

FISHERIES EXPLOITATION OFF CANADA'S WEST COAST: THE EFFECTS OF NATIONAL POLICY

by Parzival Copes*

INTRODUCTION

Over the past three decades there has been a manifold increase in the exploitation effort applied to the world's marine fish stocks. By the end of the 1960s there were clear signs of biological overfishing for many of the more desirable and accessible stocks; annual catches were declining despite increasing fishing effort. Recognition of this irrational use of the world's fish resources led to attempts at corrective action in two spheres. Domestically, several countries introduced management measures that regulated fishing effort, with the aim both of conserving stocks and of improving economic returns to the fishing industry.

In the international sphere, states whose fishing activities focused on their own coastal zones, pressed for recognition of preferential access for coastal states to the fish resources adjacent to their shores. Their agitation culminated in a rash of unilateral declarations of extended fishing jurisdiction taking effect in 1977. In that year the 200-mile fishing limit became the accepted world standard and, thereby, an article of international law. There were two principal arguments for extended coastal state jurisdiction. One was that the only practicable way of bringing fish stocks under effective management was to place them under the legal authority of particular states. The other was that coastal states should hold first rights to adjacent fish stocks, on which their coastal communities were often economically dependent (Copes [8]).

This paper will consider the changes that are taking place in fishing operations off Canada's west coast following the establishment of extended fisheries jurisdiction. It will seek to analyze developments in relation to the policy objectives set by the Canadian government and the practical constraints that have been encountered.¹ The analysis recognizes two spheres of action; one concerned with management of domestic fisheries and the other with foreign fisheries arrangements.

* The author is Professor of Economics at Simon Fraser University. Research support from the Social Sciences and Humanities Research Council of Canada and helpful comments from K. S. Ketchen and J. McDonald are gratefully acknowledged.

¹ Reference here is to the policy objectives exhibited by the Liberal Government that has held office since 1963, except for a short break between the elections of June 1979 and February 1980. The Progressive-Conservative Government that held office during the break did not have time to consider any alternative policy objectives.

The Domestic Fisheries of British Columbia

Canada's west coast province of British Columbia was late to be colonized and developed because of its remote location in relation to the path of European migration to and through North America. The conditions affecting economic development in the province include a rich natural resource base, a small population and a long distance to world markets. Under these circumstances only the richest among the available resources tend to be exploited, at least at first.

The marine resources of Canada's west coast include abundant stocks of salmon, a high-value food fish that can be harvested at low cost. Salmon naturally became the first and most important target species of the British Columbia fishing industry. While fisheries for other species are now well developed, the salmon sector remains dominant. It accounted for a landed value of \$109 million in 1977, comprising 65 percent of the catch value for Canada's west coast and 24 percent of the value for east and west coasts combined. This makes the Pacific salmon sector easily the most valuable component of Canada's fishing industry.

The halibut fishery, historically, has also been prominent in British Columbia. Halibut is a high-value food fish, though not quite on a par with salmon. Moreover, the halibut stocks are much smaller in extent than the salmon stocks, so that halibut has always ranked well behind salmon in importance.

In physical terms of biomass, British Columbia's stocks of herring are much greater than those of salmon. But with a very much lower unit value for the catches and great variations in abundance, the herring fishery has been a less steady sector of the industry. In the last few years, the British Columbia herring stocks, which are particularly well suited to roe production, have taken on a new importance, second only to salmon. A spectacular speculative surge of herring roe prices in the Japanese market has made this fishery quite lucrative — at least for the time being.

There is one further sector of the British Columbia fishing industry of some significance. This is a trawl fishery for smaller groundfish, i.e., species other than halibut.² They include various "cods," small flatfishes, ocean perch and other rockfishes. These are more modestly priced species supplied particularly to local fresh fish markets, though some quantities of processed frozen products are shipped to distant markets. The yield potential in the past substantially exceeded the harvesting requirements of the domestic fishing industry for the available market. However, in the last few years domestic exploitation of all of the more important species has reached the level of full utilization.

A few minor fisheries require mention. Modest stocks of various shellfish (oyster, clam, crab, shrimp and prawn) along Canada's west coast have been brought under exploitation in response to high demand for these luxury species. Migrating stocks of albacore appear in British Columbia waters with varying annual abundance. They are an attractive fisheries target when available in sufficient numbers (Copes [12]). Less attractive is a resident stock of dogfish,

² Unless the context indicates otherwise, "groundfish" in this paper does not include halibut.

a nuisance predator on more valuable species. However, a fishery for dogfish appears commercially feasible and is being developed.

The Foreign Interface

Institutionally, an important aspect of fisheries on the west coast of North America has been the interaction, and sometimes integration of, Canadian and American operations. Both countries have been fishing the same northeast Pacific stock complexes. These extend from the British Columbia zone into American waters, northwards into Alaska and southwards into Washington, Oregon and, to a lesser extent, California. The commercially most important species in this northeast Pacific marine region, salmon and halibut, are characterized by regular migrations, with a large part of the stocks passing through both American and Canadian 200-mile zones.

Inevitably, fishermen from each country have been taking large amounts of fish, which, if not intercepted by them, would have ended up in the nets of fishermen from the other country. Moreover, in the past Canadian and American vessels have operated freely off each other's coasts outside the original three-mile limits, in pursuit of the best exploitable concentrations of fish wherever these might be found. As illustration of the foregoing, it may be noted that for a long time Americans have been taking about half of the rich sockeye and pink salmon runs heading for the Fraser River in Canada, while Canadian fishermen a few years ago were taking the larger part of their halibut catch from Alaskan waters.

Because of heavy exploitation of the salmon and halibut stocks in the northeast Pacific, both Canada and the United States have long recognized a need for conservation measures. And because of the joint exploitation patterns the two countries were induced to establish joint conservation agencies (Koers [20]). In 1923 they agreed to set up the International Pacific Halibut Commission (IPHC). This body has regulated exploitation, principally by the device of setting annually a limit on the total catch for the combined fishing fleets of the two countries.

The International Pacific Salmon Fisheries Commission (IPSPC) was established by a convention signed in 1930, though its implementation was delayed until 1937 (Koers [20]). The Commission's task was to improve the joint catch from the potentially very abundant stock of sockeye salmon using the Fraser River system for spawning. In 1957 the pink salmon runs of the same river system (together with those of adjacent smaller streams on both sides of the border) were also placed under the Commission's authority. The salmon approached the Fraser River in British Columbia through waters straddling the marine boundary of the two countries, where they were subject to a joint fishing effort. The agreement called for a 50-50 split in the allowable catch, as well as an even split in the cost of improving salmon passage and rearing on the Fraser River.

The policy of accommodation in their joint exploitation of fisheries was continued after the two countries moved to establish 12-mile fishing zones. They

allowed reciprocal access for each other's fishermen to grounds within the 12-mile fishing limit, but outside the three-mile territorial limit.³ However, the coming of the 200-mile limit has marked the beginning of new and much more restrictive policies on mutual fisheries accommodation, which will be discussed below.

Prior to 1965 the fishery off British Columbia was pursued exclusively by Canadian and American vessels. But in that year a Soviet fishing fleet appeared. It was joined the following year by a Japanese fleet. Both engaged in a factory trawler fishery for groundfish species. Canadian concern over the appearance of these foreign fleets was moderated by the fact that the groundfish stocks were in excess of North American harvesting requirements and that the Soviets and the Japanese were apparently not engaged in any directed fishery for salmon or halibut. The salmon fishery, in any case, was best pursued by smaller vessels, mostly inside the 12-mile limit from which the Soviets and Japanese were barred. The halibut fishery was best undertaken by smaller vessels using longlines. However, it was subsequently concluded that the Soviet and Japanese trawling operations did cause damage to the halibut fishery by removing part of the juvenile halibut stock (Hoag [18]).

The fleets from the U.S.S.R. and Japan fished vigorously off Canada's Pacific Coast during the ten years, 1966-1975, reducing the local groundfish stocks considerably in the process. In 1975 they were joined by a Polish fleet, as well as a few vessels from the Republic of Korea (South Korea) and the German Democratic Republic (East Germany). The following total groundfish catch estimates for the period, 1966-1975, show the dominance of foreign fleet operations in this sector.⁴

<i>Country</i>	<i>Catch (metric tons)</i>	<i>Percent of total</i>
Canada	187,468	23.9
U.S.A.	132,687	16.9
U.S.S.R.	270,612	34.5
Japan	163,621	20.9
Poland	26,273	3.4
R.O.K.	1,301	0.2
G.D.R.	2,000	0.3

By 1976 it was evident that rockfish species (particularly ocean perch) had been over-exploited and that the halibut stocks had suffered from trawling operations. This provided Canada with an incentive to limit foreign groundfish operations when the 200-mile limit was introduced in 1977. This is discussed below.

³ These reciprocal privileges were also extended to American fishermen when Canada in 1970 claimed fisheries jurisdiction in certain additional waters behind "fisheries closing lines."

⁴ Data provided by K. S. Ketchen, Pacific Biological Station, Canada, Department of Fisheries and Oceans.

The Rationalization of Domestic Fisheries

In 1976 the Canadian government issued a document entitled, *Policy for Canada's Commercial Fisheries*. It contained an extensive analysis of the prevailing problems of the Canadian fishing industry, as well as principles and guidelines for redevelopment. It was, in fact, the first ever comprehensive statement by a Canadian government on fisheries policy. The timing of its publication was explicitly linked, both to the acute conditions of crisis then existing in the Atlantic Coast fisheries and to the imminent establishment of the 200-mile limit. The document made explicit a policy of socio-economic rationalization of the Canadian fishing industry, which had been emerging over the previous 12 years (Copes [9]).

Canadian fisheries problems have been largely of the same character as those of mature fisheries elsewhere in the world. The central difficulty has been the peculiar condition of economic exploitation of fish stocks as a "common property resource." The problem, in its wider context, has become known as "the tragedy of the commons" (Hardin [17]). It was only when Gordon in 1954 published his seminal article, that a start was made with a careful and extensive economic analysis of the fisheries problem. Gordon's interest in the fisheries problem was related to a stint as economic analyst with the Canadian government's Department of Fisheries. Canadian economists, in fact, have been prominent among the contributors to the analytical literature on fisheries economics that has developed over the past 25 years. Their influence helped to develop a growing understanding of the fisheries problem in the Canadian government service well in advance of such understanding in most other countries.

Before economists busied themselves with the fisheries question, biologists had identified the problem of overfishing in physical terms. They formulated the concept of maximum sustainable yield (MSY), which marked an optimum level of steady state exploitation in terms of physical output. Under their influence various methods of fisheries regulation or closure were put into effect to constrain fishing activities, with the aim of conserving stocks by lowering effective fishing pressure. When economists became involved, they identified as the key feature of the fisheries problem the practice of allowing open access to the common property fishery resource, leading to excessive inputs of manpower and equipment. The remedy was limitation and control of labour and capital inputs. The economic solution was to conserve not only the resource, but also the other factors used in the fishing process, so that economic returns could be maximized.

Under the influence of the new economic analysis of fisheries, the Canadian government in 1975 specifically adopted as a criterion for fisheries management the achievement of an optimum sustainable yield (OSY). It would maximize benefits in socio-economic terms, in contrast to the MSY which was designed to maximize the physical output of fish without reference to costs or benefits (Canada [4]; Copes [11]). This approach was confirmed in the 1976 policy statement, where the guiding principle in fisheries management was described as the "best use of society's resources" as defined "by the sum of net social benefits (per-

sonal income, occupational opportunity, consumer satisfaction and so on) derived from the fisheries and the industries linked to them."⁵ The policy statement accepted the need to introduce restrictive licensing in all commercial fisheries.

The fisheries problem on Canada's east coast was much more severe than on the west coast, primarily because in the east the lack of alternative employment opportunities tied greatly excessive numbers of men into the industry at exceptionally low opportunity costs. On the Pacific Coast wage levels were much higher and employment opportunities were more plentiful. Altogether, British Columbia fishermen, a high proportion of whom were urban dwellers, were more mobile.⁶ All of this made rationalization of the fishing industry, involving a reduction of labour inputs, in the west more feasible — if perhaps less urgent — than in the east.

The first attempt by the Canadian government at comprehensive economic rationalization of a fisheries sector came in 1968; with the salmon fishery of British Columbia chosen as the object. There were three circumstances that made this a particularly suitable choice.

- (1) As mentioned, there were relatively good alternative employment opportunities for fishermen displaced by rationalization.
- (2) The fishery, essentially, came under effective jurisdictional control of the Canadian government.
- (3) There was a demonstrably large benefit to be gained from rationalization.

The fishery for British Columbia salmon was undertaken largely by Canadian fishermen within the territorial limits of Canada or in international waters adjacent thereto. The Canadian government had full legal competence to control their activities. The only relevant fishing activity on a significant scale that could not be controlled by the Canadian government was the interception of Fraser River salmon by United States fishermen. But because there was a firm agreement on a 50-50 split of this catch with the Americans, there was still no obstacle to Canada rationalizing the fishery for her share of the catch. It is important to note that if the agreement had been for a total limit on each year's catch, with fishermen from either nation allowed to continue fishing until the year's limit was reached, effective rationalization of the Canadian fishery would not have been possible. For any reduction in the number of Canadian fishing units would then reduce Canada's share of the catch in the competitive scramble for fish. This latter was the case in the jointly managed halibut fishery, making it unsuitable for a rationalization scheme by one country.

⁵ The defined objective goes well beyond the familiar criterion of resource rent maximization originally set by Gordon (1954). It appears in line with the more elaborate criterion of maximizing the combination of net social benefits consisting of resource rent, consumers' surplus and producers' surplus (Copes, 1972) and also takes industry linkages into account.

⁶ It should be acknowledged that this generalization of the west coast situation is not valid for several small isolated coastal settlements. Some native Indian communities, in particular, fall in this latter category.

It was patently clear to everyone in the British Columbia salmon fishery that the numbers of fishermen and vessels in use were vastly in excess of the numbers required to take the entire catch. Conservation measures to allow sufficient escapement of spawning salmon to renew the stocks were effected by frequent closures of the fishery. The severe restrictions on fishing time allowed made it plain to all concerned that if the number of vessels were smaller, more continuous employment could be achieved, with much higher catches per boat and much higher revenue per fisherman.

Without the benefit of sophisticated economic analysis, the largest fishermen's organization in British Columbia, the United Fishermen and Allied Workers' Union (UFAWU), as early as 1943 reached the conclusion that the rational conduct of the salmon fishery required limitation of entry to the fishery. Later, an investigation of the question was commissioned by the Canadian government, resulting in a path-breaking study (Sinclair [26]) that advocated a limited entry scheme. Discussions between the government and the several elements of the industry revealed a consensus on the need for limited entry, but differences of opinion regarding the methods.

In 1968 the government put into effect a limited licensing plan. It barred some marginal vessels from the salmon fishery and provided for a "buy-back" program to remove additional vessels. Under this scheme fishermen were offered a sum representing an appraised value plus bonus to surrender their boat and license. The sales were on a voluntary basis entirely. The scheme was financed by increased license fees, justified by the higher returns remaining fishermen could expect from larger catches per vessel.⁷ The licensing and buy-back program has been hailed as a pioneering effort in fisheries rationalization, though the extent of its success is open to question (Pearse and Wilen [23]; Fraser, [14]). Increased returns in the salmon fishery since 1968 appear to have been more a result of higher prices than of effort limitation. All the same, there is now a broad consensus in the Canadian fishing industry that limited entry is a key requirement for economic improvement. Accordingly, license limitation has been introduced in all of the British Columbia fisheries.

The most effective and desirable form of license allocation remains a question of debate. In the salmon licensing program owners have been allowed freely to sell their boats with license attached. As a result, the rents represented by improved returns (real or anticipated) have been capitalized in license values, which have reached speculatively high levels. In turn this has rendered government buy-back of further vessels prohibitively expensive. In fact, as a result of this "expectations trap" the buy-back program was suspended after only five percent of catching capacity was removed from the fishery (Copes [9]). Much more than that amount of capacity has been built back into the fishery by technical improvements in the existing fleet (the process of "capital stuffing").

In view of the difficulty of removing excess fishing capacity by buy-back,

⁷ For additional details see Pearse (1972) and Fraser (1977).

government plans now tend to emphasize increasing the fish supply instead, in order to raise catches and incomes per fisherman. In the case of the salmon fishery, a massive stock enhancement program has been commenced, designed to double the amount of fish produced, with the aid of hatcheries, artificial spawning channels, habitat improvement and other means (Canada [3]).

A problem in connection with enhancement is that much of the additional stocks would be liable to interception by American fishermen. But with the United States also planning an expansion of salmon enhancement programs, the converse would also be the case. Both countries naturally want a full return to their own nationals on any investment in enhancement. To achieve this there must be an agreement on compensation for interception or, alternatively, an agreement to seek a balance in interceptions (Copes [12]). Negotiations to this end are being conducted by the two countries.

Apart from salmon, British Columbia marine fisheries do not offer much scope for stock enhancement. However, in the case of the halibut fishery there is a great need for an additional fish supply, as Canadian fishermen are losing access to the American 200-mile zone where they previously obtained the greater part of their catch. Canada's own halibut stocks may be increased by careful regulation of trawling operations that previously did much to deplete halibut stocks. But there are also opportunities for Canadian fishermen to fish alternative species, in particular blackcod which may be taken by a setline fishery, similar to that for halibut. To this end the phasing out of all foreign fishing for blackcod is anticipated.

There are, of course, further opportunities to increase Canadian catches of groundfish by replacing foreign effort. It is to be expected that the Canadian government will encourage existing fishermen to expand their catches by fishing groundfish stocks previously exploited by foreign vessels, in preference to licensing additional fishermen to exploit these stocks. For an important aim of fisheries rationalization, of course, is to increase the catch, and thereby the net revenue of fishermen.

As indicated, the Canadian government is looking for opportunities to expand Canadian catches of some species by replacing foreign effort. However, it should be noted that economic rationalization of mature fisheries previously subject to open access generally requires that catches and effort levels be kept below those compatible with MSY.⁸ It is interesting to speculate whether the combination of extended jurisdiction and the policy of rationalization will result

⁸ This is the position expressed in most of the economics literature from Gordon (1954) on, in which a steady state analysis is applied. Essentially this is because marginal catch (and marginal revenue) per unit of effort reaches zero at MSY. If marginal cost is not to exceed marginal revenue, effort and output levels must be kept below those compatible with MSY. This conclusion does not necessarily hold if a dynamic analysis with a positive social discount rate is used (Clark and Munro, 1975). In other words, we may "overfish" if fish today is worth more than fish tomorrow. However, even with a dynamic analysis real price increases for diminished catches from physically overfished stocks may offset the effect of a positive discount rate, and preserve the conclusion that effort should be kept below the MSY level.

in larger or smaller total catches from British Columbia fisheries. In the case of salmon and roe herring stocks that show a high schooling propensity (in estuarial waters or on spawning grounds) the OSY level is likely to be close to the MSY level. This is because marginal catching costs at MSY are likely to remain low as a result of fish density remaining high.⁹ In the case of salmon and herring the traditional management pattern of aiming for MSY therefore requires no significant modification. The policy of economic rationalization, as such, should make little difference on catch levels, though salmon enhancement and improved bio-economic management of herring stocks could result in increased catches in both fisheries.

In the case of the more dispersed stocks of halibut and other groundfish, higher fishing effort undoubtedly tends to thin out the stocks. This should significantly lower catches per unit of effort and thereby raise costs per unit of catch. Optimum economic returns in these fisheries therefore is likely to be achieved at an output level measurably short of MSY.¹⁰ If economic rationalization is successful, therefore, output levels from these stocks will be somewhat short of the maximum achievable under MSY management.

The Regime of the 200-Mile Limit

Canada has enjoyed an enviable reputation as a middle power with a strong sense of international responsibility, tinged with "altruistic mission." The country's highly "internationalist" stance in foreign affairs during the days of Prime Minister Lester Pearson was modified in some degree during the era of Prime Minister Pierre Trudeau. The development of strains within the Canadian federation called for a more conscious effort to reconcile foreign policy with the requirements of internal harmony and abatement of regional and sectional distress. This was reflected in Canada's position in international negotiations on the Law of the Sea (Gotlieb and Dalfen [16]). While still seeking to maintain harmonious foreign relations and a favourable international image, Canada pushed strongly for changes in the Law of the Sea that were particularly supportive of her own national interests.

The coastal regions of Canada have long been vulnerable to a sense of distance from the country's central interests. To reduce regional alienation, particularly in the case of the distressed Atlantic Region, it was necessary to demonstrate a strong national concern for the particular problems of coastal regions. One of their visible concerns during the past decade was the rapid depletion of the fishery resources available to them as a result of escalating foreign fishing effort. This caused Canada to take an increasingly aggressive position in international negotiations on the Law of the Sea, pressing for recognition of greater coastal state rights in respect of nearby fish resources (Johnson [19]).

⁹ Bell (1972) also observes that standard economic analysis shows that economic optimization will come closer to producing MSY at high levels of consumer demand for a fish stock. This certainly would apply to salmon and roe herring.

¹⁰ Particularly so for groundfish species for which consumer demand is less high than for halibut.

Canada, in fact, assumed a leading role in developing new concepts of international law in relation to fisheries (Copes [9]). And as the international climate became more propitious, Canada shifted to increasingly more "acquisitive" positions. At the Third Law of the Sea Conference (which opened in 1974 and is still continuing through intermittent sessions) it soon became clear that a great majority of nations were ready to accept a 200-mile fishing limit. A consensus on the appropriate conditions for such a limit was embodied in a document produced at the Conference, the Informal Composite Negotiating Text (ICNT). Disagreement on non-fisheries items in this document so far has prevented the conclusion of the Conference and adoption of a formal convention. However, the 200-mile limit for fishing purposes has been adopted through the alternative process of a series of unilateral declarations by coastal states claiming these limits.

Many countries, including Canada (MacEachan [21]), have acknowledged that they will observe the rules formulated in the ICNT in administering their 200-mile fishing zones. The ICNT accords to coastal states "sovereign rights for the purpose of exploring and exploiting, conserving and managing" the fish stocks in a 200-mile zone (United Nations, 1979). These rights are qualified, however, by the ICNT requirement that a coastal state, where it "does not have the capacity to harvest the entire allowable catch" must "give other states access to the surplus." The constraint is not severe insofar as the ICNT allows the coastal state unilaterally to set the allowable catch, and thus determine the extent of the surplus — which could be zero. Moreover, the coastal state is entitled to set conditions of access to its zone — including fees — which could be prohibitive. The real constraint is a moral one. The coastal state has a responsibility in the eyes of the international community to see to it that available fish are not wasted. Thus the coastal state must be seen to be reasonable in setting realistic allowable catches and nonexcessive conditions of access.

One area of particular interest to Canada in the ICNT is the section dealing with "anadromous fish" which spawn in fresh water and spend much of their life in salt water.¹¹ The ICNT rules have application only for those anadromous species (principally salmon) that migrate beyond the 200-mile zones of their "states or origin." In the ICNT it is acknowledged that states of origin "have the primary interest in and responsibility for" anadromous stocks. It is widely acknowledged that states of origin incur many explicit costs in maintaining the spawning beds and freshwater habitat of salmon. They also face great implicit costs in having to avoid many alternative uses of salmon streams, e.g., for power development, irrigation and waste disposal. In addition it is known that the salmon fishery is managed most effectively, generally, if the catching operations are confined to waters near the mouths of spawning rivers. The salmon have reached maximum weight when they arrive there. Only there is it possible to identify different races of salmon and manipulate fishing effort for each so as to allow optimum escapement up river for maximum stock renewal.

¹¹ For a more extensive analysis see Copes (1977).

Most of the North American Pacific salmon stocks travel well beyond the 200-mile limit on their feeding migration in the North Pacific, where they are potentially subject to a high seas fishing operation by foreign fleets. In the Law of the Sea Conference discussions leading to the drafting of the ICNT, several states of origin for salmon (and notably Canada and the United States) urged that the proprietary rights of states of origin in respect of anadromous stocks be recognized and that high seas fishing for them be prohibited. However, the number of states of origin is small in relation to the number of states with an actual or potential interest in fishing for salmon on the high seas, or no interest at all in the question of anadromous stocks. A compromise was reached and a provision included in the ICNT which stated that no harvesting of anadromous fish should take place outside the 200-mile zone "except in cases where this provision would result in economic dislocation for a state other than the state of origin." This has been held to mean that existing high seas fisheries for salmon could continue, but that no new high seas fisheries for salmon should be commenced.

Japan is the only country so far that has engaged in any significant high seas fishing for Pacific salmon from North America. However, under the terms of the International Convention for the High Seas Fisheries of the North Pacific, concluded in 1952 by Canada, Japan and the United States, Japan agreed to abstain from fishing for salmon east of 175° W.¹² Very few salmon from British Columbia and the American states to the south migrate past this "abstention" line, so that the Japanese high seas fishery is confined almost entirely to salmon of Asian and Alaskan origin.

It should be noted that the ICNT strictures on high seas fishing for salmon are practically unenforceable and would be so even if the ICNT were adopted by an international convention. For international law applies only to states that voluntarily submit to it. While coastal states may be expected to enforce their fishery jurisdiction within their 200-mile zones, it is unthinkable that Canada, or any state, should attempt to police ICNT rules on the high seas. It is conceivable that at some time Japan will renounce the 1952 Convention and extend her high seas fishery to Canadian salmon stocks. It is also possible that other countries will start a high seas fishery for Canadian salmon.¹³ However, the United States does have considerable economic and political leverage with countries in a good position to engage in North Pacific high seas salmon fishing, such as Japan and the Republic of Korea, and is likely to use this leverage for protection of the salmon stocks. As Canadian and American salmon are inextricably mixed on the high seas, Canada may be a "free rider" in respect of any protection that the United States would secure.

¹² In a 1979 amendment to the Convention Japan agreed to further restrictions on high seas salmon fishing, including a shift of the abstention line from 175°W to 175°E.

¹³ It should be noted that the advent of the 200-mile limit indirectly may increase the danger of new high seas fisheries for salmon developing. With distant water fishing fleets being barred from 200-mile zones around the world, they are under additional pressure to start new fisheries in the remaining high seas. For a further discussion of this and other "perverse effects" of the 200-mile limit on Canada's fisheries see Copes (1979 and 1980b).

Foreign Relations in Fisheries

Canada's 1976 policy statement on fisheries referred to the imminence of the 200-mile limit, but was strangely silent regarding Canada's position vis-à-vis foreign fishing nations. This may be explained, in part, by the fact that in 1976 delicate negotiations were underway with several foreign countries, to persuade them to recognize Canada's 200-mile fishing limit in advance.

While Canada felt compelled for internal reasons to advance a strongly acquisitive position in the ongoing Law of the Sea negotiations, the country remained quite anxious to maintain cooperative relations with other fishing nations. Good foreign relations, of course, are important for various reasons of image, diplomacy and trade. But Canada has cogent reasons directly related to fisheries management as well. On both coasts the country has important fisheries that are not fully protected by the 200-mile limit. The goodwill and cooperation of other countries is needed in respect of these fisheries.

On the Atlantic Coast it concerns stocks of groundfish that straddle, or migrate across, the outer boundary of the 200-mile zone. Canada, in this matter, is seeking a position of respect and influence in the new Northwest Atlantic Fisheries Organization to obtain stock management regulations favourable to Canada's interests. The problem on the Pacific Coast, as indicated, is the migration of Canadian salmon stocks into the high seas. Canada succeeded in getting protective clauses written into the ICNT. But because of their unenforceability there remains a need for continuing cooperation from other countries to observe the ban on high seas salmon fishing.

Canada recognizes that her fishing interests will continue to be interdependent with those of other countries and that universal recognition of, and adherence to, the rules of the ICNT may be mutually advantageous. This has reinforced Canada's resolve, against some domestic opposition, to demonstrate that she will adhere to the letter and the spirit of the ICNT rules on surplus stocks. Thus Canada is giving foreign fishing fleets access on reasonable terms to stocks in her 200-mile zone that are surplus to her own needs.

On the Pacific Coast the stocks that may be considered surplus are quite modest in extent, consisting of a few groundfish species and dogfish. The surplus is much smaller than the catches taken by foreign fleets during the decade preceding the 200-mile limit. The reasons for cutting back the amount of fish made available to foreign fleets include the following:

- (1) stocks of several groundfish species have been overfished and need to be restored;
- (2) prime halibut fishing grounds need to be protected from the damaging effects of groundfish fishing;
- (3) some effort from the Canadian halibut fleet needs to be diverted to groundfish because of the loss of access to Alaskan halibut stocks;
- (4) larger groundfish catches for the domestic fleet are needed to meet a growing demand in the markets now available to Canada.

In the three years that Canada's 200-mile limit has been in effect catch quotas have been made available to foreign fleets for surplus stocks of hake, dogfish, blackcod and rockfish. Because of Canada's own increasing requirements, foreign rockfish quotas have been discontinued and blackcod quotas are also likely to be terminated.¹⁴ Canada has been expanding her catches of dogfish and is experimenting with a hake fishery. Surpluses of these species may continue to be available to foreign fleets for some time, though the Canadian fishing industry undoubtedly will seek to develop a capacity to utilize these stocks fully.

Canada phased in her assumed authority in the 200-mile zone gently. In the first year (1977) foreign vessels were charged no access fees, despite the not inconsiderable management expenses incurred by Canada. The fees charged since then have been modest. Of the five distant water fishing countries that were engaged in operations off Canada's west coast, four have taken up quotas, viz. Japan, the U.S.S.R., Poland and the Republic of Korea. Fishing arrangements with the fifth, the German Democratic Republic, have been under discussion.

In an attempt to satisfy both domestic and foreign fishing pressures at the same time, Canada is seeking to experiment with cooperative fishing ventures. On the Pacific Coast the scope is quite limited. One arrangement in this category was made in 1978 when Canadian vessels were contracted to catch hake for direct sale and delivery at sea to Polish factory trawlers, which processed and retained the catch. The economics of this operation were less certain for the Polish vessels, whose catching capacity was left idle, than for the Canadian vessels, which had no processing capacity and could not deliver this particularly perishable fish to shore plants in time.

Hake constitutes the only significant stock on Canada's west coast for which no domestic fishery had appeared feasible until then.¹⁵ The cooperative arrangement with Poland was therefore an attractive option to Canada in rounding out involvement of the domestic fleet in the utilization of available stocks. A continuation of the arrangement is under negotiation. Canada is exploring its possible extension to dogfish, as well as the possible involvement of additional foreign fleets.

The severely limited capacity for further expansion of the world's fish catch, in combination with reduced access to existing fisheries on account of the 200-mile limit, has greatly constrained the supply position for many countries that are large consumers of fish. Canada, on the other hand, has long been an important net exporter of fish and, as a result of the 200-mile limit, has acquired a much increased potential as a fish producer and exporter. In 1976, before the 200-mile limit took effect, Canada stood third in the world in terms of the value

¹⁴ For a more detailed discussion of foreign catch quotas on Canada's Pacific Coast see Copes (1981a).

¹⁵ A Canadian freezer trawler has since been introduced to catch and process hake. The commercial success of this operation has yet to be determined.

of fish exports -- not far behind Norway and Japan. It seems very likely that Canada now is, or will soon become, the world's leading exporter of fish products.

A natural consequence of Canada's surplus position in fish production is a keen interest on the part of fish importing countries in access to Canadian fish supplies. When the imminence of this development became apparent a few years ago, the Canadian government made it known that they would not permit the expansion of fishing operations in Canada to be undertaken by foreign interests, though the means of ensuring adherence to this edict were not made entirely clear.

A more restrictive policy on foreign investment in the fisheries sector than in the Canadian economy generally, is somewhat ironical. The Canadian fishing industry has had an historically low level of profitability and a (no doubt related) low level of foreign investment. However, by the same token, the possibilities opened up by the 200-mile limit were indicative of an improved profit potential in the fisheries sector, which the Canadian government not unnaturally wished to reserve for Canadian residents. There were also political reasons for restricting foreign access to the fishery. There was a felt need to assert full Canadian control over the new 200-mile zone vis-à-vis the international community, and to demonstrate to domestic regional and sectional groups that their interests in the fishery were being defended.

There are obvious ways for the Canadian government to restrict foreign investment in the fisheries sector. As all fish harvesting operations are subject to limited entry licensing, the government is in a position to turn away any foreign applications for fishing licenses. In fact, the government has controlled and strictly limited direct foreign fishing by this means. Licenses for foreign vessels have been given for no more than a single season at a time. And licenses have been given only in the case of surplus stocks made available under ICNT rules or short-term cooperative arrangements, such as the one with Poland described above. The acquisition by foreign interests of existing fish processing and marketing operations in Canada is also subject to legal controls. The Foreign Investment Review Act has established an agency to assess foreign acquisition of control over resident enterprises, with the government exercising the power to reject takeovers considered not in the Canadian public interest.

There remain, however, a number of avenues by which foreign interests may gain access to, or control over, fish supplies in Canada.¹⁶ In fact, the amount of foreign investment in fish processing companies in British Columbia, particularly by Japan, has increased greatly since 1974. The restrictions on foreign investment do not apply to the purchase of shares or other securities which do not involve formal acquisition of control of a business. Furthermore, there is no interference with the expansion of existing foreign controlled enterprises,

¹⁶ A detailed analysis of this subject in respect of the British Columbia fishing industry may be found in Proverbs (1978) and Quadra Economic Consultants and McDaniels Research (1979).

including their acquisition of "small" Canadian businesses (gross assets not exceeding \$250,000 and gross revenues not exceeding \$3,000,000). Japanese investment activities in the fisheries sector of British Columbia in recent years have also been carried out through purchase of debentures from, and provision of working capital loans to, local processors. In addition to larger Japanese corporations, some Japanese wholesalers and smaller trading companies have entered the field, providing capital to local processors and fish buyers to secure specific supplies. By paying high cash prices they have frequently obtained substantial supplies in competition with larger Canadian and foreign companies.

Japanese fish purchases in British Columbia in recent years have been particularly strong in herring and salmon roe and in frozen whole salmon. While fishermen have been very pleased with the high prices received, a number of concerns have also emerged. The particular products demanded by Japanese purchasers require rather little processing. By diverting supplies from domestic processors, it is also complained that the competitive scramble by a multiplicity of Japanese purchasers, ready to finance small local operations tied to them, has tended to produce a wasteful excess of local handling and processing capacity. In response to the local outcry the provincial government of British Columbia imposed a moratorium on the issuance of fish buyer and processing plant licenses,¹⁷ and commissioned a report on the implications of foreign operations in the British Columbia fishing industry. The report (Quadra Economic Consultants and McDaniels Research [25]) concluded that the entry of Japanese interests had tended to increase beneficial competition in the short run and that there was no immediate danger of their domination of the market. They did not recommend any countervailing action and there is no indication that any is now contemplated. The moratorium on fish buyer licenses has meanwhile been lifted.

Summary and Conclusion

The prospect of the 200-mile limit triggered a reassessment of Canada's objectives in fisheries exploitation and led to a new articulation of fisheries policy. Under the internal pressure from her coastal regions, Canada developed an acquisitive attitude with respect to the fish resources off her coasts. Possession of the fish stocks of the 200-mile zone was seen as a means of achieving economic betterment for the country's fishing communities.

It was recognized that to extract the full benefit from the 200-mile limit it would be necessary to undertake a program of socio-economic rationalization of the fisheries. Such a program was made possible only by the legal management authority that came with the claim to extended fisheries jurisdiction. Well instructed in the new economic analysis of common property fisheries problems, the Canadian government has installed limited entry licensing in all her fisheries

¹⁷ It should be noted that Canada's federal government has primary responsibility in matters of foreign trade and investment, while the provincial government of British Columbia has jurisdiction over the regulation and licensing of local trading and processing operations.

and is attempting to achieve optimum exploitation levels by socio-economic criteria. As the dubious results of the British Columbia salmon licensing and buy-back program have shown, this does not appear to be an easy task. Fortunately, the additional fish that is becoming available to the British Columbia fishing industry by control of the 200-mile limit and by the salmon enhancement program should allow better use to be made of the existing fishing capacity. It is therefore reasonable to expect improved economic returns.

With respect to the interface with foreign interests in fisheries operations off Canada's coasts, the government has issued no single comprehensive and explicit policy statement. Nevertheless, the characteristics of Canadian policy in this regard can be readily discerned from the government's actions and pronouncements. The following appear to be major elements of this policy.

- (1) The restoration of overfished stocks and the supply requirements of the domestic fishing industry will be given first priority in the allocation of fish resources.
- (2) Canada seeks cooperation with other fishing countries in managing transboundary stocks and in securing compliance with the abstention from high seas salmon fishing.
- (3) Special management agreements will be sought with the United States to secure maximum joint benefits — and equitable distribution thereof — for their overlapping and interacting fisheries. Generally, each country's fleet will be confined to its national waters.
- (4) Canada will observe the letter and the spirit of the ICNT requirement to make surplus stocks available on reasonable terms to foreign fleets.
- (5) In allocating surplus stocks to foreign fleets Canada will give preference to cooperative arrangements that beneficially involve the Canadian industry.
- (6) Increased direct foreign investment in Canadian fishing and fish processing operations, generally, is to be avoided, though some foreign investment linked to fish export operations will be tolerated.

Until 1965 fishing on Canada's west coast was limited to the exploitation of high-value species by Canadian and American vessels from nearby shore bases. The increased world demand for fish has since caused a fuller exploitation of available west coast stocks and has attracted foreign fleets in the process. The national policy that Canada has developed in response to the opportunities of the 200-mile limit, is gradually diverting the fishery for all species to the Canadian fleet. The prospect is that henceforth the available resources will be fully exploited. It appears likely, however, that, with negligible exceptions, fishing on Canada's west coast will become a domestic operation entirely.

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