

 New England Fishery Management Council

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Research Steering Committee January 17, 2007 Marriott Courtyard Hotel, Providence, RI Meeting Summary

The Research Steering Committee (RSC), chaired by Council member David Goethel met on January 17, 2007 at the Marriott Courtyard Hotel in Providence, RI. Other Council members serving on the committee and in attendance were Michael Leary, David Preble and Philip Ruhle. Additional participating committee members included fishermen Richard Taylor and Curt Rice, Gib Brogan of *Oceana*, Michael Pol and Dr. Mike Armstrong of the MA Division of Marine Fisheries, Dr. John Hoey of the Northeast Cooperative Research Partners Program (NCRPP) and Dr. Fred Serchuk from the Northeast Fisheries Science Center (NEFSC). NEFMC staff member Patricia Fiorelli also was present.

NCRPP staff Dr. Earl Meredith attended along with Carolyn Woodhead. Harry Mears, Paul Perra and Mark Grant represented NOAA Fisheries Regional Office (RO). Rachel Gallant of the Northeast Consortium, Frank Gable from the University of Rhode Island and Dr. John Annala from the Gulf of Maine Research Institute were at the meeting, along with Bill Hoffman who attended on behalf of the MA Division of Marine Fisheries to discuss his agency's cod industry-based survey project.

Overview

The RSC Chairman acknowledged several new members, Dr. Mike Armstrong, Gib Brogan, David Preble and Curt Rice, outlined general procedures and discussed the committee's custom of developing decisions through committee consensus. The following agenda items were addressed during the meeting:

- Review five research project final reports
- Discuss recommendations concerning the future direction of industry-based survey projects relative to other east coast trawl surveys and management information needs
- Discuss the NEFMC request for a peer review of the NCRPP-funded pilot study fleet project
- Depending on the outcome of the above discussions, consider an approach to develop research priorities for 2007

Major points made during the RSC meeting are highlighted below.

Final Project Reviews

The Research Steering Committee reviewed five final reports related to cooperative research. As outlined in the Council's Research Review Policy, the RSC is charged with reviewing final reports that are generated through cooperative research activities in the Northeast Region and providing advice on whether results are acceptable for consideration in the management process. The reports reviewed at this meeting included:

- Correlation of Silver Hake Abundance with Bottom Water Temperatures in the Middle Atlantic Bight and Stock Identification Using Microsatellite DNA Undersea Research Foundation (Dr. William Phoel, et al.)
- *Eastern Gulf of Maine Inshore Community-Based Tagging of Atlantic Cod* Island Institute (Tagging component of the larger GMRI-led Northeast Regional Cod Tagging Program)
- *Comparison of Environmental Contaminants on Georges Bank and Stellwagen Bank* PIs Dr. Emily Monasson and David Lincoln with 15 Gloucester boats participating in the project
- *Sea trials to assess codend mesh selectivity.* Fisherman Kelo Pinkham, Trevett, ME with two additional ME fishermen and Dana Morse, ME Sea Grant
- Industry-Based Survey for Gulf of Maine Cod Pilot Study MA Division of Marine Fisheries

1) Correlation of Silver Hake Abundance with Bottom Water Temperatures in the Middle Atlantic Bight and Stock Identification Using Microsatellite DNA. Submitted by Dr. William Phoel, Undersea Research Foundation, Tom's River, NJ. Funded by the Northeast Cooperative Research Partners Program. The Council received the final report in August 2006, including a summary of the 35th Northeast Regional Stock Assessment Workshop peer review comments. The report was submitted by the Principal Investigators (PIs) in May 2002 with subsequent findings provided in May 2006. (\$79,916).

Research Priority Addressed: Investigations into stock definition, stock movements, mixing, and migration, such as through tagging studies, DNA markers, morphological characteristics, etc. Effects of assumptions on stock definition, movements, mixing, and migration on stock assessments.

Results: The project PIs proposed to identify stock abundance changes in the Mid-Atlantic Bight between the late 1960s and the 1990s and correlate changes with bottom temperatures. In a second phase, they intended to use microsatellite DNA to determine if Mid-Atlantic Bight, Georges Bank and Gulf of Maine silver hake constitute a single or multiple stocks. A one degree Celsius change was noted during the spring in the 33 years covered by the study. In spring and fall, temperatures were within the preferred temperature range published for the species.

The report was peer reviewed at the 35th Northeast Regional Stock Assessment Workshop (SAW) in 2002. In May 2006 NOAA Fisheries Northeast Regional Office received the remainder of the report which addressed silver hake stock identification in response to recommendations made at the SAW.

RSC Discussion: As the project found and the SAW peer review indicated, with respect to the relationship between the abundance of silver hake in the Mid-Atlantic Bight and bottom water temperatures, no new information was provided beyond that already found in the literature. Results fell within the range of previously recorded values. The RSC concurred with these findings.

The SAW further commented that stock identification work was hampered by inappropriate methods relating to the use of a single locus with null alleles and unrepresentative samples. It concluded that the data collected were not of sufficient quality to use in further analyses. The RSC agreed with the SAW --- that no valid conclusions could be drawn from the stock identification data because of experimental problems.

The report will be on file at NOAA Fisheries and the Council offices and available to the Council's Small Mesh Multispecies Committee and its Plan Development Team with the above caveats as

noted by the SAW and supported by the RSC. Committee members added that the project completion timeline and receipt of the second set of results, although updated, was unsatisfactory.

2) *Eastern Gulf of Maine Inshore Community-Based Tagging of Atlantic Cod* (Tagging component of the larger Gulf of Maine Research Institute-led Northeast Regional Cod Tagging Program). Submitted by the Island Institute. Approved by NOAA Fisheries on July 21, 2006. A brief summary review was included with the final report. The project was part of a region-wide, standardized collaborative cod tagging effort, a follow-on to the original NCRPP-funded New England Aquarium project involving Canadian DFO and Manomet Center of Conservation Sciences, with coordination and data maintenance provided by GMRI. The purpose of this project was to perform inshore tagging along the northern Gulf of Maine coast. Project components included tagging and recording 5,000 releases over a two-year period, distributing outreach material and presenting information at commercial and recreational meetings of relevance to the project. (\$70,475)

Research Priority Addressed: Investigations into stock definition, stock movements, mixing, and migration, such as through tagging studies, DNA markers, morphological characteristics, etc. Effects of assumptions on stock definition, movements, mixing, and migration on stock assessments.

Results and RSC Discussion: The PI for this project participated in the regional cod tagging program coordinated by GMRI. With some exceptions related to availability of fish and weather, the projects was successfully completed including the tag deployment initiatives (although approximately 2,245 fish were actually tagged), associated outreach activities and analyses that contributed to the larger program. If further analyses with management implications are or become available, these PIs will be invited to present their findings to the RSC.

As with the other projects in the overall cod tagging program, this report will be on file with NOAA Fisheries and the Council, and is available to the Council's Groundfish Committee and its Plan Development Team.

3) Comparison of Environmental Contaminants on Georges Bank and Stellwagen Bank.

Submitted to the Northeast Consortium (NEC) by PIs Dr. Emily Monasson and David Lincoln with 15 Gloucester boats participating in the project. An independent technical evaluation was provided by the NEC in July 2006. The project investigated the potential for contaminant-induced effects on reproduction and development in both nearshore and offshore cod. Heavy metals, polychlorinated biphenyls and organochlorine pesticides were measured in cod livers, gonads and sediments from Stellwagen and Georges Bank as well as Wilkinson Basin. (\$129,130)

Research Priority Addressed: Oceanographic and meteorological monitoring - Better information on weather, sea-state, oceanographic and fishing conditions, commercial harvest data, synoptic coverage of large regions, and use of satellite telemetry. Use of commercial fishing vessels as platforms for coastal monitoring, modeling, and prediction.

Results: Spurred by fishermen's concerns about potential contamination of fishing grounds and fish stocks, the report concluded the anecdotal evidence of widespread pollution on offshore fishing grounds was not supported. Significant levels of contaminants were not found in cod livers and gonads and there were clear differences in contaminant concentrations for cod collected from different sites and higher cadmium concentrations in offshore compared to nearshore sites. The study

found relatively low concentrations of PCBs in Georges Bank fish compared to earlier work conducted in the mid-1970s.

RSC Discussion: The RSC members agreed with the positive reviews conducted by the NEC. Comments were made that, in some cases and perhaps in this instance, fishing vessels make less than optimal platforms for certain types of research, minus the collaborative value. Others added that the committee now has the benefit of hindsight, but agreed that as selection processes are conducted in the future these aspects will be fully considered. Finally, it was noted that despite that science might be better served by alternative platforms, the subject matter of a project might be associated with a such a high degree of controversy that it is best undertaken as a collaborative project involving both scientific and industry partners. This discussion, a related sidebar to the review of the project, did not alter the committee's recommendations about the overall success of this project. As with all reports reviewed, it is on file with the Northeast Consortium and the Council, and is particularly directed to the Council's Habitat and other committees and their related Plan Development Teams for use as appropriate.

4) *Sea Trials to Assess Knotless Codend Mesh Selectivity.* Submitted to the Northeast Consortium by PIs Dana Morse of Maine Sea Grant and Kelo Pinkham of Trevett, ME with two additional ME fishermen as industry partners. An independent technical evaluation was provided to the Council by the NEC in September 2006. The selectivity of knotless twine used in the codend of a groundfish trawl was tested relative to a standard codend constructed of knotted twine. (\$56,180)

Research Priority Addressed: Fishing gear selectivity - Gear research that enhances selectivity, targets healthy stocks, minimizes harvest losses and bycatch, reduces or eliminates technical barriers to trade, and improves fishing practices.

Results: Analysis of catch per unit effort and length frequency by species detected only a small difference between catches from the knotless and knotted codends. Video footage suggested a general tendency for the knotless twine to remain more fully open during trawling. Escapees from knotless codends could suffer less scale loss and other damage during the escape process. The knotless twine is lighter, easier to handle, and more supple, according to the PIs.

RSC Discussion: The RSC commended the two well-qualified reviewers on their technical evaluation sponsored by the NEC. The committee agreed with them that the project findings were interesting but should be viewed as preliminary and not definitive. The RSC noted that the study was confounded by a number of factors, including low catches in both control and experimental tows and as such, results are not currently applicable to management. Members also agreed that the underlying data from 13 paired tows, including time and location, would have been helpful to make further comments, but were not available either in the report or in the NEC data archives available online. One member noted that the mesh was actually square mesh hung as diamond.

This report is on file with the Northeast Consortium and the Council, and is particularly directed to the Council's Groundfish Committees and its Plan Development Team for use as appropriate.

4) *Industry-Based Survey for Gulf of Maine Cod Pilot Study*. Submitted by the Massachusetts Division of Marine Fisheries. The multi-year project was approved by NOAA Fisheries in August 2006 following a peer review process. Initiated in 2003, it was designed to further define cod stock distribution in space and time, by age and size composition in Gulf of Maine waters from Cape Cod to the Bay of Fundy. Secondary objectives included providing information on cod age/length

structure during the rolling closures periods of November and April-May when fishery-dependent data would be unavailable and to provide information on the seasonal distribution and length composition of other Gulf of Maine groundfish species where data was sufficient. (\$2,799,351)

Research Priority Addressed: Investigations into stock definition, stock movements, mixing, and migration, such as through tagging studies, DNA markers, morphological characteristics, etc. Effects of assumptions on stock definition, movements, mixing, and migration on stock assessments.

RSC Discussion: The committee fully supported the findings of the peer review panel which are provided and commended the MADMF for their exceptional work on this project:

- The Cod IBS represented an enormous amount of work for the investigators, cooperating fishermen, and NCRPP. Much care was taken in the development of the survey design and gear. An outreach program designed to keep the fishing community and general public aware of survey activity was initiated consuming considerable time and energy. The panel commends the survey team for their thoroughness and dedication.
- The Cod IBS provides valuable information on cod in the Gulf of Maine when no other sources of data are available. The Cod IBS is a good example of a cooperative project.
- The survey provides high resolution information on the spatial and temporal distribution, size composition, maturity and potentially age of cod and augments existing surveys.
- There is some concern that the lack of sampling of cod in water deeper than 75 fathoms may not provide a complete picture of cod distribution particularly during the winter.
- Survey data are useful in determining the location and timing of cod in spawning condition as well as the coincidence of spawning cod with rolling closures.
- It is assumed the efficiency of the four commercial vessels providing data is the same; however, inter-vessel comparisons would be desirable.
- The data presented provide a qualitative spatio-temporal view for a number of parameters; however, further statistical analyses are required to determine if there are significant differences.
- While it may be possible to use the data collected during the survey to derive indices of stock abundance for specific species, a significant number of issues would first need to be examined and resolved.
- Survey design is very good for the objective of examining cod distribution but the mixed design is not easily adaptable for other types of common survey analyses.

RSC members identified several important findings from the committee's perspective: 1) that fishing industry-selected stations produced results similar to the random stratified stations, hopefully overcoming industry criticism of standard trawl survey methodology; 2) a successfully run IBS can produce useful science as discussed in the peer review; 3) if the survey continues and given that there are redundancies in the project relative to information from industry-selected stations and the random stratified results, the design may need to be revised to accommodate new management-related research questions and priorities and/or gaps in existing survey coverage of Council-managed species.

NCRPP staff noted that project results, while not useful for indices of abundance, will be used in the 2008 benchmark assessments and that use of the available data is now accessible through the NEFSC database. The number of age and biological samples will be sub-sampled prior to the assessment. State agency partners were encouraged to assist with analyses of what is now a very large volume of data and information.

This report is on file with the NOAA Fisheries and the Council, and is particularly directed to the Council's Groundfish and other committees and their related Plan Development Teams for use as appropriate.

Future Direction of Industry-based Survey Projects Relative to Other East Coast Trawl Surveys and Management Information Needs

The committee also reviewed the genesis of IBS projects including a commitment to their use over the long-term, but without guarantees that any one project would continue indefinitely. Continuance of the projects was intended to be evaluated in light of results, funding considerations, new research questions new circumstances such as the capabilities or lack thereof of the new survey vessel.

The committee's strategy to develop advice on the direction of industry-based survey efforts was to answer several questions: determine whether the current survey(s) need to continue; whether the focus of efforts should fill spatial gaps in the current state and federal surveys and/or those that will occur as a result of operation of the new *FSV Bigelow*; consider any new objectives; and make comments on any necessary survey redesign. It was agreed that answers would not be available until the next committee meeting, although members emphasized that decisions on these matters must be made this year for implementation next year.

The deliberations at the Council meeting concerning groundfish management directions will also be helpful to the RSC in determining further IBS and other work. It was also noted that budget information also may be available at that time so that recommendations could match funding levels, particularly if monies are not available to support all projects.

As outlined by the NCRPP staff, federal-funded projects that have already committed to include the ME-NH Inshore Groundfish Trawl Survey (supported by the RSC as a long-term monitoring project), the Marine Resource Education Project and analyses of information collected during the regional cod tagging project for the Groundfish Assessment Review Meeting. NCRPP will also proceed with the peer review of the yellowtail flounder industry based survey so that both projects might be considered along with the other efforts.

Finally, to prepare for a fuller discussion at the next meeting the committee agreed to communicate with the trawl survey advisory committee to determine unanswered questions about the *Bigelow's* survey capabilities and coverage. A request for recommendations as to how IBSs might be integrated into the overall survey system also will be included. Ideally, this information would be available by the next committee meeting. Staff also will query other groups such as the Council's Plan Development Teams.

Request for a Peer Review of the NCRPP-Funded Pilot Study Fleet Project

As background on this topic, following its last meeting, the Council sent a letter to Dr. Nancy Thompson, Acting Science and Research Director of the Northeast Fisheries Science Center, requesting a peer review of the NCRPP-funded pilot study fleet program. In turn, Dr.Thompson responded, seeking clarification about the Council's primary area of interest, presumably a review of the utility of the data collected with the logbooks for stock assessment and management analyses, versus an IT system development review. Following clarifications by Dr Hoey, the RSC concurred with the premise of the letter and confirmed its interest in the precision of the data and how it might be used. An additional request was made in Dr. Thompson's letter for suggested reviewers for both the Southern New England yellowtail flounder IBS and study fleet projects. Discussion ensued about conducting a written review of the study fleet project and a panel review for the IBS project without definitive resolution. The committee determined that the decision was best left to the NEFSC. The committee did support a recommendation to use the same reviewers, if possible, who participated in the other IBS project evaluations for the yellowtail project.

The discussion then moved to anonymity of reviewers of final reports. The committee recommended that, just as the technical reviewers of the NCRPP projects are anonymous, NEC reviewers should remain anonymous to the RSC, but with qualifications provided. The committee asked that it have access to reviewers should questions arise, noting this could be accomplished through staff.

An Approach to Develop Research Priorities for 2007

This discussion was deferred to a future meeting. Committee members were asked by the Chairman to think of priorities, at least in part, in terms of the new mandates in the Magnuson-Stevens Fishery Conservation and Management Act.

Additional Items Discussed

- NOAA Fisheries Regional Office staff was asked to provide general background on the timelines for Experimental Fishery Permits.
- As with the Sea Scallop Research Set-Aside Program (RSA), the committee clarified that, for the sake of consistency, it will review the final reports associated with the Council's other RSA programs (currently herring and monkfish). Committee members requested that the proposals for funded projects be made available to the committee.
- The RSC discussed the development of a consistent approach with respect to the RSC review of RSA-funded project results.
- The committee asked if it could expect additional responsibilities given the new researchrelated mandates in the newly reauthorized Magnuson Act.
- The committee agreed to schedule a future discussion about requirements for data availability on the part of project PIs, particularly focusing location, format and a timeframe for data archiving.

Before the meeting adjourned, the committee agreed to meet in March.