

Individual Vessel Quotas in the Halibut Fishery of British Columbia

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During the 1980s, individual quotas (IQs) and enterprise allocations (EAs) came into use in many fishing nations around the world, notably New Zealand, Canada, Iceland, and Australia. The common feature of these management programs was the allocation of output quotas to individuals or companies, although the specific design of the output quota programs differed considerably from one country to another. In Canada, programs incorporating individual quotas or enterprise allocations were introduced gradually throughout the country and now operate in more than 20 fisheries. In most instances, output quotas were introduced on an experimental basis and with strict restrictions on transferability. However, in all cases where IQ/EA programs have been introduced, they have become firmly established as the management approach preferred by participants in the fishery. The purpose of this chapter is to review and assess experience with individual vessel quotas in British Columbia's halibut fishery, which has been under an IQ management program since 1991.

IQs have usually been introduced into fisheries that were experiencing problems associated with the traditional fisheries management approach of input controls: excess fishing capacity,

pressure to overharvest, increasingly unsafe fishing practices, poor economic returns to the fishery, and recurrent financial crises for fishers—problems clearly linked to the common property nature of fisheries resources. Economists generally agree that an IQ management program can overcome the inefficiencies associated with the exploitation of common property resources. In practice, the performance of IQ management programs depend upon a number of factors such as the characteristics of the fishery, the design and implementation of the IQ program, and the role of industry participants.

Overview of the Pacific Halibut IVQ program

From 1979 until 1990, management of the halibut fishery was based on three main elements:

- limited entry, introduced in 1979 when 435 licences were issued;
- a total allowable catch (TAC) for each year; and
- the closing of the fishery when the TAC was reached.

In 1980, fishers took 65 days to catch 5.7 million pounds of halibut. Over the next decade, technological advances such as circle hooks, snap-on gear, and automatic baiting machines improved the efficiency of the fleet enormously, and in 1990, fishers took only six days to catch 8.5 million pounds. In 1980, then, the halibut fleet took 10 times longer than in 1990, to catch two-thirds the amount of fish. Fisheries management in the 1980s was ineffective in controlling fishing effort, and the race for the fish resulted in very short seasons, unsafe fishing conditions, large quantities of by-catch being wasted, poor product quality, gluts in supply, and low landed prices.

In 1991, IVQs were introduced on a two-year trial basis. The Individual Vessel Quota (IVQ) program was developed with extensive advice from the halibut industry and from licence holders. The main features of the IVQ program are the following.

- 1 Longer season: the fishery is now open from March 15 to November 15.
- 2 A percentage share of the TAC: initial individual quota allocations were calculated using a formula based on the length of the licence holder's vessel and historical catch. The resulting 435 individual vessel quotas were expressed as fixed percentages of the annual TAC.

- 3 Limited transferability: during the first two years of the IVQ program, quotas were not transferable. Beginning in 1993, each quota was divided into two equal shares and up to four shares could be fished on one vessel.
- 4 Catch validation: a mandatory port monitoring program was initiated according to which fishermen must notify the Department of Fisheries and Oceans (DFO) prior to fishing and 24 hours prior to landing. An observer then meets the vessel at the landing site, validates the weight of the halibut landed, and tracks each quota holder's total landings.
- 5 Cost recovery: quota holders are required to pay all the incremental costs associated with the management, monitoring, and enforcement of the IVQ program. The cost recovery program also pays for some stock assessment and other research activities at the discretion of the quota holders. Activities paid for by halibut-licence holders under the IVQ program cost nearly CDN\$800,000 in 1995.

Assessment of the IVQ program

The major effects of the IVQ program fall under the following categories: biological management, economic efficiency, equity and distributional considerations, and administration and enforcement.

Biological management

Prior to the introduction of IVQs, it was difficult for fisheries managers to estimate when the TAC was reached; this often led to overharvesting and depletion of the halibut resource. Since the introduction of IVQ management, the catch has been slightly lower than the TAC each year. This is noteworthy, as 1991 was the first time that the annual catch fell below the TAC since limited entry was introduced in 1979. Further, the department of Fisheries and Oceans estimates that waste in the halibut fishery, resulting from the discarding of undersized halibut (and lost and abandoned gear) decreased by 50 percent with the introduction of IVQs.

Additional stock assessment is possible since the quota holders are now supplementing the cost of research. In 1993, quota holders contributed CDN\$34,000 to the International Pacific Halibut Commission (IPHC) for research projects. And, there has been a higher return of data from logbooks since the introduction of IVQs.

Economic Efficiency

The economic performance of the halibut fishery improved significantly after the introduction of IVQs. This improvement is attributed both to higher revenues from better meeting the needs of the market and to lower fishing costs.

The halibut season was 214 days in 1991, compared to 6 days in 1990. Under IVQ management, fishermen altered their fishing patterns to increase net revenue by fishing to meet market demand and by reducing costs. The number of active vessels has decreased every year since the introduction of IVQs (see table 1), and landed prices have risen under IVQs because harvesters can time their landings to match periods of high market-demand and can supply the high-value market for fresh fish. While landed prices in Alaska (which was not under ITQ management) remained the same, in 1991 landed prices in British Columbia increased by an estimated CDN\$0.50 per pound over 1990 prices, and in 1992 increased another CDN\$1.00 per pound as a result of these positive marketing aspects of IVQs. The price increase produced, in 1991, an increase in revenues for the halibut fleet of CDN\$3.6 million, while harvesting costs decreased by CDN\$440,000 (mostly because of decreased crew payments). Thus, the net income earned by the halibut fleet in 1991 increased by about CDN\$4 million as a result of the IVQ program.

Table 1 Number of Active Vessels and Landings in British Columbia's Halibut Fishery

| | Number of Active Vessels | Landed Weight (000 pounds) | Landed Value (CDN\$000) |
|-------------------|--------------------------|----------------------------|-------------------------|
| 1991 | 433 | 7,145 | 21,770 |
| 1992 | 431 | 7,586 | 21,525 |
| 1993 | 351 | 10,573 | 30,275 |
| 1994 ^A | 313 | 8,966 | 34,499 |
| 1995 ^A | 294 | 8,633 | 31,210 |

^A preliminary

Equity and Employment

During the first two years of the IVQ program, the number of crew members employed was reduced by nearly 300 (from about

1,600 to about 1,300). Further reductions in employment have occurred since then, as the number of active vessels has decreased further through "quota stacking," i.e., fishing more than one IVQ from a single vessel. The individuals who are still employed, however, are generally working a longer season and earning higher incomes. Employment of shore workers has declined slightly, because there has been a shift from frozen product to fresh halibut, which requires less shore-based employment.

Before IVQ management, harvesters were under pressure to fish every day the fishery was opened, even if the weather was bad; they often had to overload their vessels. Now working conditions have improved, and a safer, more stable, working environment exists.

Administration and Enforcement

The level of enforcement has increased under IVQs as quota holders pay for the port monitoring and for fishery officers specifically assigned to the halibut fishery. This contribution provides for enforcement above previous levels, and the port monitoring program ensures that the landings reported are accurate and timely. The Department of Fisheries and Oceans and quota holders can determine the balance of the licensee's quota immediately after each landing.

Views of the licence holders

In December 1992, halibut-licence holders were asked to vote on whether to continue the Pacific Halibut IVQ program. Ninety-one percent of those responding voted in favour of IVQs. Since that time, the trial program has been extended on an annual basis. While there is a high degree of support for the IVQ program, there is also criticism. The main complaints focus on two issues:

- the reduction in the number of individuals employed; and
- the "windfall profits" accruing to halibut-quota holders as the increased profitability of the fishery is translated into higher market values for quotas.

Success of the program

Overall, the Halibut IVQ program is regarded as a success by the majority of the participants in the fishery and by those responsible for managing the fishery. The IVQ program is credited with

improving both the biological management of the halibut fishery and its economic performance. The following factors have contributed to the success of the program:

- the halibut fishery is a single species fishery with selective gear, thereby avoiding bycatch problems associated with some fisheries
- a good program design with extensive input from participants
- effective implementation with most costs covered by participants
- a high degree of support and involvement of the participants in the operation of the program through the Halibut Advisory Board.