

IPHC Memo

To: Research Advisory Board
From: Executive Director
Date: November 8, 2003
Re: Report of October 23, 2003 meeting

Attending: Dean Adams, David Boyes, Rob Wurm, Gary Robinson, IPHC staff

Absent: Arne Fuglvog (boat work), Gary Williamson (house building work), John Woodruff (stranded in Dutch Harbor by weather)

Material distributed to the RAB prior to the meeting included: progress on 2003 research projects; information on US and CDN bird avoidance regulations.

After introductions, IPHC staff members reviewed the results of 2003 research projects.

2003 Research Project review:

Staff provided a brief review of all current projects. The following projects received the majority of discussion.

1. PIT tagging Considerable time was devoted to issues of the PIT tagging and scanning program. In particular, RAB members explored the experimental and simulation bases for numbers of fish tagged, shedding rates, mortality rates, and expected return rates. They also wished to be assured that quality control in both scanning and tagging was adequate. RAB members were generally satisfied with the planning and results of the program, to date.
2. PSAT tagging. Members wished to know about plans for further PSAT tagging. Staff explained that three projects were being proposed for 2004. The first would examine movements of fish within the Bering Sea, with a view to determining whether halibut from the Aleutian Island region, west of Bower's Ridge, were connected via spawning migrations to the central Bering Sea. Tags would be deployed in summer with 2/3 popping up during the following spawning season, and 1/3 popping up the following summer. This is an area where staff perceives the greatest information gap in our

understanding of seasonal halibut movements. This project would be done in conjunction with a graduate student from the University of Alaska.

The second project would deploy tags during the winter in the inside waters of southeast Alaska, with pop-up the following summer. This project will examine whether the fish found in these inside waters during winter remain there through the entire year or move offshore during the summer months.

The third project would examine the timing of seasonal movements by tagging in late summer of 2B, 2C, and 3B with pop-up during the following early summer. The objective of this project is to assist in determining how late into fall or how early into spring the season could be extended and still encounter migrating fish.

RAB members encouraged the use of this technology but did agree with staff that the results are indicative, rather than definitive, and that they should be used judiciously because of their cost. However, it was noted that they do provide a window of observation on periods of the year when the fishery is currently closed, hence provides no information on stock distribution and abundance.

3. Sex-specific stock assessment. Staff reviewed how the stock assessment for 2003 would be separated by sex. This initiative is prompted by the lower growth rate of fish in the past half decade where, in some areas, many males may not be reaching commercial size until they are very old. The implications of this are that females are absorbing a higher fishing mortality now than they were during times of more rapid growth, when more males would have been caught in the fishery and that previously calculated reference points (e.g., minimum observed spawning biomass) will need to be recalculated and expressed as female spawning biomass. This may also have implications for the appropriateness of the existing minimum commercial size limit. In addition, we may need to re-visit our understanding of control effects such as density dependence in growth rate (e.g. if many males are not being caught, does this create the competition that results in lower growth rates?).

The Board expressed some concern over the effect of the sex-specific assessment and potential changes in our understanding of the reference points we use as well as the implications for our harvest policy. Board members wished to have an understanding of these implications as soon as possible.

Outstanding items from 2002 RAB meeting:

1. Season extension

Staff reported on the meeting of the Season Extension Work Group held in Seattle on July 23-24th. This meeting examined the administrative and logistical issues associated with extending the halibut season. Two options were identified, a 10.5-month season and a 12-month season. The essence of the work group conclusions was that a 10.5-month season was achievable with limited modifications to existing procedures and timetables. A 12-month season could not be accomplished without major modifications to the

administrative procedures required by IQ programs, in particular the calculation of overages/underages, issuance of new quota share certificates, licences, etc. The work group recommended that the IPHC request that NMFS restructure the date-specific quota share regulations to reference a time relative to the season opening or closing dates when operational events (such as permit calculations and issuance) should occur. This would be appropriate even if the halibut season were not changed in the near future, as it would allow the Commission flexibility in setting season dates.

2. Impacts of bycatch in the halibut fishery; whale/shark interactions with halibut fishing

A major topic of concern in last year's meeting was the interference or restriction of the halibut fishery caused by interactions with marine mammals, or the bycatch of unwanted/restricted species. The Board wished to initiate research on fishing gear that might reduce bycatch and/or minimize interactions with other species. The demands of the 2003 PIT tagging program restricted staff opportunities to conduct additional research. However, IPHC port sampling staff did begin censusing harvesters concerning interactions with sharks and marine mammals during logbook interviews. This initiative arose from discussions in 2002 and all port samplers incorporated these questions into standard interviews. This research will be reported in the 2003 RARA but staff noted that the information was highly subjective since the questions posed solicited harvesters' opinions on whether the interactions negatively affected catch rates. Additionally, the Board noted that some harvesters would avoid mentioning interactions if they perceived that acknowledgement of interactions would result in additional restrictions on their fishing activities. A revised question format was discussed but the Board and staff agreed that self-reporting of interactions may never capture data that could be used quantitatively. The value and direction of this project will be evaluated further when the data are compiled.

3. Aquaculture

The staff did not conduct any research on aquaculture related issues during 2003. We did obtain a copy of the contract report by Archipelago Marine Research on potential impacts of aquaculture but no additional work was conducted. The Board had asked the staff to produce a position paper on concerns about aquaculture development (based on results from other species' aquaculture) and the safeguards that will be necessary to protect the wild stock from potential deleterious effects of halibut aquaculture. There has been some tempering of the worldwide interest in aquaculture of halibut, largely as a result of increased interest in farming of Atlantic cod. In addition, recent papers by environmental groups opposed to aquaculture have produced some of the background information sought by the Board. Staff will raise the issue of a position paper with the Commissioners in January.

4. Sand fleas

No additional work on sand fleas was conducted in 2003 but staff is planning to census historical survey data sets during 2004, to determine whether there are consistent

geographic areas of sand flea abundance. Several samples of amphipods were collected in 2003 for taxonomic identification and additional samples will be collected more systematically in 2004.

5. Mechanism for growth changes in halibut

Staff is continuing cooperative work with researchers at the Prince William Sound Science Center on the trophic status of halibut as determined through stable isotope (N and C) analysis. Work in 2003 was confined to processing of the large backlog of historical samples collected on IPHC surveys during 1999-2002. A paper on the preliminary results of this project is being prepared. In addition, the development of the sex-specific assessment model for halibut may shed light on the density dependent aspect of halibut growth rates.

6. Wastage from prior hook injuries

The Board requested that staff examine the impacts on catch rates and severity of discard injuries resulting from the use of barbless hooks. Staff did not conduct this examination during 2003 but the general topic of hook effects on both capture and release of halibut and other species is one of the topics for consideration in 2004 research.

7. Mercury in halibut

Staff provided a briefing on mercury in halibut in the review of 2003 research. Briefly, the joint study with the Alaska Department of Environmental Conservation (ADEC) has shown that average levels of methyl mercury in Pacific halibut from Alaska are well below the levels of concern for both the U.S. Environmental Protection Agency and the Food and Drug Administration. A news release was issued by the ADEC on this finding. Average levels of methyl mercury in halibut are less than 50% and 25% of these reference levels, respectively. The Board was briefed on the scheduled revision of the FDA level in December, 2003. Staff anticipates that the FDA level (currently 1.0 ppm methyl mercury) will be reduced to a level similar or identical to the EPA level (0.5 ppm). However, some rationalization of these two standards is required because they are not calculated in the same manner.

Bird Avoidance Regulations

The Canadian members of the Board requested information on U.S. regulations on Bird Avoidance Devices (BADs) to evaluate potential modifications to Canadian regulations. This information was provided and reviewed by staff. Canadian members requested that the Commission staff provide a recommendation on appropriate regulations to the Canadian Halibut Advisory Board, to discuss with DFO. However, staff felt that this was not an area of its expertise and did not wish to provide such a recommendation. Staff did agree that proposed regulations could be reviewed with a view to commenting on their appropriateness based on staff's knowledge of fleet characteristics and survey observations on bird distribution.

Research Considerations for 2004

The Board and staff considered several research priorities for 2004 and identified two areas of major interest: gear modifications directed at avoidance of interactions with species of concern, and estimating discard mortality of halibut in recreational fisheries. The former topic is the one of most interest to the Board and has a different focus in each country. U.S. harvesters are primarily concerned with avoiding interactions with marine mammals, mainly killer whales, sperm whales, and pinnipeds. Canadian harvesters are concerned primarily with minimizing interactions with rockfishes, due to regulatory concerns, and to a lesser extent with sharks (spiny dogfish, sleeper, and blue sharks). U.S. harvesters also have concerns with reducing catches of rockfishes and sharks in some areas.

The major discussion on minimizing interactions with marine mammals focused on the use of alternate fishing gear, mainly traps. It was recognized that there are a number of concerns about the potential use of traps in the halibut fishery, including gear conflicts, habitat damage, and boat size required for such gear. However, the Board believed the staff should initiate some research in this area because marine mammal interactions are believed to be increasing and are affecting the fleet's ability to prosecute a fishery in some areas. Staff expressed some concern that the initiation of such research might create concern within the industry over the potential for regulatory changes in the halibut fishery. While this concern was acknowledged, it was also agreed that marine mammal interactions are presently a significant impediment to the conduct of the fishery in some areas. Use of alternate gears in these areas might provide a solution to this problem. The Board and staff agreed that research concerning the design of entrance and exit characteristics, as well as the general design of traps useful for halibut would be worthwhile. Staff will pursue this approach from both a laboratory and field perspective and have requested Board input in the design of any field programs.

The issue of rockfish avoidance was discussed at some length and previous IPHC research using cameras to observe hooking behaviour was reviewed. Hooking behaviour is poorly understood for these species and several avenues of research were suggested including underwater camera observations in both the laboratory and the field, investigation of hook design, use of artificial baits, and barbless hooks. The staff agreed to look at a smaller subset of these studies for research in 2004.

The issue of discard mortality of recreationally-caught halibut will also be pursued with the NMFS Newport laboratory staff, who have both physiological expertise and sophisticated facilities for behavioural observations.