WORKSHOP ON MANAGEMENT STRATEGIES

La Jolla, California (USA)
17-20 OCTOBER 2006

Documents

- Workshop report:
http://www.iattc.org/PDFFiles2/Management-strategies-WS-Oct-06-ReportENG.pdf

Topics covered

- Comprehensive management strategy evaluation (MSE) for tunas and billfishes
  - Operating models
  - Data collection
  - Assessment methods
  - Harvest rules
  - Evaluation criteria
- Evaluation of management strategies that use spatial and temporal closures
- Evaluating other management strategies
  - gear restrictions
  - vessel catch limits
  - yield consequences of effort allocation among fishing methods
- Multi-species MSE.

Presentations

- Simon Hoyle presented an introduction to MSE
- Steven Hare presented information on the operating model used in support of the harvest policy at the International Pacific Halibut Commission
- Kevin Piner presented a framework for using the Stock Synthesis II model (SS2) for MSE.
- Alain Fonteneau presented a discussion of the use of temporarily or permanently closed areas
- Michel Dreyfus described methods to analyze the redistribution of effort during fishery closures.
- A presentation was provided for Harley and Suter (2007) analysis of historical catch rates for the EPO purse-seine fishery to search for time-area "hotspots" for bigeye catches and predict the impact of closing these areas.
- Mark Maunder presented an analysis of IATTC Resolution C-04-09 on the conservation of tuna in the EPO
- Simon Hoyle presented an approach for modelling tuna movement with Multifan-CL

Presentations

- Kurt Schaefer described research done, in collaboration with Daniel Fuller, on the acoustic detection and behavior of bigeye and skipjack tunas, and potential applications of that research toward meeting the management objective of reducing the catch of small bigeye tuna in the purse-seine fishery on floating objects in the EPO.

- Cleridy Lennert-Cody presented a preliminary analysis of the effects of purse-seine gear characteristics on catch of bigeye.

- Mark Maunder presented an analysis of the impact of vessel catch limits for bigeye.

- Mark Maunder presented an analysis of restrictions on bigeye less than 60 cm in length (<60 cm).

- Mark Maunder presented a multi-species yield analysis of the tuna fisheries in the EPO.

- George Watters presented an outline of multi-species management strategy evaluation (msMSE).

Conclusions and recommendations

- Several management options were identified at the workshop.
    - Closed season
    - Spatial closure
    - Catch quotas
    - Size limits
    - Restrictions on number or characteristics of FADs
    - Individual vessel quotas
    - Capacity limits

- The advantages and disadvantages identified
    - likely success
    - Effectiveness
    - effect on bycatch
    - practicality in implementation
- No attempt was made to weight the importance of each advantage or disadvantage.
- Research required to assess their potential

Most promising management measures

- Existing 6-week closure is generally acceptable, but insufficient for yellowfin and bigeye conservation
- Other management action in addition to a seasonal closure is needed; otherwise the required closure will be too long.
- More promising to develop approaches that involve the industry in a proactive rather than punitive way.
- Develop methods to reduce bigeye catch by permitting some vessels to fish for skipjack associated with FADs during the closed period.
- Requires a designed program with scientists and observers on board to test methods that avoid catching bigeye.
- Alternative is to allow each vessel to continue fishing after the catch limits have been met, provided its catches of yellowfin or bigeye are kept below an acceptable limit.

A selection of research recommendations

- Evaluate the effectiveness of previous closures.
- Use commercial vessels to conduct research during the closure (*e.g.* how to catch skipjack while minimizing catches of bigeye, tagging studies).
- Estimate movement to improve the analysis of closures.
- Investigate how effort might be reallocated if a spatial closure is implemented.
- Develop the tools to conduct comprehensive MSE for the EPO
- Developed gear that can minimize catches of small fish.
- Investigate acoustic methods to identify small fish before setting.
- FAD registration and numbering would greatly improve research on the FAD fishery.
- Vessels that capture the most bigeye, or a large proportion of bigeye, should be analyzed in more detail (*e.g.* spatial distribution, gear configuration, and FAD design).
- Prioritize the observer's duties to provide information that can help address current management problems.