

Management Issues and Quotas in the Salmon Fishery of British Columbia

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What management issues need to be resolved for quotas to work in the salmon fishery in British Columbia? This chapter will examine the management issues associated with the introduction of individual transferable quotas in the Pacific salmon fishery. But, it is important first to provide some background to the salmon fishery in British Columbia. This will put the issues in context and alert readers to the enormity of the management problems we are facing. This paper will run quickly through the status of the salmon fishery, including current management mechanisms, the objectives for the fishery, and the direction for management in the coming salmon seasons as set out by the recent announcement of the minister of Fisheries and Oceans.

Context

There are 5 species of salmon (Chinook, Chum, Coho, Pink, and Sockeye¹) from more than 8,000 genetically distinct stocks using 1,500 streams for spawning. Salmon are sensitive to habitat

¹ *Oncorhynchus tshawytscha*, *Oncorhynchus keta*, *Oncorhynchus kisutch*, *Oncorhynchus gorbuscha*, and *Oncorhynchus nerka*.

disturbance and are affected during early life by climate changes and later by large-scale oceanographic events, so that abundance fluctuates widely and often unpredictably. Pacific salmon are fished by other countries outside Canadian waters (e.g., there are large catches in Washington and Alaskan waters), and by three competing sectors in Canadian waters, aboriginal, commercial and recreational. Any decision to limit one fishery impinges on the others. Over 90 percent of the salmon catch is taken by the commercial sector, and the remainder is split fairly evenly between the aboriginal food fishery and sport fishers. Up until 1996, there were 4,400 vessels and about 9,000 fishers participating in the commercial salmon fishery. These vessels are divided into three distinct fleets based on fishing method used: seine, around 540 licences; gillnet, around 2,300 licences; and troll, around 1,550 licences. The total landed value of commercially caught salmon between 1991 and 1994 averaged over \$200 million annually, accounting for around half of the landed value of the entire commercial fleet in British Columbia.

The fish processing sector employs over 8,000 individuals during peak periods and generates a wholesale value for salmon roughly double the landed value. Many small isolated communities depend upon the fishery as an important source of economic activity.

A combination of low-cycle years for important productive commercial stocks, depletion of some smaller stocks, and ocean conditions adverse to the fish resulted in a very poor 1995 salmon season. The 1995 landed value, approximately \$80 million, was less than 40 percent of the average annual revenues over the 1991 to 1994 period.

The financial performance of the British Columbia salmon fleet is sensitive to global market conditions. A major shift in global salmon markets began in 1990, when increased supply from aquaculture and abundant wild harvests turned a seller's market into a buyer's market. As a result, salmon prices fell sharply. On average, British Columbia supplied only 8 percent of the world salmon production for the period for 1990 to 1993. Japan is the most important market for British Columbia salmon and Norwegian and Chilean fish farmers are pushing hard to increase their share of the Japanese market at the expense of Canadian suppliers. At the same time, capital investment in the British Columbia fleet has increased dramatically, to the point where the fleet can-

not now survive on low landed prices because of the unnecessarily high operating and fixed costs.

Scientific forecasts for all five commercial salmon species indicate replenishment below average for most stocks over the next 5 years. It is thus urgent that something is done to protect and preserve this resource and help the salmon fleet to deal with the poor financial outlook.

In 1995, the report of the Fraser River Public Review Board recommended that a consultative forum begin planning the future of the salmon fishery, addressing issues such as overcapitalization and allocation to the competing sectors. The minister of Fisheries and Oceans, accepted this recommendation and set up a series of discussions known as the Pacific Policy Roundtable. Participation in the discussions was broad and included representatives from the commercial, aboriginal, and recreational sectors, coastal communities, the department of Fisheries and Oceans, and the government of British Columbia. To guide the Roundtable, the minister provided the following three principles.

- 1 Conservation: to conserve and protect the fisheries resource and its habitat in trust for future generations.
- 2 Economic viability: to ensure the best use of the resource. The fishery must be economically viable and organized around sound business principles; it must be capable of providing a decent living for its participants and be able to contribute to the Canadian economy on a self-reliant basis.
- 3 Partnership: to create a joint vision for the Pacific fisheries with stakeholders and to share responsibility for resource development and fishery management, including management costs, decisions, and accountability.

The meetings of the Pacific Policy Roundtable produced, in December 1995, the Report to the Minister of Fisheries and Oceans on the Renewal of the Commercial Pacific Salmon Fishery (DFO 1995). The Government's response to that report, announced on March 29, 1996, was the Pacific Salmon Revitalization Strategy (the "Mifflin Plan").

The major components of the Strategy are (1) risk-averse management; (2) a targeted 50 percent reduction in the number of boats in the fleet over the long term; (3) an \$80 million voluntary licence-retirement program; (4) single-gear licensing; (5) division

of the coast into two areas for seine vessel operators and three for both gillnet and troll; (6) introduction of licence stacking (i.e., fishing more than one area or gear licence from a single vessel); (7) a revamping of the consultative process for fisheries-management decision-making; and (8) the addressing of the allocation dispute (i.e., who catches the fish).

Announcing this plan, the minister also responded to a number of other recommendations from the Pacific Policy Roundtable, including the proposal by members representing the troll fleet for a salmon quota system to be tried on a pilot basis in the troll fishery for the 1997 season. The minister accepted the recommendation that a workshop be held during 1996 to discuss a pilot program of Individual Transferable Quotas (ITQs) for the troll sector.

The Pacific Policy Roundtable did examine the possibility of introducing a quota system in the salmon fishery, and identified some issues that would need to be addressed first. Following is a discussion of the issues that were identified by the Roundtable and through discussions between the department of Fisheries and Oceans and those involved in the fishery.

The issues fall into two broad categories. First, there are *operational issues*, which relate to whether we could introduce an effective quota system to the Pacific salmon fishery. Second, there are *social issues*, which relate to whether we should introduce a quota system.

Operational issues

Establishing a regime to set annual quotas

Many of the benefits from an Individual Quota (IQ) system flow from the certainty of access provided to an individual through the allocation of a percentage of a resource for a season or longer. The problem presented to scientists by salmon is that it is very difficult to estimate the size of the runs for individual species on an annual basis, and this would need to be done for each individual stock.² Presently, salmon escapement rates are calculated at the beginning of each run and then adjusted through the season as more information on the size of the run becomes available. This meth-

² A stock is a subgroup of a species. Since individual salmon stocks are associated with particular rivers or their tributaries, a large number of stocks must be considered when estimating the size of a run for any species.

od, while flexible in allowing in-season adjustment in response to new scientific information, makes it difficult to provide security of access to fishers. If any doubt existed that an individual's quota would be available, there would be a race for fish that would dissipate many of the benefits of the quota system.

Another complicating factor is that the mix of species and stocks taken by fishers at any one time will vary depending on the fishing method being used, the specific location of the catch, and the year of capture.

Allocation

There is a need for allocation agreements among the commercial, aboriginal, and recreational users, among the three commercial fleets using different gear, and among individuals within each fleet. The first two of these points were raised very early in the discussions of the Roundtable and are independent of any decision on future management mechanisms. In response, in January 1996, the minister appointed an independent adviser, Dr. Art May, to provide advice on an intersectoral allocation policy framework. As well, Mr. Stephen Kelleher was appointed in March 1996 to act as a mediator in the debate over a new long-term commercial-salmon allocation plan. May's results were reported to the minister in December 1996, while Kelleher's report is expected in the Spring of 1997. Resolution of these two issues will still leave the formula(s) for allocation of quotas between individual industry members to be resolved, a problem that is specifically related to IQ systems and that has been the cause of much anxiety in other fisheries managed on the basis of quotas.

IQ enforcement

Enforcing quotas in the salmon fishery would be challenging. The fishery has several thousand operators landing at a multitude of landing points; the product is valuable in small quantities and it can be readily sold directly to the public. All of these characteristics would make it difficult to enforce individual salmon-quota allocations effectively. Nevertheless, effective mechanisms have been developed for other fisheries using quotas, though it should be noted that new enforcement mechanisms would likely be in addition to existing enforcement, and the costs would be additional.

High-grading of product

There is a price differential paid for different sizes and qualities of product and therefore there is the potential for salmon high-grading to occur. If an IQ system were to be introduced, the incentive to discard smaller, less valuable, fish would increase. A means of addressing this problem needs to be found.

Increased management costs

A restructuring of the department of Fisheries and Oceans would be required to allow the development, implementation, and ongoing management of a quota-management system in the salmon fishery. At least initially, the department of Fisheries and Oceans would need to maintain all of the existing input controls during the implementation of a quota-management regime, and so the costs of implementation would be additional to the existing budget.

Assuming solutions to these issues can be found, it can be concluded that we could introduce a workable IQ system in the salmon fishery. We must then decide whether we should do so. The issues identified by the Pacific Policy Roundtable and through many discussions between DFO staff and fishers, industry members, and members of the public are presented below. The recent announcement of the Pacific Salmon Revitalization Strategy, and particularly the planned reduction in the salmon fleet, has sparked an outcry from the public, fishers, and others involved in the industry. The introduction of an IQ system would generate a similar debate over issues such as employment and the impact on coastal communities.

Social issues

Employment

The issue is the impact of quotas on the number of people employed in the salmon fishery. Most participants in the salmon fishing industry agree there needs to be some reduction of the fleet although there is disagreement about the size of the reduction. The minister, in his Pacific Salmon Revitalization Strategy, has announced the target of a 50 percent reduction in the fleet over the long term. As a result, some participants will be displaced from the industry.

The issue with respect to an IQ system is whether its introduction would reduce the fleet below the minister's target of 50 percent through aggregation of quota, and therefore reduce employment more than other management systems. If deemed appropriate, an IQ system can be fettered by a variety of means such as transferability restrictions and limits on quota holding to stop this from happening.

Quota speculation acting as a barrier to new entrants

The concern here is that individuals who want to enter the fishery may not be able to afford to do so. It should be noted that this is not an issue specific to IQs. Any increase in the price of entry to the salmon fishery reflects better prospects for the industry. If prices are low now, it is due to the uncertain future of the industry because the financial returns are low. The 50 percent reduction in fleet numbers over the long term announced by the minister will likely lead to an increase in licence values and would also increase the cost of entry to the fishery.

Loss to coastal communities

Concern has been expressed that the introduction of an IQ system will result in a few large corporations with ready access to capital holding the bulk of the quota at the expense of coastal communities and the small boat fleet. If deemed appropriate, measures could be introduced to prevent this from happening.

Negative conservation impacts

There has been some concern expressed over the ability of an IQ system to address conservation targets effectively. These would appear to be related to the difficulty in setting accurate levels for the total allowable catch (TAC) of salmon. It is clear that unless IQs can meet conservation targets at least as effectively as the current system, the Department of Fisheries and Oceans will not follow the quota path.

Opposition to quotas from industry and the public

Opposition to the concept of quotas is, in part, a consequence of the unfamiliarity of a quota regime in British Columbia together with concerns over the social issues discussed above. Resolution of the other issues would likely overcome much of this opposition.

Conclusion

This list of issues, though necessarily long, is probably not exhaustive; there is much to be done before an IQ system can be contemplated for the British Columbia salmon fishery. Nevertheless, the question about management issues and quotas should be amended from "Can quotas work for salmon?" to "Can quotas work better for salmon than the present system?"

It is easy to point out difficulties in a quota management system, just as it is easy to point out failures in the current management system. The important questions are whether a quota management system would allow more able management of the Pacific salmon resource within conservation targets and whether it would give fishers the flexibility to catch a limited resource in a manner that maximizes the benefit to Canadians of exploiting that resource. In other words, would a salmon IQ system, warts and all, better meet the conservation, economic viability, and partnership objectives of the department of Fisheries and Oceans than the present system of management?

References

Department of Fisheries and Oceans, Pacific Region (1995). Report to the Minister of Fisheries and Oceans on the Renewal of the Commercial Pacific Salmon Fishery. Vancouver, BC.