

# IPHC Memo

**To:** Research Advisory Board  
**From:** Executive Director  
**Date:** October 17, 2002  
**Re:** Report of October 8, 2002 meeting

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

Absent: Rob Wurm (schedule conflict)

Material distributed to the RAB prior to the meeting included: documents provided to the external peer reviewer panel for the PIT tagging program; the panel's report and staff comments on the report; progress on 2002 research projects; and preliminary proposals regarding 2003 research.

After introductions, RAB members were asked to identify the major issues affecting the conduct and viability of their harvesting or processing operations, as a vehicle for the group to identify research projects of importance to the industry. Staff then put forward their ideas on fishery related issues. This dialogue was extremely broad ranging but the following areas were identified for further discussion:

1. Season extension/winter fishing/PIT tagging
2. Impacts of bycatch caught in the halibut fishery/gear selectivity
3. Chalky halibut
4. Aquaculture
5. Whale and shark interactions with halibut fishing
6. Sand fleas
7. Mechanism of growth changes in halibut
8. Wastage from prior hooking injuries
9. Mercury in halibut

The Board then examined each of these areas and suggested potential research projects to address the issues involved.

1. Season extension/winter fishing/PIT tagging  
Extension of the halibut season continues to be an industry priority, primarily with regard to providing competition to farmed halibut during the present closed season. Halibut farming companies have identified the current closed period for the commercial fishery as

the target for their marketing and production efforts. Wild halibut harvesters want to eliminate the opportunity for farmed halibut to have sole access to the marketplace, by having wild halibut available throughout the year. Staff have noted that conservation can be maintained with year-round fishing but that there may be long-term shifts in biomass distribution over that currently used as the basis for setting quotas by regulatory areas. Interceptions of migrating fish between the two countries may be significant depending on the magnitude and location of winter fishing.

If winter fishing were to occur, some 'down' time will be required for administrative purposes of IQ management but other administrative processes could be shifted in time to accommodate winter fishing. Longer-term initiatives to stabilize quotas over multiple years may facilitate the administrative accommodation of year-round fishing. The Board requested that staff continue its work on medium-term harvest and recruitment forecasts, with a view to longer-term quota setting. Staff responded that a progress report on this issue would be presented at the 2003 Annual Meeting.

The season extension and tagging topics were somewhat linked because of the need for understanding of the potential effects of winter fishing. The historical IPHC tagging database has very limited ability to predict the effects of removals in particular areas during the winter on the existing summer distribution of biomass, which is the basis for current quota setting. While our summer PIT tagging will provide some data on movements, the primary emphasis of the planned experiment is to obtain an independent estimate of biomass. The usefulness of winter recoveries of tags applied during the summer distribution of the stock would be limited by the magnitude and distribution of winter catches.

Alternately, the Board considered the option of applying tags during the winter. The pros to this approach are that fish may be concentrated and a large number of tags might be applied rapidly. It would also provide direct information about the origin of individuals in specific spawning concentrations, when summer recoveries are made. The cons of this approach are that it would be a substantial incremental expense on the Commission's existing field activity, it would provide information only on the fish that went to the spawning locations where winter tagging occurred, and there would likely be few tags applied to smaller or juvenile fish. A last comment concerning the tagging program was that staff consider a regulation requiring that landed catch be made available for scanning. Noting the up-front expense of the program, the Board believed that its success should not be compromised by an inability to scan the catch for tags. Staff believes that we will be able to work with industry to achieve the necessary scanning but acknowledged that such a regulation might be useful.

Additional use of PSTAT tags was also supported as providing more direct evidence of fish movements. It was noted that the use of this technology is currently quite expensive but that costs would likely decrease in the future. The Board also identified that efforts should be made to ensure that cost-recovery funds from IQ programs be directed to the Commission to support needed research on these and other issues.

## 2. Impacts of bycatch in the halibut fishery

The Board noted that bycatch in the halibut fishery, primarily rockfishes, is currently the major constraint in the conduct of halibut fishing. Overlapping species composition for different licence categories creates restrictions on retention of species that consequently constrain target fishing for halibut. While integrated fishing, i.e., non-licence restricted fishing, will be necessary to overcome these restrictions over the long term, the Board noted the need for research on more selective fishing gear as a means to address the bycatch issues over the near term. In particular, they wished to have pot fishing for halibut examined for its potential to overcome some of the bycatch issues. The Board was aware that a shift in gear for halibut fishing would likely have other impacts, some negative, but believes that pots should be examined as a potential solution to at least some aspects of the bycatch problem. In addition to pot gear, the Board discussed reviewing hook types and sizes to determine if catch composition could be different. Selective gear research could be done under partnerships with the industry, and there could be funding (Saltonstall-Kennedy) through ecosystem management.

It was also noted that presently-unconstrained species occurring as bycatch in halibut fishing may become targets of regulatory actions through either biodiversity, endangered species, or ecosystem management concerns. More selective fishing for halibut may be required regarding these species in the future. A more detailed temporal and spatial distribution of bycatch species through either Commission surveys, camera observations during fishing or logbook recordings will be required to address avoidance. Lastly, more complete utilization of catch in the halibut fishery should be a long-term goal for the industry.

## 3. Chalky halibut

While chalky halibut remains a significant concern for industry, the Board felt that the Commission had conducted as much research as was appropriate for its role. The emphasis remains on avoidance, detection, and utilization. The industry (through HANA) and the Commission are presently funding a contract to examine the detailed cell chemistry of chalkiness in hope that there may be some mitigative measures possible. The Board was not optimistic in this regard but believed that this research was necessary to fill in the missing understanding of cell chemistry. The Board also believed that further progress in education/marketing concerning chalky halibut was possible but that chalkiness was likely to be an ongoing issue.

Staff explained that a proposed web page to register occurrence of chalkiness was not well received by some industry participants. The main perceived drawback was that dealers and harvesters perceived potential negative consequences to their business if particular areas and times were identified as sources of chalky halibut. There was strong concern that such perception would have negative consequences on the marketing of all halibut from those areas and times.

#### 4. Aquaculture

The Board reviewed the concerns industry has about both the economic and the environmental impacts of halibut aquaculture. The latter pertain primarily to the potential amplification of existing pathogens through intensive culture in open net cages, escape of fish with high levels of pathogens, and introduction of non-native pathogens from Atlantic halibut should it be used as a culture candidate on the west coast. The Board recognizes federal government support for aquaculture in both countries but suggested that the Commission produce a position paper on the 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. The Board suggests that the staff obtain a copy of a contract report by Arhipelago Marine Research on the potential impacts of halibut aquaculture.

#### 5. Whale and shark interactions with halibut fishing

The Board discussed the apparent increase in interactions between both killer whales and sperm whales and halibut fishing. Predation by both species is reported more frequently than in previous years and involves predation on hooked halibut by the whales. Since this behaviour can be learned, the industry is concerned about habituation to this type of feeding by the whales. It was noted, that the interaction with whales was more significant during sablefish fishing than during halibut fishing. Similarly, occurrences of sleeper sharks are higher than they were in the 1980s and previously. The Board requested that staff monitor progress of working groups in Alaska examining this interaction and determine if logbook recording can be used as an effective tool for documenting occurrence of interactions. The Board also suggested that the Commission consider support for a graduate student to examine this problem.

#### 6. Sand fleas

Board members suggested that sand fleas in some areas may be coming more prevalent. While this issue is not regarded as a priority item, staff suggested that survey records could be examined to determine if any trends in abundance or distributional shifts in sand flea occurrence are evident. Several Board members also noted that sand flea occurrence appears to be pseudo-cyclical and that changes were more or less natural. Staff agreed to examine survey records because they may be the only data that are collected consistently. Logbook records are unlikely to provide consistent and objective records of sand flea occurrence.

#### 7. Mechanism for growth changes in halibut

Staff have presented detailed evidence for long-term changes in growth rate that are highly correlated with the abundance of halibut. While this density dependence is well demonstrated, the actual mechanism for growth rate changes has not been determined. This is particularly important in consideration of which harvest strategy we should adopt

and whether we should assume a change in growth rate with stock abundance changes. We have no direct experiments planned but Dr. Clark has established contact with European researchers examining similar patterns for Atlantic flatfish and may conduct joint research with them.

8. Wastage from prior hook injuries

The Board presented views on the use of barbless hooks as a means to decrease the severity of prior hooking injuries for halibut in both target and non-target fisheries. There was some divergence of views on this topic. Some Board members believe catch rates would not decrease appreciably with barbless hooks because the circle hooks retain fish better than the older J-hooks, while others believed that fish will slip easily off barbless hooks while feeding on bait. The Board requested that staff examine the impacts on catch rates and severity of discard injuries resulting from the use of barbless hooks.

9. Mercury in halibut

Staff briefed the Board on its involvement with US and Canadian federal agencies that are examining a suite of contaminants, including mercury, in a variety of marine species. Staff has been working with these agencies to ensure that their sampling design and protocols do not create bias toward centres of human habitation, hence higher levels of anthropogenic mercury introductions. These studies will proceed regardless of Commission participation and staff believed it was in the interest of characterizing contaminant levels in the population and the catch of halibut accurately that we participate in these studies. Some collections will be made on the 2003 setline grid survey.