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**Jurisdictional and Administrative Limitations
Affecting Management of the Halibut Fishery**

by

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Contents

Abstract	4
Introduction	5
Management Under the Halibut Convention	6
Jurisdictional Limitations	7
The Halibut Convention	8
The Enabling Acts	11
Conflicts with Multi-Species Fisheries	12
Administrative Limitations	14
Enforcement Deficiencies	14
Licensing Provisions	15
Approval of Regulations	16
Staffing and Related Matters	16
Summary and Conclusions	20
Acknowledgements	21
Literature Cited	22

ABSTRACT

The Canadian-U.S. Halibut Convention and its Enabling Acts were re-examined to assess the ability of the International Pacific Halibut Commission (IPHC) to manage the fishery under the existing terms of reference and to re-evaluate the need for international management of the halibut resource. National goals such as limited entry and optimum yield have not been incorporated in the terms of the present Convention and these inconsistencies, as well as administrative deficiencies concerning enforcement and staffing, have limited the effectiveness of IPHC. A revision of the existing treaty and associated legislation is recommended and suggestions are made for the restructuring of international arrangements now under study by the federal governments.

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INTRODUCTION

The International Pacific Halibut Commission (IPHC) was created by the Halibut Convention of 1923 and has managed the halibut fishery for Canada and the United States for more than 50 years. The Convention has not been revised since 1953, and it is time to reexamine the terms of the Convention and to reevaluate the need for international management of the halibut resource. Can IPHC effectively manage the fishery under existing guidelines or should the directives be changed to accommodate today's circumstances?

During the past 25 years of IPHC's experience, significant changes have occurred in the international fishery scene, not the least of which was the extension of the fishery zone from 3 to 12 miles and the imminent implementation of a 200-mile limit. Canada and the U.S. have established a reciprocal fishing agreement that recognizes the traditional fishing rights of both countries and, in essence, incorporates provisions stipulated in the Halibut Convention. Then, too, Canada, Japan, and the U.S. are members of the International North Pacific Fisheries Commission (INPFC) whose authority in the eastern Bering Sea pervades that of IPHC. The same may be said for bilateral agreements that Canada and the U.S. have with other countries. The complexity of these arrangements has been noted by biologists, political scientists, and industry members alike (Kasahara, 1973; Kasahara and Burke, 1973; Needler, 1973; and UFAWU, 1974), and these authors have suggested that a multi-national treaty similar to that serving fisheries in the Northwest Atlantic is needed for the North Pacific.

The 50-year existence of IPHC and the complications of institutional affairs are reason enough to reassess the Halibut Convention, but other considerations also justify the reexamination. One of the deterrents to IPHC's effectiveness is the problem concerned with the incidental catch of halibut by trawlers, domestic (Canada and U.S.) and foreign (Japan and U.S.S.R.). Other factors such as limitations of the present Convention, different national goals, problems of enforcement, and administrative deficiencies also affect IPHC's operation. All of these matters and their significance to the management of the halibut fishery are discussed in this report.

The two federal governments are reviewing the role of IPHC as well as other international fishery commissions. In part, the federal studies were prompted by the prospect of extended fishery jurisdiction, and their perspective may not include functional problems of the Commission that are important in deciding its future. I have attempted to summarize the problems critical to IPHC's operation and to assess them in terms of management goals and objectives. I have also reviewed the administrative structure of IPHC and its related problems; these more mundane aspects generally have not been discussed in the literature and their importance to the effectiveness of international management agencies largely

has been ignored by those examining or recommending changes in the international institutions. This lack of attention is not surprising if one considers that the experience of most of these authors has been in fields other than fishery management. Alverson (1975) reviewed the background of 11 authors in a six-paper series on alternative arrangements for management of marine fisheries (published by *Resources for the Future, Inc.*) and another paper entitled "Principles for a Global Fisheries Management Regime" with 9 authors (published by the *American Society of International Law*). He found that all 20 authors had been associated with academe: 8 were economists, 8 were lawyers, 1 was a political scientist, and 3 were biologists. Only one, a biologist, had been directly involved in fishery management. My intent in citing these findings is not to criticize the output from other disciplines, rather to emphasize the lack of input from fishery managers.

The objectives of this paper are to assess IPHC's ability to cope with problems of management under the existing terms of reference in the Convention and to consider alternative guidelines that will improve IPHC's effectiveness. Because the federal governments are planning to restructure fishery management bodies to cope with the responsibilities inherent in extended jurisdiction, the topics discussed in this paper should be considered in deciding the future of IPHC and are offered as means to strengthen the management of the halibut resource.¹

MANAGEMENT UNDER THE HALIBUT CONVENTION

The history of management under the Halibut Convention (as executed by IPHC) has been reviewed by the following authors: Babcock et al (1931), Thompson and Freeman (1930), Thompson (1952), Bell (1959 and 1969), and Bell and St-Pierre (1970), Skud (1973), and IPHC (1974a). During IPHC's tenure, the halibut catch increased from 40 million pounds in 1930 to over 70 million pounds in 1963. Landings declined thereafter, in part, because of lowered recruitment, but also as a result of intentionally increasing the catch to test estimates of maximum sustained yield. This action was necessary to demonstrate that stocks were fully utilized, a requisite for Japanese abstention under the International North Pacific Fisheries Convention. Although stock abundance declined, the North American setline fishery was not in jeopardy until trawlers from other nations began fishing in the North Pacific during the mid-1960's. As these fleets increased their fishing effort, the Halibut Commission's effective control of the resource decreased. Reductions of the catch limit for the setline fishery were partially offset by the incidental catch by Japanese and Soviet trawls in the eastern Bering Sea and northern part of the Gulf of Alaska and by both domestic and foreign trawl fleets in the southern part of the Gulf.

¹ After completing this manuscript, President Ford signed the Fishery Conservation and Management Act of 1976, which establishes a 200-mile fisheries zone as of March 1, 1977. The Act includes the following directive (Section 202(b)) to the Secretaries of State and of Commerce concerning treaties such as the Halibut Convention:

"(b) TREATY RENEGOTIATION.—The Secretary of State, in cooperation with the Secretary, shall initiate, promptly after the date of enactment of this Act, the renegotiation of any treaty which pertains to fishing within the fishery conservation zone (or within the area that will constitute such zone after February 28, 1977), or for anadromous species or Continental Shelf fishery resources beyond such zone or area, and which is in any manner inconsistent with the purposes, policy, or provisions of this Act, in order to conform such treaty to such purposes, policy, and provisions. It is the sense of Congress that the United States shall withdraw from any such treaty, in accordance with its provisions, if such treaty is not renegotiated within a reasonable period of time after such date of enactment."

Under IPHC's management, the Canadian and U.S. fleets have fished harmoniously in waters off four states and one province under a uniform set of regulations. Because of the foresight of the early investigators, the statistical records of the fishery are the longest and most complete of any in North America, perhaps in the world. The Commission also has contributed to the knowledge of the biology of halibut and to the understanding of population dynamics and fisheries management in general. Although IPHC's scientific analyses or management decisions have not been flawless (Skud, 1972 and 1975a), the Commission has enjoyed international recognition of its achievements. However, scientists such as Burkenroad (1951), Ketchen (1956), and Fukuda (1962) have questioned IPHC's role in the recovery of the stocks; and Nesbit (1943), Gordon (1954), and Crutchfield and Zellner (1962) contend that regulations have reduced the economic efficiency of fishing and marketing. Nonetheless, the development and maintenance of a viable fishery for 40 years was, in itself, a significant achievement. Johnson (Ph.D. thesis)¹ summarized the situation as follows:

“ . . . the commissions have encountered economic and political problems which their limited authority prevents them from confronting (e.g., overentry into the fishery). In some cases, the success of a commission in restoring a fishery actually creates such problems by attracting new entrants. Thus, the commissions may fill their legal biological goal yet become economic and political failures in the process. Several observers have pointed out that setting out rigid legal definitions of what commissions can or cannot do has been an impediment to their growth, by preventing their adjustment to conditions they have by their existence created.”

The limitations of IPHC's management responsibility are described in subsequent sections of this paper. Although IPHC's authority is inflexible in certain respects and lacks necessary controls for effective management of the fishery, several aspects of IPHC's operation can serve as guidelines to structure new management bodies or to enhance existing ones. Preeminent among these factors is the ability to institute restrictive measures without undue delay. An example is the reductions of the catch quotas during the early 1970's when IPHC realized the severity of the stock decline. These restrictions were not popular with either Canadian or U.S. fishermen, particularly in face of the increasing catch by foreign fleets, but drastic action was necessary to halt the decline in abundance and the Commission responded accordingly. Further, the Commission is relatively free of political and national pressures.

JURISDICTIONAL LIMITATIONS

National agencies have not been satisfied with the management practices of international fishery bodies, in general; yet, in the bilateral commissions such as IPHC, the guidelines were established by the national governments and they alone have the authority to change them. Needler (1973) claimed that conservation bodies have been hindered by restrictions of their own conventions and urged that provisions be as non-restrictive as possible. This sentiment was echoed by Alverson and Paulik (1973):

¹ Johnson, Eleanor Barbara. 1973. The regulation of international fisheries. University of Washington, Ph.D. dissertation, 213 p.

“Many problems confronting effective management can be traced to the limited authority invested in management institutions and to the procedures utilized in making management decisions. Authority may be limited in a geographic sense, i.e., the resource under consideration may be partly under national jurisdiction and partly in international waters. The problem of fragmented management has operated to the detriment of fisheries goals, both at national and international levels. In addition, management agencies are frequently restricted to actions concerned solely with conservation objectives. Hence they have not been able to deal—other than in a de facto manner—with socioeconomic problems.”

The Halibut Convention

Bell (1969) compiled the complete texts of all the Halibut Conventions and presented a detailed narrative of pertinent events that led to the revisions. In all, there have been four revisions (1923, 1930, 1937, and 1953). The portion of the Convention specifically dealing with management of the fishery is contained in Article III, Paragraph 2 of the 1953 revision:

“The Contracting Parties agree that for the purpose of developing the stocks of halibut of the Northern Pacific Ocean and Bering Sea to levels which will permit the maximum sustained yield from that fishery and for maintaining the stocks at those levels, the International Pacific Halibut Commission, with the approval of the Governor General in Council of Canada and of the President of the United States of America, may, after investigation has indicated such action to be necessary, in respect of the nationals and inhabitants and fishing vessels and boats of Canada and of the United States of America, and in respect of halibut:

- (a) divide the Convention waters into areas;
- (b) establish one or more open or closed seasons, as to each area;
- (c) limit the size of the fish and the quantity of the catch to be taken from each area within any season during which fishing is allowed;
- (d) during both open and closed seasons, permit, limit, regulate or prohibit, the incidental catch of halibut that may be taken, retained, possessed, or landed from each area or portion of an area, by vessels fishing for other species of fish;
- (e) prohibit departure of vessels from any port or place, or from any receiving vessel or station, to any area for halibut fishing after any date when in the judgment of the International Pacific Halibut Commission the vessels which have departed for that area prior to that date or which are known to be fishing in that area shall suffice to catch the limit which shall have been set for that area under section (c) of this paragraph;
- (f) fix the size and character of halibut fishing appliances to be used in any area;
- (g) make such regulations for the licensing and departure of vessels and for the collection of statistics of the catch of halibut as it shall find necessary to determine the condition and trend of the halibut fishery and to carry out the other provisions of this Convention;
- (h) close to all taking of halibut such portion or portions of an area or areas as the International Pacific Halibut Commission finds to be populated by small, immature halibut and designates as nursery grounds.”

The Halibut Convention specifies maximum sustained yield (MSY) as the management goal and does not allow for regulations that would limit entry into the fishery. This is in direct conflict with pronounced national goals. During the past year, both national governments have assumed a strong posture regarding the objectives of fishery management and consider MSY as too limited an objective. In a recent speech, the Canadian Minister of State for Fisheries, Roméo LeBlanc, said ". . . We must move away from the unworkable concept of maximum sustainable yield to a concept of optimum economic yield".¹ Canada also has introduced limited entry in its lobster and salmon fisheries. A similar stance in recommending broader goals for fishery management is advocated in a draft of the U.S. National Fisheries Plan: ". . . Limited entry should be considered as a management tool for application to those fisheries in which overcapitalization exists or in which there is good likelihood that overcapitalization will develop . . .".²

Ad hoc working groups in other international bodies recently concluded that, under certain circumstances, fishing for MSY can result in stock depletion.³ Indeed, their findings may help to explain part of the decline in halibut abundance since the late 1950's. However, the specific reference to MSY is not a serious limitation in today's halibut fishery because stock abundance is low and the Commission's efforts are directed solely towards stopping the decline and rebuilding the resource. In the future, however, the management objective should be more flexible than MSY and should permit consideration of economic, political, and social factors. Provisions for licensing are now limited to statistical needs and should be broadened to permit IPHC to limit entry of vessels into the fishery and to charge license fees as considered necessary to achieve management objectives and to reimburse state or federal costs of enforcement (see section on Licensing Provisions). Similarly, attention should be given to controls other than those now in force. Examples, suggested by fishermen, are the authority to limit the amount of gear (number of skates) fished per vessel, to limit the "soak-time" of the gear, or the length of each trip. Fishermen regularly have asked IPHC to incorporate the industry's "lay-up program" in the halibut regulations. The program provides for rest periods between trips and extends the fishing season. It is a voluntary measure introduced by industry organizations. IPHC supports these objectives but lacks authority for implementing such restrictions.

Another shortcoming of the Convention is that no proviso exists for emergency action by the Commission, i.e., regulations or changes thereof must be approved by the national governments. An emergency change can be approved by the U.S. in a few days, whereas approval in Canada may take up to 6 weeks, too protracted to implement a pressing emergency. Because IPHC cannot readily institute emergency regulations during the present period of low abundance, the fishing season has been curtailed as an extra precautionary measure to limit fishing effort. Emergency situations have been infrequent, but one occurred in

¹ Press Release, June 6, 1975, Information Branch, Fisheries and Marine Service, Environment, Canada.

² Draft of National Plan for Marine Fisheries, U.S. Department of Commerce, NOAA, National Marine Fisheries Service, October 1975.

³ Unpublished documents: International Commission for the Northwest Atlantic Fisheries (ICNAF) and International Council for the Exploration of the Sea (ICES).

1973 when the catch rate fell drastically during the first 2 months of the fishing season. The Commission had to withdraw its recommendations for an early closure of the fishery because approval could not be obtained soon enough to provide adequate notice to the fishermen. Similarly, in 1975, the Commission could not consider an extension of the fishing season when a strike in British Columbia threatened to prevent fishermen from attaining the catch quota. Authorization for emergency closures usually is included as a directive for other management agencies—state, federal, or international—and should be granted to IPHC. If such authority is granted, a stipulation should be made that IPHC must discuss the need for emergency measures with the industry Advisory Group and allow time for evaluation before instituting such action.

The Convention does not speak to the question of allocation of the catch either, but this exclusion has not created any difficulties to date. However, revisions in the Canadian-U.S. reciprocal agreement or the extension of national jurisdiction could dictate an allocation of the halibut catch. The distribution of the catch by nationality has changed significantly in recent years (Table 1).

Table 1. Catch of halibut by area and nationality, 1926-1975. (Dressed weight in thousands of pounds.)

Year	British Columbia			United States ¹			All Areas		
	Catch	Canada	U.S.	Catch	Canada	U.S.	Catch	Canada	U.S.
	Pounds	Percent		Pounds	Percent		Pounds	Percent	
1926-1935	226,279	37.5	62.5	273,581	0.2	99.8	499,860	17.1	82.9
1936-1945	211,928	59.0	41.0	303,516	0.3	99.7	515,444	24.4	75.6
1946-1955	244,461	86.2	13.8	345,568	2.6	97.4	590,029	37.2	62.8
1956-1965	257,213	95.7	4.3	415,879	15.6	84.4	673,092	46.2	53.8
1966-1975	173,807	96.2	3.8	274,690	22.9	77.1	448,497	51.3	48.7
Total	1,113,688	74.9	25.1	1,613,234	8.6	91.4	2,726,922	35.6	64.4

¹ California, Oregon, Washington, and Alaska.

Whereas U.S. fishermen accounted for 60% of the catch from waters off the coast of British Columbia before 1936, they now account for less than 5% of the catch in that area. The Canadian share has increased from 0.2% to 22.9% in waters off the U.S. (Washington and Alaska) and from 17% to 51% in the entire North Pacific. Obviously, the division of the total catch by nationality is more evenly proportioned today than in the early years of the fishery. The change was the result of a decline in the catch by U.S. fishermen off British Columbia and by an increased catch by Canadian fishermen off the Alaska coast. These changes in the distribution of catch should be examined in determining the necessity for international management, particularly if coastal nations attain jurisdiction within 200 miles. If the Convention is revised and the catch is apportioned by country, IPHC's directives will have to be modified to supervise the allocation.

Interpretations of the Convention are requested periodically from the two governments. Recently, the questions have involved economic aspects of management and the answers are summarized here. A Canadian official (J. G. Carton, Director of Legal Services, Department of the Environment, correspondence dated 8/13/1973) interpreted economic aspects of the fishery to be a part of IPHC's responsibility, i.e., the implementation of the objective in the preamble ". . . to provide more effectively for preservation of the halibut fishery . . .".

However, the same official did not consider it within IPHC's authority to charge \$1,000 for a license or to revoke a license of an individual guilty of a violation, because the Convention did not explicitly specify such authority.

On the other hand, a U.S. official (Donald L. McKernan, Ambassador for Fisheries, State Department, correspondence dated 9/25/1973) considered IPHC's authority to be limited to the conservation terms of the Convention, i.e., Article I ". . . to develop the stocks of halibut in the Convention waters to those levels which will permit the maximum sustained yield and to maintain the stocks at those levels pursuant to Article III . . .". He did not question IPHC's authority, per se, to charge a \$1,000 license fee, but doubted that such a fee could be justified in terms of conservation.

As is apparent from these and earlier interpretations, regardless of whether economic controls are implicit or not, IPHC's authority is limited to those actions that are specifically outlined in the Convention and IPHC must abide by the more conservative of the interpretations. I do not quarrel with this specificity and accept the governments' requirement to limit the authority of IPHC and to retain ultimate control. One must appreciate the attitude regarding economic control at the time the Convention guidelines were formulated. My point, now that national goals have changed so drastically, is that the guidelines should be changed accordingly. This general sentiment was voiced by Wilimovsky and Alverson (1971):

"Management cannot be predicted (sic) on biological factors alone. Most of the legal, economic, social and educational questions have not been tackled on a broad base; and, indeed, effective management must consider these non-biological areas. To understand the management problems uniquely associated with fishing, it is necessary to recognize that this industry represents the only major remaining food producing system in the world which relies on a hunting procedure, exploits wild stocks, and must utilize resources that are considered the property of all sovereign nations."

Two other questions of interpretation should be clarified in a revision of the Convention. The first is a definition of "Convention waters". As presently defined, there is no western boundary: ". . . the territorial waters and the high seas off the western coasts of the United States of America and of Canada, including the southern as well as the western coasts of Alaska". The second clarification needed concerns the sport fishery for halibut. Although IPHC presently recognizes and regulates the sport fishery as part of its responsibility to manage the resource, the Convention only makes reference to the commercial fishery (Skud, 1975c).

In 1974 and 1975, the staff of IPHC urged a review and revision of the Convention to provide greater flexibility for management of the fishery (Skud, 1975b). The proposal was not approved because the Commissioners decided that the revision should not be considered until the Law of the Sea Conference (or unilateral extension of fishery jurisdiction) had been concluded.

The Enabling Acts

The U.S. Enabling Act (Section 3B) states that it is unlawful for ". . . any person to transfer to or to receive upon any vessel of the United States, or to bring to any place within the jurisdiction of the United States any halibut caught in Convention waters by the use of any vessel of a nation not a party to the

Convention . . .". Yet in 1972, Japan exported more than 20 million pounds (equivalent round weight) of halibut to the U.S., much of which was assumed to have been taken in Convention waters. This regulation could help provide the control needed by IPHC to limit the incidental catch of halibut by foreign vessels, but it has not been enforced because another agreement supersedes the Halibut Convention and gives Japan status as "a favored nation". Further, the regulation is not included in the Canadian Enabling Act.

The Enabling Acts of the two countries do not prescribe the same penalties for violations. For example, whereas the Canadian Act specifies that vessels or goods *may be* seized or forfeited when in violation of the Act, the U.S. Act states that the vessel and cargo *shall be* seized and forfeited. Also, the U.S. Act specifies severer penalties for second and third violations, whereas the Canadian law does not distinguish penalties in this fashion. Under Canadian legislation, the minimum fine for a violation is \$100, whereas in the U.S. the minimum is only \$50. Further, with the present value of halibut now exceeding one dollar per pound, the maximum monetary penalty (\$1,000) does not provide a sufficient deterrent for violators. On the other hand, several of the penalties for minor infractions of commercial regulations are too severe. And, finally, a separate schedule of penalties is needed for violations of the sport fishing regulations because those now in existence are too severe and are not consistent with fines applicable in other marine sport fisheries.

The U.S. Act does not delegate enforcement authority to state officers as is customary in other international fishery arrangements to which the U.S. is a party. As discussed in a later section on enforcement, a provision designating state authority in enforcement would help solve critical problems in the Alaska fishery.

Neither of the Enabling Acts recognizes a body of industry advisors. This is not a serious problem with regard to management, but the Commission has regularly consulted with industry groups, and there are advantages to formalizing these arrangements. The Commission meets annually with the Conference Board (fishermen and vessel owners) and pays travel and expenses for the attendance of 12 delegates. Consultations with processors were intermittent and not formalized. In 1974, the Commission created the Advisory Group that includes 7 members of the Conference Board and 7 processors selected through the Halibut Association of North America (HANA). Representation in this group recognizes nationality and geographic location. The group meets with the Commissioners at the time regulatory decisions are made. The role of the Conference Board and Advisory Group is an important one and should be formally recognized in the Enabling Acts (or the Convention).

Conflicts with Multi-Species Fisheries

Domestic and foreign trawlers take large quantities of halibut as an incidental catch and, even when returned to the sea, many of the halibut do not survive (Hoag, 1971 and 1975). The abundance of halibut began to decline before the trawl fishery was extensive, but as the foreign fleets expanded in the 1960's and the losses to their trawlers increased, IPHC was compelled to further reduce the catch limit for the North American setline fishery. In 1974, the catch was 21 million pounds, only one-third of the annual catch during the early 1960's and the lowest since the 1920's. IPHC's attempt to manage the fishery was, in part, being negated by the incidental catch by countries that were not parties

to the Halibut Convention. Attempts to control the incidental catch of halibut were not successful until 1974, when Japan agreed to prohibit trawling in certain parts of the Bering Sea (IPHC, 1974b). IPHC has no authority to negotiate with foreign nationals; however, in 1973 and 1974, IPHC recommended that foreign trawling be prohibited in critical areas when the incidental catch of halibut was high (Hoag and Skud, 1975). Canada and the U.S. supported this proposal and successfully negotiated modifications in the Japanese and Soviet fishing effort, but the agreements will have to be renegotiated periodically. Although not all of the time-area closures in IPHC's proposal were attained, the present arrangements have substantially reduced the incidental catch, and it is likely, if jurisdiction is extended to 200 miles, that the other restrictions will be instituted through future negotiations.

The situation with the domestic trawl fisheries is not unlike that of the foreign fisheries. IPHC can and does prohibit retention of trawl-caught halibut, but does not have the authority to manage the trawl fishery to reduce the incidental catch of halibut. Federal (Canada) and state (U.S.) governments are responsible for management of their trawl fisheries, but no conservation measures concerning halibut have been instituted, other than those of IPHC. The trawl fishery off British Columbia (conducted by both Canadian and U.S. fishermen) has grown substantially since 1950 and the incidental catch of halibut has increased proportionately (Hoag, 1971). Canadian officials are reluctant to impose restrictions that would inhibit the development of the trawl fishery because the target species are not fully exploited. Assuming a continued expansion of this fishery, the catch by setline fishermen will have to be reduced accordingly, unless other measures are instituted, so that stocks of halibut are not over-exploited. Similar situations are likely to develop in Alaska although, at present, the shrimp fishery is the only trawling operation of consequence. However, pot fisheries for crab and blackcod also take halibut incidentally and are another concern.

Canadian and U.S. federal agencies have been promoting the development of domestic trawl fisheries, but neither these bodies nor the state agencies have initiated measures to manage their trawl fisheries to reduce the incidental catch of halibut. Recognizing the importance of the domestic trawl fleet and the potential of developing the fisheries for groundfish (other than halibut), the attempts to increase the production of the trawl fishery should be encouraged. As the national goals also include the maintenance of a viable halibut fishery, however, a concerted effort should be made for a coordinated management program that will alleviate the conflict between these fisheries. IPHC has contacted the agencies responsible for management of the trawl fisheries and has requested that this matter receive attention, but the response has been limited. The Pacific Marine Fisheries Commission (PMFC) expressed an interest in the problem and agreed to serve as a forum for discussion. The National Marine Fisheries Service (NMFS) instituted a modest research program to study means of reducing the incidental catch by trawls.

IPHC presently prohibits the retention of trawl-caught halibut, but has been reexamining this position and should be prepared to consider a change when steps are taken by managers of the domestic trawl fisheries to reduce the incidental catch. If trawl fishermen were allowed to retain halibut, one can argue that the management of the halibut fishery, as well as the trawl fishery, should

be a national (or state) responsibility or that the trawl fishery should be managed by an international body. Indeed, the trawl fishery in British Columbia waters is a prime example of a fishery executed by both nationals without an international convention. U.S. vessels are bound, by a reciprocal agreement, to adhere to Canadian regulations.

In the simplest terms, the key to management is control, and IPHC does not have control of either the trawl or pot fisheries. Without control or without cooperative management, proper utilization of the halibut stocks cannot be realized. The national (and state) governments will have the authority to control domestic and foreign fleets if fishery jurisdiction is extended and this control should be exercised with concern for all species.

ADMINISTRATIVE LIMITATIONS¹

Enforcement Deficiencies

IPHC and other international commissions do not have enforcement authority. The Enabling Acts for the Halibut Convention specify that federal agents are responsible for enforcement of the regulations. In Canada, the reference is to fishery officers, Royal Canadian Mounted Police, commissioned officers of the Royal Canadian Navy, and others, such as Customs officers, authorized by the Governor General of Canada. In the U.S., the enforcement authority is delegated to the Coast Guard, Customs Service, and the Bureau of Fisheries (now National Marine Fisheries Service, NMFS). In practice, only personnel from the fishery agencies actually enforce present-day regulations.

Before statehood in Alaska, U.S. fishery agents were stationed in all major ports and periodically monitored the halibut fleet. The agents used patrol vessels and aircraft to check vessels on the fishing grounds. Since statehood, federal agents have been stationed only in Juneau and Kodiak and their enforcement activities are largely directed to the aerial surveillance of Japanese and Soviet fishing vessels. In certain areas, such as the Bering Sea, these aerial surveys also improved the offshore enforcement of the North American halibut fleet but gave little or no coverage of the inside waters of southeastern Alaska. Landings of the halibut fleet are checked infrequently at Juneau and Kodiak and checking at other ports is practically non-existent. IPHC alerted NMFS about the problem, but surveillance of foreign vessels had an established priority and limitations in funding and personnel precluded additional enforcement of the halibut regulations. Another attempt to remedy the enforcement problem was made in 1974, when the State of Alaska adopted IPHC's regulations for the commercial halibut fishery and assumed responsibility for enforcement. This action was accomplished through the cooperative efforts of state agencies (Fisheries and Public Safety), NMFS, and IPHC. However, the State of Alaska has not taken an active role in the enforcement of halibut regulations and it may be several years before its participation is effective. The U.S. Coast Guard and Customs Service also have enforcement responsibility, but Coast Guard participation essentially is limited to providing transportation in aerial surveillance and vessel operations on the high seas. Customs officers do issue licenses and clear vessels of foreign registry, but usually are not assigned to the small ports which collectively account for a

¹ Several topics included under this heading are specified in the Convention or in the Enabling Acts—enforcement, licensing, and approval of the regulations—but the problems associated with these directives are ones of execution and therefore have been included in this section.

substantial portion of the halibut catch. Neither country permits vessels of the other country to land their fare if a Customs officer is not available.

In Canada, the number of fishery officers and their areal coverage has been adequate, but particular facets of IPHC regulations have been ignored. In the early 1970's, hundreds of Canadian vessels over 5 net tons were not licensed as required by IPHC regulations. Canadian officials remedied this situation, but IPHC was placed in the awkward role of persuading officials of the federal governments to improve enforcement of the halibut regulations. I suspect that enforcement would be more thorough if the federal agencies also had the direct responsibility of managing the halibut stocks. If IPHC continues with its management authority, then the national governments must take steps to provide adequate enforcement. The necessity for such action and its importance to management were discussed by Christy (1973):

“An essential element of effective overall management is that those regulated believe that offenders against regulations will be brought to justice promptly and that prescribed sanctions will be imposed without delay. Unless those subject to a regulatory management have some confidence in the administration of the system they may disregard prevailing regulations, perhaps in large numbers and reduce the whole management scheme to futility. Even if mass violations of regulations do not occur, the incidence of individual offenses may rise and make enforcement virtually impossible.”

Licensing Provisions

The authority for licensing halibut vessels is provided in the Convention, Article III, 2(g), and the annual regulations specify that vessels (over 5 net tons) fishing for halibut must be licensed except those that use hook and line gear other than setlines. IPHC has no license fee and does not require an annual renewal, but every vessel is also required to be licensed by federal or state conservation agencies that charge fees and necessitate annual renewal. However, IPHC does obtain information not now included in many licensing programs. The regulations require that the licensee maintain a log book, which is the source of detailed data on catch and effort used to assess stock abundance. IPHC cannot abandon its licensing program until comparable data can be obtained from state or federal agencies.

When the licensing exclusion by tonnage was introduced in 1930, the fishery was dominated by large vessels—over 5 net tons. Today, the large vessels still account for over 80% of the catch, but the number of small vessels that land halibut now exceeds 3,000 annually. Most of these small vessels are salmon trollers that usually catch halibut incidentally (a by-catch), but on occasion they purposely target on halibut, either with troll gear or setline gear. Another class of small boats is the salmon gillnetters. These vessels have a drum on the stern to handle the gillnet, but it can also accommodate a groundline for halibut fishing. Removable hooks are snapped on the groundline before setting. Fishing records, other than catch, seldom are available from these small boats, but as their numbers have increased so has the necessity for more detailed information.

Both the staff of IPHC and the Conference Board (advisors from fishermen's unions) have recommended that all vessels fishing for halibut be licensed annually. The Commissioners have been reluctant to license the small boats or to require an annual license for large vessels because of the duplication with

other agencies and because of the time and cost required to broaden the licensing program. If the state or federal agencies do institute a requirement for log books, the Commission should consider introducing a license fee—high enough to pay for the increased costs and to reimburse the other agencies for collecting the statistics. The entire licensing procedure undoubtedly will be reviewed if fisheries jurisdiction is extended, and assuming that “coastal-state” control prevails, it is sufficient here to emphasize the need, in all fisheries, for log books and annual license renewal.

Approval of Regulations

In Canada, regulations proposed by IPHC are reviewed by the Fisheries and Marine Service (FMS) of the Department of the Environment and then must be approved by the Minister of Fisheries and the Privy Council. In the U.S., regulations are first reviewed by the Director and staff of the National Marine Fisheries Service and then by the Secretary of Commerce. The President of the United States has delegated the authority for final approval to the Secretary of State, who in turn has delegated the authority to the person responsible for foreign fishing agreements. For the most part, the approval is perfunctory because both FMS and NMFS officials serve as IPHC Commissioners. Nonetheless, the formal approval of the annual regulations often suffers from bureaucratic delays and confirmation of IPHC's recommendations has taken as long as 4 months. At times, approval has not been received prior to the opening of the fishing season. These delays could be overcome if the governments revised the requirements or re-delegated the authority for approval to federal fishery agencies or to the Commission. Mr. Jeff Birtz, an attorney in the Canadian Fisheries and Marine Service, has suggested (verbal communication) a revision that would eliminate the delay and still meet the requirements of the Convention: IPHC regulations would state that the Commission has the authority to amend those items which are subject to annual changes, such as the catch limits and the fishing season.

A suggested rewording that would not infringe on the control of the federal governments is as follows (the underlining indicates the addition to the existing section of the regulations):

SECTION 13. PREVIOUS REGULATIONS SUPERSEDED

(a) These regulations shall supersede all previous regulations of the Commission. These regulations shall be effective each succeeding year, until superseded.

(b) Notwithstanding paragraph (a), the Commission may modify annually the opening and closing dates and the catch limits, providing the changes are approved by both the Minister of Fisheries for Canada and the Secretary of State of the United States. Other changes must be approved in accordance with the specifications in the Convention.

Staffing and Related Matters

Most authors writing about international commissions give little attention to staffing problems. Swygard (1948), Burke (1967), and Kasahara and Burke (1973) specifically address the matter of the Commission's organizational structure

and operation. Comments from the latter paper serve as an introduction to this section:

“The most startling features of the Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea of 1953, and of the three predecessor treaties, are their brevity and simplicity and, perhaps consequently, their omissions of any mention of major organizational components of the commission’s structure and operation. Perhaps no other intergovernmental fishery body better illustrates the proposition that there is often a great distance between the basic constitutional charter of an organization and how it actually organizes itself to discharge its authority and responsibility. In this instance only one brief paragraph of one article (there are four operative articles) refers to the structure of the commission itself, and there is no reference to any other organ, body, or office in the treaty. Despite this lack of detail and the neglect of seemingly important procedural matters, the commission, as is well known, has a director of investigations, a staff, and a more or less formal international advisory structure and procedure for invoking it. Furthermore, none of this is new—the director’s office and staff were established immediately after the 1925 treaty came into effect and they have been exceedingly important in the commission’s functioning ever since.”

This lack of administrative directive has definite advantages in that bureaucratic procedures generally are minimized in the commissions. However, without general guidelines, the independent decisions made by each commission have created other problems—in particular, the staffing inequity among commissions and between commissions and federal agencies. Employees of the Halibut Commission are not recognized as federal employees by their respective governments and their status is controlled wholly by the Commissioners. Ironically, the U.S. Government requires that U.S. citizens hired by the Commission must be cleared by the International Organizations Employees Loyalty Board which conducts a security check similar to that conducted for federal employees. No such clearance is required for Canadian employees. The only common bond among fishery commissions is the pension provided through the Pension Society. In theory, federal status for commission employees may not be desirable, i.e., so their allegiance is less likely to be prostituted and the contributions to management decisions are not biased by nationalities. In practice, I don’t believe these concerns are important, but the lack of national recognition creates more serious problems that are described below.

Historically, the staff of IPHC has had lower salaries as well as lesser pension benefits than federal employees. Today, salaries are comparable with those of the U.S. Civil Service system, but pension and other benefits lag behind those of both Canada and the U.S. The Commission adopted the U.S. Civil Service salary system in 1949, but was frequently out of phase with periodic adjustments and did not follow the same promotional guidelines, all of which resulted in a lower pay scale. Because members of the Commission staff are not recognized as federal employees by either government, they are not eligible for federal retirement programs. Instead, pension benefits are provided through the International Fisheries Commissions Pension Society which was created in 1957 and which services other international fishery bodies in North America.¹

¹ Great Lakes Fishery Commission, Inter-American Tropical Tuna Commission, International Commission for the Northwest Atlantic Fisheries, International North Pacific Fisheries Commission, and International Pacific Salmon Fisheries Commission.

The late initiation of a pension plan necessitated an expensive "buy-back" scheme for long-term employees, and because of financial limitations, the benefits of the plan were considerably less than those of either federal plan. Even though the pension has been improved gradually throughout the years, the benefits still fall short of federal benefits. The prospects of real changes in the pension plan are limited and the difficulties and expenses associated with the plan are going to be severely compounded in future years. The Board of Directors of the Pension Society does not include representation by employees, and this lack of representation may be one reason why the Society has not thoroughly appreciated the need for improvements. Beyond that, the Society has not been funded so there is no permanent staff to check the contracts with the insuring agency and no auditing system to check the agency's charges.

The Halibut Commission and other international fishery organizations in North America have existed under the above mentioned conditions and can continue to do so; however, beyond being discriminatory, these shortcomings are not conducive to building strong and productive research bodies. In my opinion, permanent employees of international agencies should be recognized by their native governments and at least have the option of participating in federal retirement programs. (Precedent for this type of arrangement in North America exists in the International Boundary Commission, the International Joint Commission, and is a customary practice in European-based commissions.) Among other advantages, if employees of the Commission were included in the federal program, the exchange of personnel through staff transfers would increase and recruitment of research personnel would be enhanced. To date, employees have had little incentive to change organizations, even to transfer to other international bodies, because few reciprocal arrangements exist and there is no regular communication about vacancies; however, both Canada and the U.S. allow temporary secondment of federal employees to international organizations. (In 1972, IPHC established a policy to credit employment with the other commissions and with the federal governments and to recognize this past service for purposes of transfer and leave.) Because of the poor communication and the lack of flexibility, the staff turnover is minimal and long-term tenures (up to 40 years) are the rule rather than the exception. There are, of course, advantages to long tenures, but new and younger employees are needed to provide a proper balance and this is difficult to achieve under existing limitations. Other institutions face similar problems, but the situation in the Halibut Commission is aggravated by the small size of the research staff.¹

A major change in the status and recognition of Commission employees occurred during the preparation of this manuscript. In 1954, the Canadian Government enacted a national program called the Reciprocal Transfer Agreement which permitted employees of the Canadian Government to carry their vested pension funds from the national government to local governments that agreed to a reciprocal arrangement for their own employees. In 1975, the International Fisheries Commissions Pension Society signed such an agreement on behalf of the commissions. Although both U.S. and Canadian citizens are eligible

¹ This is not a plea to increase the staff size nor should it be construed that staff size has been unnecessarily restricted. I disagree with Johnson's (Op. cit.) conclusion that ". . . To a degree, opposition to the growth of fishery commissions has come from the dominant national scientific bureaucrats who dislike competition or hope to add to their own jurisdiction. This may partly explain . . . their opposition to permanent scientific staffs for commissions."

under the plan, it is most advantageous to commissions based in Canada. However, the option selected under the agreement is more favorable to employees of commissions based in the U.S. than for those in Canada. In principle, this is a forward step for commission employees and provides for a semblance of the mobility that previously has been lacking. Unfortunately, the U.S. Government does not have a comparable plan.

Another aspect of staffing problems, caused in part by the lack of mobility, is the national representation of the Commission's staff. There is a strong tendency for dominance by nationals of the country in which the commission is based. In 1970, less than 10% (2 employees) of the IPHC staff were Canadian. In 1975, 8 staff members were Canadian, 15 were U.S. citizens. In the Salmon Commission (located in New Westminster, British Columbia), 93% (51 employees) are Canadian citizens. The Great Lakes Fishery Commission (located in Ann Arbor, Michigan) has 3 U.S. and 1 Canadian. A 50/50 representation on bilateral commissions is not necessary, but problems could arise if management proposals are made without adequate representation by staff from both national governments.

One factor that may discourage Canadian citizens from joining U.S.-based commissions is the U.S. restriction on his family regarding "outside" employment. For example, a spouse of a Canadian employee presently cannot obtain an immigrant's working permit except under rare circumstances. Although the U.S. Immunities Act recognizes commission employees and allows members of their family to enter the country, the privilege does not include the right to seek employment.

The commissions need a coordinating body within their federal governments. Both governments have international sections in their fishery organizations, but they have not been concerned about uniform administration within the commissions, nor has the Canadian Department of External Affairs or the U.S. State Department. Budgeting in Canada is handled by the Department of the Environment and in the U.S. by the State Department. However, once the commissions were created, no agency attempted to coordinate the activities or organization of the various commissions and no guidelines were provided for their operations. As Burke (1967) surmised, each commission was afforded complete discretion in administrative matters and a wide variety of practices were adopted.

SUMMARY AND CONCLUSIONS

As Director of IPHC, I recommend that the Halibut Convention and the Enabling Acts be revised and other actions taken to upgrade IPHC's ability to execute its responsibilities. Revision of the Convention and the Enabling Acts would improve the present operations and effectiveness of IPHC. Without a revision, IPHC cannot manage the halibut fishery in a manner consistent with the changing national policies nor can it implement changes recognized by many scientists and managers as necessary for modern-day fishery management. Specifically, IPHC is restricted to manage for MSY and cannot consider other goals or economic factors. Both national governments foster more progressive management in fisheries which they control and urge similar measures be adopted by other management agencies; but IPHC, which once was regarded as the most successful fishery management agency, lacks the authority to implement these more progressive measures. Although the need for changes in the Convention guidelines and in the legal authority granted IPHC are rather obvious, there has been a general reluctance to take this step. Indeed, if the needs can be met without revising the Convention, i.e., by adding a protocol, then this approach should be considered.

The following changes are considered necessary if the Commission is to effectively execute the management of the resource (1-9 concern changes in the Convention or Enabling Acts, whereas 10-15 are of an operational nature):

1. Provide for emergency changes in the regulations.
2. Redefine biological objectives.
3. Include economic and social aspects in the management goal.
4. Broaden provisions for licensing.
5. Grant authority for license limitation and fees.
6. Acknowledge the sport fishery for halibut.
7. Reexamine penalties for violations and establish realistic fines.
8. Define "Convention waters".
9. Formalize IPHC's industry advisory bodies.
10. Improve state and federal enforcement capability.
11. Arrange for coordinated management of trawl and setline fisheries.
12. Speed government approval of regulations.
13. Recognize commission employees in federal systems.
14. Provide for personnel exchange.
15. Create a federal body to review the commissions' administration.

In light of the potential extension of jurisdiction by Canada and the United States and the resultant emphasis on restructuring fishery management bodies, government officials and Commissioners of the international agencies are understandably reluctant to advocate changes in the existing treaties until the national policies are fully developed and implemented. The planning for restructuring has relied heavily on the recommendations of regional representatives from industry and local governments. This concept was basic to the origin of the Halibut

Commission (also the Salmon Commission) and should continue when revising the treaty.

If the *Informal Single Negotiating Text* from the Third United Nations Conference on the Law of the Sea is used as a guideline, coastal states will have sovereign rights in "The Exclusive Economic Zone" and the initial decision about the Halibut Convention will rest with the two governments. If bilateral commissions such as IPHC continue as part of the national management plans, attention should be directed towards the problems discussed in this paper. There is also need to examine scientific and institutional guidelines of the type suggested by Regier and McCracken (1975). My recommendation is that the Convention be reviewed by a task force of representatives from IPHC and from the governments. If this group decides that no change should be made, no further action is feasible. If it decides to amend the Convention or to establish other means of managing the resource, representatives from the states, industry, and academe should be added to the task force to review the initial decisions and formulate subsequent action. I also recommended that the representatives of the federal governments consider means of correcting administrative problems such as those discussed in this report.

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LITERATURE CITED

Alverson, Dayton L.

- 1975 Management of the ocean's living resources: An essay review. *Ocean Development and International Law, The Journal of Marine Affairs*, Volume 3, No. 2, pp. 99-125.

Alverson, D. L. and G. J. Paulik

- 1973 Objectives and problems of managing aquatic living resources. *Journal of the Fisheries Research Board of Canada*, Volume 30, No. 12, Part 2, pp. 1936-1947.

Babcock, John Pease, William A. Found, Miller Freeman and Henry O'Malley

- 1931 Report of the International Fisheries Commission appointed under the Northern Pacific Halibut Treaty. International Fisheries Commission, Report No. 1, 31 p.

Bell, F. Heward

- 1959 Economic effects of regulations of the Pacific halibut fishery. [In] *Biological and Economic Aspects of Fisheries Management*, Edited by James A. Crutchfield, University of Washington, Seattle, Washington, pp. 51-75.
- 1969 Agreements, conventions and treaties between Canada and the United States of America with respect to the Pacific halibut fishery. International Pacific Halibut Commission, Report No. 50, 102 p.

Bell, F. Heward and Gilbert St-Pierre

- 1970 The Pacific halibut. International Pacific Halibut Commission, Technical Report No. 6, 24 p.

Burke, William T.

- 1967 Aspects of internal decision-making processes in intergovernmental fishery commissions. *Washington Law Review*, Volume XLIII, pp.115-178.

Burkenroad, Martin D.

- 1951 Some principles of marine fishery biology. Publication of the Institute of Marine Science, The University of Texas, Volume II, No. 1, pp. 181-212.

Christy, Francis T., Jr.

- 1973 Alternative arrangements for marine fisheries: An overview. *Resources for the Future, Inc., The Program of International Studies of Fishery Arrangements*, Paper 1, 91 p.

Crutchfield, James and Arnold Zellner

- 1962 Economic aspects of the Pacific halibut fishery. U.S. Department of the Interior, Bureau of Commercial Fisheries, Fishery Industrial Research, Volume 1, No. 1, 173 p.

Fukuda, Yoshio

- 1962 On the stocks of halibut and their fisheries in the Northeastern Pacific. International North Pacific Fisheries Commission, Bulletin No. 7, pp. 39-50.

Gordon, H. Scott

- 1954 The economic theory of a common-property resource: The fishery. *Journal of Political Economy*, Volume 62, pp. 124-142.

Hoag, Stephen H.

- 1971 Effects of domestic trawling on halibut stocks off British Columbia. *International Pacific Halibut Commission, Scientific Report No. 53*, 18 p.
- 1975 Survival of halibut released after capture by trawls. *International Pacific Halibut Commission, Scientific Report No. 57*, 18 p.

Hoag, Stephen H. and Bernard E. Skud

- 1975 Effect of multi-species fisheries on the management of halibut stocks. *Food and Agriculture Organization of the United Nations, Advisory Committee on Marine Resources Research (ACMRR), Eighth Session, FAO Fisheries Reports No. 171, Supplement 1*, pp. 27-35.

International Pacific Halibut Commission

- 1974a Annual Report 1973, 50th Anniversary. *International Pacific Halibut Commission*, 52 p.
- 1974b No-trawl areas established to protect young halibut. *Western Fisheries*, Volume 88, No. 1, pp. 38, 52-53.

Kasahara, H.

- 1973 Management of fisheries in the North Pacific. *Journal of the Fisheries Research Board of Canada*. Volume 30, No. 12, Part 2, pp. 2348-2360.

Kasahara, Hiroshi and William Burke

- 1973 North Pacific fisheries management. *Resources for the Future, Inc. The Program of International Studies of Fisheries Arrangements*, Paper 2, 90 p.

Ketchen, K. S.

- 1956 Climatic trends and fluctuations in yield of marine fisheries of the Northeast Pacific. *Journal of the Fisheries Research Board of Canada*, Volume 13, No. 3, pp. 357-374.

Needler, A. W. H.

- 1973 Chairman's summary of the highlights of the Conference. *Journal of the Fisheries Research Board of Canada*, Volume 30, No. 12, Part 2, pp. 2508-2511.

Nesbit, Robert A.

- 1943 Biological and economic problems of fishery management. *U.S. Department of the Interior, Fish and Wildlife Service, Special Scientific Report No. 18*, pp. 23-53.

Regier, H. A. and F. D. McCracken

- 1975 Science for Canada's shelf-seas fisheries. *Journal of the Fisheries Research Board of Canada*, Volume 32, No. 10, pp. 1887-1932.

Skud, Bernard E.

- 1972 A reassessment of effort in the halibut fishery. International Pacific Halibut Commission, Scientific Report No. 54, 11 p.
- 1973 Management of the Pacific halibut fishery. Journal of the Fisheries Research Board of Canada, Volume 30, No. 12, Part 2, pp. 2393-2398.
- 1975a Revised estimates of halibut abundance and the Thompson-Burkenroad debate. International Pacific Halibut Commission, Scientific Report No. 56, 36 p.
- 1975b Changes needed by Halibut Commission. Western Fisheries, Volume 39, No. 6, pp. 16, 37.
- 1975c The sport fishery for halibut: Development, recognition and regulation. International Pacific Halibut Commission, Technical Report No. 13, 19 p.

Swygard, Kline Ruthven

- 1948 The International Halibut and Sockeye Salmon Fisheries Commissions: A study in international administration. Doctoral Thesis, University of Washington, Seattle, Washington, 622 p.

Thompson, W. F.

- 1952 Condition of stocks of halibut in the Pacific. Conseil Permanent International pour l'Exploration de la Mer, Journal du Conseil, Volume XVIII, No. 1, pp. 141-166.

Thompson, William F. and Norman L. Freeman

- 1930 History of the Pacific halibut fishery. International Fisheries Commission, Report No. 5, 61 p.

United Fishermen and Allied Workers' Union

- 1974 Halibut talks outcome spurs treaty demand. The Fisherman, Volume 39, No. 13, pp. 1, 12.

Wilimovsky, N. J. and D. L. Alverson

- 1971 The future of fisheries. [In] Modern Fishing Gear of the World: 3, Edited by Hilmar Kristjónsson, Fishing News (Books) Ltd., pp. 509-513.