

SECTORAL
REPORT

YUKON DEVELOPMENT STRATEGY

FISHING

Y U K O N · 2 0 0 0

Building the Future

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SUMMARY

The fisheries sector is a small but important part of the economy of the Yukon. This discussion paper outlines the current status of the Yukon's fisheries resources and their contribution to the Yukon economy. It identifies a number of factors that at present may be restricting the further economic development of the fisheries. Opportunities for overcoming these limiting factors are identified where possible and proposals for the growth and development of the Yukon fisheries are outlined for review and discussion.

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1.0 PURPOSE OF THE PAPER

1.1 Objective

The present paper has been prepared as one of a series of discussion papers contributing to the November 1986 conference on the Yukon Development Strategy - YUKON 2000.

The objectives of the paper are:

- 0 To stimulate discussion on viable options for the economic development of the Yukon fisheries;
- 0 To reflect and summarize discussion that has already taken place on the issue as a part of the Yukon 2000 process;
- 0 To provide a brief background on the status of the salmon and freshwater fisheries in the Yukon.

1.2 Format

The paper is divided into two major sections. The Background Section summarizes the present use and importance of the Yukon's fisheries resource. It contains essentially the same information that was included in the first draft of this document, which was prepared for the October 7, 1986 evening workshop on the Fisheries Sector.

The second part of the paper outlines the issues raised at the October workshop and highlights the recommendations and questions that emerged from the group discussion. As such, the second part of the paper (Sections 3 and 4) is the part most directly relevant to the Yukon 2000 Conference in November 1986.

1.3 Updates

This document is the second version of the Fisheries Sector paper for Yukon 2000. It includes input from a number of people active in the commercial, sport and subsistence fisheries but it is by no means a final product. New drafts will be prepared at each stage of public consultation, discussion and review until the final document reflects the comments and recommendations of the widest possible range of interests in the Yukon fishery.

The final document, ideally, should be a concise, consensual strategy for the economic development of the fisheries sector in the territory.

2.0 BACKGROUND - THE YUKON'S FISH RESOURCES

2.1 Use

The fisheries resource of the Yukon is typically divided into two categories: freshwater and anadromous (or sea-run). Freshwater species of importance include Arctic grayling, lake trout, northern pike, dolly varden, char, rainbow trout, whitefish, inconnu, burbot and least cisco (Paish, 1985). The most important anadromous species are chinook salmon, sockeye salmon, chum salmon and coho salmon (Paish, 1985).

THE USES OF THE YUKON'S FISH RESOURCES

There are three main components to the fisheries. These are the native and domestic subsistence fishery, the sport fishery and the commercial fishery. All four of these fisheries are licensed under the authority of the federal Fisheries Act. The federal Department of Fisheries and Oceans is the lead agency for fisheries management in the Yukon, although the Yukon government is involved in issuing licences for sport fishing, in printing of annual sport fishing brochures, in conducting or assisting with sport fishing surveys and in enforcement of sport fishing regulations under the Fisheries Act and Regulations.

The Native and Domestic Subsistence Fisheries

The subsistence fishery is important to many aboriginal people in the Yukon as a dependable and needed food supply. Most of the aboriginal subsistence fishing effort is centered on Kluane, Marsh and Teslin lakes and the Yukon, Porcupine, Stewart, Pelly, Ross and Teslin rivers; some food fisheries remain on the Arctic coast (Fox et al., 1983).

Because of the traditional importance of the aboriginal subsistence fishery, it takes precedence over other users and uses of the fish resources in the federal Department of Fisheries and Ocean's priorities. The aboriginal subsistence fishery is licensed by DFO, and licences are issued free of charge by the department. In 1981/82, 204 aboriginal subsistence licences were issued. However, the number of aboriginal people who participate in the subsistence fishery is much greater than 204: according to Pearse (1982), most of the native people who harvest fish for food do not know about the requirement to obtain a licence, or choose to ignore the requirement. Enforcement of the licensing requirement has not been strict, as harvests are generally thought to be modest and conflicts between the aboriginal food fishery and other fisheries have not been a problem in most parts of the Yukon. Only in the Klukshu-Tatshenshini area has a serious conflict arisen, one which is caused by high sports fishing pressure and high subsistence harvest pressure on the salmon in this river system.

Information on the economic value of the aboriginal subsistence fishery is limited. One estimate, by Fry (1986), used the approximate retail replacement value of the fish harvested to estimate that the total value of the subsistence fishery was about \$760,000 in 1985. This estimate did not attempt to include the non-monetary value of the fishery's cultural and traditional importance.

The other subsistence fishery, the domestic fishery, is much smaller than the aboriginal subsistence fishery. In 1981, only 47 domestic licences were issued authorizing salmon harvests, and only 76 for freshwater fish (Pearse, 1982). Each domestic licence specifies which area may be fished with that licence and what the allowable harvest is for that licence. Total harvests under domestic fishing licences are a small proportion of total territorial harvests: for example, the 1979 domestic harvest of lake trout was only one percent of the territorial total (Fox et al., 1983). In the southern areas of the territory where pressure is greatest on the fish resources, domestic food fishing is limited to lakes with commercial quotas established; in the rest of the territory domestic fishing licences are issued at the discretion of fisheries officers (Pearse, 1982).

The Sport Fishery

The sport fishery is important both as a great tourist attraction and as a valued recreational activity for Yukoners. About 70 percent of Yukoners fish each year. In 1980, sport fishing

provided 170,000 person-days of angling for about 11,500 residents and 8,500 visitors. About 235,000 fish were caught and kept, primarily arctic grayling and lake trout. Most of the fishing effort by visitors to the Yukon occurs along the highways, as tourists pass through the territory on their way to or from Alaska. However, the Yukon also has a growing sport fishing lodge industry, which is tapping a demand for high-quality fishing opportunities. According to Fry (1986), there are currently seven fishing lodges operating in the Yukon, with sixteen more proposed. In addition, there are another seventeen businesses that service sport fishing with accommodation, supplies and other services (Fry, 1986).

The dollar value of the sport fishery is difficult to estimate in the absence of detailed surveys or other studies. However, a study by Paish in 1981 estimated that the retail value of fish caught by sports anglers was about \$1 million. Another study, by the Department of Fisheries and Oceans in 1980, estimated that about \$4.2 million in expenditures in 1980 could be attributed to sport fishing. Of that, about \$1.4 million was from non-residents fishing in the territory (Fox et al., 1983).

Opinions differ on the future prospects for the sport fishery. Some studies have suggested that the sports fishing harvests have exceeded the production in lakes with the heaviest pressures, and indeed there is a widespread perception in the Yukon today that the quality of sport fishing has deteriorated in recent years. However, others are more optimistic, believing that the productivity of lakes in the Yukon may be greater than originally

thought. It is important to recognize that the continued contribution of sport fishing to the Yukon's economy, especially as an attraction for tourists, depends to a large degree on maintaining high-quality fishing opportunities and therefore on proper management of our fish resources.

The Commercial Fishery

The commercial fishing operations in the Yukon are primarily local in nature. They harvest both salmon and freshwater fish species. In 1985, a total of 69 commercial licences were issued by the Department of Fisheries and Oceans. Commercial freshwater fishing in the Yukon is conducted on a quota basis, with commercial licences being restricted to lakes which have quotas established for them. In 1985, quotas had been established for 20 lakes in the Yukon, with a total annual allowable catch of 145,000 pounds of fish (Paish, 1985). However, only about ten percent of the total allowable catch is actually taken by commercial fishing operators. Almost all of the commercial catch is sold locally.

According to Fry (1986), the value of the 1985 commercial salmon harvest was about \$300,000, while the value of the commercial freshwater fish harvest was about \$30,000. There are two businesses in the Yukon that process commercial harvests. One, the Han Fishery in Dawson, recently suspended purchases of salmon until its existing inventory could be sold. The other processor is the Ice House in Whitehorse. The value of all fish processed in the

Yukon (including some fish that were caught in northern B.C. but processed in the Yukon) in 1985 was about \$580,000 (Fry, 1986).

2.2 Issues

Many of the issues related to the development of the Yukon fisheries ultimately rest on questions about limits and constraints to growth.

A recent study identified a total of seven constraints that could limit the future growth and development of the fisheries sector of the Yukon economy (Fox et al., 1983). These seven constraints were:

- 1) Low productivity of northern lakes limits the annual sustainable freshwater fishery yield.

Because the lakes in the Yukon have relatively low productivity for freshwater fish, the ability to expand commercial and sport fishing opportunities may be constrained. As previously mentioned, in some areas there is a perception that high fishing pressure has already reduced the quality of the sport fishing experience. If the sport fishing and commercial fishing sectors are to grow, the fish resources will have to be carefully managed to ensure their long-term sustainability in the face of increased harvest pressures.

- 2) There are significant gaps in our knowledge about the Yukon's fish resources.

The amount of information on the Yukon's fish resources is quite restricted at present. Few inventories have been carried out of lakes and rivers in the territory. As a consequence, there is not a lot of detailed information available on productivity of lakes, information that could be used to set quota restrictions on catches from lakes, or for other management purposes. Information deficiencies also make it very difficult for government decision makers to consider the value of the fish resources when reviewing development proposals that could affect those resources.

- 3) The Yukon's salmon resources must be shared with Alaska.

At the present time, Alaskan fishing operations harvest a huge proportion of the salmon that are produced in Yukon streams and rivers. This puts Yukon commercial fisheries in a difficult position: they need to harvest salmon to make a living, but if they harvest what they feel is an equitable share of the salmon populations, the combination of their harvests and the Alaskan harvests could result in over-fishing the salmon populations. As the Alaskans have the first opportunity to harvest the salmon returning to their spawning grounds in the Yukon, it appears that some limits on harvests by the Alaskans will be needed before any significant increases can be safely made in Yukon harvests.

- 4) Large-scale export-oriented commercial fishing operations do not appear to be economically feasible.

Because of the low levels of sustainable harvests, it does not appear that large-scale commercial operations would be feasible in the Yukon. However, concentrating on small-scale, high-value specialty products may be a viable alternative.

- 5) Marketing problems could limit expansion of commercial fisheries.

Although more intensive management of the fish resources and increased access to the salmon resource could allow the commercial fisheries to expand, developing appropriate marketing strategies requires special skills that may not be available to small operations or that they may not be able to afford. Without sound marketing strategies, the commercial fisheries could have trouble selling their increased harvests.

- 6) Conflicts with other resource uses could affect fishery productivity.

The Yukon is fortunate to be endowed with a wide range of natural resources that could contribute to greater economic development of the territory. However, making use of those natural resources could create conflicts with management of the fish resources. For example, forestry, mining and hydroelectric developments can all affect fish populations.

Because information on the fish resources is still limited, it is difficult to assess in advance what the effect of a new development may be, and what the economic value of any decrease in the fish resource may be.

- 7) Conflicts among the fisheries sectors could make fisheries management and planning difficult.

If the fisheries sectors continue to expand without a firm development strategy in place, more and more conflicts could arise. For instance, added friction could occur over salmon harvests between aboriginal subsistence fishing and sports fishing in the Klukshu-Tatshenshini area. At present, the Department of Fisheries and Oceans divides the fish resource among the fisheries sectors, with aboriginal subsistence fisheries being the highest priority for consumptive use. This priority for aboriginal use of the fish resource will probably be a feature of future land claim settlements in the Yukon. Therefore, competition among the other fisheries sectors may force some difficult decisions about allocation of the remaining fish resources between sport fishing and commercial fishing.

Several suggestions readily come to mind to overcome many of these constraints on fisheries development.

Four general proposals were presented to the October workshop for review and discussion. These related to research, enhancement of natural systems, aquaculture and international co-operation.

1) **Research**

Conduct the additional research necessary to provide information with which long-term management plans for the fish resources may be developed.

2) **Stocking**

To ensure that areas receiving high sport fishing pressure continue to offer good fishing, stocking with rainbow trout or other suitable species could be considered.

3) **Fish Farming**

Fish farming, or aquaculture, could be one alternative method of diversifying the Yukon's fisheries sector. Experience to date with fish farming in the Yukon has uncovered problems as well as opportunities in this area. Further research may be useful to investigate the potential opportunities presented by fish farming and the conditions it would need to be successful in the Yukon.

4) International Cooperation

Improving Yukoners' access to the shared salmon resource could provide immediate opportunities for our fisheries. Cooperative management programmes for the salmon resources could prove to be beneficial to both Alaska and the Yukon.

3.1 Participants

Invited participants to the workshop on October 7, 1986 included commercial and subsistence salmon fishermen on the Yukon River, the manager of Han Fisheries, aquaculturists, avid anglers, a CYI spokesperson and a sizeable contingent of federal and territorial public servants (Appendix A for a full list of participants).

A representative from the fishing lodge operators was not able to attend the workshop. Thus, while reflecting a wide spectrum of views in a constructive and valuable manner the participants by no means represented the views of all parties with an interest in the Yukon fisheries. Further consultation within the fisheries sector will be undertaken as new versions of this paper are drafted.

3.2 Workshop Format

The workshop took place between 7:00 pm and 10:00 pm on Tuesday, October 7, 1986 at Jeckell School in Whitehorse.

In brief terms, the discussion developed in five phases.

1) **Introduction**

There was a short introduction which outlined the relationship between the fisheries sector workshop and the overall Yukon 2000 exercise.

2) Presentation

The Department of Fisheries and Oceans presented a status report on the Yukon fisheries, with the aid of screen-projected view groups summarizing available information about stocks, fishing effort and catch.

3) Discussion

An open-forum general discussion took place on development opportunities in both the freshwater and the salmon fisheries. This discussion was wide-ranging and some debate took place over proposals which were deemed workable by some people but not workable by others.

4) Summary

The major points raised during the discussion were summarized in a Table drawn on the chalk boards in the room (Section 4.0 this paper). The proposed opportunities, development requirements and hurdles were reviewed and commented on as they were being listed.

5) Final Review

Each participant in the workshop was polled before the meeting adjourned in an attempt to capture last-minute thoughts and questions.

A SUMMARY OF THE WORKSHOP DISCUSSION

The discussion in the workshop ranged over a number of topics and issues. Areas of interest were debated, put aside and taken up again through the course of the evening. The following paragraphs summarize the major points made in the workshop, not in the order they were reviewed but under a number of general headings.

FRESHWATER FISHERIES

Supply: Information was presented which indicated that the average weight of lake trout taken from Yukon waters is declining. The long term sustainability of fish populations is in question in some areas.

Several suggestions were made to address the question of supply. A lake trout hatchery, for example, could produce stocks for depleted lakes. However, it was argued that such a hatchery would be expensive and that there are technical problems to be solved before lake trout can be successfully produced in a hatchery.

Alternatively, the freshwater fisheries could be more intensively managed. In particular, fishing on spawning beds during spawning season could be prohibited. Catch and release programmes could be encouraged and public education campaigns mounted to promote the use of a wider range of species and to promote a stronger conservation ethic.

Access to Fish: Several people observed that there is very poor fishing along our highway routes and that this does little to encourage tourists to stay in the territory as they drive through to Alaska.

It was suggested that minimal grade trails be developed along river banks and to lakes that are within a short hike of the roadway. While it was questioned whether or not this would merely exacerbate the problem, it was also noted that the proposal would provide short term employment benefits. A related suggestion was that access should be maintained to older sections of the Alaska Highway that run close to rivers and creeks. Spreading the fishing effort across a wider area might increase the overall value of a wilderness fishing experience.

Working with the User: There was general agreement that the success of future management programmes in the freshwater fishery depends greatly on reeducating the users of the resource. To this end the fishing regulation synopses could be redesigned to be more "promotional" in nature. Positive attitudes toward catch and release fishing for grayling, pike and whitefish should be encouraged. The idea that "small is beautiful" and that "the days of the really large trout are gone" should be emphasized.

Fishing Facilities: The lack of coherent policy on commercial fishing lodge operations was criticized. It was proposed that a new policy be formulated and that it encourage non-permanent fish camps to reduce the probability that an operator is forced to overfish to recover a large capital investment for a permanent lodge. It was recognized by the workshop participants that the freshwater sport fishery rates strongly as a high value-added activity.

SALMON FISHERIES

The point was made early in the workshop discussion that when talking about the Yukon fisheries one has to keep in mind that the freshwater and the salmon fisheries are essentially two very different sectors, each with their own set of issues and management problems.

Supply: Concern was expressed about the possibility of over-fishing the resource and emphasis was placed on strong management programmes that would ultimately fall within the framework of a Canada-U.S. treaty.

Harvest: It was argued that there are too many licenses on the Yukon River to make commercial fishing an economically rewarding activity. Most of the take is by a small number of people. There was debate over whether or not the number of licenses should be reduced.

Putting aside the number of commercial operators on the Yukon, it was suggested that changes in fishing techniques would improve the quality of fish harvested. Drift netting was proposed as an alternative to existing gear.

Processing: Financing continues to be a major issue in the operation of Han Fisheries and is one which should be addressed seriously.

Market Access: Low prices, high transportation costs, global over-supply and poor product identity are major constraints to the development of the commercial fishery on the Yukon River.

To offset these difficulties the Yukon needs to develop a unique product, with a strong product image, that has high value-added.

Subsistence: Strong management is needed to ensure the protection of the subsistence fishery in the face of dwindling stocks. The subsistence fishery supports families with food and there is spin-off potential to the activity by providing cultural interpretation programmes for tourists.

Non-consumptive activities: More thought should be given to establishing view sites and interpretation programmes for tourists. This would serve as an educational function as well as add to the list of attractions available to Yukon visitors.

AQUACULTURE

There is a large market potential for aquaculture products, including those that could be developed in the Yukon. Aquaculture products could aid in protecting stocks in lakes and in mitigating over-fishing concerns.

Char can be produced using tank systems. Quality and product image need to be addressed in processing and marketing this fish. However, Yukon production of char would essentially have an unlimited market in that demand far exceeds potential supply.

Regulations are needed to support and govern the development of a freshwater aquaculture industry in the Yukon.

SUMMARY OF THE WORKSHOP PROPOSALS

The workshop participants summarized future fishery opportunities, their related development requirements and some hurdles to be overcome (see Table 1). In reviewing the opportunities listed in the table they discussed the question of financing and funding support for the sector. Various sources of start-up capital were identified, including the Economic Development Agreement, Small Business Loans and Special ARDA. Any fisheries development strategy should pay close attention to the whole question of funding and economic support to the sector. It should also address the regulatory framework within which fisheries activities are allowed to develop. In addition, participants agreed that greater efforts were needed generally on research, resource education and resource management/development training.

TABLE 1. SUMMARY OF WORKSHOP PROPOSALS

Future Opportunities in Fisheries	Development Requirements	Hurdles and Issues
Subsistence Fishery	- land claims settlement	
Aquaculture	- infrastructure development - public education regarding opportunities	- capital constraints - lack of regulations - broad stock development
Commercial Sport Fishing Lodges	- a development approach focusing on moveable camps rather than large permanent lodges. - market studies - product diversification	- lack of regulations and policy
Commercial Fishing	- market studies - product diversification - facility/plant development to provide value-added product - development of unique products	- regulatory changes - licenses/rationalize existing situation - change gear and permit new equipment (e.g. nets)
Sport Fishing	- increase access to redistribute effort - public education and promotion - market diverse species and different fishing experiences (get away from large fish mentality)	- review and revamp regulations, particularly regarding fishing on spawning beds.
Salmon (all interests)	- treaty covering Yukon River	
Non-consumptive Opportunities	- public education - marketing - product development (e.g., cultural interpretation programme regarding subsistence fishery)	

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