Collaborative Monitoring of the Spiny Lobster in the Channel Islands Marine Protected Areas

Background

- Northern Channel Islands MPAs implemented in 2003 amid controversy
- Impacts of no-take reserves on fisheries unknown

Purpose

Develop a collaborative program to evaluate fishery-related impacts of MPAs on spiny lobster populations at the northern Channel Islands

Agenda

- Monitoring Plan
- Collaboration
- Logbooks
- Recommendations

www.bren.ucsb.edu/~lobster
Why Monitor Lobster?

- Impacts of MPAs on fishery unknown
- No lobster fishery-related data since 1979
- Lobster industry in Santa Barbara worth $1.3 million in 2003

Agenda

- Monitoring Plan
  - Pilot Study Methodology
- Collaboration
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Pilot Study Sampling Methodology

Variables

- Abundance
- Size Distribution
- Sex Ratio
- Reproductive characteristics

Mark-Recapture Method: Tagging Lobster

Estimates:
- Population Size
- Individual Growth
- Natural Mortality
- Movement

Pilot Study Sampling Sites

Minimum of 3 Marine Protected Areas
Pilot Study Sampling Sites
Minimum of 3 Marine Protected Areas

Pilot Study Sampling Sites
Minimum of 3 Marine Protected Areas

Pilot Study Sampling Sites
Minimum of 3 Marine Protected Areas

Pilot Study Sampling Design
Within, Near, Far Locations
- Stratified random sampling design
- Suitable habitat
- 3 Depth ranges, 6 traps per depth
- Traps >30m apart

Sampling Periods
- Sample in June and September during lobster fishery off-season
- Set and check traps every 24 hours for 4 days

3 MPAs
3 locations
3 depths
6 traps
× 4 days
= 648 traps each sample period

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Collaborative Model

Our Approach to Collaboration

Establishing a Collaborative Effort:
- Working meetings
- External review
- Post-summer update
- Port Sampling

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Logbook Analysis

- Identify historical baseline of lobster catch
- Guide monitoring site selection

Understanding Logbooks

Logbook: 3 sections

Section: 5 events, 1 comment

Pelican  686  30  80  4  64  53

1 "trapping event": contains data

Logbook: 3 sections

Section: 5 events, 1 comment

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Working with the data

Talchott Talcot
Talcott Shoal

Process
1. Consolidate landmarks into official names
2. Maintain privacy

Agenda
- Monitoring Plan
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- Logbooks
  - Landmark Maps
  - Gazetteer
- Recommendations

Catch Performance by Landmark
From 1999 - 2003 Seasons

Legend
- Average Legal Landarea per Trip Depth (ft)
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8 - 9
- 9 - 10

Carrington
Bechers Bay
**Agenda**

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**Gazetteer**

- Landmark Dictionary
- Characteristics
  - Location
  - Variant names
  - Landmark type

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**Recommendations: Pilot Study**

- Implement pilot study
- Use pilot study as basis for long-term monitoring plan

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**Recommendations: Collaboration**

- Formalize a steering committee
- Establish a contractual relationship
- Activate a fishery cooperative among local trappers
Recommendations: Logbooks

- Publish historical baseline
- Adopt gazetteer & official landmark names

Thank you

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Santa Barbara Lobster Trappers
Chris Mize, Ken Berndstien, John Peterson, Matt Foutz, & other trappers

CINMS
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DFG
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