

# Fishing Community Sustainability and Co-Management



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The Nature Conservancy  
Protecting nature. Preserving life.™



## Co-Management

What is it? And why is TNC involved?

## TNC Background in fishery

## Co-Management Examples & Outcomes

California quota risk pool

Community quota funds

## Co-Management advancing innovative research

Trawl habitat impact study

Rockfish Conservation Area assessment

Ilwaco selective lingcod trapping

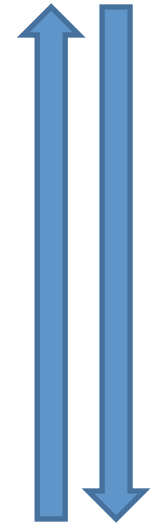
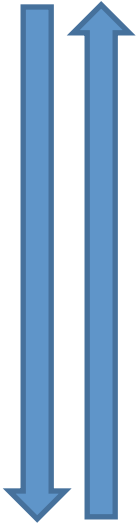
## MSA

How it helped

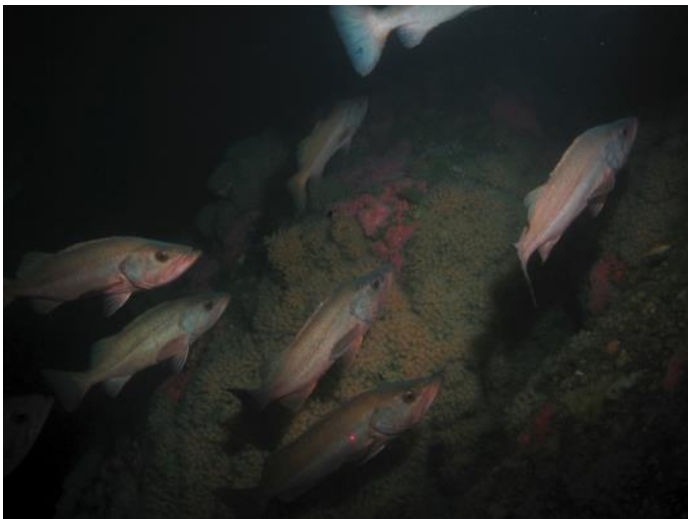
How it can do more

# Fishery Management Structure

PFMC/NMFS



Diverse resource and socioeconomics



# Fishery Management Structure

PFMC/NMFS

Academia



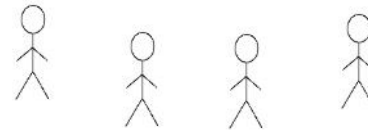
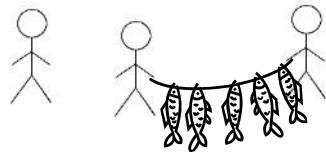
eNGOs

Fishing  
Communities

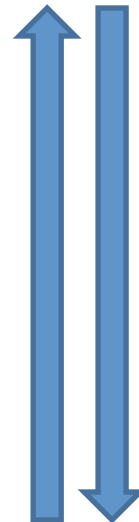
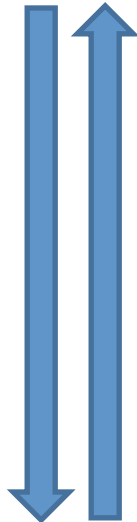


Fish  
Dependent  
Businesses

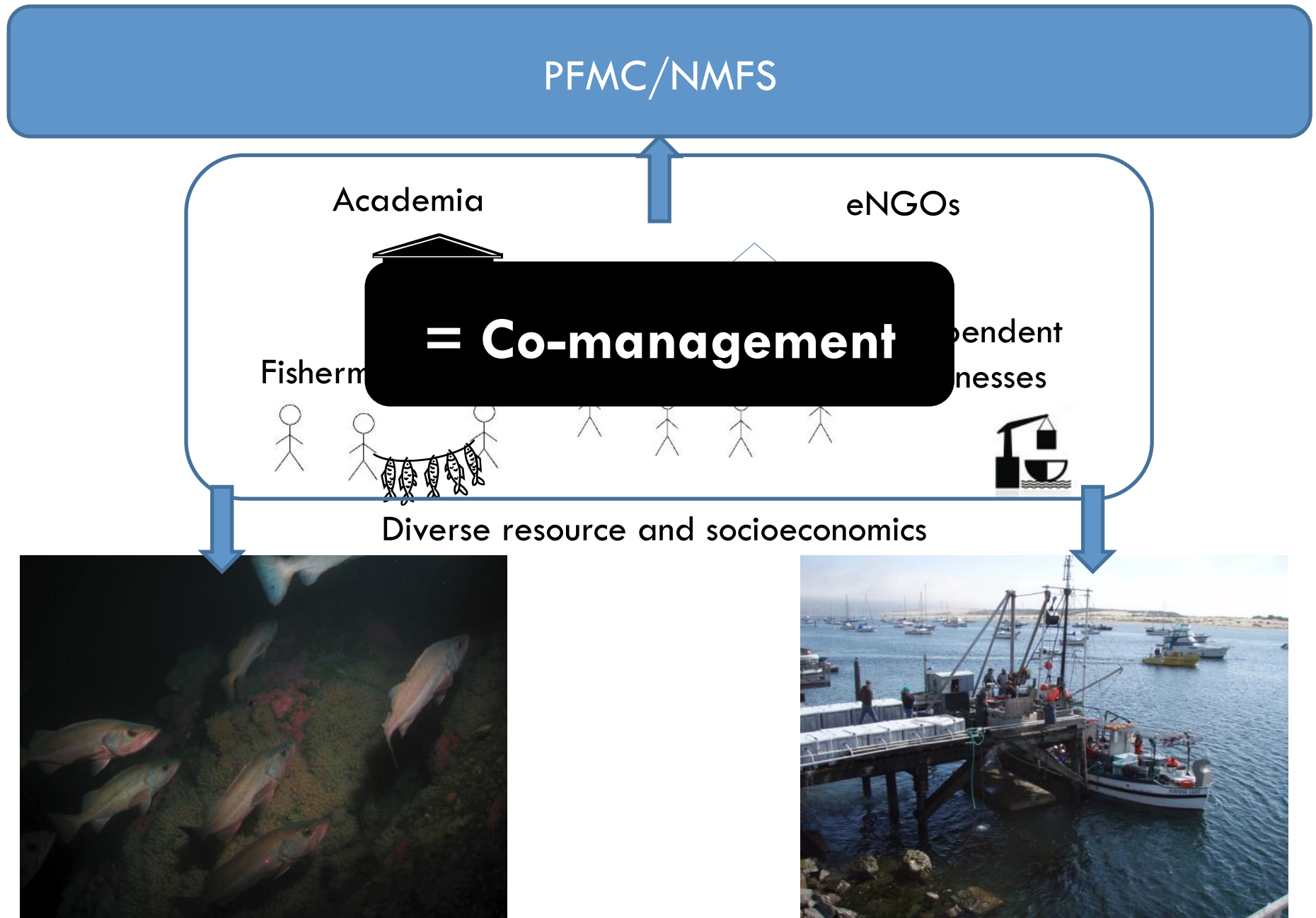
Fishermen



Diverse resource and socioeconomics

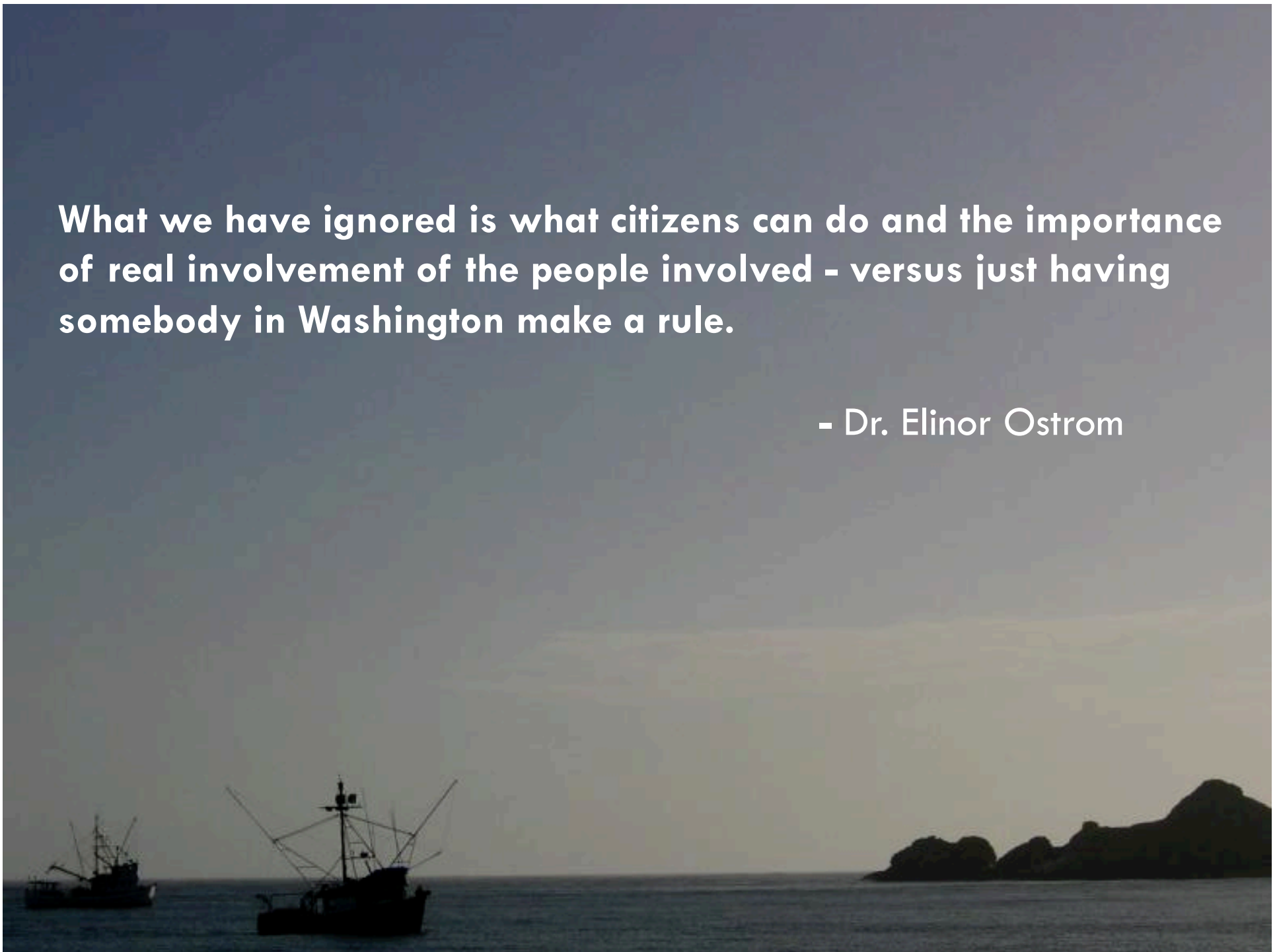


# Fishery Management Structure



**What we have ignored is what citizens can do and the importance of real involvement of the people involved - versus just having somebody in Washington make a rule.**

- Dr. Elinor Ostrom





Cape Mendocino

# The California Risk Pool

Ft. Bragg  
GF Association



TNC

~15 million lbs. of  
quota

San Francisco

Half Moon Bay

Half Moon Bay GF  
Marketing Assoc.



- Co-management
- Technology
- Collaborative research

Morro Bay

Santa Barbara

Point Conception

Central Coast  
Seafood Marketing  
Association





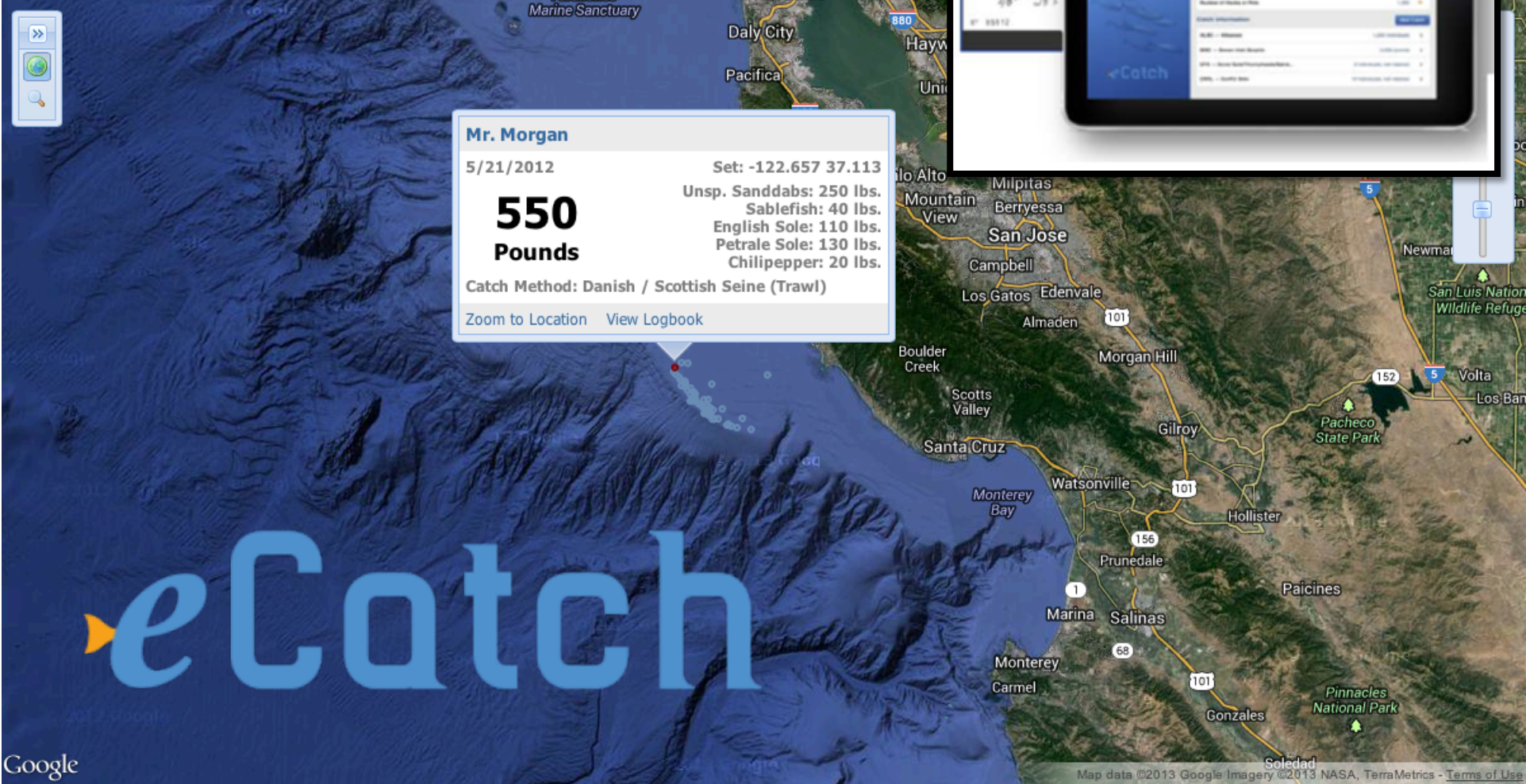
Vessels Species

April 1, April 7, 2012 May 1, 2012

0

2011

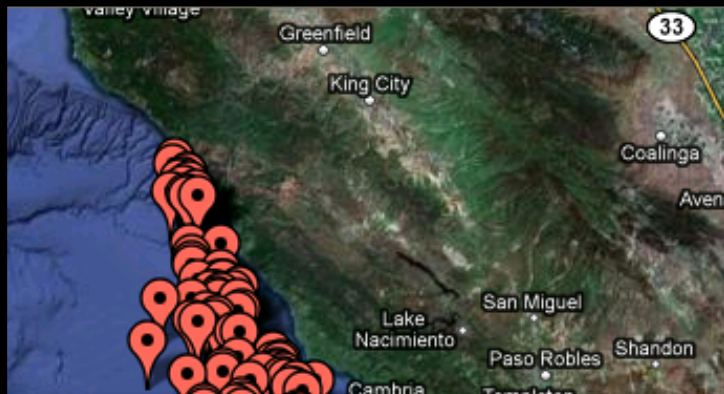
2012



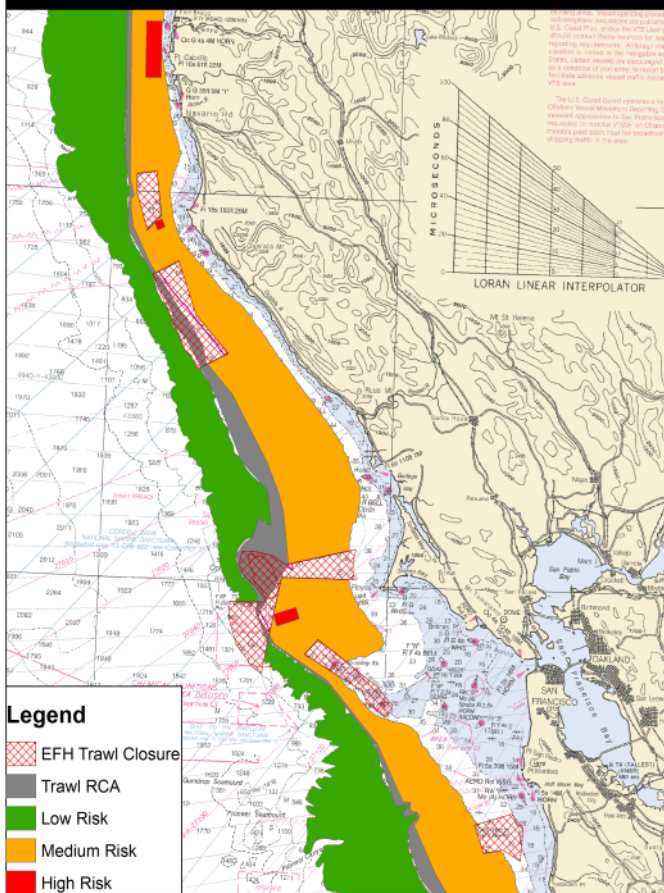
**Mr. Morgan**  
 5/21/2012 Set: -122.657 37.113  
**550 Pounds**  
 Unsp. Sanddabs: 250 lbs.  
 Sablefish: 40 lbs.  
 English Sole: 110 lbs.  
 Petrale Sole: 130 lbs.  
 Chilipepper: 20 lbs.  
 Catch Method: Danish / Scottish Seine (Trawl)  
[Zoom to Location](#) [View Logbook](#)



eCatch



### EXAMPLE Spatial Fishing Plan



# 2012 Risk Pool

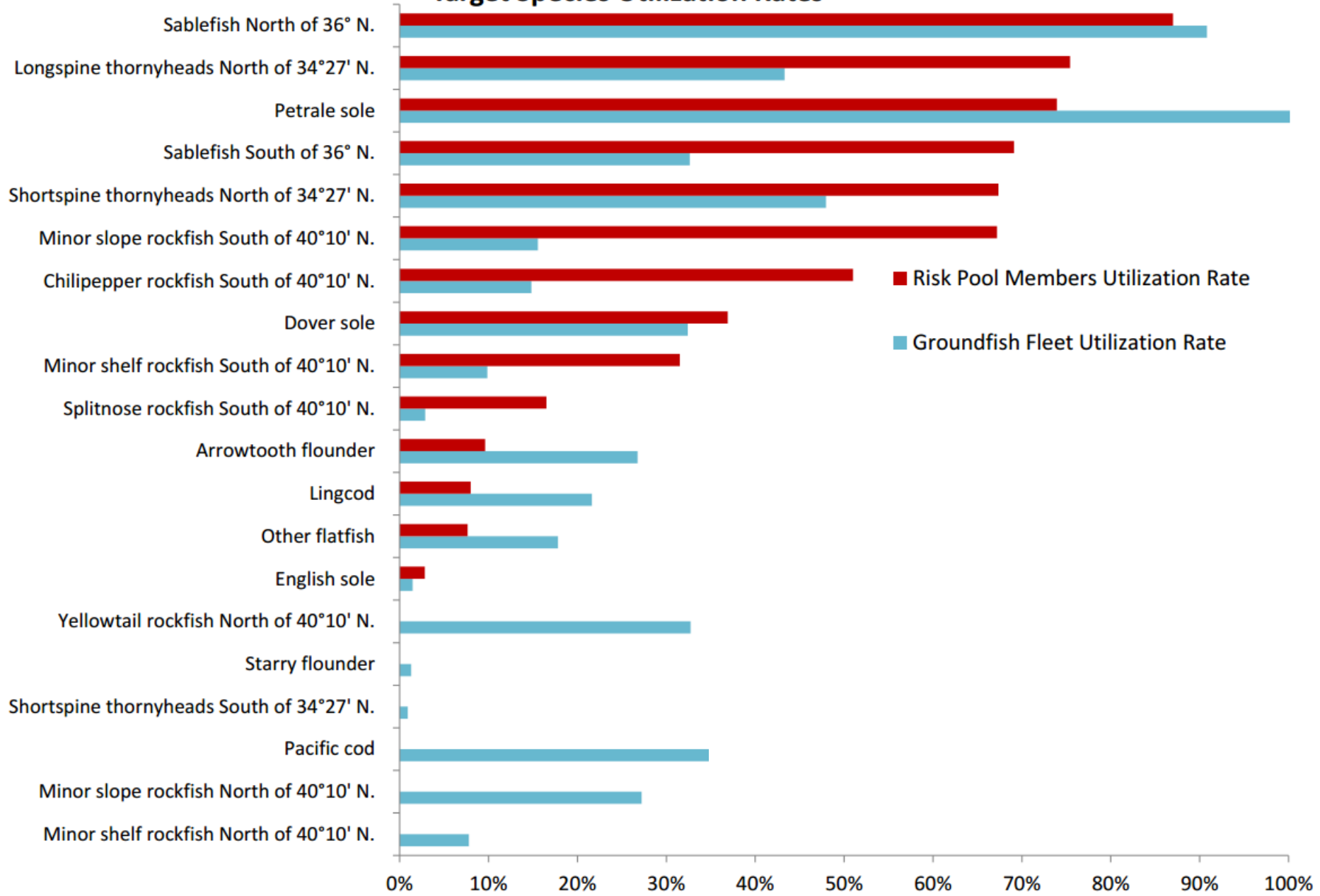
## By-catch Risk

for each set max of:  
 $(\text{total ofs} / \text{total catch}) * \text{risk weight}$

OFS includes:  
 Bocaccio, Widow, Darkblotch,  
 Canary, Cowcod, Yelloweye

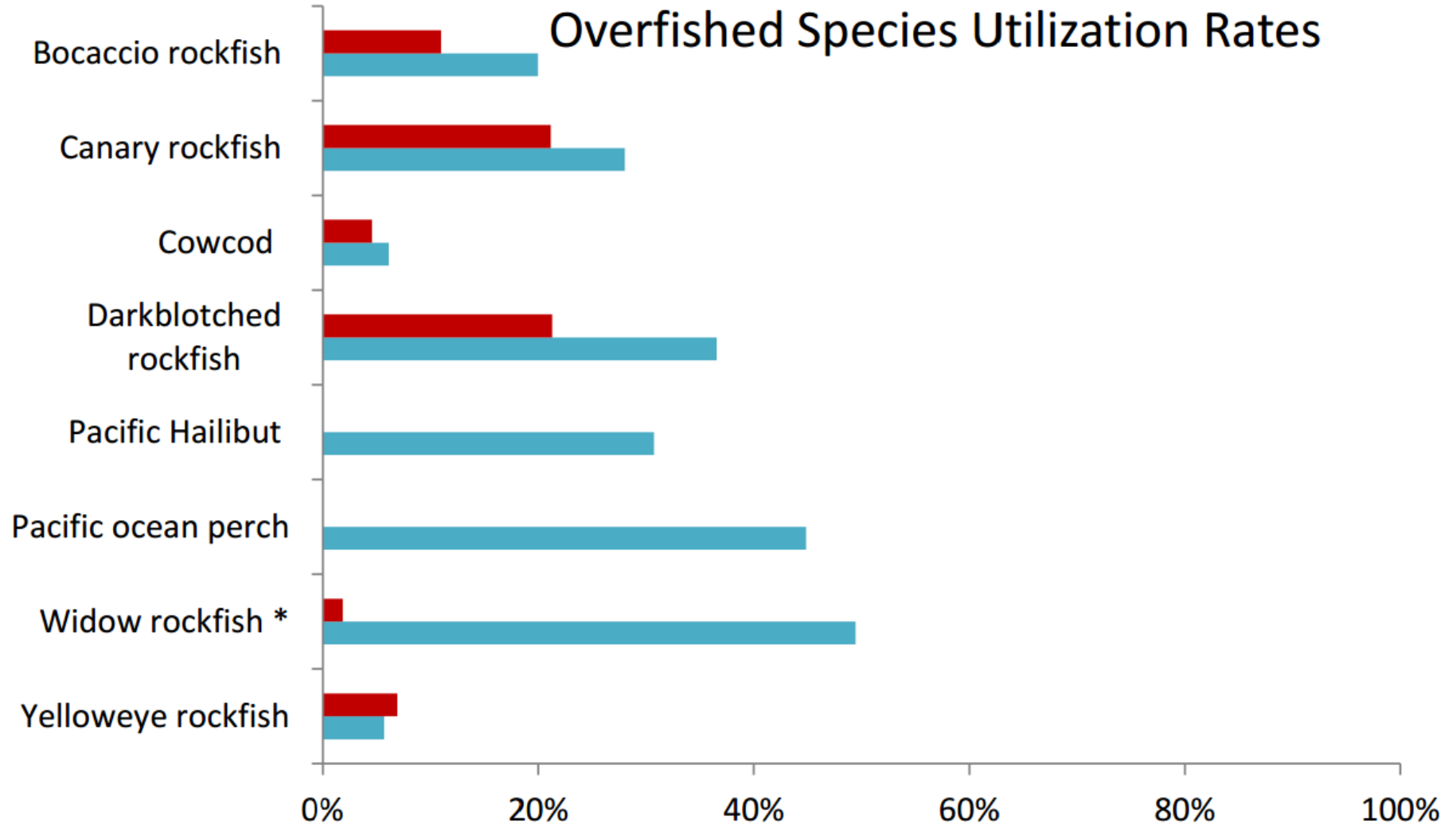


### Target Species Utilization Rates



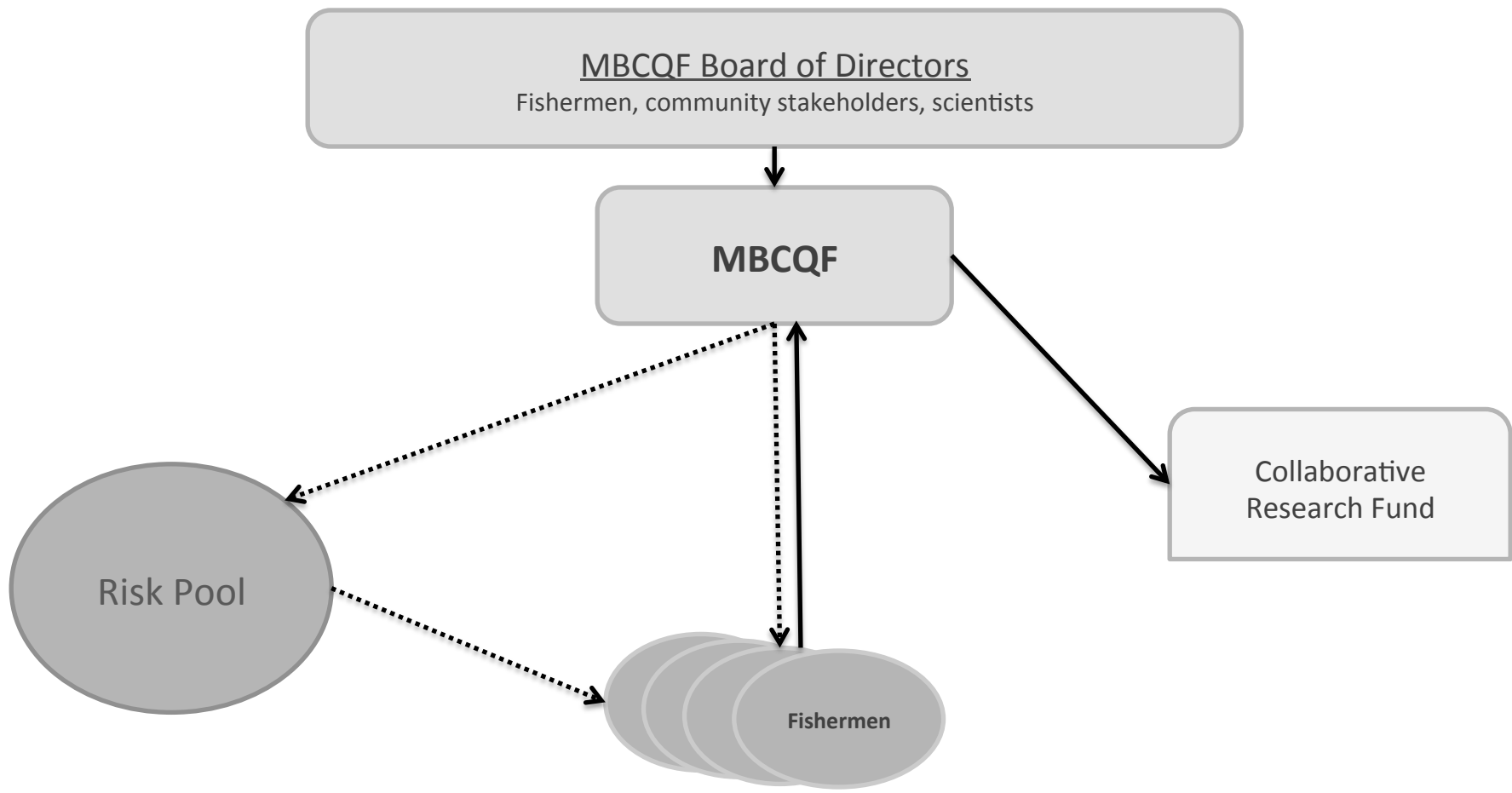
Labrum, K. and Oberhoff, D. 2013. Fort Bragg - Central Coast Risk Pool Annual Summary Report 2012. Report to the Pacific Fisheries Management Council. March 19, 2013.

# Overfished Species Utilization Rates





Morro Bay Community Quota Fund

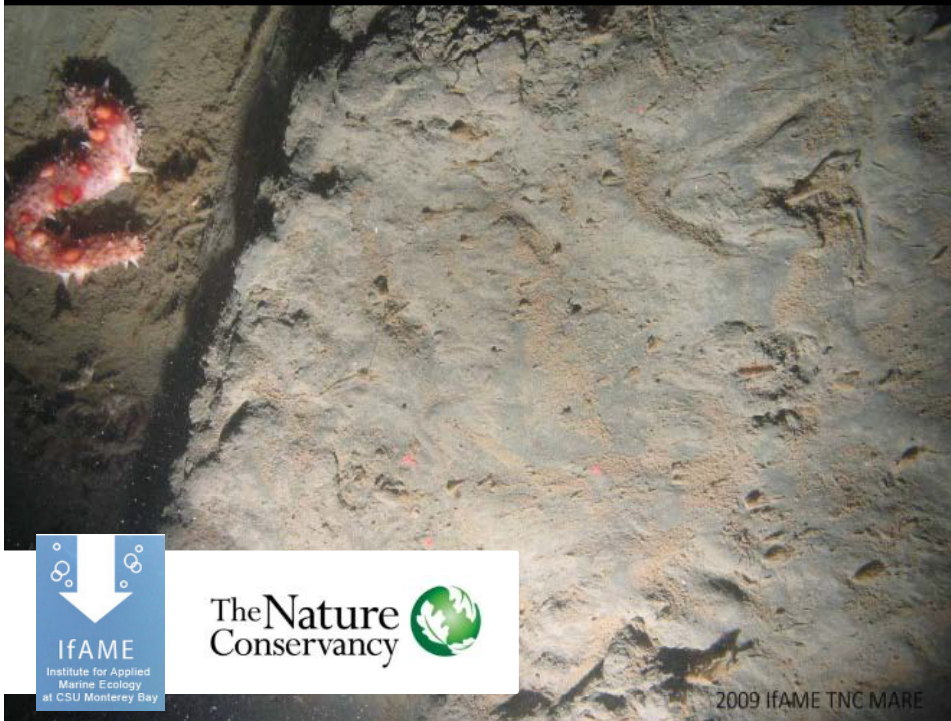
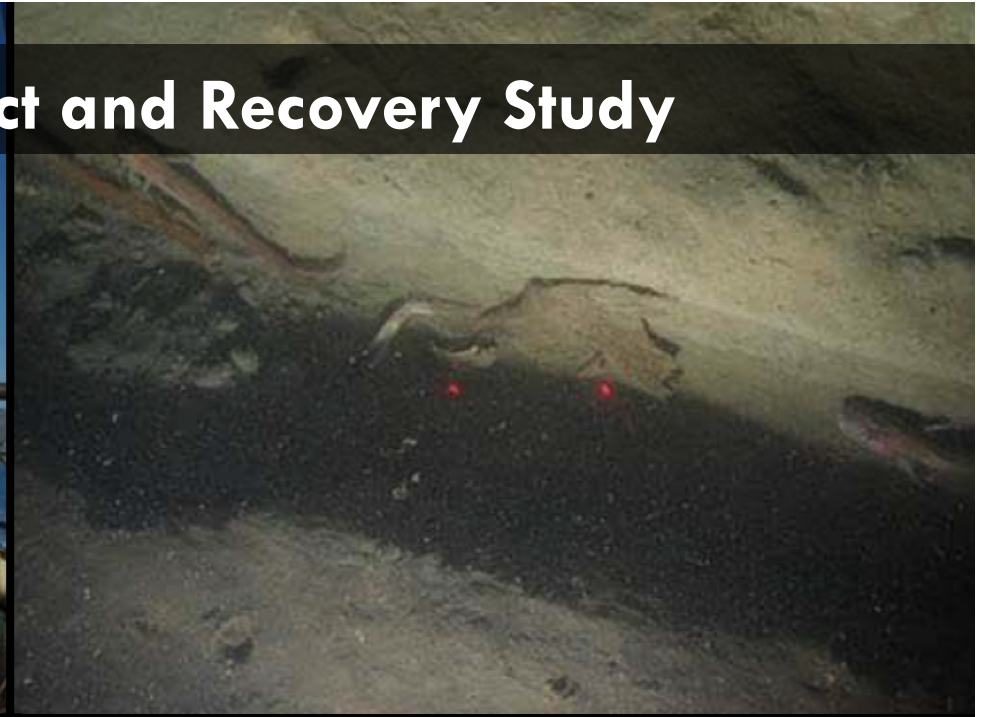


# Innovative Science & Research through Co-Management

1. Trawl habitat impact study
2. Rockfish Conservation Area assessment
3. Ilwaco selective lingcod trapping



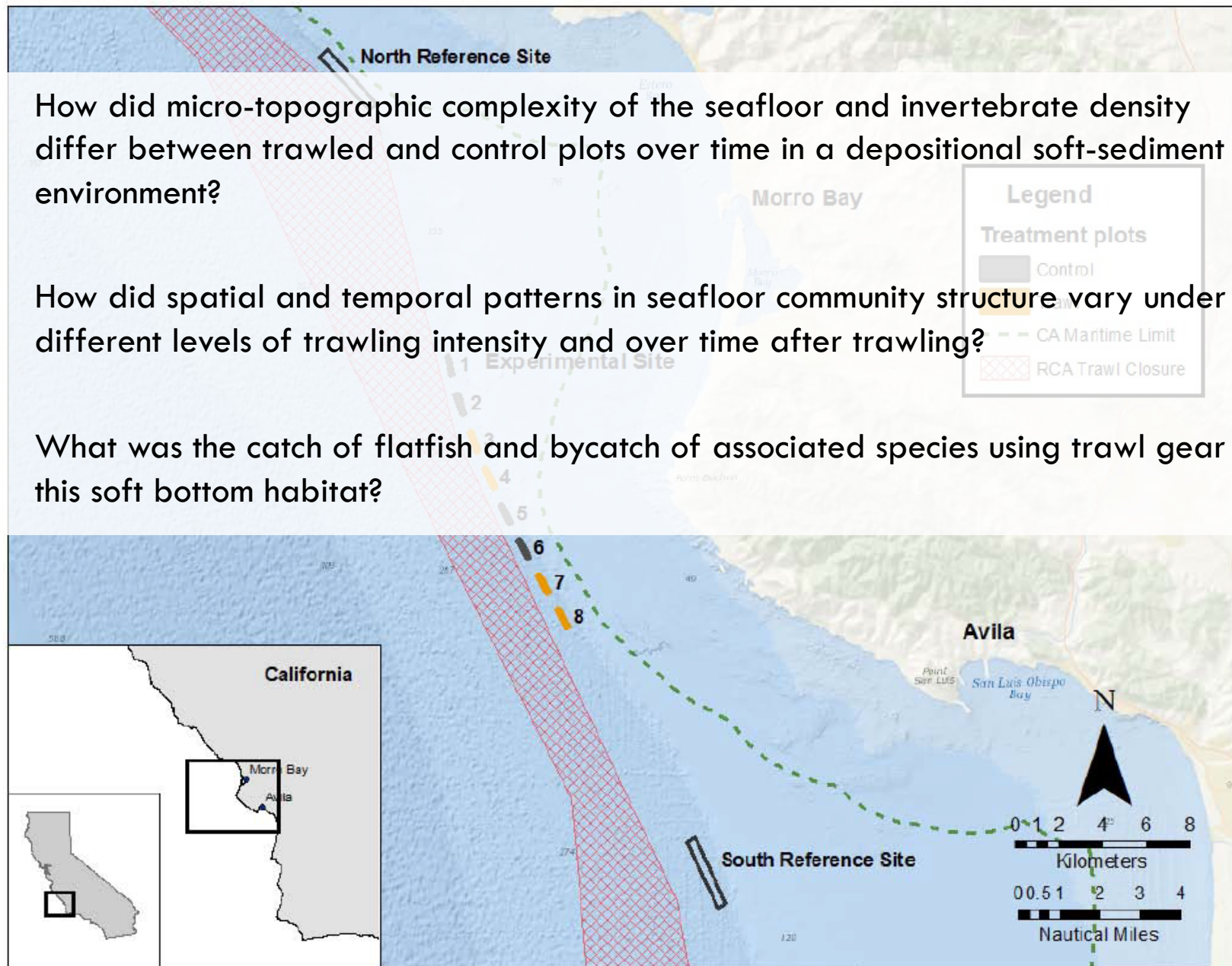
# Central Coast Trawl Impact and Recovery Study

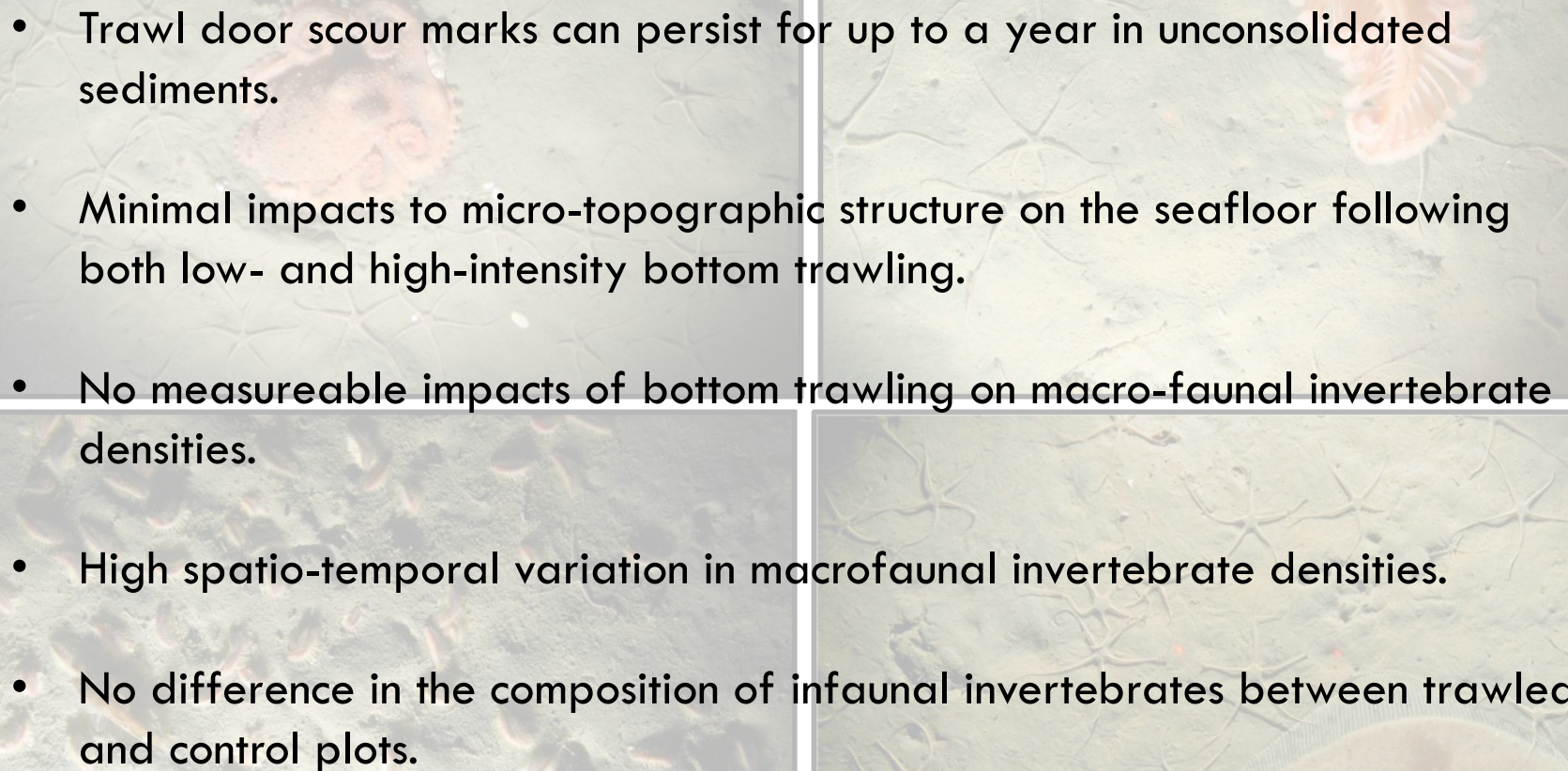


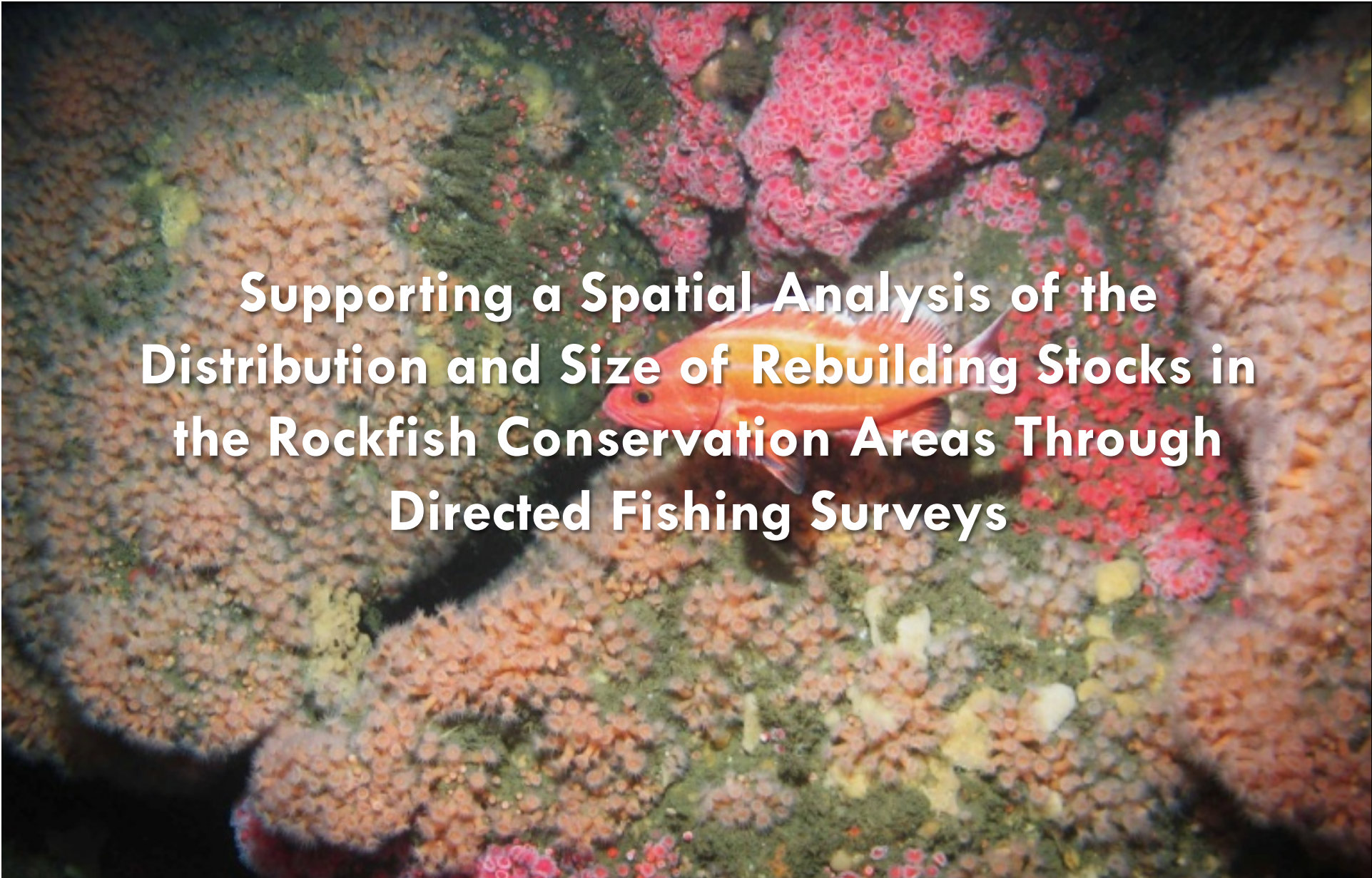
2009 IfAME TNC MARE



- How did micro-topographic complexity of the seafloor and invertebrate density differ between trawled and control plots over time in a depositional soft-sediment environment?
- How did spatial and temporal patterns in seafloor community structure vary under different levels of trawling intensity and over time after trawling?
- What was the catch of flatfish and bycatch of associated species using trawl gear in this soft bottom habitat?



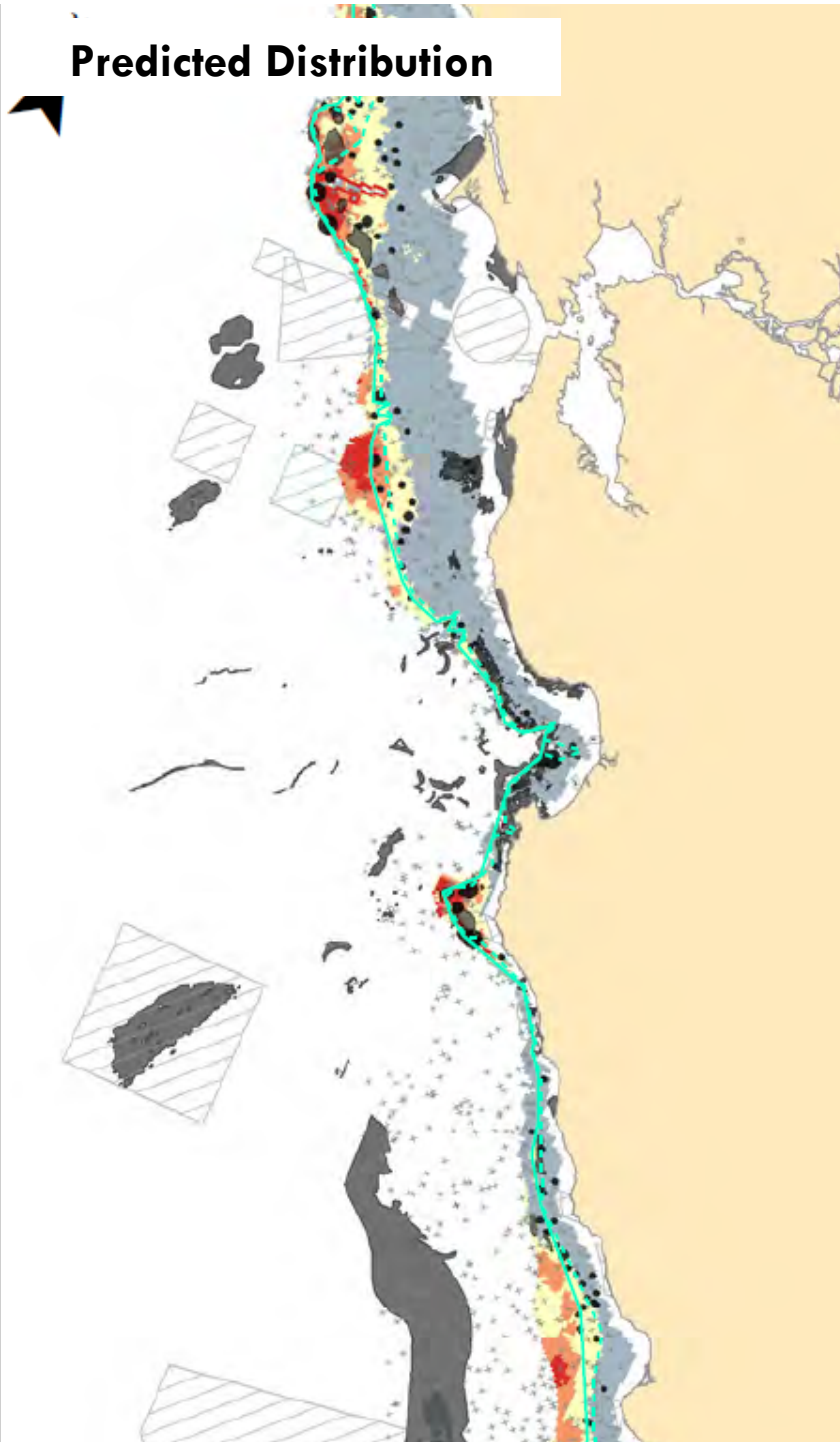
- 
- Trawl door scour marks can persist for up to a year in unconsolidated sediments.
  - Minimal impacts to micro-topographic structure on the seafloor following both low- and high-intensity bottom trawling.
  - No measureable impacts of bottom trawling on macro-faunal invertebrate densities.
  - High spatio-temporal variation in macrofaunal invertebrate densities.
  - No difference in the composition of infaunal invertebrates between trawled and control plots.



**Supporting a Spatial Analysis of the  
Distribution and Size of Rebuilding Stocks in  
the Rockfish Conservation Areas Through  
Directed Fishing Surveys**

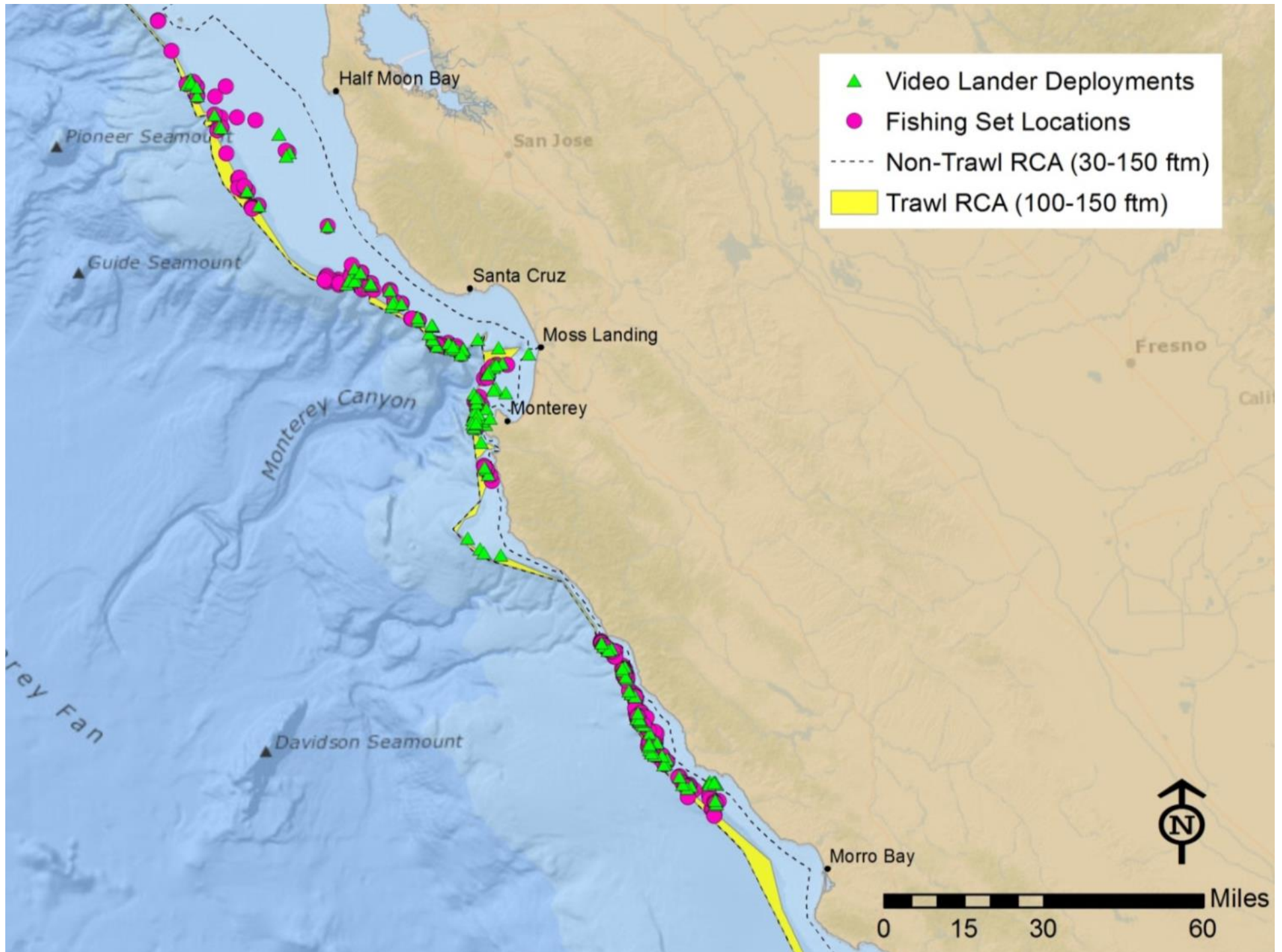


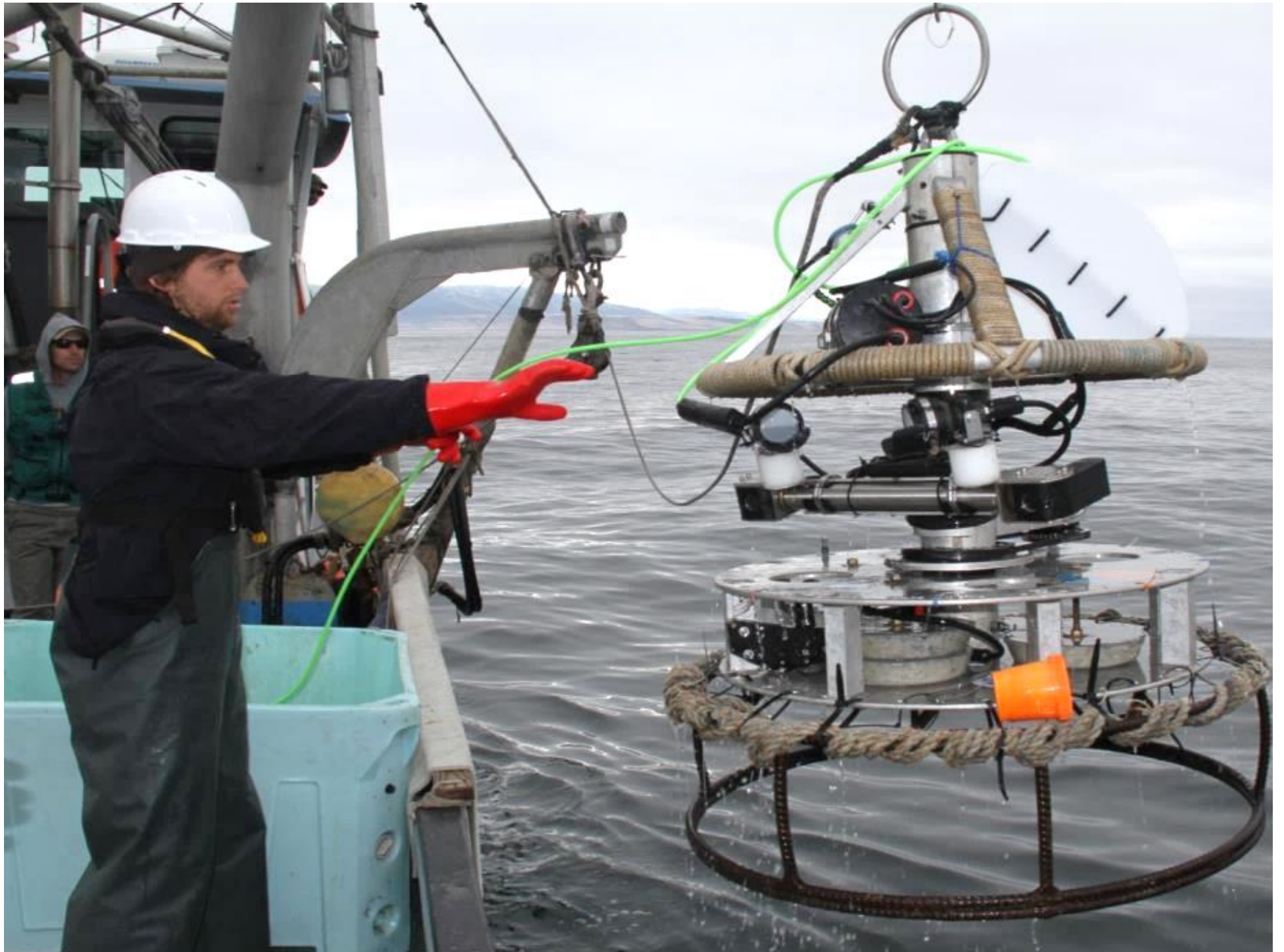
## Predicted Distribution



## Catches







# Ilwaco selective lingcod trapping



**ILWACO FISHERMEN &  
MARKETING  
COOPERATIVE**

The Nature  
Conservancy













## Current MSA: Creates the Conditions



# Reauthorized MSA: A Framework Defined



