

IPHC Research Advisory Board meeting: November 11, 2004

Attending: Dean Adams, David Boyes, Arne Fuglvog, Gary Robinson, IPHC staff

Absent: Rob Wurm (traveling), Gary Williamson (fishing), John Woodruff (business in Alaska)

A summary of 2004 research results was distributed to the RAB prior to the meeting.

Outstanding items from 2003 RAB meeting:

Gear modifications directed at minimizing interactions with other species

The 2003 RAB meeting identified research on alternate gear as a priority item. The Commission staff proposed to spend \$50k in conjunction with the NMFS Newport OR laboratory. Initial discussions were held with NMFS staff and preliminary project design outlined. However, funding cuts at the Commission forced us to defer this work. NMFS staff did proceed with some aspects of this work in conjunction with other projects. For the same reason, no research on estimation of discard mortality rates for recreationally caught and released halibut, or on hooking behaviour involving hook design, artificial baits, and barbless hooks was conducted.

Research items arising from 2004 RAB meeting

The Board first reviewed their observations of the status of the halibut stock as revealed by their personal fishing during 2004. While noting the limited nature of their individual observations, the Board felt the halibut stock was relatively strong in Area 3A, about level in Area 2C but down in other areas, particularly Areas 3B and 4B. The Board identified several broad areas of research interest, a subset of which were then discussed in more depth in order to formulate a research approach. The broad areas were:

1. **Bycatch issues.** The incidental capture of or interaction with non-target species during halibut fishing is the single greatest concern to the industry. The species of concern include rockfishes, seabirds, sharks and skates, and invertebrate species such as deepwater corals and sponges. In some instances, the concern is about the impact of halibut fishing on these species (birds, sharks/skates, invertebrates) while in others the concern is about optimizing capture of species among sectors.

The use of IPHC data to index the relative abundance and distribution of some of these species was explored. In the case of rockfishes, sharks, and skates, IPHC currently shares survey data with federal and state agencies responsible for research and assessment of these species. IPHC has also worked closely with research and regulatory agencies of the two contracting parties concerning interactions with seabirds and marine mammals as observed on IPHC surveys. Currently, both U.S. and Canadian agencies are using Commission data to map distribution and occurrence of species of concern, as well as to index relative abundance of species.

The issue of gear modifications to avoid capture and interactions was raised again as a productive area of research.

2. **Fishing patterns.** The seasonal distribution of halibut movements and interaction with existing and potential fishing patterns is not well understood. Industry continues to express a desire to know movement patterns in greater detail in order to understand the impacts of fishing during alternate periods to the current March – November season.

In addition, Board members expressed concern about changes in the pattern and nature of halibut fishing effort since the advent of IQ fisheries on halibut and sablefish. The use of combination gear for the two species, or the primary use of sablefish gear to catch halibut IQ, may have affected the nature of the data used for their assessment. Lastly, the pattern of fishing effort in relation to habitat areas of particular concern is not well documented. It is likely that fine-scale knowledge of halibut fishing activity, as well as that for other fleets, may be an important component of decisions regarding these areas.

3. **Sport and subsistence catch verification.** The Board is concerned that adequate verification of sport and subsistence catches may not be occurring. The implementation of detailed subsistence regulations in Alaska, together with major increases in the allowable fishing power for subsistence fishing, and the formal allocation agreement between recreational and commercial sectors in Canada have heightened this concern. In particular, the Board has requested that staff continue to press both contracting parties to verify estimates for these removals. It was noted that a subsistence mail/phone survey was initiated in Alaska for 2003 but that it was not paired with a catch verification program as, for example, the Alaskan statewide harvest survey for recreational removals. Similarly, the Canadian allocation agreement will require data of equal resolution if any transfer of allocation between the two sectors is to occur. At present, commercial removals are based on complete census through dockside monitoring and fish tickets but recreational removals are estimated via a synthesis of several different sampling programs.
4. **IPHC survey data.** This issue was related to the bycatch issues noted above. The Board views the survey data as one of the few widespread and consistent indices of species abundance, for those species encountered on the surveys, and queried whether these data were represented adequately when conclusions about the stock status of these other species were made. Staff explained that there is a great deal of data sharing among the agencies. For example, the NMFS document on skate abundance and trends relied heavily on IPHC data. The Board encouraged staff to make these data widely available because of concerns about poorly-informed EPA and SARA processes in the two countries.
5. **Other research by IPHC staff.** The Board expressed the view that staff should be very active in the realm of ecosystem research and research on species that the IPHC has not traditionally conducted any research upon. The rationale for this is that the halibut fishery may begin to be constrained either by its interaction with, or by the abundance levels of, these other species. In many instances, the level of knowledge about and research programs on these species may be inadequate for clear understanding of their status. The Board believes that the staff should be more pro-active at bringing IPHC expertise and data to bear on the problem of understanding these other species. Staff explained that such directed research is currently outside the mandate to the Commission but that, with additional resources, such research might be possible. Such endeavors would also require discussion with the full Commission.

Research considered by the Board

Two major themes emerged from discussions between the Board and the staff. The most prominent theme was the value of the existing IPHC data collection processes, particularly the standardized setline surveys. Data of value to both direct assessment of co-occurring species and to mitigation measures related to co-occurring species that might be undertaken by the halibut fleet, are collected currently. The second major theme was ecosystem or multispecies research and the IPHC surveys were a direct link between these two themes.

The Board and the staff considered three topic areas:

1. Bycatch research.

- 1.1. A high priority is assigned to compilation and transfer of IPHC survey data on non-target species to agencies of the contracting parties. While the staff has disseminated these data on a request basis, it has not made them available generally. The Board wishes simply to ensure that all topical information is considered in the management of these species.
- 1.2. Swivels on snap gear. Swivels are becoming increasingly common on vessels using snap gear for halibut and sablefish. The swivels are believed to decrease gear damage from non-target species and increase the CPUE of the target species by approximately 20%. The Board would like to see the staff undertake experiments to examine the impact of swivels on both CPUE of halibut and bycatch, compared with non-swivel gear. Staff noted that the standardized gear on IPHC surveys is traditional fixed gear, rather than snap gear. Snap gear is only used in the IPHC stock assessment for Area 2B, because it represents a large portion of the total fishing effort, although snap gear also accounts for about one-half of the effort in the central and eastern Gulf of Alaska. It seems prudent to understand the potential effect of swivels and staff will consider this as a project for 2006. [An experiment on hook size and spacing will be the major field experiment for 2005. Bruce agreed to send this proposal to the RAB for their review and comment].
- 1.3. Avoidance gear. The Board iterated its desire to have staff conduct research on gear to avoid interactions of halibut fishing with marine mammals, and to develop fishing gear that might reduce retention of non-target species.

2. **Fishing and halibut distribution patterns.** The primary focus of the discussion on movement patterns concerned potential impacts of extended seasons on interception of migrating fish. More precise estimates of timing of movements are desired if impacts are to be estimated. The staff has proposed to conduct additional PSAT tagging in 2005, directed at interpreting the timing of migratory movements in Areas 2B through 3B.

Discussion then focused on the nature of winter fishing and understanding movements. Commissioners requested that staff estimate the cost of a winter PIT tagging program. The staff estimated that a program to produce useful results would need to be almost the scale of the summer tagging. In addition, expenses would likely be higher because catch rates could be highly localized, weather days more frequent, and it is likely that all fish obtained would need to be tagged, thus generating no cost recovery. The Board then explored the merits of having an experimental winter fishery to recover existing PIT tags (or even deploying more tags in the summer of 2005 if necessary). Such a fishery might answer several questions

including the likely participation level, magnitude of removals, and summer origin of fish captured in the winter. Staff agreed to present this option to the Commission.

3. **Ecosystem/multispecies research.** The Board supports the staff's willingness to engage in broader scale research programs, recognizing that the mandate of the Commission is relatively proscribed. However, several productive directions were identified.
 - 3.1. Research data sharing. The Board wishes to ensure that the staff provides all relevant research data to cooperating agencies for use in assessment of other species and habitats. Commercial logbook data should also be made available to the extent that it does not compromise confidentiality.
 - 3.2. Mapping of IPHC knowledge. IPHC staff should act proactively to produce detailed maps of research data on species distributions and occurrences, particularly as they pertain to multispecies distribution patterns and potential interactions with management of those species and HAPC issues. An interactive format for these data presentations should be developed and this should be a major initiative for the staff over the next several years.
 - 3.3. Spatial recruitment patterns. The staff has not produced detailed presentations of recruitment patterns beyond the work of Steven Hare for the harvest rate evaluation. In that work, he examined the differences in mean recruitment levels by regulatory areas over the past several decades. This information should be enhanced with detailed age-specific data by area, to investigate possible trends and responses to adult biomass levels.
 - 3.4. Trophic studies. Both the Board and the staff recognize the importance of trophic linkages within the ecosystem. However, determining causative relationships for changes in the dynamics of species based on trophic studies has been fraught with difficulty in studies worldwide. Studies in the north Atlantic were of limited usefulness in a predictive sense, despite a very large investment in describing trophic linkages and attempting to estimate mortality rates from predation. The staff does presently contribute data to the NMFS Ecosystem research program and is aware of the activities of this program. The Board encouraged the staff to keep abreast of this program and to consider incorporation of survey relative abundance data to it.

Staff will present this report to the Commission at the Annual Meeting in Victoria.