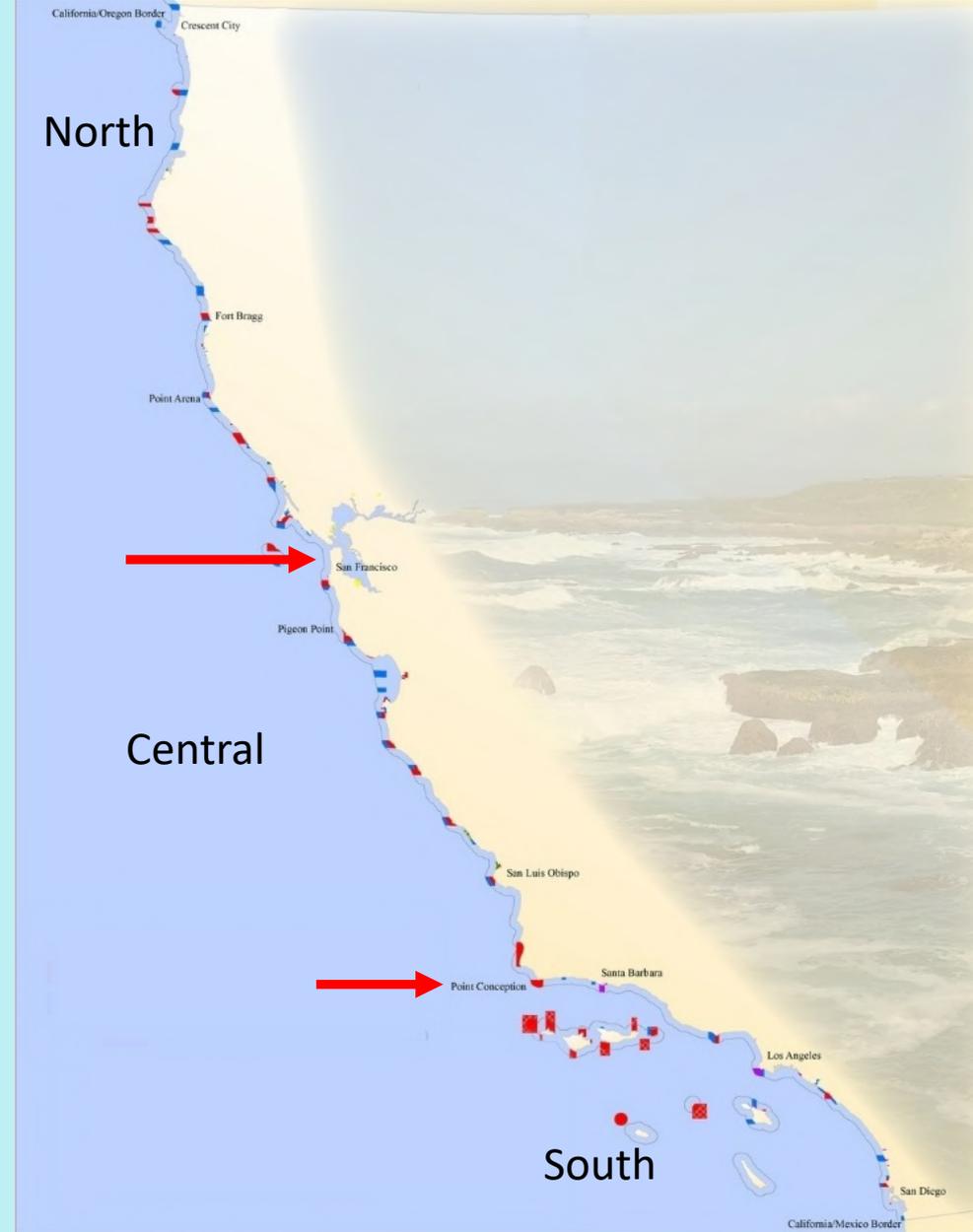
- MPA design features
- Historical monitoring programs
- Connectivity matrix modeling
- Local historical recreational fishing effort





# Key Components: Site Selection

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# Key Components: Species Selection



**Regional monitoring plans**



**Deep water workshops**



**MLMA recommendations**



**Special status species**



# Key Components: Indicator Species



**Fish**



**Invertebrates**



**Algae and plants**



**Birds**



# Key Components, continued

- Incorporate Traditional Ecological Knowledge
- Leverage other existing monitoring programs and approaches
- Apply novel, emerging quantitative analyses





# Network Performance Evaluations

- Unique partnership between CDFW and UC Davis: co-mentor 3 post docs:
  - Setting expectations for population recovery
  - Estimating local fishing mortality and MLMA/MLPA integration
  - Designing effective monitoring protocols for mid-depth/deep rocky reef habitats





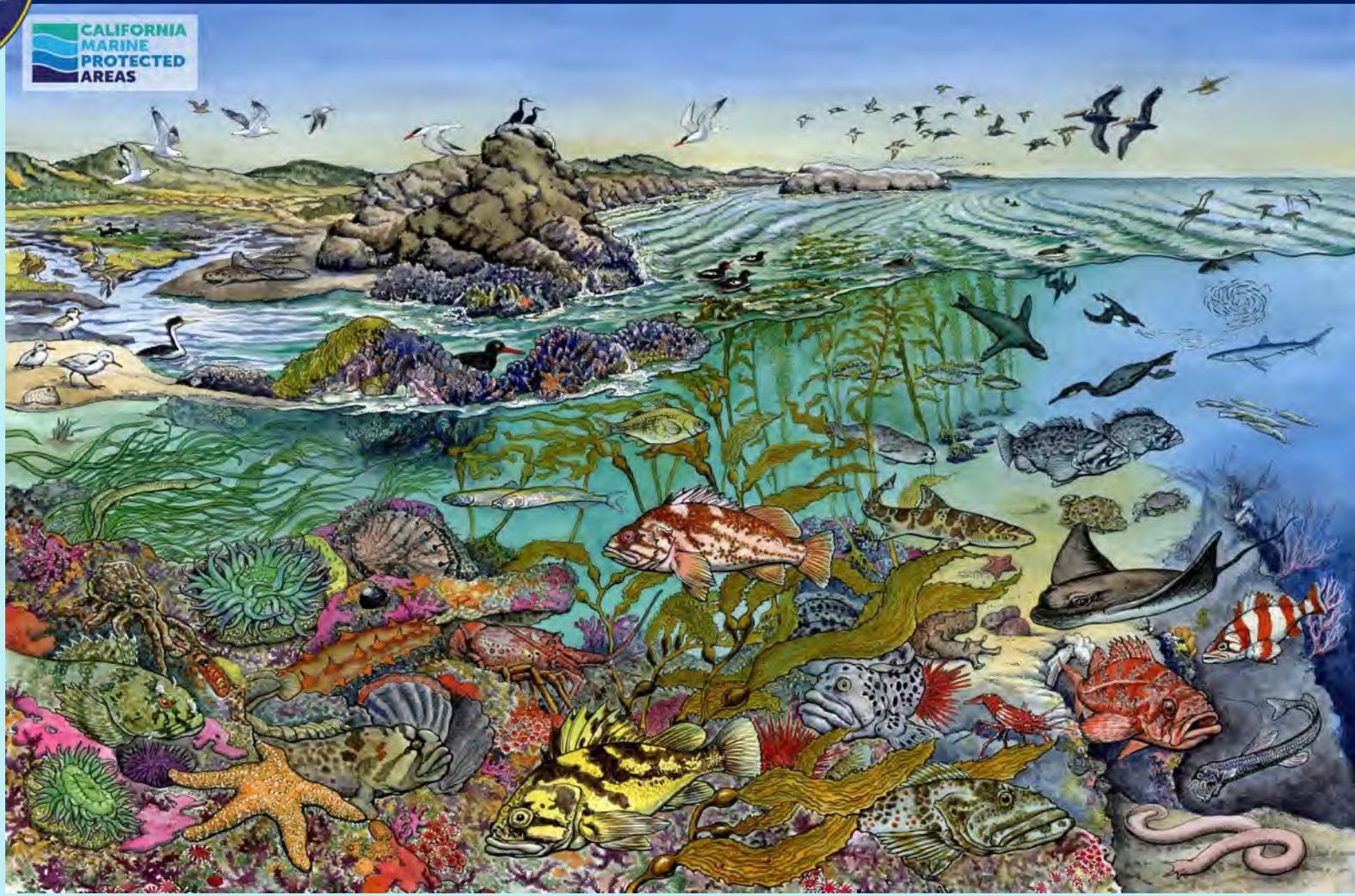
# Long-term Monitoring Priorities

- Long-term monitoring projects should:
  - Prioritize Tier I index sites
  - Monitor Tier II and III when appropriate
  - Prioritize indicator species
- Efficient data collection, broad evaluation of Network performance





# Thank you!



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[www.wildlife.ca.gov/Conservation/Marine/MPAs](http://www.wildlife.ca.gov/Conservation/Marine/MPAs)