

Data-Poor Management Activities Update

For
MRC Meeting – Monterey CA
May 25, 2010

Tom Barnes
Department of Fish and Game
Marine Region

Managing Data-Poor Fisheries Workshop

December 1-4, 2008

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%)*

Managing Data-Poor Fisheries Workshop

Topic 2: Analytical Techniques

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

Managing Data-Poor Fisheries Workshop

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%)*

Managing Data-Poor Fisheries Workshop

Workshop results - suggested Next Steps for the Department:

- Determine which workshop techniques might be viable for CA management
- Set goals for data-poor fisheries
- Evaluate the support for the workshop suggestions among a larger & more representative group of stakeholders
- Assess the practicality & feasibility of implementing workshop suggestions
- Prioritize suggestions identified from previous steps
- Develop pilot studies to assess the 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), information analyzed:

<u>PRODUCTIVITY ATTRIBUTES</u>
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

<u>SUSCEPTABILITY ATTRIBUTES</u>
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.)...

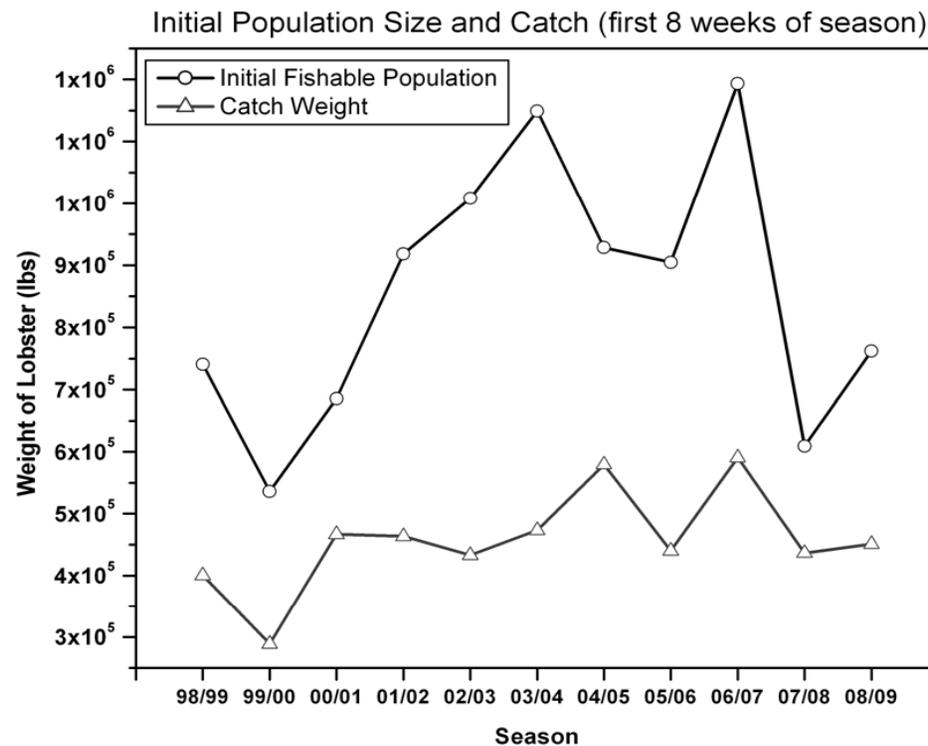
- Analyses
 - Vulnerability index for finfish:

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
 - 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