

Fleet Reduction in British Columbia's Commercial Salmon Fisheries: 1996-1998

Ben Muse

March 10, 1999

CFEC 99-2N.

Alaska Commercial Fisheries Entry Commission

8800 Glacier Highway, #109

Juneau, AK 99801

Abstract

In 1996 Canada implemented the Mifflin Plan which was designed to reduce the size of the commercial salmon fleet in British Columbia. The Mifflin Plan redefined limited entry salmon licenses with respect to fishing area and gear, allowed stacking of the salmon licenses, and spent C\$80 million to purchase and retire the licenses (but not vessels). In 1998 Canada implemented another program to purchase and retire limited entry salmon licenses (but not vessels). Funding for these programs was provided by the federal government. This paper describes and discusses these programs. Details are provided on the reasons for the fleet reduction programs, the details of the license redefinition and stacking rules, the rules used to decide which licenses to buy and the prices to pay for them, and the numbers of licenses removed from the fishery. A discussion section reviews some issues raised by these programs.

Notice:

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA coordinator at (voice) (907) 465-4120, or (TDD) (907) 465-3546. Any person who believes s/he has been discriminated against should write to:

ADFG
P.O. Box 25526
Juneau, AK 99802-5526

or

O.E.O.
U.S. Department of the Interior
Washington, D.C. 20240

Executive Summary

In the early 1990s British Columbia's salmon fisheries experienced market and resource crises. These appear to have created a long-term, negative change in the prospects for the Province's commercial salmon fisheries, which had been managed under limited entry since 1969 by Canada's federal government. The federal government responded to this crisis in several ways. The Mifflin Plan in 1996 (named for the Fisheries Minister, Fred Mifflin) sought to (a) reduce the size of the fleet through buying back and retiring limited entry licenses, (b) redefined limited entry licenses by area and gear type and (c) allowed license holders to buy and combine the newly redefined licenses. In 1998 the federal government made C\$400 million available for various salmon fishery initiatives. This included between C\$100 and C\$200 million that would be committed to a new license buyback program.

The first step in the Mifflin Plan involved the redefinition of licenses with respect to fishing area and gear. Prior to the Mifflin Plan salmon licenses generally allowed a license holder to use more than one type of gear off of a vessel. Some licenses allowed a license holder to fish seine, gillnet or troll gear, and some allowed a holder to fish gillnet or troll gear. The Mifflin Plan required each license holder to make a permanent choice of one gear to fish with that license.

Prior to the Mifflin Plan license holders could generally use their licensed salmon vessels anywhere up and down the coast. Under the Mifflin Plan, the coast was divided into two seine areas, three gillnet areas, and three troll areas. Seine, gillnet, and troll license holders each had to select the management area within which they would fish. The area choices were for four years, at the end of which new, and permanent, choices would have to be made.

The Mifflin Plan allowed a person who held one of the newly redefined licenses to buy one or more additional licenses, and "stack" them together. Once two licenses had been purchased and stacked, they could not be sold separately. A person who held a gillnet license to fish in one of the three areas could buy, for example, a gillnet license to fish in one or more of the other gillnet areas, or could buy a license to fish with troll gear in one or more of the troll areas. Stacking provided a mechanism for reducing fleet size by private activity among license holders and without government subsidies.

The Mifflin Plan also included C\$80 million for buying and retiring salmon licenses. The Mifflin plan was announced in the Spring of 1996 and the money was to be spent before the salmon fishery began in July. A buyback committee was formed with gear group representatives and other members and it solicited offers to retire licenses from license holders. Each license holder was to make a bid. The committee used several criteria to rank the bids although purchase of low bids was the most important of these. When the committee found that it had bought all the licenses that were offered at bids it found

acceptable, it refused to buy more and called for a second “round” of license retirement with new bids and a new selection process. Between the two rounds, the program bought 48 seine licenses at an average cost of C\$413,908, 444 gillnet licenses at an average cost of C\$79,260, and 305 troll licenses at an average cost of C\$77,007.

In 1998, the current Fisheries Minister, David Anderson, announced that the federal government would make C\$400 million available to support a new program to rehabilitate the salmon resource, restructure the fishery, and help communities and fishermen adjust to the changing conditions in the fishery. He made C\$200 million of this available for fleet reduction and for support of initiatives to diversify the fleet and develop more selective fishing methods.

Using these funds the Department of Fisheries and Oceans started a new license retirement program in the Fall of 1998. One round was held in 1998, a second round was held in early 1999, and additional rounds appear almost certain. The first round used a process very similar to that in 1996. A license retirement committee with gear group experts was set up and bids were solicited. The license retirement committee selected the bids using a variety of criteria. In this first round, the committee selected 99 out of 1,124 bids. It bought 46 seine licenses at an average of C\$420,152, 20 gillnet licenses at an average of C\$77,880, and 33 troll licenses at an average of C\$77,532.

A review of the program suggests that:

- ▶ Stacking has been relatively more important in reducing the size of the seine fleet, while purchase and retirement of vessel licenses has been more important in reducing the size of the gillnet and troll fleets.
- ▶ Prices paid for licenses since 1995 have ranged between C\$405,118 and C\$443,475 for seine licenses, between C\$73,719 and C\$84,702 for gillnet licenses, and between C\$70,881 and C\$82,136 for troll licenses.
- ▶ A program may want to keep some of its intentions with respect to expenditures, license purchase targets, and timing, confidential to discourage speculation.
- ▶ Community development assistance came to be an integral part of the overall program because of concerns about job loss in rural communities dependent on fisheries.
- ▶ Administrative implementation costs are only part of the costs of a buyback program. Other costs, such as those incurred by license holders participating in the program, can also be significant.
- ▶ Stacking was controversial. Many were concerned that it would give an undue advantage to persons with better access to capital. Licenses could be owned by

processing companies in the Canadian system, and some were concerned that stacking would allow processors to increase the proportion of licenses they held.

- ▶ Stock allocation was a continuing issue. Voluntary fleet reduction programs may not bring proportional reductions in fleets, raising issues about the shares of salmon runs that should go to each.
- ▶ Fleet reduction did not change the common property nature of the fleet, raising the possibility that some fleet reduction benefits would be lost through subsequent competitive upgrading.

ABSTRACT.....	iii
1. INTRODUCTION.....	1
2. BACKGROUND TO FLEET REDUCTION.....	2
2.1 COMMON PROPERTY AND EXCESS CAPACITY	2
2.2 LIMITED ENTRY AND EXCESS CAPACITY IN BRITISH COLUMBIA.....	3
2.3 MARKET AND RESOURCE CRISES IN THE EARLY 1990s.....	5
2.4 THE PACIFIC POLICY ROUNDTABLE	6
3. PACIFIC SALMON REVITALIZATION STRATEGY (THE MIFFLIN PLAN).....	7
3.1 AN OVERVIEW OF THE MIFFLIN PLAN	7
3.2 AREA REGISTRATION.....	9
3.3 SINGLE GEAR LICENSING	11
3.4 LICENSE STACKING	12
3.5 1996 VOLUNTARY FLEET REDUCTION PROGRAM.....	14
4. C\$400 MILLION MORE.....	17
4.1 1998 VOLUNTARY TIE-UP.....	18
4.2 1998 VOLUNTARY FLEET REDUCTION PROGRAM.....	19
5. DISCUSSION	22
5.1 THE RELATIVE IMPACTS OF FLEET REDUCTION AND STACKING	22
5.2 PRICES PAID FOR LICENSES	23
5.3 STRATEGIC BEHAVIOR BY LICENSE SELLERS IN BUY-BACK	25
5.4 CHANGE IN APPROACH TO COMMUNITY DEVELOPMENT	26
5.5 ADMINISTRATIVE COSTS UNDERSTATE TRUE PROGRAM COSTS	27
5.6 STACKING AND ACCESS TO CAPITAL.....	29
5.7 STOCK ALLOCATION AMONG USER GROUPS AND COMMERCIAL FLEETS.....	29
5.8 THIS REMAINS A COMMON PROPERTY FISHERY.....	31
6. SOURCES	33
APPENDIX: THE BUYBACK PROGRAM IN 1993	37

1. Introduction¹

Since 1993 Canada has taken significant steps to reduce the number of vessels in British Columbia's commercial salmon fishing fleets. Two major initiatives associated with two different Fisheries Ministers have redefined existing limited licenses with respect to fishing gear and fishing area, allowed stacking of licenses, purchased and retired fishing licenses, and also bought a large proportion of a single year's fishing rights. In addition, a smaller program was used in support of a program to reallocate some salmon to Native fishermen.²

The major initiatives have involved much more than fleet reduction. They have also included job retraining, fisheries enhancement, changes in fisheries management, programs to help fishermen diversify, research into improved gear selectivity, enhanced pensions for retiring fishermen, and community development projects.

Nevertheless, a large proportion of the expenditures for these initiatives have been spent on, or have been publicly allocated to, the fleet reduction programs. As discussed later, planned expenditures on the current round of fleet reduction are not being released by the government. However, it seems reasonable to guess that total expenditures from 1995 to the end of the current program may be well over C\$200 million Canadian dollars.

This paper describes the recent Canadian fleet reduction programs. It describes the events leading to the fleet reduction programs in 1993, 1996, and 1998, the evolution of those programs, the details and operation of the specific programs, and the results in terms of limited entry licenses removed from the fisheries. Specifically, this paper looks at the following programs:

- ▶ a small 1993 commercial salmon fleet reduction program³
- ▶ the 1996 "Mifflin Plan" redefinition of licenses by area and gear
- ▶ the 1996 "Mifflin Plan" stacking program
- ▶ the 1996 "Mifflin Plan" fleet reduction program
- ▶ compensation paid to license holders who chose not to fish in 1998
- ▶ the first round of a new fleet reduction program, carried out in 1998.

¹ Kurt Schelle, Manager of Research and Planning for the Commercial Fisheries Entry Commission, and Chris Sporer and Steve Wright of the Canadian Department of Fisheries and Oceans, had many helpful comments on earlier drafts of this report. They are not, however, responsible for any errors.

² This smaller program was begun earlier than the major programs discussed in this report and was not closely related to them. The report deals with the major programs although the smaller program is discussed in an appendix.

³ Described briefly in an appendix to this report.

2. Background to Fleet Reduction

2.1 *Common Property and Excess Capacity*

Salmon in the water, before harvest, are generally treated as a regulated common property resource. The costs of defining property rights over salmon in the water are generally too high to make it economically possible to make them private property.⁴

As a common property resource, the salmon belong to the person who harvests them first. This leads fishermen to overinvest in their fishing operations and to spend more than they otherwise might in a race to capture the salmon before the other operators in the fishery. This is the root cause of the high cost of salmon harvest.

In a common property fishery, this competition may also lead to an overharvest of the spawning stock and ultimately to lower annual salmon returns and harvests. While Department of Fisheries and Oceans managers work to protect the stocks from overharvests, powerful fleets of competitive vessels make their job harder.

Common property problems aren't eliminated when a fishery is limited. Although the number of separate operations is restricted and cannot grow, the effort expended by an individual operation, as it competes for fish with other operations, may grow.⁵ Depending on the regulations governing the fishery, fishermen might be able to increase the length, width, and engine power of their vessels. They may be able to use more elaborate electronics or work with spotter airplanes. They may invest in larger nets made from more sophisticated fibers. Mesh size or other gear characteristics may be modified. Fishermen may invest in more powerful and sophisticated machines for setting and retrieving gear. They may increase their crew sizes and fish longer hours.

⁴ In the last 25 years other species of fish have been converted from open access to something closer to private property through the implementation of different types of individual quotas. It seems less likely that this move from the open access towards the private property end of the rights "spectrum" will take place for salmon, unless the fishery is fundamentally restructured - perhaps through the reintroduction of fish traps. This generalization doesn't apply to the treatment of farmed fish or of private or semi-private hatchery returns. One of the options for fisheries reform discussed in British Columbia is a change in the rules which would give communities or Native groups more control over management of some local resources. See Copes, page 28-29. This issue is not dealt with in this report.

⁵ Although not discussed in the text, limited entry programs in the Pacific Northwest salmon fisheries have not typically led to reductions in numbers of operations at the time of initial limitation. License or permit eligibility rules are often generous and the numbers of operations allowed under limited entry can be similar to (or greater than) those seen in the preceding unlimited fishery.

Managers can restrict the effort by fishermen by regulating the times and places for fishing and the gear or methods used for fishing. But there are problems with this approach. Regulation is a crude tool. Many regulations may increase fishing costs. Further, and perhaps more important, fishermen can get around the regulations and find other ways of increasing their fishing effort. As one observer has pointed out, even under limited entry:

...the fundamental incentives to employ extra measures to compete are latent, strong, quickly triggered, and basically unaffected by limited entry. Fishermen are quick to adopt any measures possible to gain a small, short-lived edge, even when it is understood that when everyone adopts in the face of fixed total harvests, costs simply rise.⁶

Overcapacity and higher fishing costs can also be promoted by government policies that subsidize investment in fishing operations.

2.2 Limited Entry and Excess Capacity in British Columbia

British Columbia has historically had a rich salmon resource and active commercial salmon fisheries. The principle commercial gears include seines, gillnets, and trolling gear. Limited entry was originally implemented in the British Columbia salmon fisheries by the federal government in 1969.⁷

Two classes of salmon licenses were originally issued. “A” licenses were issued to vessels used to land more than 10,000 pounds of pink or chum salmon, or their equivalent, in 1967 or 1968. There were 5,870 “A” licenses issued in 1969. Initially, persons receiving these “A” licenses could use them to fish any combination of gillnet, troll or seine gear from a vessel. A second category of licenses, “B” licenses, were meant to be eliminated through attrition.⁸ At this time there are no more of these. There was only one “B” license in the fishery during part of the period covered by this report; this has now expired.⁹

In 1977 a moratorium was placed on the number of “A” licenses that could be used to fish seine gear. In 1982, salmon vessels allowed to fish seine gear were separated even more decisively from the other vessels. The fleet was divided into two parts: vessels that could fish all three gears, and vessels that could only fish gillnet and troll gear.¹⁰

⁶ Wilen, pages 316-317.

⁷ In Canada the federal government has responsibility for salmon management, not the provincial government.

⁸ Schelle and Muse, page 7.

⁹ “B” licenses went to persons with lower landings levels. Both “A” and “B” licenses could be transferred with the vessel, but only “A” licensed vessels could be replaced. The number of “B” licenses declined through attrition. Although 1,062 were initially issued, there are no longer any left. Canada, Fisheries and Oceans, 1990, pages 25-27.

¹⁰ Canada, Fisheries and Oceans, 1990, pages 25-26.

Licenses were originally freely transferable from one vessel to another. This, however, led to considerable upgrading of the fishing power of the fleet as licenses were transferred from smaller to larger vessels. Ultimately regulations were imposed that limited the ability of license holders to move licenses to larger vessels. These regulations took the form of “net ton for net ton” and “foot for foot” rules.¹¹ Because of the replacement restriction, the salmon licenses were not homogenous. Within a gear category - seine or gillnet-troll - licenses differed in that the size of the vessel that could be used with a given license differed.¹² During this period license markets quoted license values in terms of dollars per foot.¹³

The initial limitation in 1969 was looked on as the first phase in a two part program. The second phase would be the reduction in the number of fishing operations through feet reduction programs. There were two fleet reduction programs. The first ran from 1971 to 1974 and the second was in 1981. In each of these programs managers bought back vessels and their licenses. Three hundred and sixty one vessels were bought back in 1971-74 and a further 26 in 1981. The money for the first fleet reduction program came from vessel licenses and the resale of purchased vessels (after the salmon license was taken from it), while the second program was funded with federal grants.¹⁴

Despite limited entry and fleet reduction, fishing capacity in British Columbia salmon fisheries continued to increase. Numerous observers commented on it.¹⁵ In part the problems flowed from elements that were specific to the B.C. program. As initially implemented, limited entry licenses were issued liberally. Licenses allowed multiple gear types to be fished off of a single vessel, and some took advantage of this to move from gillnet or troll vessels to more powerful seiners. Until the tonnage and length upgrade restrictions were introduced, license holders were allowed to transfer their licenses to larger vessels. In addition to these factors, which were part of the specific program rules for this program, the license holders upgraded in response to the competitive pressures discussed earlier. In a fishery that had a large element of common property they were forced to upgrade to compete with other license holders.

¹¹ Wilen, page 314; Schelle and Muse, page 8-9.

¹² Limited entry in British Columbia differed in several respects from limited entry in Alaska. The limited entry licenses were assigned to vessels rather than to persons. They could be held by corporations and other entities, as well as by natural persons. Originally, until 1996, they were not gear specific; a license could allow a person to fish seine, gillnet, and troll gear off of the same vessel. Until 1996 they were not area specific; a limited entry license gave the person who held it the right to use the vessel to which it was attached throughout the province. The British Columbia licenses were not homogenous within gear categories, while the Alaska permits are homogenous within each area and gear category. Finally, the program was a federal rather than a provincial program. Primary management responsibilities for B.C. salmon fisheries rested with the federal rather than the provincial government. Of course, in Alaska the state has the primary salmon management responsibilities and limited entry is a state program.

¹³ Wright, pers. comm.

¹⁴ Schelle and Muse (1984). pages 10-25.

¹⁵ Dupont. Fraser. Gislason, *et al.*. Pearse and Wilen, Schwindt, *et al.* Wilen.

This competition was fueled by a boom in fish production and prices during the late 1980s. Prices were good and fish were plentiful. License holders took on debt and invested in their operations to capture their share of the profits.

2.3 Market and resource crises in the early 1990s

During the 1980s a competitive product, farmed salmon, came on the market. In the late 1980s, farmed salmon production exploded. Farmed production from places like Norway and Chile has many attractive qualities that made it highly competitive with B.C. products.

Additionally, during the early 1990s the Japanese economy experienced recurrent recession and financial crisis. Japan is an extremely important world salmon market and its buoyant economy during the 1980s had been a significant factor in the health of the salmon fisheries during that time. While the problems in the Japanese market might be temporary, the explosion in the production of farmed salmon, and the impact it had on salmon prices, appeared to be permanent.

These market problems were coupled with concerns about some fish stocks, particularly coho. Managers projected poor returns, particularly for kings and coho. British Columbia coho catches declined in almost every year after 1990. Catches in 1996 were maybe a third of what they had been in 1990. Chinook catches also began a steep decline in 1994, and had almost been eliminated by 1996.¹⁶

After 1989 the landed value of B.C. salmon tended to drop. 1991 was a very poor year. For three years, from 1992 to 1994, there were increases in landed value, but then in 1995 landed value (adjusted for inflation) dropped to its lowest level since the fishery was limited in 1969. The landed value in 1995 may have been about half the landed value in 1991 which was, as noted, a very poor year.¹⁷

Schwindt *et al.* estimate that aggregate commercial salmon fishery profits, or private rents, ranged between C\$38.6 and C\$51 million 1995 dollars from 1988 to 1990, but then fell to C\$6.5 million in 1991. They bounced back between 1992 and 1994, reaching C\$50.1 million in 1994.¹⁸ Gislason *et al.* estimate that commercial salmon fleet pre-tax income during this period averaged C\$12 million dollars from 1991 to 1994, and then fell to - C\$41 million in 1995.¹⁹

¹⁶ Copes, Figures 1 and 2, page 37.

¹⁷ Gislason, *et al.*, 1996, Exhibit 1.2.

¹⁸ Schwindt, *et al.*, forthcoming.

¹⁹ Gislason, *et al.* 1998. Summary page 3.

In the months following the bad 1995 season, there was a widespread expectation that the 1996 season would also be bad (as it turned out to be).²⁰ The poor market conditions were expected to continue, and to be combined with low harvest levels.

2.4 The Pacific Policy Roundtable

In Spring 1995, the Minister of Fisheries set up a “Pacific Policy Roundtable” to make recommendations for future commercial salmon management. This Roundtable included representatives of the different gear license holders, governments, the fishermen’s union, Native groups, processors and senior Department of Fisheries and Oceans fisheries advisors. The Roundtable delivered its report to the Minister in December, 1995.²¹

Representatives of coastal communities and Native groups felt that the Roundtable process was flawed and submitted minority reports. The fisherman’s union likewise submitted a minority report. The discussion that follows focuses on the majority report and the opinions put forth by the commercial gear group interests.²²

There was agreement among the commercial license holders that there should be a large reduction in the numbers of license holders and vessels, and that this reduction should begin before the 1996 fishing season (which would begin in July).²³

While there was agreement about the need for fleet reduction, there was disagreement about the approach to take. Seiners and gillnetters wanted 30% to 33% reductions in their fleets. Gillnetters were interested in area and gear separation and fleet reduction. Seiners offered three separate fleet reduction alternatives with different combinations of gear and area separation, stacking, and fleet reduction. The trollers wanted a 25% to 50% reduction in their fleet over five years through fleet reduction and were also interested in area and gear separation. In addition, the trollers asked for experimental implementation of an individual quota program in 1997. The fishermen’s union accepted that fleet reduction might be a part of a fisheries renewal program but was against license stacking. Native communities wanted to cut the fleet in half by requiring two licenses with Native skippers receiving a free license and non-Native skippers purchasing their second license in the market.²⁴

²⁰ Gislason, *et al.* 1998, estimate the fleet’s 1996 pre-tax income was -C\$11 million. Summary page 3.

²¹ This is not meant to be a survey of events leading up to the start of the Mifflin Plan. This discussion does not treat the Roundtable in its political context. However, the Roundtable Report does provide some insight into industry thinking just before the Mifflin Plan was implemented.

²² Canada, Fisheries and Oceans. News Release. “Roundtable Report Forwarded...” December 15, 1995.

²³ Pacific Policy Roundtable, page 6.

²⁴ Doherty, pages 38-40.

The commercial fishing interests represented at the roundtable were very concerned about the relationship between fleet reduction and the allocation of fish between the commercial, Native, and sport fisheries. This issue was mentioned repeatedly and was the only issue singled out for attention in the covering letter that accompanied the report to the Minister of Fisheries. The report said that cooperation of the license holders with fleet reduction would depend on “more certainty on long-term catch shares.” It was important that the “productivity gains from fleet rationalization not result in allocation transfers” between the major commercial, Native, and sport user groups. If transfers were necessary they should be voluntary with compensation. The report did not deal with allocations of fish between commercial user groups and how this process might be related to changes in relative fleet sizes through fleet reduction.²⁵

3. Pacific Salmon Revitalization Strategy (The Mifflin Plan)

3.1 An Overview of the Mifflin Plan

In March 1996, with the Roundtable’s report completed, the Federal Minister of Fisheries Fred Mifflin announced a comprehensive and long-term plan to “revitalize” British Columbia’s salmon fisheries. This “Pacific Salmon Revitalization Strategy” was to become popularly known as the “Mifflin Plan.”

The Mifflin Plan sought to conserve the resource and improve the economic viability of the license holders. The elements of the Mifflin Plan, as announced in March, were focused on reducing the size of the salmon fleet and limiting the ability of the remaining fleet to concentrate on a single area or opening. The Minister announced a goal of a 50% reduction in the commercial fishing “capacity” of the salmon fleet. By capacity he appears to have meant the number of fishing vessels. As announced in March the plan had four specific components,

- ▶ redefinition of licenses by area and gear
- ▶ C\$80 million for fleet reduction before the 1996 season
- ▶ allow permanent stacking of licenses
- ▶ and license renewal fee increases scheduled for 1996 spread out over two years.

In addition, the Minister noted that the Department of Fisheries and Oceans was committed to a “risk-averse management program,” referred to plans to discuss an “industry board to assume responsibility for ongoing fleet rationalization and to provide

²⁵ Pacific Policy Roundtable, page 2.

strategic direction on changes to the salmon fishery,” and noted his commitment to a “new consultative process” on intersectoral salmon allocations by 1997.²⁶

This plan was controversial. Its focus on a reduction in the size of the fleet appears to have conflicted with the goal, held by many, of using the salmon fishing industry to provide jobs. Many rural communities were dependent on fishing and feared the loss of fishing businesses as fleet reduction proceeded.

A great deal of concern focused on the provisions for the stacking of licenses. This appeared to give an advantage to license holders with large financial resources. Because of this, many persons were concerned that fish processing corporations, which could hold limited entry permits under the Canadian limited entry program, would increase the percentage of the fleet that they owned. Others were concerned that persons in urban areas would have differential advantages in credit markets and that limited entry licenses and vessels would migrate to urban areas.²⁷

Environmental issues were also raised. It was pointed out that the Mifflin Plan would leave large numbers of vessels in the fishery and would add no limitations to their ability to upgrade. Further it was argued that the program should have included funds for habitat restoration and enhancement.²⁸

Very soon after the announcement many interests protested the program. Representatives of rural communities, Native interests, fishermen’s union representatives, the provincial government, environmentalists, and numerous academics advocated program changes.

The Minister responded in several ways. In early May he announced modifications to the program, including a moratorium on additional license stacking until the end of the fishing season (this moratorium did not affect stacking that had already taken place), confirming that the initial selection of fishing areas was temporary for a four year period with long-term selections coming after, and providing guidance on the Department’s plans for salmon allocations among fleets.

In July 1996, he agreed to a joint review, with the government of B.C., of the federal and provincial “roles and responsibilities” in salmon management and the revitalization program and of the revitalization plan’s impacts. This panel included a representative from the federal government, one from the provincial government, and one independent of both.²⁹ This panel came to be known as the “Tripartite Panel.”

²⁶ Canada. Fisheries and Oceans, News Release. “Minister Announces...” March 29, 1996.

²⁷ Copes, page 14.

²⁸ Coastal Community Network. “Effects of the ‘Mifflin Plan’...” 1996.

²⁹ Canada. Fisheries and Oceans, News Release. “Canada and B.C. Agree...” July 15, 1996.

As a result of the recommendations of the Tripartite Panel, in January 1997 the Minister made a number of further changes to the program. Earlier the moratorium on additional stacking during the fishing season had been extended until the Tripartite Panel had finished its work. The Minister now announced that additional stacking would be permitted from January 15. The annual fishing season moratorium on additional stacking would be retained. Stacking was to be put to a vote of the license holders in November 1997.³⁰ The Minister also announced that C\$37.5 million dollars would be made available for a variety of programs:

- ▶ C\$15 million for habitat restoration and salmon enhancement
- ▶ C\$5 million for credit assistance for stacking
- ▶ C\$8 million to pay license holders for gear made unusable by single-gear licensing
- ▶ C\$7.7 million for early retirement assistance for fishers between 55 and 64

The minister called on the B.C. government to provide matching funds for the habitat work and the early retirement assistance and took steps to improve consultation between provincial interests and the Department.³¹

The Mifflin Plan, modified by the changes outlined above, remains in place. In 1998 Mifflin's successor as Minister of Fisheries and Oceans, David Anderson, announced new measures. These new measures did not alter the Mifflin Plan's redefinition of the licenses or the stacking provisions. The Mifflin Plan elements concerned with the reduction in the number of separate fishing vessels are discussed in more detail below.

3.2 Area Registration

Before 1996 the owner of a vessel license with a salmon seine privilege could use that vessel in seine fisheries almost anywhere along the coast of British Columbia. The owner of a gillnet-troll license could use that license in gillnet fisheries anywhere along the coast. British Columbia seine and gillnet fisheries were not separated regionally as the salmon fisheries are in Alaska. While persons who wanted to salmon troll had to make a decision each year about whether they wanted to fish in the waters inside Vancouver Island or in the area outside and north of Vancouver Island, this decision did not bind them from year to year.³²

In March, 1996, the Minister of Fisheries announced that this right would be restricted. Starting in 1996 the coast would be divided into zones. There would be two zones for seiners, three for gill net operations, and three for troll operations. License holders would choose the zone in which they wanted to operate. It was originally announced that area

³⁰ As noted below, it actually took place several months later.

³¹ Canada. Fisheries and Oceans, News Release. "Mifflin Accepts Panel's..." January 9, 1997.

³² Canada. Fisheries and Oceans, 1990, page 80.

selection would be for a minimum of four years. In May these initial choices were set to expire after four years. License holders would then be asked to make a new, and permanent, choice of area.³³

The two seine areas were a northern area including the waters around the Queen Charlotte Islands and the mainland waters north of Vancouver Island, called area “A,” and a southern area including the waters around Vancouver Island and the mouth of the Fraser River, called area “B.” Seiners were thought to need more mobility and were therefore given two areas, each of which was somewhat larger than the gillnet or troll areas.³⁴ By June 4, the northern area had been chosen by 188 seine license holders and the southern area by 320.³⁵

The three gill net areas were a northern area, called area “C” covering the same region as the northern seine area, a central area including the waters around the northern two-thirds of Vancouver Island and associated mainland waters, called area “D”, and a southern region including the waters around the lower third of Vancouver Island and the Fraser River area, called area “E.” By June 4, 1,222 gill net license holders had selected the northern area, 310 had chosen the central area, and 700 had chosen the southern area.³⁶

The three troll areas were a northern area, called area “F” covering much the same region as the seine and gill net areas, an inside area, area “H” including the waters between Vancouver Island and the mainland, and an outside area, area “G” including the waters on the Pacific coast of Vancouver Island. The inside area, H, was similar to the inside area used for annual registration purposes in the years before the program. Areas F and G represented a division of the preexisting outside area. By June 4, 340 trollers had chosen the northern area, 187 had chosen the inside waters, and 602 had chosen the outside waters.³⁷

Area licensing had been used previously in the British Columbia herring fishery in the eighties.³⁸ It had been an issue in a review of the licensing program in 1990 and 1991,³⁹

³³ Canada. Fisheries and Oceans, News Release, “Minister Announces Plan...” March 29, 1996.; Canada. Fisheries and Oceans, Backgrounder, “Commercial Salmon License...” March 29, 1996; Canada. Fisheries and Oceans, Backgrounder, “Modifications...” May, 1996.

³⁴ Sporer, pers. comm.

³⁵ Canada. Fisheries and Oceans, News Release, “Salmon License Applications Proceed...” June 4, 1996; Sporer, fax.

³⁶ Canada. Fisheries and Oceans, News Release, “Salmon License Applications Proceed...” June 4, 1996; Sporer, fax.

³⁷ Canada. Fisheries and Oceans, News Release, “Salmon License Applications Proceed...” June 4, 1996; Sporer, fax.

³⁸ McGillivray, 1986.

³⁹ Canada. Fisheries and Oceans, 1990.

and all the gear groups had mentioned it in the Roundtable Report of December, 1995.⁴⁰

A variety of rationales have been advanced for area licensing. Stock management might be improved if limitations on vessel mobility reduced the number of vessels at specific openings. Operating costs might be reduced if fishermen did not have to invest in a competitive race between fishing areas up and down the coast.⁴¹

3.3 Single Gear Licensing

Before 1996 there were two classes of commercial salmon licenses. A license with a seine privilege allowed vessel owners to use their vessel with seine, gillnet, or troll gear, while one without a seine privilege only allowed the vessel owner to use troll and gillnet gear.⁴² At the end of 1995, 536 licenses allowed the vessel owner to use seine gear, as well as gillnet and troll gear, and 3,831 only permitted gillnet and troll gear.⁴³

Under the Mifflin Plan each license was to be converted from a multiple gear license to a single gear license. Vessel owners were asked to choose which of their gears they wanted to retain. For license holders in the northern fishing areas for the two gears, the choice would become effective in 1997. For license holders in the other areas, the choice became effective in 1996. Unlike the choice of fishing area, which was also a part of this plan, the choice of gear license would be permanent.⁴⁴

After the 1996 fleet reduction program 3,569 licenses remained in the fishery. There were 488 seine licenses, 2,060 gillnet licenses, and 985 troll licenses.⁴⁵

As noted, the Mifflin Plan was modified as time passed in response to the controversy that was generated. One of the modifications was the introduction in January, 1997, of a program of compensation for lost gear rights. The Minister committed up to C\$8 million for payments of C\$10,000 each to former license holders who could no longer use gear that had generated significant income for them between 1990 and 1994.⁴⁶

⁴⁰ Doherty, pages 39-40.

⁴¹ Canada. Fisheries and Oceans, Backgrounder, "Commercial Salmon Licensing..." Jan., 1997; Canada, Fisheries and Oceans, 1990, page 81.

⁴² Canada. Fisheries and Oceans, "Commercial Fishing Licensing Policy: Discussion Paper," page 25-27.

⁴³ Gislason, *et al.*, 1996, page 4-2.

⁴⁴ Canada. Fisheries and Oceans. Backgrounder, "Commercial Salmon License Changes." March 29, 1996.

⁴⁵ The numbers of licenses for each gear do not add up to the total. There were 36 licenses that could not be classified by gear in Sept., 1996. Gislason, *et al.*, 1996, Exhibit 14.3.

⁴⁶ Canada. Fisheries and Oceans, Backgrounder, "Federal Response..." , January 1997.

3.4 License Stacking

In addition to the requirements that vessel owners choose one gear type and one license area, the Mifflin Plan included provisions that would allow a vessel owner to purchase a second license in the open market, and “stack” it on the original vessel. This would allow the vessel owner to fish more than one gear from the vessel and/or to fish with it in more than one area.

Both the gillnet and troll panels on the Roundtable Report mentioned provisions related to stacking. The gillnet panel had wanted to allow stacking of gillnet and troll licenses on the same vessel but the gillnetters had wanted the licenses to remain independent of each other so that one could be sold without the other. The trollers had not ruled stacking out, but wanted a moratorium on it until a fleet reduction program had been completed. At that time stacking would be reviewed. The seine panel mentioned it as a source of contention and did not endorse it.⁴⁷

There were restrictions on the stacking rights. A license that was being stacked could not be moved to a vessel that was more than 30% longer than the original vessel.⁴⁸ Licenses that were stacked were considered “tied” together and could no longer be sold separately.⁴⁹ Seine, gillnet and troll licenses could all be stacked on the same vessel.⁵⁰

The stacking program was an integral part of the Mifflin Plan’s tools for reducing the fleet by half. The fleet reduction program - discussed at length below - would “jump start” the fleet reduction process and bring a large reduction before the anticipated poor 1996 season. The stacking provision would operate over the longer run through a “market mechanism” to reduce the size of the fleet.⁵¹

As noted earlier, the Mifflin Plan was controversial, and stacking appears to have been a very contentious component. A important concern seems to have been that only prospective license holders with large amounts of capital, particularly corporations (who could hold vessel licenses under the Canadian limited entry system), would be able to take advantage of the stacking arrangements and the competitive advantages they entailed. Copes notes that it cost an average of C\$77,000 to buy an additional troll license, C\$79,000 to buy an additional gillnet license, and C\$414,000 to buy an additional seine

⁴⁷ Roundtable, pages 8-15.

⁴⁸ This, however, meant a relaxation of earlier “foot for foot” upgrade limits.

⁴⁹ Canada. Fisheries and Oceans form, “Application for Salmon License Eligibility Transfer for the Purpose of Stacking.”

⁵⁰ Sporer, pers. comm.

⁵¹ Canada. Fisheries and Oceans, News release, “Minister Announces Plan...”, March 29, 1996.

license.⁵² There was also considerable concern that stacking would lead to a loss of licenses from rural areas with few alternative job opportunities.

In May a moratorium on additional stacking was imposed for most of the 1996 fishing season (which ran from June 30 to November 30). This moratorium was extended into January 1997 to allow completion of the Tripartite Panel's report. In subsequent years new stacking would not be permitted during the salmon fishing season (which ran from June 1 to November 30).⁵³

The Tripartite Panel recommended a vote on stacking by license holders but was not able to agree on the timing. The province wanted an immediate vote, before further stacking was allowed. The Department wanted a vote at the end of 1998 to allow further time to experiment with the new system.⁵⁴ The Minister accepted the timing position of the independent member and scheduled the election for November, 1997. The Minister agreed to the vote with the stipulation that, no matter how the vote went, stacking arrangements already agreed to would be permanent.⁵⁵

The vote on stacking was actually delayed until January 1998. It was held by mail under the supervision of the accounting firm PriceWaterhouseCoopers. License holders were eligible to vote and the response rate was 73%. Those voting from all three gear groups voted strongly in favor of stacking. It was favored by 70% of the troller license holders voting, by 71% of the gill net voters, and by 85% of the seine voters.⁵⁶

The Tripartite Panel also recommended a program of credit assistance for fishermen trying to stack licenses who could not get access to the necessary capital through private markets. As noted above, the Minister's response was to commit up to C\$5 million in matching assistance. The commitment was made in January. By May, the Department had made arrangements with the Community Futures Development Corporation (CFD) to provide these loans through their regional offices. The CFDs were regional, federally incorporated, non-profits, whose mission was to assist and encourage "community economic development initiatives throughout B.C." Applicants for loans would have to show credit worthiness and that the value of the license they wanted to buy was similar to the market values for licenses of that type.⁵⁷

⁵² Copes, page 13. Copes doesn't indicate whether or not prices varied by area. It seems likely that they did.

⁵³ Canada. Fisheries and Oceans. Backgrounder. "Minister Announces Modifications..." May 9, 1996.

⁵⁴ Canada. Fisheries and Oceans, backgrounder, "License Stacking...", January, 1997.

⁵⁵ Canada. Fisheries and Oceans. Backgrounder. "Commercial Salmon Licensing Measures..." January, 1997. Copes has noted that the delay the vote might produce a situation where fishermen would vote against their own beliefs. Fishermen who had already stacked might vote against stacking to maintain their competitive advantage. Fishermen who had not yet stacked might vote for it in order to keep an upgrade option open. Copes, page 13.

⁵⁶ Canada. Fisheries and Oceans, News Release, "Minister Announces Results...", February 5, 1998.

⁵⁷ Canada. Fisheries and Oceans, News Release, "Details of Access to Credit...", April 25, 1997.

By late January 1999, 2,941 vessels and 3,523 licenses remained in the fishery. Twenty-six vessels held three licenses, 530 vessels held two, and 2,385 held one.⁵⁸ The most popular combinations were the two seine areas (110 vessels held both of these), gillnet vessels with licenses for areas C and D (130 vessels held both of these), and gillnet vessels with licenses for areas C and E (121 vessels held both of these). Area C was the area north of Vancouver Island, area D was the northern end of Vancouver Island, and area E was the southern end of Vancouver island and the Fraser River. Trollers were less involved in stacking, only 90 vessels held more than one of the troll licenses. There was very little stacking across gear types.⁵⁹

3.5 1996 Voluntary Fleet Reduction Program

Fleet reduction was an integral part of the Mifflin Plan. Eighty million Canadian dollars were allocated for the purchase and retirement of 20% of the eligible limited entry licenses before the start of the 1996 fishing season. The program was announced on March 29 and the fleet reduction target date was set for July 1. During that time the program managers bought 797 licenses, or about 19% of those eligible. This was more than twice the number of licenses that had been bought back during the two fleet reduction programs in the late 1970s and early 1980s.⁶⁰

This program was only meant to achieve part of the Mifflin Plan's goal of a 50% reduction in the fleet. The urgency of the program reflected the concerns over the poor fishing and prices that were expected in 1996.

License holders could participate in the program if they met the following criteria:⁶¹

License holder must hold an A or an A-I license. (An A-I license is an A license held by a Native license holder. The A-I license holder would pay a reduced annual renewal fee for the license, and could only sell it to another Native.) This ruled out "communally held Aboriginal commercial licenses and Northern Native Fishing Corporation...licenses..."

License holders "must have held a commercial salmon license in 1995 and have submitted their application and fees for their 1996 commercial salmon license

License holders "must be in good standing with ownership of the vessel not in dispute"

⁵⁸ Sporer, pers. comm.

⁵⁹ Sporer, pers. comm.

⁶⁰ James, pages 2, 13, 15.

⁶¹ James, page 3.

Interested eligible license holders were asked to submit an “offer to sell” to a Fleet Reduction Committee. The Fleet Reduction Committee was to decide which of the offers it would accept. Acceptance decisions were to be made on the basis of a balance of several criteria. The most important was to purchase the bids with the lowest cost per licensed foot of vessel subject to a market price cut-off.⁶² This was to be modified by several other criteria, including:⁶³

maintain Native participation in the fishery by keeping the current proportions of “A” and “A-I” licenses in the salmon fleet

keeping the current relative numbers of licenses among gear groups

consideration of vessel characteristics and apparent condition (although vessels were not purchased)

preference to offers from vessels with a salmon license but no other commercial species licenses

The Fleet Reduction Committee was composed of persons who were knowledgeable about the industry and license and vessel markets. There were eight members, two of whom were independent, one from each of the gear types, one from the processing sector, one from the fisherman’s union, and one representing Native interests.⁶⁴

The Department of Fisheries and Oceans mailed applications for the program to all salmon license holders on April 4, 1996; the closing date for the applications was May 24. By that date the Department had received 1,111 applications. Offers to sell would be “binding” on the license holders submitting them once accepted by the government.⁶⁵

The Fleet Reduction Committee completed its deliberations by June 10 and recommended that the Minister buy 411 of the offers that had been received. The Department ultimately purchased 396 of these. The following table provides the details of these purchases.⁶⁶

⁶² Note that up to this time the licenses had not been homogenous. Licenses had been attached to vessels of different sizes and could not be moved to larger vessels. This led to the practice of quoting prices in dollars per foot. With the advent of the stacking rules that allowed licenses to be transferred to vessels that were 30% larger, licenses became more homogenous. Wright, *pers comm*. This change does not seem to have been fully recognized this soon since the Fleet Reduction Committee used cost per foot as its criterion.

⁶³ James, page 4.

⁶⁴ James, pages 3,6.

⁶⁵ James, page 5-6.

⁶⁶ James, page 8.

Table 1. License Purchases During Round 1 of the 1996 Fleet reduction Program

Gear type	Area	Purchases	Ave. price	Total cost (millions)
Seine	A	8		
	B	24		
	N	5		
	Total	37	C\$405,118	C\$14.989
Gillnet	C	84		
	D	33		
	E	94		
	N	9		
	Total	220	C\$73,719	C\$16.218
Troll	F	23		
	G	61		
	H	37		
	N	18		
	Total	139	C\$70,881	C\$9.852

It is clear from this table that the Committee only spent just over half of the funds it had available. When it recommended its license purchases on June 10, the Committee also recommended that a second round of the fleet reduction program be run immediately. The committee did not spend all of the money available in one round for two reasons. First, the committee believed that many license holders had submitted offers to sell with bids well above market prices. These license holders had evidently hoped that the committee, with a time constraint for spending C\$80 million, and trying to meet a target of 20% reductions in licenses, would accept at least some bids with higher prices. Second, the committee hoped to obtain more offers from seine license holders in order to maintain the balance of purchases among the fleets.⁶⁷

The second round was announced by the Minister of Fisheries on June 14 and applications were accepted until July 3. The committee received 611 applications. License holders who had applied in the first round submitted 448 of these, and applications were received from 163 persons for the first time.⁶⁸

⁶⁷ James, page 8.

⁶⁸ James, pages 9-10.

Table 2. License Purchases During Round 2 of the 1996 Fleet reduction Program

Gear type	Area	Purchases	Ave. price	Total cost (millions)
Seine	A	3		
	B	7		
	N	1		
	Total	11	C\$443,475	C\$4.878
Gillnet	C	102		
	D	25		
	E	88		
	N	9		
	Total	224	C\$84,702	C\$18.973
Troll	F	30		
	G	93		
	H	21		
	N	22		
	Total	166	C\$82,136	C\$13.635

During both rounds of the program 48 seine licenses were retired at a total cost of C\$19,867,605, or an average cost of C\$413,908, 444 gillnet licenses were retired at a cost of C\$35,191,436, or an average cost of C\$79,260, and 305 troll licenses were retired at a cost of C\$23,487,087, or an average cost of C\$77,007.⁶⁹

Total administrative costs came to C\$180,000. This included C\$70,000 for computer system development, C\$55,000 for contracts for license value tracking and the Fleet Reduction Committee Chair, C\$38,200 for temporary help for application data entry and checking, C\$10,700 for telephone and couriers, C\$1,700 for printing, and C\$4,300 for travel and Fleet Reduction Committee meeting expenses.⁷⁰

4. C\$400 Million More

In June 1998 Mifflin's successor as fisheries minister, David Anderson, and the Canadian Minister of Human Resources Development, Pierre Pettigrew, jointly announced C\$400 million in federal funding for a "comprehensive plan to rebuild the resource, restructure the fishery, and help people and communities adjust to the changing fishery." They

⁶⁹ James, page 11.

⁷⁰ James, page 11.

announced a coho recovery plan involving heavy restrictions on coho harvests, a program to reduce commercial fishing effort during 1998, a long-term license retirement plan, programs to help fishermen adopt more selective gear and to promote diversification of fishing operations, a program of salmon habitat rehabilitation, early retirement and adjustment programs for fishermen leaving the fishery, and community development assistance.⁷¹

In contrast with the Mifflin Plan of 1996, the 1998 program provided large sums for habitat and for transitional assistance for communities.⁷² One hundred million dollars were to be devoted to habitat. These habitat measures emphasized “community based stewardship programs” and “community restoration and enhancement partnership programs.” Another C\$100 million were to be devoted to adjustment assistance for fishermen leaving the fishery and for communities impacted by the fishery changes. In the announcement, these programs were said to include “early retirement, adjustment programs for displaced fishery workers...community economic development...” and “marketing efforts for conservation based recreational fishing.”⁷³

Half of the money in the plan, C\$200 million, was to be devoted to restructuring the fishery. License reduction was expected to be a part of the restructuring, although other measures such as “...new, selective harvesting techniques and exploring options for diversifying fishing income and opportunities” were also mentioned.⁷⁴

Along with these announcements the Ministers said that the Department of Fisheries and Oceans would spend part of the money to encourage license holders to voluntarily tie up their vessels in 1998. The details for a more comprehensive fleet reduction program were not announced, although the Ministers promised to discuss the options with stakeholders in the coming weeks.⁷⁵

4.1 1998 Voluntary Tie-up

In their June announcement, the ministers said that vessel owners who voluntarily chose not to fish in 1998, would not be charged license fees, and would be given payments to offset the costs they might have incurred prior to the fishing season. Gill net and troll

⁷¹ Canada. Fisheries and Oceans, News Release, “Ministers Announce...”, June 19, 1998.

⁷² It is noteworthy that Anderson announced the program jointly with Pierre Pettigrew, the Canadian federal minister for Human Resources Development.

⁷³ Canada. Fisheries and Oceans, News Release. “Ministers announce...” June 19, 1998.

⁷⁴ Canada. Fisheries and Oceans, News Release. “Ministers announce...” June 19, 1998.

⁷⁵ Canada. Fisheries and Oceans, News Release. “Ministers announce...” June 19, 1998.

vessel operators who chose not to fish would get C\$6,500, while seine boat owners would get C\$10,500.⁷⁶

The 1998 voluntary tie-up program was a one-time program. In 1998 severe restrictions on coho harvests, which would have the effect of reducing operating profits for many fishermen, were announced shortly before the season. Many license holders already had money invested in preparations for the season. The purpose of the program was to compensate license holders who chose not to fish for the investments they had made and to reduce fishing pressure in 1998.⁷⁷

Owners of vessels with almost 1,340 of the 3,633 available commercial salmon licenses (holders of about 37% of the licenses) took advantage of the program. These included:

- 11% of northern seiners
- 15% of southern seiners
- 47% of northern gillnetters
- 24% of Johnstone Strait gillnetters
- 15% of Fraser River gillnetters
- 39% of northern trollers
- 47% of outside trollers
- 24% of inside trollers⁷⁸

This program transferred about C\$7.8 million to the license holders. The northern gillnet and troll and outside troll fleets made particularly heavy use of this provision.

4.2 1998 Voluntary Fleet Reduction Program

In the fall of 1998 license holders were polled to determine how they felt the fleet reduction program should be organized. Surveys were mailed to 3,304 license holders⁷⁹ and were returned by 1,525 of these, a 46% response rate. Fishermen were asked a number of questions about the nature and timing of future fleet reduction programs.⁸⁰

Large majorities felt that all salmon license holders should be eligible to participate in fleet reduction and that persons with multiple licenses on a vessel should be allowed to sell one

⁷⁶ Canada. Fisheries and Oceans, press releases “DFO Announces Extension...”

⁷⁷ Wright, pers. comm.

⁷⁸ Canada. Fisheries and Oceans, Press Release “...Voluntary Tie-Up.” July 3, 1998.

⁷⁹ The number of license holders is less than the number of licenses listed above. Presumably this is due to multiple license holdings by some persons.

⁸⁰ PriceWaterhouseCoopers, “License Holder Survey Results”

while retaining the others for use with other gear types or in other areas.⁸¹ In normal transactions license holders were not allowed to split stacked licenses. Licensing policies would have to change to allow splitting in a fleet reduction program.

License holders were about equally divided on whether the department should buy licenses using a reverse auction procedure or should pay an appraised market price for each gear category. About equal proportions of the license holders strongly agreed with each method, but the proportions who strongly disagreed with the reverse auction method were higher (36.7% to 21.1% strongly disagreeing with the market price).⁸²

License holders tended to want a program soon. Almost two thirds wanted to see the fleet reduction money spent within a year. About 45% wanted the program started before the end of the 1998 fishing season.⁸³

Almost as soon as the results from the survey were published, the Department launched the new fleet reduction program. Departmental press releases spoke explicitly about a “first round” of license retirement, implying that there would be multiple rounds.

The Department did not say how many rounds there would be however. Nor did it announce how much of the C\$200 million for fleet restructuring would be devoted to fleet reduction, as opposed to gear selectivity research or diversification. The Department did not announce the target numbers of licenses it sought to retire. Finally, the criteria that would be used to choose which offers to retire would be accepted were described only in general terms. All this information about the program was kept confidential, in order to discourage speculation.⁸⁴

A license retirement advisory committee was appointed by early November. The six members were chosen to provide expertise from each gear group, to provide experience in fleet reduction, to provide Native representation, and to provide regional balance. Gear group representatives were chosen from names submitted by gear organizations. To maintain their impartiality they were not to submit their own licenses for sale to the program.⁸⁵ They were also told that they were expected to act as gear “experts” and not as gear “representatives.”⁸⁶ The chairman of the gear selection committee, James Matkin, had been chair of the 1996 Voluntary License Retirement Committee.⁸⁷

⁸¹ PriceWaterhouseCoopers, “License Holder Survey Results”

⁸² PriceWaterhouseCoopers, “License Holder Survey Results”

⁸³ PriceWaterhouseCoopers, “License Holder Survey Results”

⁸⁴ Wright, pers. comm.; See Schelle and Muse, pages 62-63 for a discussion of this issue in the context of earlier buyback programs.

⁸⁵ Wright observes that since committee members had to be gear license holders who didn’t plan to submit their licenses to the buyback program, the selection process probably “screened” for license value optimists. Wright, pers. comm.

⁸⁶ Wright, pers. comm.

⁸⁷ Canada. Fisheries and Oceans, Backgrounder, “...Advisory Committee.” Nov. 1, 1998.

By the application deadline, November 20, the committee had received 1,124 bids. However, the committee only recommended that 99 bids be accepted:

46 seine licenses, or 9.4% of the 488 seine licenses outstanding, for an average price of C\$420,152. Twelve of these were from the northern area (A) and 34 were from the southern area (B).

20 gillnet licenses or 1.1% of the 1,825 outstanding, for an average price of C\$77,880. Nine of these were from the northern area (C), eight were from the central area (D) and three were from the southern area (E).

33 troll licenses or 3.3% of the 989 outstanding, for an average price of C\$77,532. Eleven of these were from the northern area (F), 16 were from the outside area (G), and six were from the southern area (H).⁸⁸

The program spent about C\$23.4 million for the three fisheries. Most of this, C\$19.3 million or about 82%, was spent on seine licenses. Only about C\$1.6 million, or about 7% was spent on gillnet licenses, and about C\$2.6 million or about 11% was spent on troll licenses. The relative proportions of seine and non-seine licenses bought back were reversed from the 1996 program, when larger proportions of non-seine than seine licenses had been purchased.

The License Retirement Advisory Committee used several criteria to determine which bids to accept. However, the Committee has not provided much information about the criteria it used and how they were weighted. These criteria have only been publicized in general terms. The purpose for this confidentiality is to prevent speculation against the program in subsequent rounds of fleet reduction.⁸⁹

Several criteria are believed to be important. Within each gear type, bids are probably ranked in ascending order by the size of the bid with the committee tending to purchase licenses offered for less than some cutoff price the committee considers reasonable. The committee hasn't announced its cutoffs or released individual information on the values of the bids that were or were not accepted so it is hard to infer the cutoff values that it used. As background for choosing cutoffs, the committee was briefed on license markets by a broker, on fishery conditions by a biologist, and on salmon markets and on strategic interactions in bidding by an economist. Cut off adjustments might be made for situations where one license from a stacked set was purchased, since this would not reduce the vessel value as much as purchase of the entire stacked set.⁹⁰

⁸⁸ Canada. Fisheries and Oceans, News Release, "First Round of..." December 1, 1998.

⁸⁹ Wright, pers. comm.

⁹⁰ Wright, pers. comm.

Priority is likely to be given to licenses from vessels which only have one salmon license. Vessels with only a salmon license probably received a high ranking because a major program objective was to reduce fleet dependency on salmon. Vessels with one salmon license were less diversified with respect to gear, fishing area, or species, than other vessels. As noted, stacked licenses became merged and could not be sold separately. This rule was relaxed for the purpose of this fleet reduction program. Thus this program could buy one or two licenses from a two or three license stack.⁹¹

License selections were forwarded as recommendations from the selection committee to the Director General of the Pacific Region. The Department reviewed them for consistency with program guidelines supplied by the Canadian Treasury Board.⁹² While the Director General could reject selections, the Department would only do so for a strong reason. None of the first round recommendations from the selection committee were rejected.⁹³

The second round of fleet reduction began as soon as the numbers from the first round were announced. The application deadline was set for February 15, 1999.⁹⁴

Program administration is expected to cost about C\$500,000 over a one to two year period. The precise period isn't known since, as pointed out, managers have not publicized a target date for completion in order to discourage speculation.

The program employs a full time manager, two "800 number" technicians, and three licensing clerks. The members of the License Retirement Advisory Committee are paid for travel and *per diem*. There are also costs for periodic mailings. These come to about C\$3,000 per mailing.⁹⁵

5. Discussion

5.1 *The Relative Impacts of Fleet reduction and Stacking*

Before the first fleet reduction program in 1996, there were 536 seine licenses, 2,256 gillnet licenses, 1,291 troll licenses, and 29 "other" licenses.⁹⁶ By the end of 1998, 94 seine licenses, or 18% of the original total had been purchased through fleet reduction,

⁹¹ Wright, pers. comm.

⁹² An agency that has some similarities to the U.S. federal Office of Management and Budget.

⁹³ Wright, pers. comm.

⁹⁴ Canada. Fisheries and Oceans, News Release. "First Round..." Dec. 1, 1998.

⁹⁵ Wright, pers comm.

⁹⁶ James, page 13.

464 gillnet licenses, or 21% of the original total had been purchased, and 338 troll licenses, or 26% of the original total had been purchased.

In January, 1999, there were 444 seine licenses for areas “A” and “B.” After stacking considerations were allowed for there were 334 vessels that could use seine gear. At the same time there were 1,805 gillnet licenses for areas “C,” “D,” and “E.” After stacking there were 1,510 vessels that could use gillnet gear. In January there were 956 troll licenses. After stacking there were 861 vessels that could use troll gear.⁹⁷

Stacking and fleet reduction are both on-going programs. To date, stacking has played a relatively bigger role in reducing the size of the seine fleet, while fleet reduction played a bigger role in reducing the sizes of the gillnet and troll fleets. Among seiners, stacking appears to have done somewhat more to bring the fleet size down. Fleet reduction accounted for 98 vessels, while stacking accounted for about 110. Among gillnetters, fleet reduction appears to have been a larger factor in bringing down fleet size. Fleet reduction accounted for 464 vessels, while stacking only accounted for 295. Among trollers, fleet reduction also appears to have been a more important factor in reducing fleet size. Fleet reduction accounted for 338 troll licenses, while stacking only accounted for 95.⁹⁸

5.2 Prices Paid for Licenses

Average prices paid in the different fleet reduction programs are summarized in Table 3 below. Prices for gillnet and troll licenses are similar to each other over the five years covered by the table. Seine prices are dramatically higher than the prices for the gillnet or troll licenses. Further, there was a large increase in the prices paid for seine licenses between 1993 and the following years. The average prices paid for seine and gillnet licenses increased between 1993 and 1995, but by no where near as much, either absolutely or proportionately.

⁹⁷ Estimated from licensing data supplied by Sporer.

⁹⁸ There are small discrepancies among all these numbers, but they are not large enough to affect the conclusions in this paragraph. All numbers are from Department of Fisheries and Oceans sources, but they were prepared by different persons at different times for different purposes, presumably using different systems.

Table 3. Average Fleet Reduction Prices Paid for British Columbia Salmon Licenses

Program	Seine	Gillnet	Troll
1993 ⁹⁹	C\$190,000	C\$52,380	C\$67,812
1996 (Round 1)	C\$405,118	C\$73,719	C\$70,881
1996 (Round 2)	C\$443,475	C\$84,702	C\$82,136
1998 (Round 1) ¹⁰⁰	C\$420,152	C\$77,880	C\$77,532

The increase in license prices between the first and second rounds of the program in 1996 is interesting. These prices were paid within a month or so of each other. The reason may be that the bids from license holders who were willing to sell at relatively lower prices were accepted in the first round, leaving only persons willing to sell at relatively higher prices for the second.

The second round occurred because the fleet reduction committee felt that many of the bids in the first round were too high, perhaps because of speculation. By moving to a second round the committee was able to reject the bids it felt were too high and solicit another round of bids, some of which might have been lower. However, the second round was the final round, there clearly was no room for another round before the season, and the program was committed to completing its activities before the season. Thus, potential bidders were faced with the same strategic problem in the second round that they faced in the first. Under these circumstances it is not clear that there would have been a great incentive for bidders to submit significantly lower bids.

It seems unlikely that the prices rose in the second round because the decrease in the number of licenses in the first round, by reducing supply, may have driven up the prices at which the remaining license holders were willing to sell. Much of this price effect probably occurred when it became clear earlier in the spring that the government was committed to a significant reduction in licenses through fleet reduction. The anticipated fleet reduction payments and reduced fleet size should have begun to be reflected in license prices then. The first round may have clarified the extent to which licenses would be bought back, but this could have moved prices up or down.

⁹⁹ This program is described in the appendix.

¹⁰⁰ This is the first round of an ongoing program. The application period for the second round closed on February 15, 1999.

5.3 Strategic Behavior by License Sellers in Buy-back

In 1996, license holders were told how much would be spent, were given a good idea of the license purchase targets that were planned, and were told that there was to be one round. The program was run on a tight time constraint - announced in March it had to be completed by the start of the fishing season in July. License holders responded by submitting bids that were generally fairly high. Program managers improvised in response and divided the program into two “rounds.”¹⁰¹

Drawing on this earlier experience, managers gave more thought in 1998 to hiding their specific intentions. The Canadian cabinet knew and approved the specific program goals, and a routine audit following the program should make these public. However, during the program, the Department has not committed itself to a specific budget for the fleet reduction, to specific targets for fleet reduction, to a specific time frame, or to a specific number of rounds. Information on prices in license markets, provided by a broker working under contract to the Department, is not made public.¹⁰²

These precautions increase the costs to fishermen of submitting strategic bids that differ from the prices they would actually be prepared to accept to sell their license. The importance placed on these strategic considerations is highlighted by the briefing the Department arranged for the license retirement advisory committee on strategic behavior by fishermen.¹⁰³

These precautions and the consequent potential reduction in license prices may have a price of their own, however. The lack of information on several facets of the program may promote speculation and rumor. This could cause or exacerbate ill-will between the Department of Fisheries and Oceans and parts of the public. Ultimately, the program will be subject to audit. However, given the fact that purchases may be based on a mix of criteria, which may be hard to sort out in any specific case, an audit may not completely clear the air.

It is not clear that these arrangements were entirely successful in discouraging price speculation in the first round of the current program. The committee only bought 99 out of over 1,000 licenses offered, implying that the committee only felt that these 99 licenses were offered at reasonable prices.

¹⁰¹ Wright, pers. comm.

¹⁰² Wright, pers. comm.

¹⁰³ It is not clear that all of these precautions will be possible in a buyback program run in Alaska. For example, Alaska Supreme Court interpretations of the Alaska statute (see *Johns*) suggest that an optimum number of permits would have to be identified before a buyback program could be run. This would set a definite target for the program.

5.4 Change in Approach to Community Development

The Mifflin Plan reduced the size of the fishing fleet in order to reduce fishing costs and provide more management control. It immediately ran into a storm of protest from local communities and other parties over its potential impacts on rural economies.

British Columbia has numerous rural communities that depend on fishing jobs for a significant part of their economy. Forestry and government employment have also been major employers in these economies. Further, fishing is covered by Canadian unemployment insurance and this has also been an important source of income for many fishermen.

During the period in which the fleet reductions discussed in this report have been taking place, many of these communities were experiencing slumps in the forestry markets and cuts in government employment opportunities. Also during this period Canadian unemployment compensation programs were changed in ways that made it harder to obtain as much in payments as before.¹⁰⁴

In June 1998, Gislason *et al.* estimated that the events of the 1990s caused a large drop in the number of commercial salmon fishing jobs in British Columbia. On average, from 1991-1994, there were an estimated 10,430 seasonal jobs in the salmon fishery, but by 1997 there were 6,565. This loss of 3,865 seasonal jobs translates into a loss of 1,545 person-years.¹⁰⁵ Gislason *et al.* attribute some of this, 770 seasonal jobs, to lower prices and catches. They attribute the largest proportion however, 3,095 seasonal jobs, to Mifflin Plan fleet reduction efforts.¹⁰⁶

While all coastal regions lost significant proportions of their commercial salmon fishing jobs, smaller communities where the jobs were significant factors in the economy could be harder hit proportionately. Gislason *et al.* indicate that the Central Coast, Upper Vancouver Island, and the Queen Charlotte Islands were particularly hard hit.¹⁰⁷ The fifteen communities identified by Gislason *et al.* as hardest hit range from Prince Rupert, where commercial salmon job loss came to 3% of community employment, up to Kyuquot, where the job loss came to an estimated 29% of employment. Five of the hardest hit communities had job losses of 10% or up.¹⁰⁸

¹⁰⁴ Gislason, *et al.* 1998, page 12-3.

¹⁰⁵ Gislason *et al.* 1998, Exhibit 10-3.

¹⁰⁶ Gislason *et al.*, 1998, Exhibit 4-4.

¹⁰⁷ Gislason *et al.*, page 10-2.

¹⁰⁸ Because of data limitations, Gislason *et al.* treated the Central Coast as a single community. These job losses include losses in addition to crew losses. Other figures quoted in this section are limited to crew licenses. Gislason *et al.*, page 11-4.

Job losses in rural communities were a major source of controversy under the Mifflin Plan. The management plan introduced in 1998 paid a great deal more attention to these issues. In fact, only half the money in this program was allocated to fleet restructuring. A quarter of it, C\$100 million, was to be used to help “people and communities adjust” to the conservation measures introduced in 1998 and the fleet restructuring.¹⁰⁹ Perhaps to emphasize this point, the plan was jointly announced by the Fisheries Minister and the Minister for Human Resources and Development.

The initial announcement of the new set of fisheries initiatives did not include a final plan to deal with the transitional and local development issues, although a number of initiatives, planned or underway were mentioned. Three federal Departments, Fisheries and Oceans, Human Resources and Development, Indian Affairs and Northern Development, and an agency, Western Economic Diversification, were to be involved. Money would be made available for “early retirement, adjustment programs for displaced fishery workers, and community economic development.” The measures would be guided by a community economic assessment that would “allow communities themselves to identify local opportunities and initiatives.”¹¹⁰

5.5 Administrative Costs Understate True Program Costs

The 1996 Mifflin Plan fleet reduction programs in British Columbia have been run with relatively modest administrative costs. These appear to have come to about C\$180,000 with an expenditure on licenses of about C\$78.5 million. Administrative expenses appear to have been about 0.2% of program costs. The current program may cost C\$500,000 over a two year period, although total expenditures on licenses are not yet known. These cost estimates are for the fleet reduction programs. The administrative costs associated with the redefinition of the licenses and stacking are not known.

These estimates of program costs understate the total public and private costs of these programs. Additional costs, not covered, include the costs incurred by license holders in their efforts to obtain a share of the fleet reduction money, the costs incurred by license holders in finding, and stacking licenses, and the excess burden of the taxation required to raise the funds.

In a program such as this, with millions of dollars available for distribution and with elements such as license redefinition and stacking that redistribute income, there may be considerable lobbying over the rules that determine how the money will be distributed. In addition, license holders might modify their behavior in an effort to obtain a part of the benefit under the agreed rules. As noted earlier, there has been a lot of controversy

¹⁰⁹ Canada. Fisheries and Oceans, Backgrounder, “Helping People and...” June 19, 1998.

¹¹⁰ Canada. Fisheries and Oceans, Press Release, “Ministers Announce...” June 19, 1998; DFO Backgrounder, “Helping People...”, June 19, 1998.

associated with the programs since 1996. License holders, communities and others have invested a great deal of time and money trying to influence allocation decisions and program rules.

These estimates of program administrative costs do not include the costs incurred by those license holders to gather information about the program and to submit applications to the program. In 1998, many of the applications were submitted by brokers on behalf of license holders, suggesting that these private sector program costs were not trivial.¹¹¹ These costs do not include the costs incurred by license holders who enter the license market to buy and stack licenses. These latter costs include the costs of gathering information about market prices, searching for licenses, negotiating agreements, the legal work involved in preparing contracts, and enforcement of contracts - in court if necessary.

License holders may incur another cost as well. The redefinition of licenses by specific gear types and fishing areas reduced the numbers of operators with a specific gear type that might appear in a specific area at one time during a season. This may well have made management easier and forced a reduction in operating costs. However, it also reduced license holders' ability to diversify their operations in different gears and areas. Diversification is often an important way in which persons can protect themselves against risk. The cost to fishermen of the risk of possible increased income fluctuations associated with this loss of diversification could be another program cost.

The actual payments for the licenses would not be considered a program cost in a cost-benefit analysis. In that context they would represent a transfer of income from one group of persons to another within the Canadian economy. One person's gain would be canceled by another person's loss.

There are, however, costs associated with raising the money that was spent on the program. These include the costs of administering and complying with the tax program, but perhaps more important, these include what economists call the "excess burden" of the taxation. Excess burden is the cost to society when persons change their behavior in response to taxation, in this case the federal taxation required to raise the money for these programs. Income taxation may lead people to work less (or more) than they would have liked. Sales taxes may lead them to buy more of one thing and less of another. The excess burden is the cost to people of these changes in behavior. There is some evidence that the excess burden cost of taxes can be high.¹¹²

¹¹¹ Wright, pers. comm.

¹¹² The marginal excess burden could be a significant program cost. The U.S. Office of Management and the Budget suggests that cost and benefit analyses of federal programs using general funds should be supplemented with an analysis of excess burden. It recommends the use of an excess burden factor of C\$0.25 per dollar spent. The appropriate rate may well be different in Canada. However, applying this rate to the program run under the Mifflin Plan suggests that the excess burden could be on the order of C\$20 million. U.S. Office of Management and the Budget, Section 11.a.

5.6 Stacking and Access to Capital

Fishermen who wanted to fish multiple gear types or in multiple areas were required to enter the license market, buy an additional license, and stack them together. Once stacked, licenses could not be separated (although an exception to this has been made for the most recent fleet reduction program) for purposes of selling to the program only.

Licenses were expensive. Prices paid in the fleet reduction programs are summarized in Table 3. Fishermen who wanted to stack licenses had to spend tens or hundreds of thousands of dollars to do so. Under these circumstances, access to capital became an issue. Some persons were particularly concerned that regional or institutional factors could affect the price at which capital could be borrowed.

As noted earlier, in Canada limited entry licenses can be owned by partnerships and corporations and there is no requirement that license holders be present with fishing operations. Many licenses are held by salmon processing firms. Many believed that processors had better access to financing than other classes of license holders and that, because of this, they would tend to increase the proportion of licenses that they held themselves or controlled through their loans to fishermen.¹¹³

One of the changes to the Mifflin Plan was the introduction of a C\$5 million fund to provide loans to fishermen who wanted to purchase and stack an additional license. Such loans would presumably be subsidized and directed at persons with difficulty accessing credit from other sources. Such a program may make it easier for some to obtain and stack licenses, but it would also tend to increase license prices. This could make access to the fishery more difficult for others. For example, if the programs are directed towards persons who already have licenses and want to stack, the increase in license prices may make it harder for a person without a license to enter the market and buy one.

5.7 Stock Allocation Among User Groups and Commercial Fleets

Many users compete for Canada's salmon. They are harvested by recreational and Native fishermen as well as by commercial fishermen. They are also divided among three commercial fishing fleets: seiners, trollers, and gillnetters.

¹¹³ Gislason, 1996, page 14-4.

Stacking and fleet reduction can reduce the number of commercial fishermen relative to recreational and Native salmon users, can affect the relative sizes of the different gear groups, and can affect the relative numbers of different area licenses within a given gear group. This can lead to pressures for reallocation of stocks among users and can affect the ability of different commercial user groups to cope with political challenges to their existing stock allocations.

Salmon allocations have been a concern throughout the fleet reduction process. As noted earlier, it was an important consideration for fishermen during the 1995 salmon roundtable. During this period various persons were requested, by the Minister of Fisheries, to look into and report on allocation issues.

Stephen Kelleher, a Vancouver attorney, conducted two fact finding investigations into possible allocation procedures that would be acceptable to commercial fishermen. In an April 30, 1998 report he noted that:

...there is also a difference of opinion on how the Long Term Allocation Plan should account for fleet reductions. Seinners...favour a neutral impact approach which re-allocates holding CPUE constant. Some gillnetters agree with this approach. Other gillnetters, and most trollers, feel that the neutral impact approach means holding coast wide shares [that is gear shares - Muse] constant regardless of changes in the number of license holders.¹¹⁴

In December, 1998, Minister Anderson announced a framework policy for allocation that would be in place at least through 2008. Conservation received the highest priority, followed by Native needs. Sport fishermen were given a priority on chinook and coho; commercial harvests would be allowed if stock sizes permitted. Commercial fishermen were allocated a 95% minimum share in sockeye, pinks, and chums.

Commercial target allocations were initially to be assigned to each gear type on a coast-wide basis. Allocations were to be made on the basis of sockeye equivalents. Sockeye equivalents are calculated by weighting the harvest of different salmon species by their ex-vessel price relative to sockeye salmon. Initially seiners were to receive 42%, gillnetters 34% and trollers 24% of the overall allocation. Although initial allocations were coastwide,

For information and planning purposes, coast-wide target allocations by gear type will be translated, on an annual basis, into anticipated license area allocations by gear and species. Over time there will be an attempt to move to more clearly defined geographical area allocations.¹¹⁵

The framework policy noted that the fleet reduction programs were voluntary, that no gear was being especially targeted, and that it would not be possible to predict the final

¹¹⁴ Kelleher, page 34.

¹¹⁵ Canada. Fisheries and Oceans, 1998, "An Allocation Framework..."

fleet composition by gear type. Adjustments to fleet allocations might be necessary in response to relatively large reductions in a gear type. A decision about such an allocation adjustment would also have to consider other issues such as conservation and improvements in gear selectivity.¹¹⁶

5.8 This Remains a Common Property Fishery

In the long run, the program has not dealt with the common property nature of the fishery. This suggests that in the long term, fishermen will increase their investments in the fishery and expand effort in an effort to compete for any profits that might have been generated by fleet reduction in the fishery. Experience suggests that these responses by the fishermen to the changes in the fishery will increase operating costs and considerably reduce any benefits that the program generated.

A recently completed cost-benefit analysis of the British Columbia commercial salmon fishery suggests that, under one set of assumptions, the net present value of the fishery under the management regime before the Mifflin Plan might have been -C\$784 million. This is the present value to Canada of the difference between fishery revenues, private harvesting costs, and public management expenses. This calculation was made over a 25 year period using a 5% discount rate. At the time the study was done the Mifflin Plan had taken about 27% of the vessels from the fishery. The authors speculate that if it had reduced harvesting costs proportionately, that is 27%, the net present value of the fishery would have risen to C\$82 million. That is an increase in the net present value of C\$866 million over 25 years.¹¹⁷

That estimate assumes that operating costs declined proportionately with the number of fishing licenses and stayed down for the 25 year period over which the analysis was carried out. If license holders and fishermen upgrade their operations and increase their effort in response to reduced costs and increased profitability, an unknown part of the benefits from the license retirement program will be lost.

¹¹⁶ Canada. Fisheries and Oceans, 1998, "An Allocation Framework..."

¹¹⁷ Schwindt *et al.* Forthcoming. The estimates reported here are among several made in this paper on the basis of different assumptions.

6. Sources

Canada. Fisheries and Oceans. 1990 “Pacific Coast Commercial Fishing Licensing Policy: Discussion Paper. September, 1990.

Canada. Fisheries and Oceans. 1995. “Roundtable Report Forwarded to Minister Tobin.” NR-PR-95-64E. December 15, 1995. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/1995/nr9564e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “News Release. Minister Announces Plan to Revitalize Salmon Fishery.” NR-PR-96-15E. March 29, 1996. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9615e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “Backgrounder. Commercial Salmon License Changes.” B-PR-96-08E. March 29, 1996. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/bg9608e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “Backgrounder. Modifications to Licensing for the Pacific Salmon Revitalization Plan.” B-HQ-96-15E. May 1996. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/bg9615e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “News Release. Salmon License Applications Proceed as Planned.” NR-PR-96-25E. June 4, 1996. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9625e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “Backgrounder. Commercial Salmon Licensing Measures Under the Pacific Salmon Revitalization Strategy.” January, 1997. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/jan9974e.htm>. January 5, 1999.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1997. “Backgrounder. Federal Response to Panel’s Recommendations.” January, 1997. [Online]

Available <http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/jan9972e.htm>.
December 9, 1998.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1997.
“Backgrounder. Highlights of Federal Initiatives for the Pacific Salmon Fishery.” January
9, 1997. [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/jan9971e.htm>. December 9,
1998.

Canada, Fisheries and Oceans. Communications Branch, Pacific Region. 1996. “News
Release. Minister Announces Results of License Stacking Vote.” NR-PR-98-07E.
February 5, 1998. [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9807e.htm>. December 9,
1998.

Canada. Fisheries and Oceans. Communications Branch, Pacific Region. 1998. “Catalogue
of News Releases/ Backgrounders and Ministers Statements.” [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat.htm>. December 9, 1998.

Canada. Fisheries and Oceans. Communications Branch, Pacific Region. 1998.
“Backgrounder. The Pacific Salmon Fishery: A 15-Year Perspective.” June 19, 1998.
[Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/bckgrnd/face.htm>.
December 9, 1998.

Canada. Fisheries and Oceans. Communications Branch, Pacific Region. 1998. “News
Release. Ministers Announce Canada’s Coho Recovery Plan and C\$400 Million for Pacific
Salmon Fishery.” June 19, 1998. [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9817e.htm>. January 5,
1999.

Canada. Fisheries and Oceans. Communications Branch, Pacific Region. 1998. “News
Release. DFO Announces Extension for License Fee, Vessel Tie-Up Program.” NR-PR-
98-52E. June 25, 1998. [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9852e.htm>. January 5,
1999.

Canada. Fisheries and Oceans. Communications Branch, Pacific Region. 1998. “News
Release. Commercial Salmon Vessel Owners Opt for Voluntary Tie-Up.” NR-PR-98-63E.
July 30, 1998. [Online] Available <http://www.pac.dfo.ca/comm/pages/english/newscat/p-releas/nr9863e.htm> January 5, 1999.

Canada. Fisheries and Oceans. 1998. “An Allocation Framework for Pacific Salmon 1999-
2005.” December, 1998. [Online] Available
<http://www.pac.dfo.ca/comm/pages/english/newscat/Alloc/st9810e.htm>. January 5, 1999.

- Copes, Parzival. 1998. "Coping with the Coho Crisis: a Conservation-Minded, Stakeholder-Sensitive and Community-Oriented Strategy." A report commissioned by, and submitted to, the Honourable Dennis Streifel, Minister of Fisheries of British Columbia. May 18, 1998. [Online] Available <http://www.fisheries.gov.bc.ca/index.htm>. January 26, 1999.
- Doherty, T.J. "B.C. Rewrites the Three R's of Fishing: Reduce, Restructure & (hopefully) Revitalize." *Pacific Fishing*. February, 1996. Page 37-41.
- Dupont, Diane. 1991. "Testing for Input Substitution in a Regulated Fishery." *American Journal of Agricultural Economics*. February, 1991. Pages 155-164.
- Fraser, G. Alex. 1979. "Limited Entry: Experience of the British Columbia Salmon Fishery." *Journal of the Fisheries Research Board of Canada*. 36: 754-763.
- Gislason, Gordon, Edna Lam, and Marilyn Mohan. 1996. "Fishing for Answers. Coastal Communities and the BC Salmon Fishery. A report prepared for the BC Job Protection Commission. The ARA Consulting Group Inc. September 30, 1996.
- Gislason, Gordon, Marilyn Mohan, Edna Lam, Simon Anderson, and Ellen Battle. 1998. "Fishing for Money. Challenges and Opportunities in the BC Salmon Fishery. A report prepared for the BC Job Protection Commission. GSGislason & Associates. June 10, 1998.
- Haig-Brown, Alan. 1999. "B.C. Salmon Buyback Targets Seiners." *Pacific Fishing*. March, 1999. Pages 94-95.
- Holland, Dan, Eyjolfur Gudmundsson and John Gates. 1999. "Do fishing vessel buyback programs work: A survey of the evidence." *Marine Policy*. 23(1): 47-69.
- James, M. 1996. "Final Report on the 1996 Voluntary Fleet Reduction License Retirement Program." Department of Fisheries and Oceans, Pacific Region. Program Planning and Economics Branch. December, 1996.
- Kelleher, Stephen. 1998. "Report to the Honourable David Anderson Minister of Fisheries & Oceans. Re: Commercial Salmon Allocation." April 30, 1998.
- KPMG. "Audit of Pacific Commercial Salmon License Retirement Program." [Online] Available <http://www.ncr.dfo.ca/communic/cread/english/reports/buyback/disc.htm>. December 8, 1998.
- MacGillivray, Paul. 1986. "Evaluation of Area Licensing in the British Columbia Roe Herring Fishery: 1981-1985." In *Fishery Access Control Programs Worldwide*:

Proceedings of the Workshop on Management Options for the North Pacific Longline Fisheries. Edited by Nina Mollett. Alaska Sea Grant Report No. 86-4. University of Alaska Sea Grant Program. Fairbanks: December, 1986.

Mylchreest, Russell. 1993. "Salmon License Retirement. Review of the 1993 Pilot Program." Economic & Commercial Analysis Division, Fisheries & Oceans - Pacific Region. November 19, 1993.

Pearse, Peter H. and James E. Wilen. 1979. "Impact of Canada's Pacific Salmon Fleet Control Program." *Journal of the Fisheries Research Board of Canada*. 36: 764-769.

Schelle, Kurt and Ben Muse. 1984. "Buyback of Fishing Rights In The U.S. and Canada: Implications for Alaska." Presented at the 114th Annual Meeting of the American Fisheries Society. August 15, 1984. Ithaca, New York. (Available from the authors at the Alaska Commercial Fisheries Entry Commission.)

Schwindt, Richard, Aidan Vining, and Steven Globerman. "Net Loss: A Cost-Benefit Analysis of the Canadian Pacific Salmon Fishery." Forthcoming in the *Journal of Policy Analysis and Management*.

Sporer, Chris. 1999. Economist with the Planning Division of the Department of Fisheries and Oceans. Personal communication. January, 1999.

United States. Office of the Management and Budget. 1992. "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs." Circular No. A-94, Revised. October 29, 1992. [Online] Available <http://www2.whitehouse.gov/WH/EOP/OMB/html/circulars/a094/a094.html> 2-26-99.

Wilen, James E. 1988. "Limited Entry Licensing: A Retrospective Assessment." *Marine Resource Economics*. 5(4): 313-324.

Wright, Steven. 1999. Director of Fisheries Restructuring, Department of Fisheries and Oceans. Personal communication. February, 1999.

Appendix: The Buyback Program in 1993

This program is discussed in this appendix because it was not directly connected with the other fleet reduction programs, because it falls outside the narrative history of those programs, and because it was a much smaller program meant to accomplish different objectives. It is discussed here in order to prevent confusion between it and the two programs that followed it, and because it has interesting characteristics of its own.

In 1993 the Department of Fisheries and Oceans ran a program to buyback commercial salmon licenses. This program was started to support plans to reallocate some salmon harvests to Natives. The Department budgeted C\$6.4 million for the program.¹¹⁸

The program sought to buy only vessel licenses. Vessel owners were asked to submit offers to sell licenses from their vessels. These were to be ranked in ascending order of the ratio of the bid price to an average catch in sockeye equivalents for vessels using the same gear type and of a similar length. Salmon equivalents were calculated by weighing the harvest of the different species by their ex-vessel price relative to sockeye salmon. These averages were calculated for the period 1988 to 1991.

The bid price-average harvest ratios were the primary decision criteria, however other criteria were used as well. Data was collected on market prices, and an attempt was made to avoid paying substantially more than market price for licenses. An attempt was made to balance purchases across gear types. Consideration was given to whether or not the vessel had additional licenses that would allow it to move into and increase effort in other fisheries.¹¹⁹

Purchase decisions were placed in the hands of a seven person “License Retirement Selection Committee” made up of three gear representatives, one fisherman’s union representatives, and three Native representatives.¹²⁰

The program began in December 1992 and bids for the first round were accepted until the end of January 1993. The results for the first round were announced in mid-February. Two subsequent rounds, in March and April evaluated bids received after January. License holders could submit new bids in subsequent rounds if a bid had been rejected in an earlier round. These three rounds used C\$5.95 million of the C\$6.4 million available.¹²¹

¹¹⁸ Mylchreest, pages 1, 5.

¹¹⁹ Mylchreest, pages 2, 4.

¹²⁰ The seventh member, an additional Native representative, was added mid-way through the program. Mylchreest, pages 2.

¹²¹ The committee accepted 87 bids, but bidders were free to drop out, and only 75 of the committee’s offers were ultimately accepted by the bidders. Mylchreest, page 5. This may explain, in part, why the committee did not spend the full C\$6.4 million.

Over the three rounds the committee received 173 gillnet bids, 20 seine bids, and 311 troll bids. While this represented bids from only 4% of the seine license holders and 8% of the gillnet license holders, it represented 25% of the troll license holders. The program retired 31 gillnet licenses (18% of the bids) at an average of C\$52,380 each, 11 seine licenses (55% of the bids) at an average of C\$190,000 each, and 33 troll licenses (11% of the bids) at an average of C\$67,812 each.¹²²

Total administrative costs for this program came to about C\$41,000. This cost included the expenses for contract program manager and program officer and costs of printing and mailing.¹²³

¹²² Mylchreest, page 6.

¹²³ Mylchreest, page 5.