

Managing Alaska's Halibut: Observations from the Fishery

by
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Abstract Alaska's halibut fishery had declined to such an extent that by the early 1990's, several 24-hour openings were all that remained of the yearly harvest season, leading to overcapitalization, falling ex-vessel prices, dangerous fishing conditions, and environmental damage. Through a transferable fishing quota system begun in 1995, the Alaska halibut season now spans 245 days per year, with associated improvements in safety, ex-vessel price, economic security, and environmental protection.

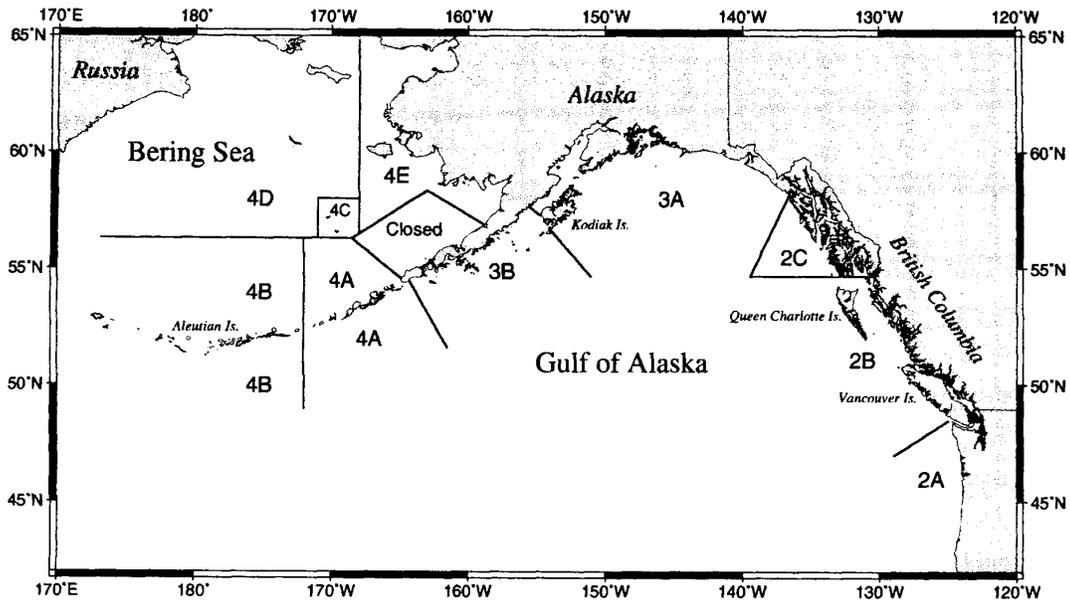
Introduction

Halibut (*Hippoglossus stenolepis*) is a bottom-dwelling flat fish found off the U.S. Pacific coast from Nome, Alaska to southern California and in the Sea of Japan. They are migratory carnivores that spawn between November and March at ocean depths approaching 300 fathoms. Halibut reach sexual maturity between eight and fifteen years of age and can attain weights over 450 pounds (ADF&G 1994).

The Alaska commercial halibut fishery ranges from the Gulf of Alaska to the Bering Sea and is divided into eight management areas by the International Pacific Halibut Commission (IPHC) (see Map 1 below) (Pautzke and Oliver 1997). The fishery

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Map 1: Alaska Halibut Fishery Management Areas



Source: International Pacific Halibut Commission

is characterized as “fixed-gear”¹, with longline² being the gear type primarily used. Longline vessel sizes vary from the large freezer-processor ships (over 120 ft.) to the smallest catcher vessels (under 35 ft.). Halibut are harvested in water depths of 60 fathoms to 300 fathoms in winter and in depths of 10 to 200 fathoms in summer. Once brought on board, fish are bled and eviscerated, then stored whole on ice in the holds of catcher vessels for processing ashore or frozen immediately on freezer-processor vessels (CFEC 1998).

¹ “Fixed-gear” refers to one or more stationary lines with hooks, which can be buoyed, and anchored. Longline, jig, handline, and troll gears are examples (CFEC 1998).

² Longline gear uses “skates” (leaded ground line 300 fathoms long) with approximately 140 hooks attached to them by “gangion” lines. “Skates” are tied together in “sets”. Each “set” lies on the ocean bottom with anchors and buoys attached at each end. “Sets” are “soaked” (fished) from 2 to 20 hours, then pulled aboard by hydraulic winches. Bait is typically herring, squid, octopus, or cod (ADF&G 1994).

The value of the Alaska halibut fishery is substantial. Average commercial landings for the years 1991-1996 were just over 60 million pounds annually, with an average ex-vessel price of \$1.51 per pound. In 1996, the halibut fishery accounted for 2.4% of total U.S. commercial fishery landings valued at \$3.5 billion (Holliday and O'Bannon 1997).

The purpose of this paper is to discuss the performance of the halibut fishery in Alaska before and after the introduction of effort management based on an individual transferable quota system. Observations are illustrated using the available literature and experience of southwest Alaska fishermen.

Alaska Halibut Fishery Management

Halibut were first harvested in Alaska waters during the 1880s (Rigby et al. 1995). In the one hundred years that followed, complex systems of management under multiple state, federal, and international agencies evolved. This evolution sought to curtail excess foreign exploitation, as well as overfishing by domestic fishermen.³

³ The Halibut Treaty of 1923 established the IPHC with Canada. The North Pacific Fishery Management Council (NPFMC) was given authority under the Magnuson-Stevens Fishery Conservation Management Act (MSFCMA) of 1976 and the Northern Pacific Halibut Act of 1982 to manage Alaska limited entry decisions. In 1973, the state of Alaska enacted a limited entry law, establishing the state's Commercial Fisheries Entry Commission (CFEC) (Pautzke and Oliver 1997).

During the 1980s, the halibut fishery drew more fishermen because of rumors that state and federal agencies were likely to enact a moratorium on new entrants. Those who felt they could profit in the fishery rushed to enter so that they might be included in the qualifying years, should a moratorium actually be implemented (Pautzke and Oliver 1997). The race-for-fish between those already in the fishery and the new entrants led to overcapitalization and increased effort. A moratorium on new entrants was not implemented; however, effort limitation programs were introduced, including vessel trip limits, gear restrictions, and lengthy closures of the fishing season (National Research Council 1999).

By the early 1990s, the fishing season was reduced to a few “derby”-style, 24-hour openings each year (Pautzke and Oliver 1997). Fishermen report that “derby” openings created a very dangerous and costly working environment. For example, in one 24-hour opening, two thousand or more boats might enter the fishing grounds, regardless of weather conditions, each setting excessive amounts of gear in a make-or-break race to land a full year’s catch. Gear losses were high, wasting both the fish hooked to it and money for replacement gear. Fishermen attribute low ex-vessel prices and poor product quality on boats and in fish packing plants to the processing bottlenecks which necessarily occurred when a “derby” opening ended and the flood of boats returned to market their catch.

In response to overcapitalization and extreme conditions created by the “derby”, the North Pacific Fishery Management Council (NPFMC), in conjunction with IPHC and

the National Marine Fisheries Service (NMFS), implemented an Individual Fishing Quota (IFQ)⁴ program in 1995 to manage the Alaska halibut fishery (Pautzke and Oliver 1997). The objectives of the program were not only to increase the length of the fishing season and promote economic efficiency and safety, but also to preserve the fishery's traditional, small-vessel character and to create better opportunities for Alaska's native fishing communities (CFEC 1998).

Under the IFQ program, fishery use-privileges called quota shares were allocated to each fishery management area (Map 1) (CFEC 1998). Initial quota shares were then assigned to persons owning or leasing vessels within four vessel classes (freezer-processor and three catcher-vessel size categories) who had made legal halibut landings during three qualifying years. Initial assignment of quota shares per individual was based on that person's highest average, documented landings during 5 out of 7 designated years.⁵ This average was then divided by the total landings in the management area to determine the percent quota share each person would finally receive for that area (Pautzke and Oliver 1997).

Quota shares were designed to be transferable, subject to certain restrictions. Such restrictions apply to their sale, lease, and transfer. Restrictions include limits on who may purchase quota shares, the amount of quota shares that may be held by any one

⁴ In other fisheries management programs, the term used is "Individual Transferable Quota" (ITQ). In this report, IFQ is used, as it is the name of Alaska's halibut management program. Alaska's IFQ's are transferable within the parameters established under its specific program.

⁵ The IFQ qualifying years were 1988, 1989, and 1990. The years used to calculate initial QS allotment were 1984-1990. The peak "derby" years 1991-1994 in which many entrants were new or one-time participants were excluded (Pautzke and Oliver 1997 and A. Bakke, pers. comm.).

individual, and the amount of quota that may be fished from a single vessel (CFEC 1998)⁶. The NPFMC adopted these rules and restrictions to exclude foreign participation and to preclude any one fisherman, group of fishermen, or commercial processor from acquiring excessive shares in the fishery (Pautzke and Oliver 1997).

IFQs are designed to be a ratio between individual quota shares and the yearly total allowable catch (TAC)⁷ allocated to each IPHC management area. Each year, personal quota shares are converted to IFQs (in pounds of halibut) by multiplying the individual's fraction of the total quota share pool for an area by the yearly TAC for that same area. A person's overharvest or underharvest of their IFQ from the preceding year (10% maximum each) is also accounted for in annual IFQ determination. Because the TAC and individual over/underharvest can vary each year, individual IFQs also differ yearly (CFEC 1998).

Compliance in the fishery is monitored and enforced by the NMFS' Alaska region Restricted Access Management (RAM) Division. Quota share holders are issued Landing Cards by NMFS-RAM, which must be presented at registered "transaction" locations when catch is off-loaded. The catch weight is then electronically debited from the holder's IFQ for that year. All Landing Card data is transmitted directly to NMFS-RAM databases. Fishermen must also alert the "transaction" station six hours prior to arrival to

⁶ QS ownership limits are 0.5% of the total tonnage available for the Gulf of Alaska; 1.5% of the total for the Bering Sea and Aleutians; or 0.5% of the total for all areas combined (Pautzke and Oliver 1997).

⁷ The TAC is determined by IPHC from NMFS ADF&G, and IPHC fishery data and models (CFEC 1998).

allow NMFS-RAM officials to observe landings. On freezer-processor vessels (over 120 ft.), fishery observers remain on-board to assure compliance (National Research Council 1999).

Assessment of Program Performance

Since its inception, the Alaska halibut IFQ program has benefited both fishermen and consumers. The availability of high quality, fresh halibut nearly year-round, providing a better product for consumers (Pautzke and Oliver 1997). At the same time, fishermen have realized moderate increases in ex-vessel prices: the average 1995-1998 price was \$1.77/lb, compared to the pre-IFQ average ex-vessel price of \$1.42/lb for 1990-1994 (IRS 1997 and CFEC 1998). And ex-vessel prices during the first half of the 1999 season for fresh halibut delivered in Homer, Alaska reached \$2.25/lb. Anecdotal evidence suggests that fishermen may also be benefiting from direct sales of catch to wholesalers and retailers (National Research Council 1999). Fishermen are also enjoying the stability that comes from participating in a single, 245-day fishery. During the “derby” years, many fishermen were forced to participate in multiple fisheries (such as sablefish, salmon, and crab) to make a living. Under the current IFQ program, many have sold or traded permits in the other fisheries to increase their halibut quota share holdings, thus making it economically feasible to fish halibut exclusively.

Fishermen also report marked decreases in operating costs in the areas of gear and crew under the IFQ program. Excessive amounts of gear are no longer necessary and gear is now seldom lost, or when it is, time allows for its retrieval because of the longer season. The IPHC reported that 1,860 “skates” were lost in 1990 alone, with an estimated

gear replacement cost for fisherman of \$200 per “skate”. Significant savings in crew costs are also attributable to the IFQ program. Because fisherman are no longer limited by a very short “derby” in which extra gear must be set and hauled, they can now reduce costs by crewing for each other, employing family as crew, taking on fewer crewmen per trip, or working their IFQ single-handedly (Pautzke and Oliver 1997).

The halibut fishery has made gains in vessel and human safety under the IFQ program. The “derby” openings of the 1980s and early 1990s often required fishermen to risk personal safety by working without rest in dangerous weather conditions, often overloading their vessels with catch (NIOSH 1997). The U.S. Coast Guard has reported a dramatic decrease in search and rescue missions and fatalities relating to the fishery since the advent of the IFQ program. There were 33 search and rescue missions in 1994. Under the IFQ fishery, the number dropped to seven missions in 1996.⁸ During the 1991-1994 seasons, the Coast Guard noted 11 fatalities in the halibut fishery, all vessel-related and occurring in heavy seas. During IFQ years 1995 and 1996, no fatalities were reported. The improvements in safety are directly related to the extended yearly halibut season due to the IFQ program.

Environmental gains have also been realized in connection with the IFQ program. Halibut mortality has decreased in several important areas. The IPHC noted a significant decrease in halibut mortality from the “ghost fishery” (lost longline gear) between the pre-IFQ year 1994 (554.1 metric tons) and the first IFQ year (1995, 125.9 metric tons).

⁸ The Coast Guard estimates that each search and rescue mission in Alaska costs, on average, \$6,800 (NIOSH 1997).

Bycatch mortality has also reportedly decreased within the first year, from 750 metric tons in 1994 to 150 metric tons in 1995 (Pautzke and Oliver 1997). Mortality due to overharvest has been non-existent. The TAC under the IFQ program has been *underharvested* each year by as much as 13%, whereas halibut catch limits during 1977-1994 were exceeded by an average of 4.9% each year (National Research Council 1999 and NMFS 1999). This underharvesting is believed to result from several factors including consolidation of quota shares and the allocation of quota shares too small to harvest economically (CFEC 1998).

The IFQ program has placed additional cost burdens on NMFS-RAM for enforcement and monitoring. Monitoring has been transferred from collective quota management (through pre-IFQ ADF&G fish ticket data collection) to individual vessel/operator quota management (i.e., a Landing Card IFQ debit system through NMFS-RAM). Landing observations at transaction stations were also increased to ensure compliance. To fund these enforcement and monitoring costs, Congress and NMFS have approved a fee of three percent to be taken from IFQ fishermen's ex-vessel earnings beginning in the year 2000 (Pautzke and Oliver 1997). It is estimated that the proposed fee will cover the current NMFS-RAM budget of approximately \$3 million, with an estimated \$2 million excess for use in strengthening existing enforcement (National Research Council 1999).

Conclusion

When the IFQ program was first recommended by the NPFMC in 1991, many of Alaska's commercial halibut fishermen voiced strong opposition to the program, signing petitions, lobbying Congress, and rallying public support through local newspapers. In the pre-IFQ fishery, many halibut fishermen increased their fishing capacity to grab the maximum catch during each short-season opening. Under a quota system, they feared being allocated quota shares significantly lower than the amount of catch they were able to harvest during the "derby" years, thus decreasing their income. Four years after its implementation, many of the fishermen who so strongly opposed the IFQ program are now its staunchest proponents. Besides experiencing safer working conditions during the season and rising ex-vessel prices, the ability to purchase and transfer quota shares has allowed fishermen to maintain harvest levels that meet or exceed their previous income levels.

The current IFQ program that governs Alaska's halibut fishery has taken many years to become a reality. The program has been shaped by the efforts of individuals in government, as well as concerned fishermen and citizens. It continues to be evaluated and adapted to meet the needs of those involved in the fishery and to conserve the halibut species itself. The overall benefits of converting the overfished and overcapitalized Alaska halibut fishery to an IFQ system are a positive recommendation for troubled fisheries around the nation.

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