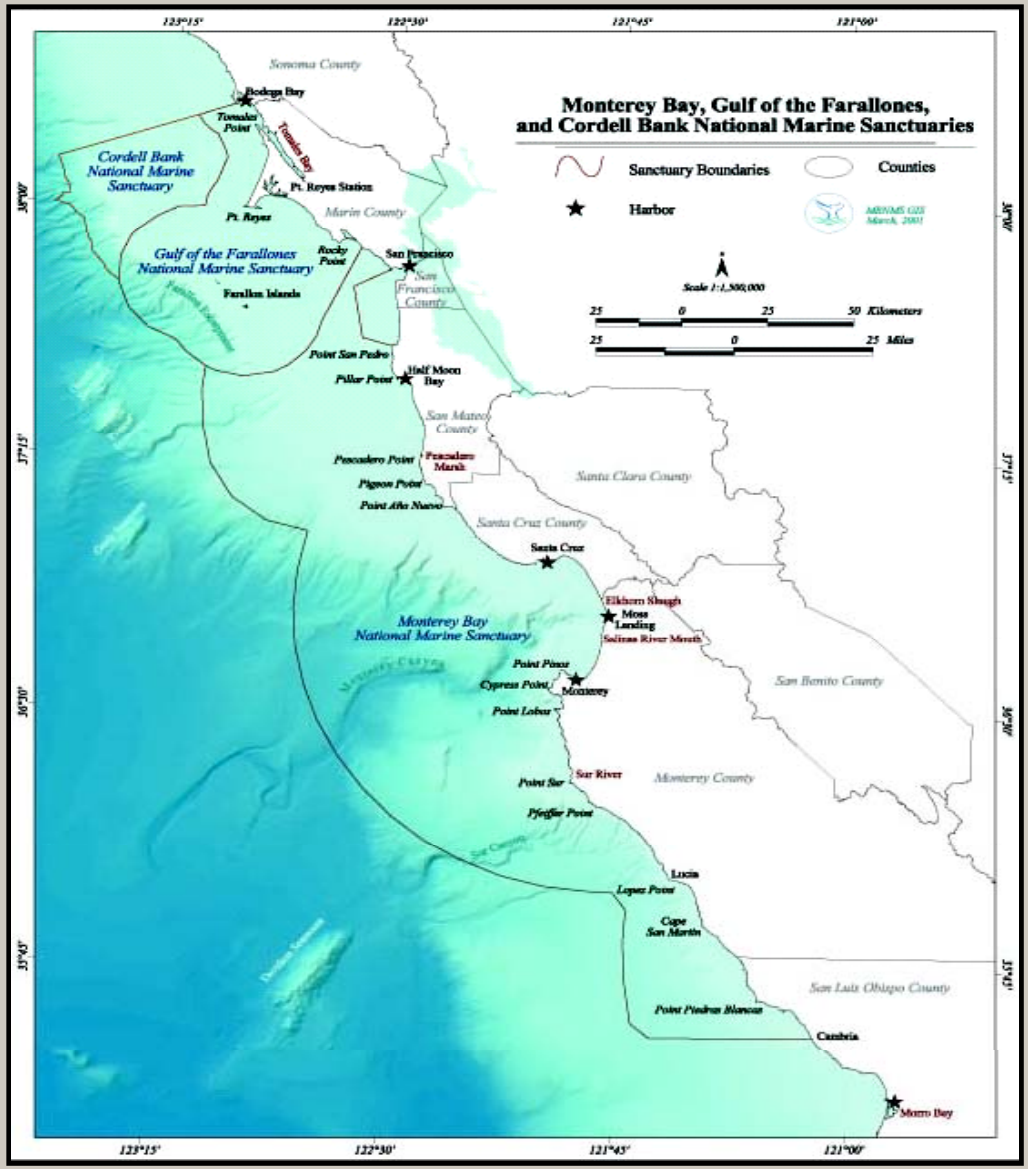
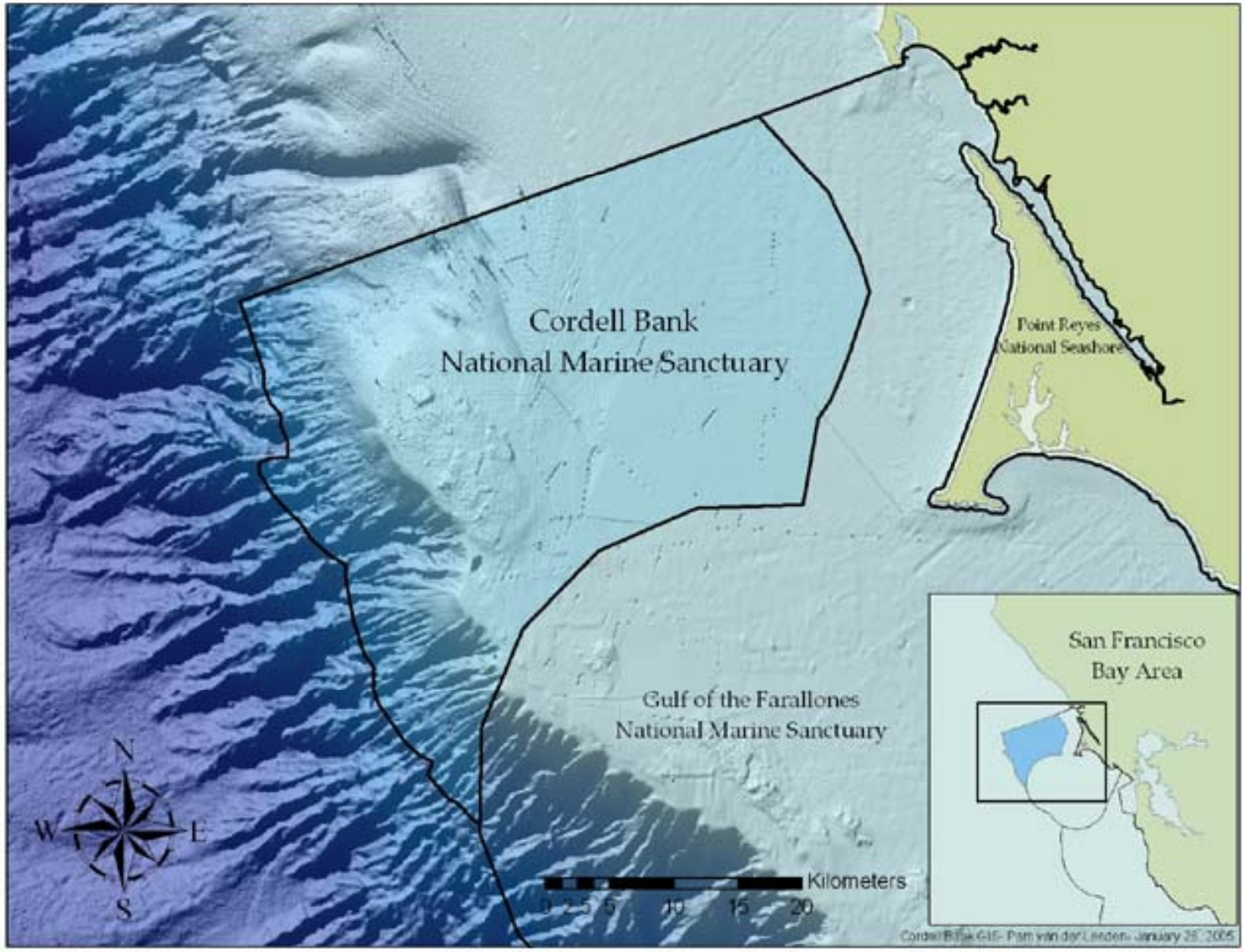
National Marine Sanctuaries in California

Northern and Central California Sanctuaries



- **Cordell Bank**
- **Gulf of the Farallones**
- **Monterey Bay**

Cordell Bank National Marine Sanctuary

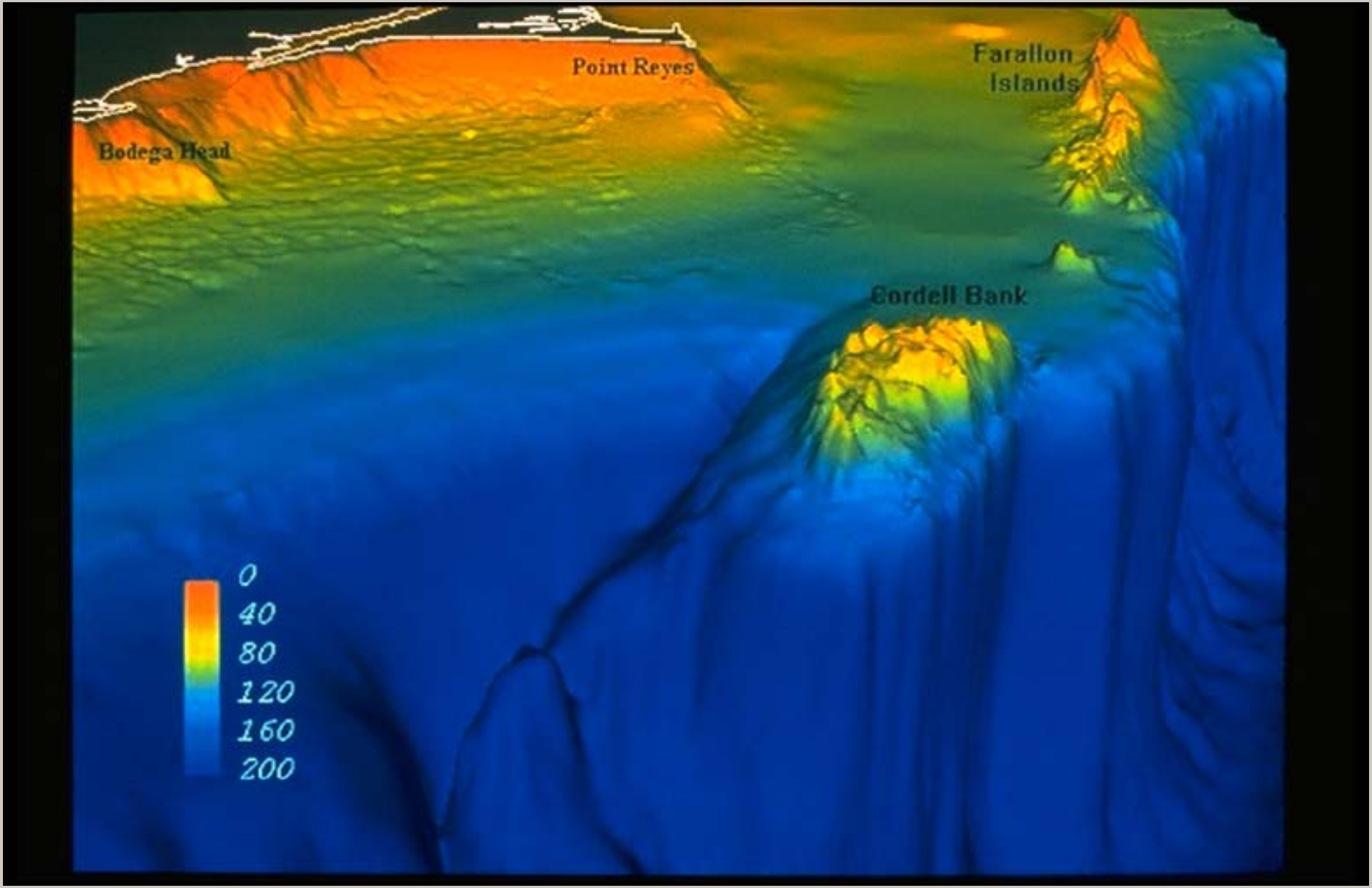


Constituent Input

Public Input in the Review Process

1. Sanctuary Advisory Council
2. Public Scoping Meetings
3. **Conservation Science Working Group**
4. Informational Workshops
5. Public Comment Meetings

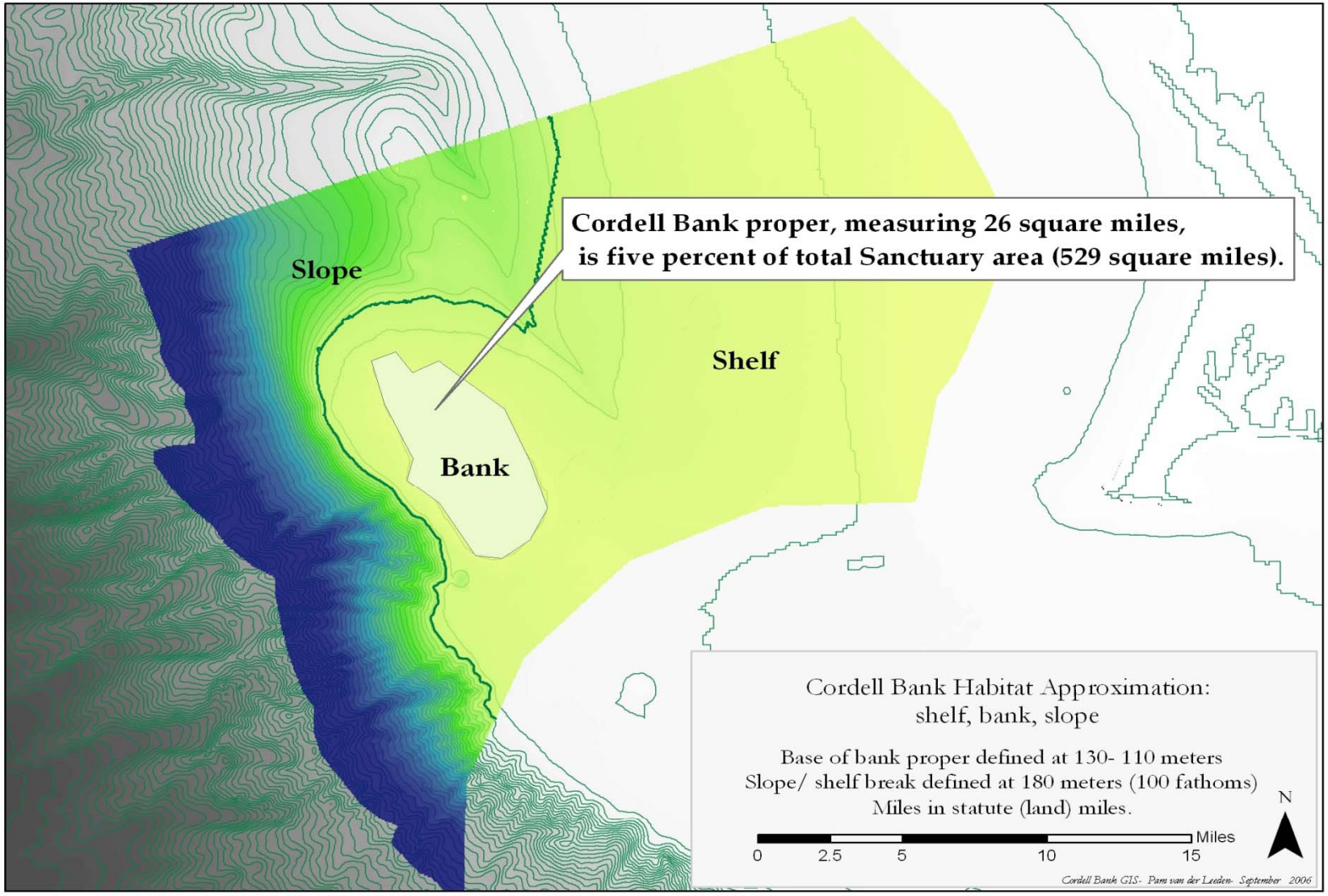
Cordell Bank



Hard Bottom

Hard Bottom

% Hard and Soft Bottom Substrate in CBNMS



Soft Bottom Substrate

Conservation Science Strategies

STRATEGY CS-3: ***Characterize the soft bottom habitats and epifaunal* communities of CBNMS.***

**epifauna are animals that live in contact with the sea bottom either moving freely over the substrate or attached to it*

STRATEGY CS-4: ***Characterize soft bottom infaunal* community of CBNMS.***

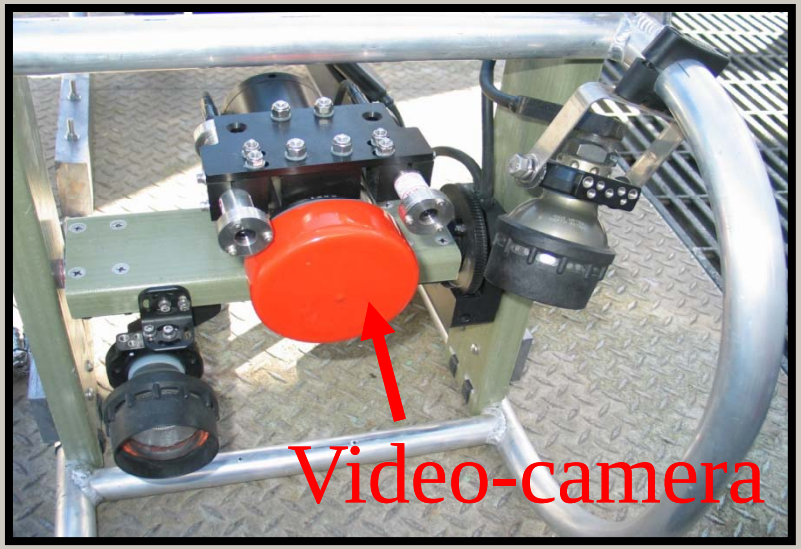
** infauna are animals that live within or burrow through substrate*

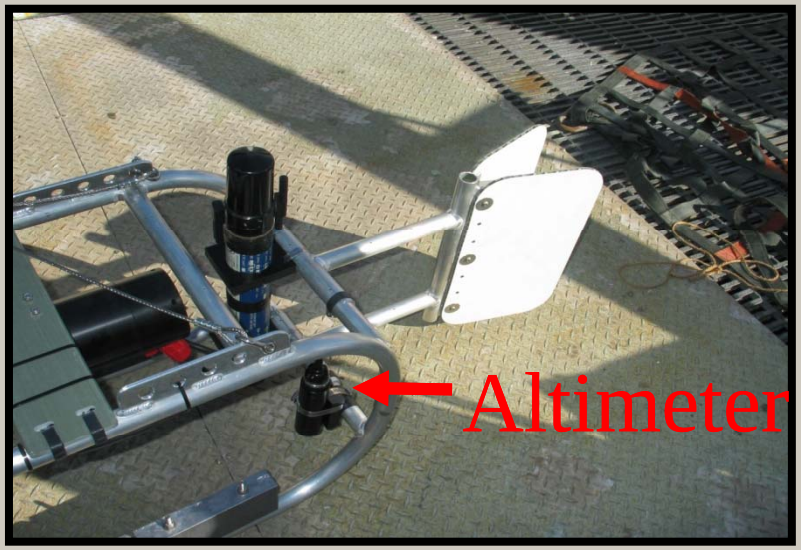
NOAA Ship McARTHUR

Sidescan Sonar Fish

-Klein 3000 system

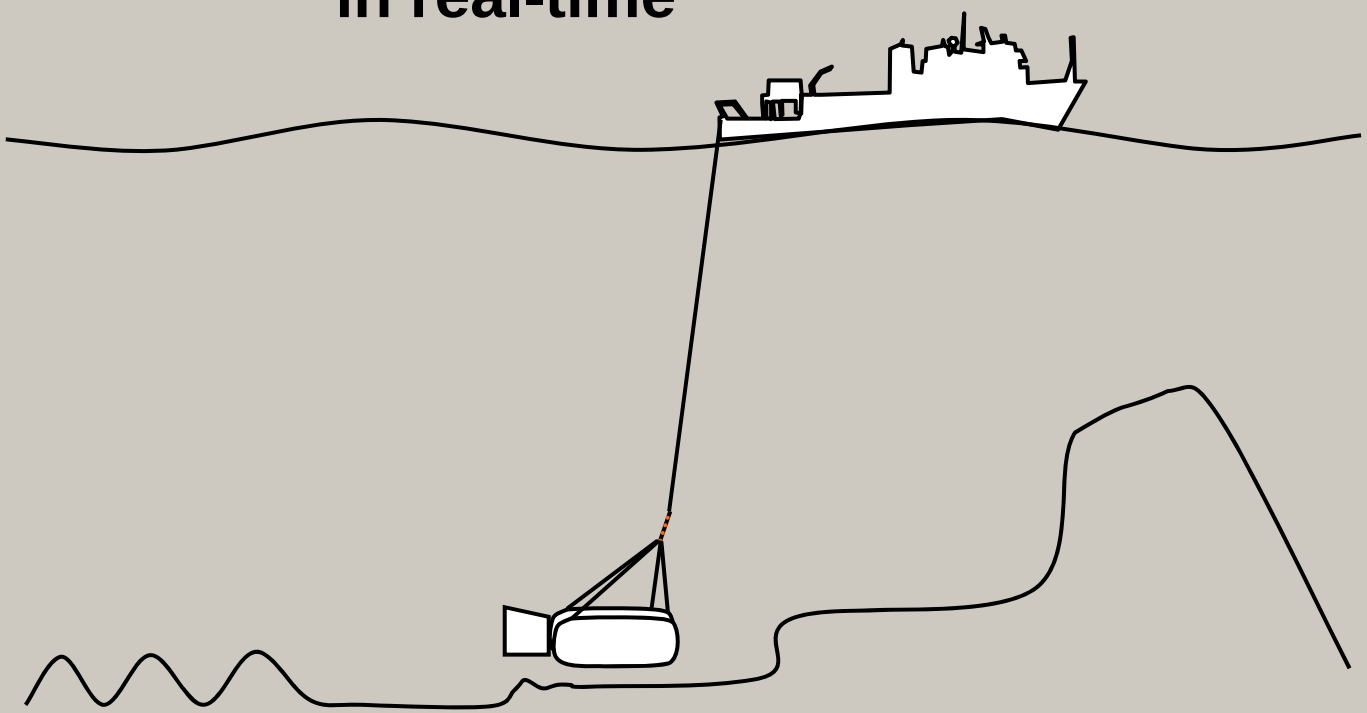
Camera-Sled





Deployment

- Towed behind vessel
- Altitude controlled by ship winch
- Video-image, altitude, and depth received in real-time

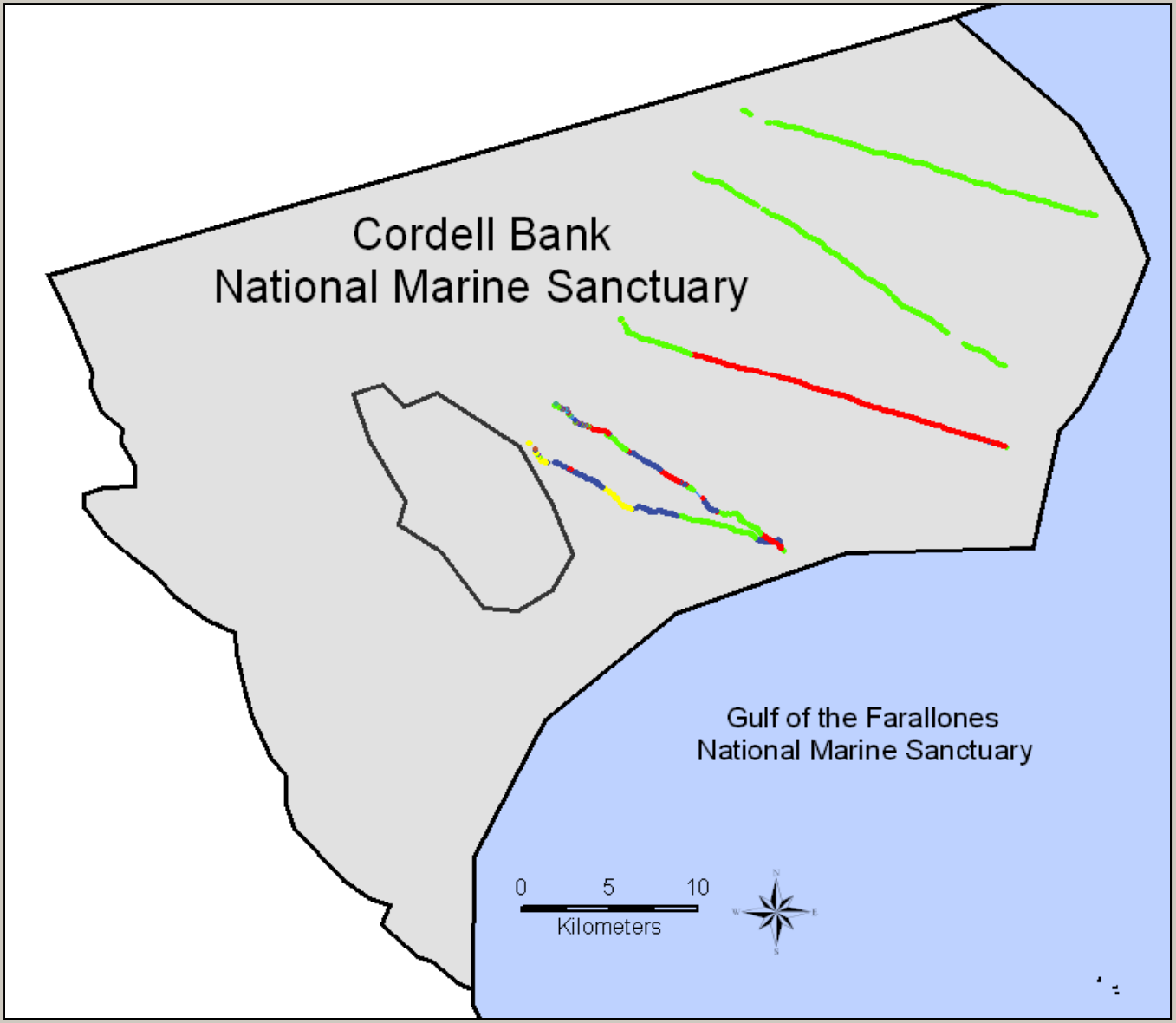


Camera-Sled enables continuous visual observations over large linear extents

Soft Bottom

Soft Bottom – Continental Shelf

Primary and Secondary Substrate Types

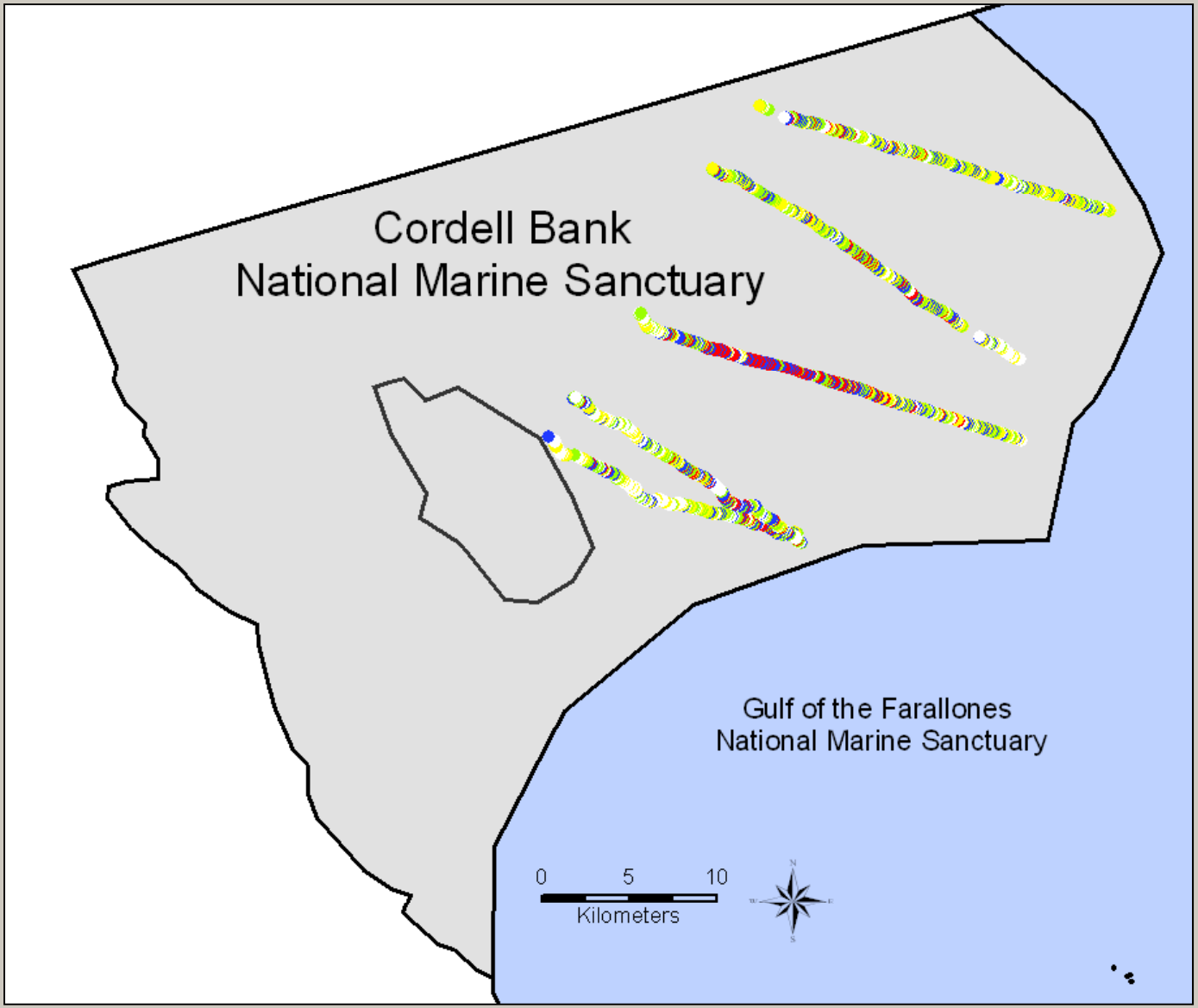


- mud, mud
- mud, sand
- sand, mud
- sand, sand

Cousin It

Dungeness Crab

Taxa Abundance



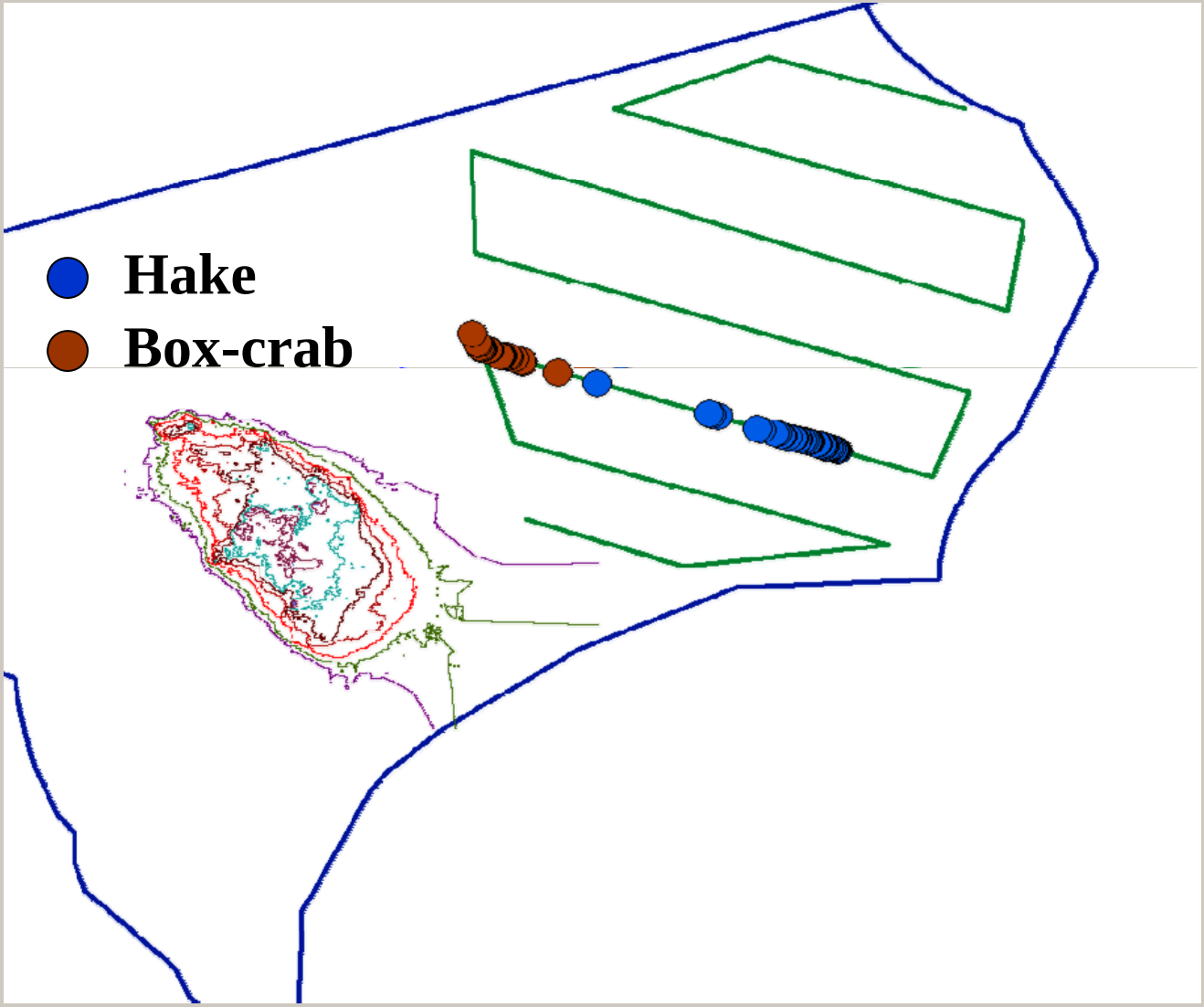
Low

High

Hake

Box Crabs

Species Distribution



Research Partners

- United States Geological Survey
- Monterey Bay National Marine Sanctuary
- National Marine Fisheries Service-Santa Cruz Laboratory
- California Academy of Sciences
- Washington State University

CBNMS - Management Plan Priority Issues

- **Education And Outreach**
  1. Community Outreach
  2. Outreach Tools
  3. Classroom Education
  4. Audience Assessment
- **Ecosystem Protection: Impacts from Fishing Activities**
  1. Monitor and Track Activities
  2. Evaluate Impacts
  3. Address Impacts
  4. Krill Harvesting
- **Partnerships with Community Groups**
  1. Research Community Partnerships
  2. Sanctuary Advisory Council
  3. Media Communications
  4. Fiscal Partnerships
- **Conservation Science**
  1. Oceanography
  2. Habitat Characterization
  3. Characterize Benthic Communities
  4. Specimen Collection
  5. Pelagic Monitoring
  6. Rocky Habitat Monitoring
  7. Data Management
- **Administration**
  1. Operations
  2. Enforcement
  3. Interagency Coordination
  4. Emergency Response
  5. Regulations and Permitting
  6. New and Emerging Issues
  7. Evaluation and Planning