Data-Poor Management Activities Update

For

MRC Meeting – Monterey CA

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Managing Data-Poor Fisheries Workshop

December 1-4, 2008

- Sponsored by the Department; conducted by CA Sea Grant; Supplemental funding by RLFF

- 100 participants - including resource managers, academics, members of the fishing community, and NGOs

- 36 contributed manuscripts & presentations from invited national and international experts

- Produced 21 overarching ideas for the Department to consider for managing CA fisheries

Managing Data-Poor Fisheries Workshop

- The 21 overarching ideas were distilled from 400 specific suggestions about ways to address data-poor fisheries

- These address the three topics as follows:

  - Topic 1: Management alternatives - 9

  - Topic 2: Analytical techniques - 4

  - Topic 3: New ways to collect & integrate data – 8

- After the workshop, Sea Grant conducted a survey of participants to evaluate the support for these 21 overarching ideas

- The following lists show the 21 ideas and highlight those supported by at least 80% of the participants

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Topic 1: Management Alternatives

- *Clearly define fishery management goals & strategies (94%)*
- *Develop a strong system of co-management that integrates user groups (94%)*
- *Develop a process for adaptive fisheries management (89%)*
- *Increase monitoring of stock size-structure for fished species (82%)*
- *Integrate recreational and commercial fishery management (80%)*

- Integrate with federal fishery management, marine protected areas (MPAs), and other spatial management tools (67%)
- Obtain an index of abundance and an index of replacement for fished species (67%)
- Explore dedicated access privileges (57%)
- Increase the use of explicit area-based management (57%)

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Topic 2: Analytical Techniques

- *Develop simple indicators (biological, socio-economic) of fishery status (89%)*

- Use existing data to complete standard biological and economic analyses (78%)
- Use existing data-rich situations to inform data collection for data-poor situations (67%)
- Explore using MPAs as a management tool (48%)

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Topic 3: New Techniques to Collect and Integrate Data

- *Use fishermen's expertise in collaborative fisheries research programs (94%)*
- *Increase the understanding of recreational fisheries (89%)*
- *Inventory, evaluate, & use existing data sets (85%)*
- *Build collaborative relationships with the fishing and research communities to collect socio-economic & biophysical information (83%)*

- Collect data on a finer geographic scale (78%)
- Establish a public data repository (74%)
- Collect data to conduct standard analyses (biological and economic) (69%)
- Conduct full economic valuations (recreational and commercial) at the port level (67%)

Managing Data-Poor Fisheries Workshop

Workshop results - suggested Next Steps for the Department:

- Review techniques presented at workshop plus other data-poor techniques to determine which might be viable for management
- Set goals for data-poor fisheries
- Evaluate the support for the workshop suggestions among a larger & more representative group of stakeholders
- Assess the administrative/logistical practicality & feasibility of implementing workshop suggestions
- Prioritize suggestions identified from previous steps
- Develop pilot studies to assess the potential usefulness of the high priority suggestions

Managing Data-Poor Fisheries Workshop

Workshop products:

- Managing Data-Poor Fisheries: Case Studies, Models & Solutions Final Project Report to the California Department of Fish and Game
  - http://mdpf.mlml.calstate.edu/sites/default/files/PDFs/MDPF_Report_FINAL.pdf

- Published manuscripts from the workshop are available through the online journal *Marine and Coastal Fisheries* at:
  - http://afsjournals.org/toc/fidm//2

- Proceedings from the Managing Data-Poor Fisheries Workshop Sea Grant publication
  - Will be available within the next 3-4 weeks

Using Data-Poor Approach

What we are doing now......

For existing California management plans

- Catch limits (OY, TAC, etc.) were set at some fraction of recent average for un-assessed stocks (precautionary response to uncertainty)
    - Abalone Recovery and Management Plan
    - Squid FMP
    - Nearshore FMP
    - White Sea Bass FMP
- In the absence of full assessments
    - Herring: Use biomass estimates and other info to set quota
    - Abalone: Index site densities trigger changes to allowable catch
    - White Sea Bass: Points of concern indicate need to change regulations

Using Data-Poor Approach

What we are doing now (con'd.)...

- Analyses
  - New vulnerability index for finfish
  - New simple assessment for lobster

Using Data-Poor Approach

What we are doing now (Con'd.)...

- Analyses
    - Vulnerability index for finfish (Patrick et al., 2009):

hagfish	1.89	barred surfperch	1.36
kelp bass	1.86	redtail surfperch	1.36
barred sand bass	1.86	calico surfperch	1.30
bat ray	1.77	shiner perch	1.25
spotted sand bass	1.66	black perch	1.25
California halibut	1.62	striped seaperch	1.25
brown smoothhound	1.59	rubberlip seaperch	1.20
grey smoothhound	1.51	pile perch	1.20
angel shark	1.50	walleye surfperch	1.16
white seabass	1.47	silver surfperch	1.16

Using Data-Poor Approach

What we are doing now (Con'd.)...

- Analyses
  - Vulnerability index for finfish, information analyzed:

PRODUCTIVITY ATTRIBUTES
intrinsic rate of population growth (r)
maximum age
maximum size
von Bertalanffy growth coefficient (k)
estimated natural mortality
measured fecundity
breeding strategy
recruitment pattern
age at maturity
mean trophic level

| SUSCEPTABILITY ATTRIBUTES |
| --- |
| management strategy (e.g. presence/absence catch limits) |
| areal overlap stock versus fishery |
| geographic concentration |
| vertical overlap of stock with fishing gear |
| F relative to M |
| relative spawning biomass |
| seasonal migrations |
| schooling/aggregation/behavioral responses |
| morphology affecting capture |
| survival after capture and release |
| desirability/value of fishery |
| fishery impact to habitat for non-targets |

Using Data-Poor Approach

What we are doing now (Con'd.)...

- Analyses
    - Collaborative approach to lobster stock assessment
    - Simple lobster assessment begun by DFG; Leslie depletion model – uses catch and effort (preliminary results):
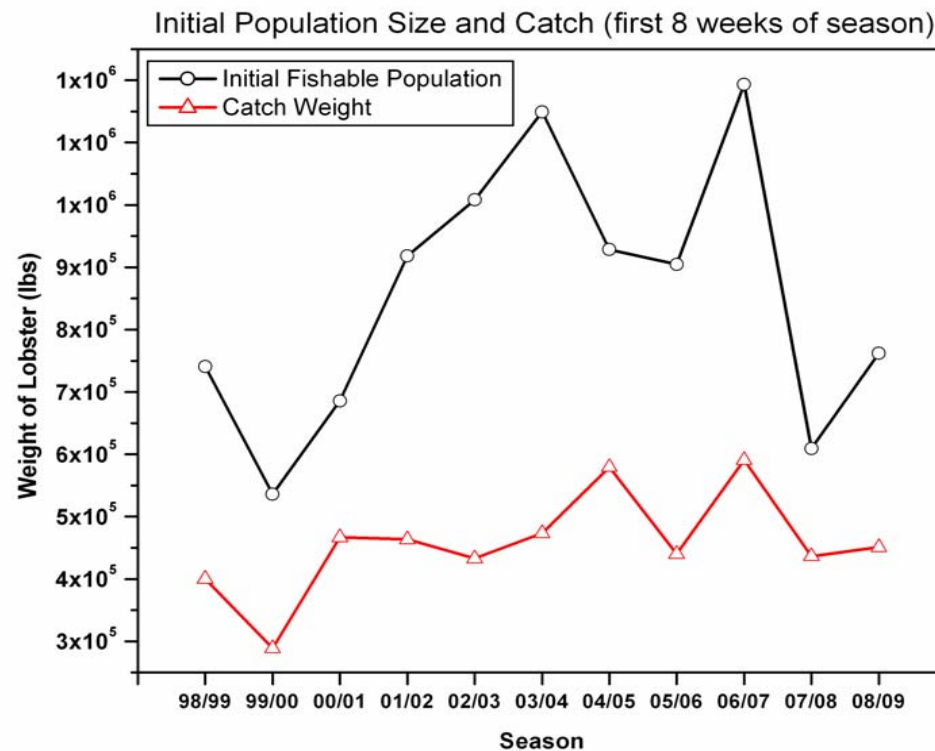
Using Data-Poor Approach

What we are doing now (Con'd.)...

- Data collection
    - Instituted fish size data collection for hagfish
    - Increased commercial sampling for white sea bass
    - Implemented lobster report cards
    - Begun collecting size data for lobster
    - Collaborating on lobster migration studies
    - Completed CalCOFI lobster larvae time series
    - Completed pilot recreational beach angler survey

Using Data-Poor Approach

What we plan to do...

Improved data-poor

- Expand vulnerability index to include invertebrates
- Conduct 2 new data-poor assessments this year (using workshop approaches)
- Collaborate further on lobster assessment approaches

- Moving to data-rich

  - Complete full assessment for halibut
  - Conduct full assessment for SF herring
  - Conduct additional vulnerability modeling for SMI abalone