

# FISHERIES MANAGEMENT ON CANADA'S ATLANTIC COAST: ECONOMIC FACTORS AND SOCIO-POLITICAL CONSTRAINTS\*

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## Introduction

The rich fish stocks found off Canada's eastern shores were a major factor in the colonization of the three Maritime Provinces and the sole economic reason for the original settlement of Newfoundland. Harold Innis, renowned for his "staples theory", placed particular emphasis on the role of the fisheries in Atlantic Canada's initial economic development [16].

In contrast to their critically important earlier contribution to the country's economic welfare, the Atlantic fisheries have become, conspicuously, the most troubled industry of Canada's economically most troubled region. The industry is characterized by low average earnings, high levels of government assistance, and great seasonal variations in activity that give rise to much underemployment. Despite their economic impotence - and indeed, partly because of it - the fisheries occupy a place of considerable political importance and influence. The historical association with the fisheries still stirs regional emotions, so that any action affecting the industry has a symbolic impact of much greater dimension.

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The current condition of Canada's Atlantic fisheries may be analyzed in terms of four important factors:

- (1) the depressed state of the regional economy,
- (2) the common property characteristics and the open access conditions that have prevailed in the fishery until recently,
- (3) the mode of political management of economic problems that has developed in the Canadian federal system, and
- (4) the impact of the extension of Canada's fisheries jurisdiction to 200 miles in 1977.

### The Regional Economy

For many decades now the Atlantic Provinces have been recognized as the economically most depressed region of Canada. The evidence supporting this judgement is overwhelming. Per capita income in the four provinces is consistently below that of all other provinces by a significant margin (Table 1). Unemployment in all of the Atlantic Provinces is markedly higher than in any of the other provinces, except for Quebec, where the unemployment rate tends to approximate that of the least afflicted among the Atlantic Provinces (Table 2).

Table 1  
PER CAPITA PERSONAL INCOME FOR CANADA, THE  
PROVINCES AND THE TERRITORIES, 1980

Jurisdiction	Per capita personal income (dollars)
Canada	9,913
Newfoundland	6,343
Prince Edward Island	7,048
Nova Scotia	7,845
New Brunswick	7,085
Quebec	9,370
Ontario	10,614
Manitoba	8,876
Saskatchewan	9,028
Alberta	11,067
British Columbia	11,027
Yukon and Northwest Territories	10,231

Source: Statistics Canada, *National Income and Expenditure Accounts* (13-201), 1980.

Table 2  
UNEMPLOYMENT RATES IN CANADA, BY PROVINCE, 1977-1981

Province	1977	1978	1979	1980	1981
Canada	8.1	8.4	7.5	7.5	7.6
Newfoundland	15.6	16.4	15.4	13.5	14.1
Prince Edward Island	9.9	9.9	11.3	10.8	11.4
Nova Scotia	10.6	10.6	10.2	9.8	10.2
New Brunswick	13.2	12.6	11.1	11.1	11.7
Quebec	10.3	10.9	9.6	9.9	10.4
Ontario	7.0	7.2	6.5	6.9	6.6
Manitoba	5.9	6.5	5.4	5.5	6.0
Saskatchewan	4.5	4.9	4.2	4.4	4.6
Alberta	4.5	4.7	3.9	3.7	3.8
British Columbia	8.5	8.3	7.7	6.8	6.7

Source: Statistics Canada, *Historical Labour Force Statistics* (71-201), 1981.

It is worth noting that Quebec also borders on the Atlantic and that its coastal area is one of the most depressed parts of the province. In terms of physical geography and economic development, the areas of Quebec around the Gulf of St. Lawrence are similar to much of the Atlantic Provinces. Conventionally Quebec is not counted as one of the "Atlantic Provinces" because it is politically (and culturally) separate and has its major focus in central Canada. But its Atlantic Coast area is a natural component of the Atlantic regional area so far as fisheries are concerned. For the purposes of this paper the term "Atlantic Coast Region" is meant to encompass Quebec as well as the Atlantic Provinces; the latter being comprised of the three Maritime Provinces, together with Newfoundland which includes the Coast of Labrador.

High as they are, the unemployment rates in the Atlantic Provinces severely understate the real shortfall in job opportunities. Because of the chronic nature of unemployment in the region, many workers give up looking for jobs and many potential workers do not start to look. They are not counted as unemployed, but as persons outside the labour force. This is reflected in the exceptionally low labour force participation rates of the Atlantic Provinces, which are far below those of any other province (Table 3).

High unemployment and low income, one might expect, would lead to a high rate of out-migration. The Atlantic Provinces have indeed experienced out-migration (Table 4). But it has not been as high as in some other provinces that have much lower unemployment and higher income levels. In fact, over the most recent period - since 1971 - the three Maritime Provinces have had sig-

**Table 3**  
**LABOUR FORCE PARTICIPATION RATES IN CANADA,**  
**BY PROVINCE, 1977-1981**

Province	1977	1978	1979	1980	1981
Canada	61.5	62.6	63.3	64.0	64.7
Newfoundland	50.7	51.7	52.7	53.1	53.1
Prince Edward Island	57.0	57.8	59.3	59.5	59.1
Nova Scotia	55.2	56.4	56.9	57.9	57.8
New Brunswick	53.7	55.0	55.3	56.0	56.7
Quebec	58.9	59.7	60.1	61.0	61.2
Ontario	64.3	65.3	66.6	66.8	67.7
Manitoba	61.7	63.1	63.7	64.6	65.0
Saskatchewan	61.5	61.9	62.5	62.9	63.5
Alberta	67.0	68.2	69.4	70.3	71.6
British Columbia	61.5	62.6	62.7	63.7	64.7

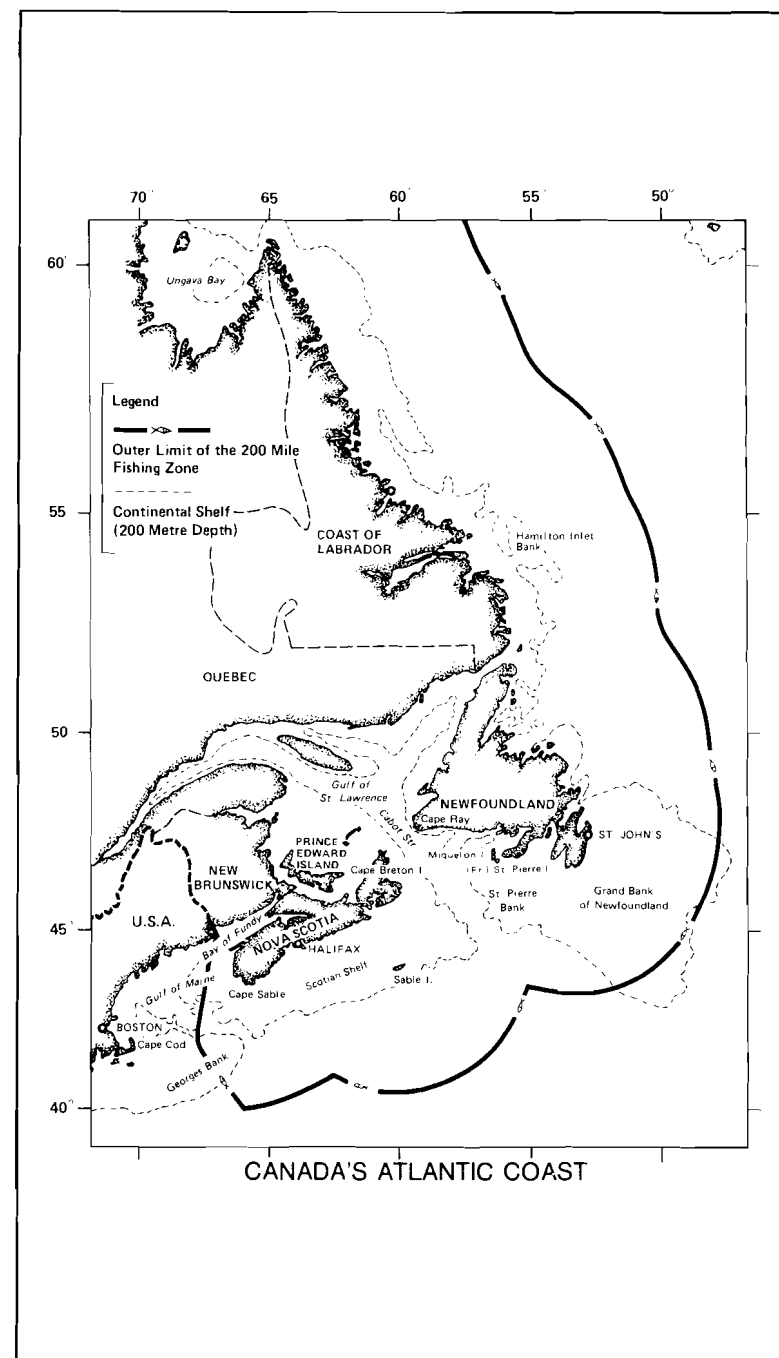
Source: Statistics Canada, *Historical Labour Force Statistics (71-201)*, 1981.

**Table 4**  
**NET MIGRATION RATES FOR CANADA, THE PROVINCES AND**  
**THE TERRITORIES, 1951-1979**

Jurisdiction	Rate of net migration per 1,000 average population of the period		
	1951-1961	1961-1971	1971-1979
Canada	64	26	26
Newfoundland	-29	-107	-14
Prince Edward Island	-96	-85	55
Nova Scotia	-46	-80	24
New Brunswick	-49	-112	41
Quebec	36	-21	-22
Ontario	123	96	37
Manitoba	0	-72	-22
Saskatchewan	-80	-146	-30
Alberta	109	43	111
British Columbia and Yukon	160	155	93
Northwest Territories	96	0	15

Source: [12:26].

nificant net immigration, while Newfoundland's out-migration has dropped to a quite low level. The difficult economic times of recent years provide an explanation of how immigration in the Atlantic Provinces has been boosted by returnees who failed to realize their employment expectations elsewhere. But even ac-



counting for this, it is notable that net out-migration from the Atlantic Provinces has been much weaker than their economic circumstances relative to other provinces might suggest should be the case.

One factor, no doubt, is the cultural cohesion exhibited by many communities in the Atlantic Provinces, with their long history of continuing existence and deep-rooted traditions. Also important, however, is a resistance from provincial governments to a loss of population. Both of these factors are particularly strong in Newfoundland [11], where the government has vigorously opposed measures that would promote extra-provincial labour mobility. No doubt this has contributed to the perpetuation of high unemployment levels and pressure on the inshore fishing industry to absorb many of those with no other work to do.

The economic misfortunes of the Atlantic Provinces may be traced, at least in part, to factors concerning their geographical location and resource endowment. The long distance to major markets and the sources of material inputs place these provinces at a disadvantage in attracting secondary manufacturing industry, and their natural resource endowments are modest in relation to those of other parts of Canada.

The forest and agricultural sectors of the region are only marginally competitive, and mining opportunities are modest. In Nova Scotia the prospects have now been improved by the anticipated exploitation of natural gas deposits found off-shore. And the discovery of large oil reserves off the coast of Newfoundland has brightened the outlook for that province considerably. However, the prospects are tempered by the difficulty and cost of extracting oil from rough, iceberg infested waters at a time when the world price of oil is declining. Moreover, the province's greatest need, for additional employment opportunities, will not be adequately met by a capital-intensive oil extraction industry.

Ironically, it is in respect of the fishery resource that the Atlantic Provinces may be considered to be rather well endowed. How then to explain the extraordinary troubles of the fishing industry? They cannot be attributed to lack of extent or lack of quality of the resource. Rather, the explanation must be sought in the failure of human institutions impacting on the fishing industry.

### **The Fisheries**

It is only in recent times that economists have come to recognize the special character of the fishing industry that derives from the common property nature of most fishery resources. Much of the

problem in common property fisheries is related to the open access condition that has prevailed historically, although this is now beginning to change.

Commencing with a seminal article by the Canadian economist, H. Scott Gordon [14], a theory of fisheries economics has been elaborated during the past few decades. This theory stresses that under conditions of open access there is an inherent tendency towards overfishing, marked by excessive inputs of labour and capital that lead to low net financial returns. Not infrequently the application of increased fishing effort actually results in smaller physical catches, because of declining reproduction. Economically, overfishing is characterized by dissipation of all of the rents that the resource could yield if it were rationally exploited. Open access fisheries demonstrate in spectacular fashion the "tragedy of the commons" [15]. They provide a textbook example of "market failure" owing to massive external diseconomies in the common use of a resource.

Economic and political circumstances in the Atlantic Coast Region have led to a particularly high level of fishing pressure on the available resource. Opportunity costs for fishermen are very low for a number of reasons. The exceptionally high levels of unemployment in the region signify that there are few alternative jobs available. In any case, most fishermen have relatively low labour skills and live in relatively isolated communities, so that they have poor access to any alternative work that is available.

Facing such poor alternatives, not many fishermen have been tempted to leave the industry, except in the best of economic times when jobs were plentiful elsewhere. Experience has also shown that during periods of rising unemployment former fishermen who lost their jobs have readily returned to the fishery [11]. The open access condition of the fishery makes a return to fishing easy, particularly as little capital is needed to reenter the small-boat inshore fishery, and none at all is needed if the returning fisherman joins an existing crew.

Canadian fishermen have not been solely responsible for the pressure on the fish stocks off Canada's Atlantic Coast. Commencing in the early 1950s, a rapidly mounting fishing effort was undertaken by distant water fleets from Europe, of which the Soviet Union's fleet was the most notable. In the 1960s the total foreign catch exceeded the total domestic catch in the waters off Canada's Atlantic Coast [11: 198].

An important feature of Canada's Atlantic fishing fleet is the differentiation between "inshore" and "offshore" sectors, although the dividing line between the two is somewhat ambiguous.<sup>1</sup> The

<sup>1</sup>For official statistical purposes it has generally been the practice to separate inshore and offshore with reference to vessel size, using 25 gross tons as

most important component of the offshore sector consists of 135 large steel-hulled, company-owned trawlers, supplying groundfish to the companies' processing plants.<sup>2</sup> These vessels operate on a year-round basis from ice-free ports on the outer coast of Nova Scotia and the south and southeast coasts of Newfoundland. They often fish at considerable distance from port, making trips lasting up to ten days and occasionally longer.

The inshore sector is characterized by fisherman-owned vessels, with small crews or single operators. These vessels are of modest size (under 25 tons) and of wooden, or occasionally fibre-glass, construction. They fish close to shore, rarely staying out over night. Rough weather and ice conditions severely restrict their operating season, often to less than half a year. They take a variety of species, of which lobster, cod and herring are the most important.

There are also some classes of vessels of intermediate size (25 tons or over) operating on Canada's Atlantic Coast, including draggers, seiners and large longliners, which are statistically classified as offshore. In the aggregate their catch is much smaller than that of either the trawler fleet or the small-boat fleet, as described above. The larger vessels in this group are usually company owned and are closer to the offshore trawler fleet in operating characteristics. The smaller vessels in the group are usually fisherman owned and may be considered a leading extension of the inshore sector.

The intermediate size vessels realistically could be reallocated over the inshore and offshore sectors approximately at the 50 gross ton mark. The total catch in terms of landed weight in recent years then would be split almost equally between the two sectors. The inshore catch, however, would be of somewhat higher value, because it contains most of the landings of higher value species such as lobster.

The offshore sector, and particularly the trawler fleet, is quite capital-intensive. Of approximately 60,000 fishermen registered in the Atlantic Coast Region in 1980, the fraction employed on offshore vessels is about seven percent. In the offshore fleet, at least on the larger vessels, fishermen are offered full-time employment. In contrast, most inshore fishermen are engaged for a

the dividing line. As an exception to this, statistics for Newfoundland since 1978 have recognized four categories: inshore, nearshore, midshore and offshore (in order of vessel size).

<sup>2</sup>There were 135 of those vessels operating in 1981, according to the Department of Fisheries and Oceans. The number has varied little since the mid-seventies in accordance with the government's limited entry policy for the offshore fleet.

limited season only, although they may spend additional time on maintenance of boats, gear and premises during the off-season. With spare time available, the majority of inshore fishermen have some part-time work at other jobs, often gaining the larger part of their income outside the fishing industry.

Fishermen on the large trawlers, many of whom are unionized, earn incomes that are competitive with general industrial wage levels.<sup>3</sup> Ship's officers on the trawlers, with catch bonuses, often have quite good incomes. Some of the more successful independent fishermen also have reasonable earnings [18]. In a few new fisheries where the number of fishing units has been rigidly limited - such as in the scallop fishery of southwest Nova Scotia - fishermen have enjoyed exceptionally good incomes. But the great majority of Atlantic Coast fishermen earn little from fishing. They constitute one of the very lowest income groups in the country. Estimates for the year 1973 put the mean total income of all Atlantic Coast fishermen at \$5,100, of which only half was derived from fishing [3:8]. The modal income was \$3,600, of which only 40 percent was derived from fishing. In that year total personal income in Canada, averaged over the employed members of the labour force, amounted to \$10,665 per worker.

The problem with the inshore fishery is not only that it exhibits low labour productivity with associated low average incomes. Because of its short season the inshore fishery contributes to high overhead costs in associated processing activities, in contrast to the offshore sector which delivers catches throughout the year [19; 20; 21; 24]. At the same time, this reduces the capacity of fish plants to offer full-time employment to workers in the processing sector. Product quality is also adversely affected, insofar as much of the inshore cod catch consists of a glut of small, soft-fleshed trap-caught fish that must be processed in a very short season.

Economists have recognized excessive inputs of labour and capital as a major cause of low returns in the fishing industry, and have advocated entry limitation as a solution. The Atlantic Coast inshore fishery provides a strong example of extraordinarily large labour inputs, associated with low productivity and low monetary returns. A large reduction in the inshore labour force has long been advocated as a means of raising the average catch and income per man in the industry [9].<sup>4</sup> Experience has shown the inshore sector in Newfoundland to be so overcrowded that large

<sup>3</sup>In 1977 they "typically earned between \$15,000 and \$22,000, with captains making more" [18].

<sup>4</sup>In economic terms, limitation of labour (and other) inputs means that an economic rent can be generated. It is usually assumed that fishermen remaining in the industry will be allowed to retain this rent.

numbers of fishermen can be withdrawn without any perceptible reduction in aggregate catch [8].

### Political and Social Factors

An important feature of Canada's political economy is the "National Policy", initially introduced by Prime Minister Sir John A. Macdonald in 1878. The purpose was to knit together the far-flung provinces of Canada in a single national economy. National industries were to be promoted through tariff protection, while internal trade was to be facilitated by a transcontinental railway system. Industry in the then well-established Maritime Provinces initially benefited from privileged access to the protected Canadian market. But soon the advantage shifted to the provinces of Ontario and Quebec, with their growing population and central location in the Canadian economy. Ever since, the peripheral provinces of east and west have complained that they are disadvantaged by the national policy that forces them to buy expensive central Canadian manufactures.

In response, the Canadian government has long pursued a policy of demonstrating compensatory economic support for the peripheral provinces through a variety of special programs. In this connection western agriculture has received much special attention in the past. In recent decades the federal government has shown particular concern for the economic rehabilitation of the regionally depressed Atlantic Provinces. A significant escalation of federal support commenced in 1962 with their establishment of the Atlantic Development Board. It is in this context that the Atlantic fisheries have become a special target of federal government assistance.<sup>5</sup>

In Canada's federal system the national government has sole authority over fisheries management, although the provinces have primary jurisdiction over the processing sector and various aspects of industrial development [6; 10]. Until 1965 federal government policy tended to be reactive, responding in *ad hoc* fashion to pressures as they arose. Management was largely concerned with conservation and the relief of observable economic distress.

By 1965 the federal government had come to recognize the nature of the common property problem in the fishery and apparently resolved to move in the direction of economic rational-

<sup>5</sup>The Newfoundland government in 1963 made a special plea for federal government support for the fisheries as a parallel to its past support for western agriculture [23], with apparent success [6].



ization. In that year a five-year agreement was concluded with the Province of Newfoundland, whereby the federal government agreed to pay for the larger share of a program to restructure the fishing industry [11]. The plan called for assistance in the voluntary resettlement of the population from a substantial number of the more isolated inshore fishing communities - the "outports" - to larger and more centrally located towns. Many of the relocated inshore fishermen were expected to find jobs on offshore vessels, in processing plants and in other industries, and thus reduce excess numbers in the inshore fishery. The offshore fishery and associated fish processing was to be strengthened to allow the Canadian fleet to take a larger share of the offshore catch in competition with foreign fleets.

With Prince Edward Island the federal government concluded in 1969 a comprehensive five-year development agreement [2]. The acknowledged plan for the fisheries sector was to rationalize the industry by reducing the number of inshore fishermen. Viability of the fish processing sector was to be improved by eliminating some of the inefficient small operations and concentrating their production in a reduced number of larger plants.

The Canadian Government's efforts to rationalize the Atlantic fishing industry had little success. A primary obstacle was the high (and rising) level of unemployment, creating resistance to the elimination of inshore fishing jobs. When the Prince Edward Island fishery sector's program was evaluated three years after the start of the development agreement, it was found that the number of inshore fishermen had gone up rather than down [5]. Meanwhile, escalating fishing pressure by foreign fleets doomed Canada's own plans for a profitable expansion of the offshore sector.

Competing local pressures, to which politicians showed little resistance, prevented rationalization of the processing sector. Despite the federal-provincial development agreement, the number of plants in Prince Edward Island continued to increase with provincial authorization and federal support.

In Newfoundland a backlash developed against the federal-provincial resettlement program. The provincial government had insisted that the program give assistance only to resettlement within the province and that it give no aid or encouragement to extra-provincial migration. With the very low availability of jobs within the province, this meant that a significant number of resettled fishermen found themselves without work, which tended to discredit the resettlement program. While the resettlement agreement was renewed in 1970, the program was phased down and soon abandoned. The problems encountered with the resettlement program engendered a strong campaign by politicians,

media representatives and academics in culturally oriented disciplines to revert to support for a large inshore fishery based on maintenance of large numbers of traditional small outports [7].

Because of the very low incomes in the inshore fishery, federal and provincial governments felt compelled to assist fishermen in many ways, through production subsidies and income support measures of various kinds. In Newfoundland, where the problem was most severe, the total amount of expenditure on the fisheries by the two levels of government in some years exceeded or approximated the value of the catch [11: 240]. Abandonment of rationalization efforts linked to the resettlement program meant a continuation of the practice of supporting large numbers of inshore fishermen with small catches and low incomes. It provided a spectacular example of assisting an industry to avoid the need to adjust and modernize. Combined with open entry to the fishery, government support indeed helped to draw larger numbers of men to the inshore fishery, exacerbating the problem of excessive labour inputs and depressing average catches and incomes.

### The Advent of Extended Jurisdiction

Before 1977 Canada was constrained by a narrowly restricted coastal fisheries jurisdiction in any effort to improve the fishery by the application of limited entry. Canada had no control over foreign fishing outside its narrow coastal zone. Wherever Canadian and foreign vessels competed for the same stocks, there was the problem that a cutback in effort by Canada would be negated by a continuing high level of foreign effort. Wherever stocks were shared, a cutback by Canada would mean a sacrifice, largely for the benefit of foreign fleets.

The situation changed decisively in 1977 when the 200-mile fishing limit became an accepted standard in international law. Canada declared a 200-mile fisheries jurisdiction effective 1 January of that year, acquiring the power to control exploitation of the stocks off its coast, except for a relatively minor part that is beyond its 200-mile limit or straddling its outer boundary. Canada was then in a position to reduce or eliminate foreign fishing within its zone in order to rebuild depleted stocks and give Canadian vessels a larger catch. The 200-mile limit presented Canada with an exceptional opportunity to improve the fortunes of its Atlantic Coast fishing industry once and for all [4]. Even if the Canadian fishing fleet were not reduced in size but just held to its existing level, there was the prospect of more fish and thus larger catches and larger incomes per man.

The potential benefits of the 200-mile limit were not evenly distributed across the Atlantic Coast fishing communities. The



additional Atlantic Coast waters brought under Canadian fisheries jurisdiction were located entirely off the coasts of Newfoundland and Nova Scotia, with the former province gaining the largest additional harvest potential in adjacent waters. The provinces of Prince Edward Island, New Brunswick and Quebec, in fact, could expect little benefit from the 200-mile limit. The coastal zones of these "shelf-locked" provinces were confined to the Gulf of St. Lawrence and the Bay of Fundy. Canada had exercised exclusive jurisdiction over these waters since 1970 and had gradually phased out most foreign effort.

The additional jurisdiction gained by Canada in 1977 was in offshore waters. The displacement of foreign effort, therefore, could be expected to provide a particularly good opportunity to expand the Canadian offshore fishery. However, as some stocks migrated between inshore and offshore waters, the inshore fishery also could benefit from a cutback in foreign effort and restoration of depleted stocks.

In the Canadian 200-mile zone there were some fish stocks which Canada was not able to exploit effectively; for example, because of high fishing costs and lack of access to the limited markets that would accept the species concerned. Canada acknowledged that, under the internationally accepted rules of extended fisheries jurisdiction, it was obliged to give other countries access to stocks in its zone that were surplus to Canadian harvesting requirements [4]. But Canada was entitled to set the conditions of access. Under pressure from domestic fishing interests, which would prefer to see all foreign fishing banned, the government declared that it would seek "commensurate benefits" from countries allowed access to Canadian stocks. Most of these benefits, it was intended, would involve some visible advantage to the Canadian fishing industry.

Foreign vessels allowed to fish in the Canadian zone were charged fees at a significant level, which helped to defray surveillance and management costs. In addition, the government sought - and in several instances obtained - other benefits, including the following [1; 10; 13]:

- (1) facilitation of access for Canadian fish products to foreign markets,
- (2) processing in Canadian shore plants of catches taken by foreign vessels,
- (3) over-the-side sales of fish caught by Canadian fishermen to foreign factory vessels,
- (4) increased use of Canadian ports, ship repair facilities, and chandlery services by foreign vessels,

- (5) continued abstention from high seas fishing for Canadian salmon,
- (6) recognition of Canadian leadership in the Northwest Atlantic Fisheries Organization, relating to Canada's special interest in stocks adjacent to the Canadian 200-mile limit, and
- (7) the acquisition of new technology by Canadian fishing companies through "developmental charters" engaging foreign vessels.

It should be noted that in some instances Canada also made modest allocations to foreign vessels from non-surplus stocks, that otherwise would have been utilized by the Canadian fleet, in exchange for actual or expected benefits.

### The Fisheries Labour Force

As has been indicated, much of the problem with Canada's Atlantic Coast fisheries is related to the low income per fisherman, deriving from the large number of fishermen. Unfortunately, it is difficult to get a precise measure of the problem because of ambiguities in determining what is the real size of the fisheries labour force.

As all fishermen are required to register in order to be allowed to fish, one can obtain an unambiguous count of fishermen by registration (Table 5). However, the degree of dedication to fishing varies considerably among registered fishermen. Some work at the fishery full time on a year-round basis. Others are engaged in the fishery for a limited season only and either have another job or remain idle for the rest of the year. Some, indeed, do not fish at all in some years.

To gain a better impression of the labour input into the fishery, it is desirable to have an estimate of the number of man-years employed, or "full-time equivalent" (FTE) number of fishermen. However, to complicate matters, there are a number of widely different criteria by which the degree of commitment to the fishery may be judged. In its annual survey of fishermen, the Department of Fisheries and Oceans has used three different criteria of commitment to the fishery at different times and in different provinces.

The most widely used criterion has been that of "time spent in fishing activities", classifying fishermen as "full time" (10 months or over), "part time" (5-10 months) or "occasional" (less than 5 months). Survey data on this basis are available for Newfoundland over the years 1969-1976 and 1979-1980, for the three Mari-



Table 5  
NUMBER OF REGISTERED FISHERMEN IN ATLANTIC COAST PROVINCES, COMPARED WITH  
FULL-TIME-EQUIVALENT ESTIMATES, 1968-1980

Province and type of count	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Newfoundland													
Registered	19,355	17,770	17,765	15,961	14,452	15,313	12,793	15,802	15,351	20,243	26,447	32,352	35,080
FTE, time spent	10,435*	9,442	8,781	6,702	5,701	5,995	5,431	5,636	5,659	7,109#	8,948#	10,699	12,123
FTE, occupation	15,399	13,968*	13,260*	10,804*	9,315*	9,903*	8,802*	9,787*	9,634*	12,352#	15,798#	19,079*	21,297*
Nova Scotia													
Registered	13,108	11,717	11,018	10,688	11,735	10,600	10,460	10,435	10,409	n.a.	10,311	10,799	11,432
FTE, time spent	7,854	7,320	7,091	6,789	7,679	6,869	6,792	6,770	6,747	n.a.	6,675*	6,792*	7,243*
FTE, income share	6,717*	6,311*	6,147*	5,865*	6,615*	5,947*	5,884*	5,864*	5,844*	n.a.	5,780	5,849	6,247
Prince Edward Island													
Registered	3,301	2,965	2,801	2,677	3,210	2,636	2,610	2,739	2,866	n.a.	2,061	2,421	2,657
FTE, time spent	1,518	1,439	1,427	1,446	1,583	1,434	1,419	1,459	1,497	n.a.	1,074*	1,225*	1,356*
FTE, income share	1,906*	1,806*	1,791*	1,819*	1,969*	1,797*	1,777*	1,825*	1,873*	n.a.	1,346	1,532	1,698
New Brunswick													
Registered	5,766	5,358	5,081	5,148	5,067	4,997	4,898	5,118	6,076	n.a.	4,748	5,165	5,753
FTE, time spent	2,642	2,581	2,471	2,464	2,513	2,422	2,387	2,464	3,024	n.a.	2,334*	2,485*	2,761*
FTE, income share	2,542*	2,521*	2,412*	2,399*	2,462*	2,359*	2,326*	2,406*	2,985*	n.a.	2,301	2,438	2,709
Total, Atlantic Provinces													
Registered	41,530	37,810	36,665	34,474	34,464	33,546	30,761	34,094	34,702	n.a.	43,567	50,737	54,992
FTE, time spent	22,449	20,782	19,769	17,401	17,476	16,800	16,028	16,330	16,927	n.a.	19,030	21,201	23,483
Quebec													
Registered	4,179	5,121	5,092	5,252	5,277	5,450	5,703	6,470	6,083	4,752	4,929	5,148	n.a.
FTE, time spent	2,114	1,930	2,062	2,524	2,139	2,245	2,079	2,296	2,249	2,035	2,120	2,214#	n.a.
Total, Atlantic Coast													
Registered	45,709	42,931	41,757	39,726	39,741	38,996	36,464	40,564	40,785	n.a.	48,496	55,885	n.a.
FTE, time spent	24,563	22,712	21,831	19,925	19,615	19,045	18,107	18,626	19,176	n.a.	21,150	23,415	n.a.

n.a. not available

\* estimated, using conversion factors

# by interpolation or extrapolation

Source: Calculated from Canada, Department of Fisheries and Oceans, *Annual Statistical Review of Canadian Fisheries*, Vols. 9-13.

time Provinces over the years 1961-1976 and for Quebec over the years 1961-1978. Based on a norm of 11 months fishing activity constituting a full year's work, weights of 1, 0.681818 and 0.227273 were applied to the numbers of full-time, part-time and occasional fishermen, respectively.<sup>6</sup> The resulting FTE numbers of fishermen in each of the provinces since 1968 is shown in Table 5.

In the three Maritime Provinces, since 1978, fishermen have been classified according to the percent of total income earned from fishing. Using weights of 0.8775, 0.505 and 0.1275, respectively, for the three income share classes of 76-100 percent, 26-75 percent, and 0-25 percent, the calculated numbers of FTE fishermen are shown in Table 5.

During the period 1962-1968 fishermen in Newfoundland were classified in relation to an occupational standard. Fishermen were counted in three groups according to whether fishing represented their "only" (full-time), "main" (part-time) or "secondary" (occasional) occupation.<sup>7</sup> Using weights of 1, 0.75 and 0.25, respectively, the FTE calculation of Newfoundland fishermen by occupational commitment for 1968 is shown in Table 5.

For all of the Atlantic Coast provinces except Quebec, two different classifications of commitment to the fishery have been undertaken in different periods. By using conversion factors it is possible to complete for each province a series of FTE calculations for each of the two classifications for the entire period for which data under either classification are available.<sup>8</sup> The extended series are shown (asterisked) in Table 5. Conversion factors were arrived at by comparing the proportions of fishermen in the three classes for adjacent years in which the two different classification systems were used.

It is notable that in the case of Newfoundland the FTE count by occupational commitment is much higher than that by time commitment. This derives from the circumstance that under the occupational classification the great majority of fishermen are considered full time, whereas under the time-spent classification very few are considered full time. This is not surprising. Weather and ice conditions prevent most Newfoundland fishermen from being engaged in active fishing operations for much of the year. However, very large numbers of these fishermen have little or no

<sup>6</sup>Further details regarding rationale and calculations for all of the FTE figures shown may be obtained from the author.

<sup>7</sup>See Fisheries and Environment Canada, *Annual Statistical Review of Canadian Fisheries 1955-1976*, Vol. 9, p. 124.

<sup>8</sup>See note, 6.

alternative employment in the off-season. They may spend some time with preparations for the next fishing season and may be considered occupationally to remain fishermen during this time. Put in other words, they are underemployed full-time fishermen.

In Nova Scotia the FTE count by time spent is higher in relation to the number of registered fishermen than in any other province. This may be traced to the fact that Nova Scotia has a high proportion of offshore fishermen, who usually have access to year-round employment in the fishery. This also explains the relatively high FTE count by income share in Nova Scotia. Prince Edward Island is the only province where the FTE count by income share is higher than the FTE count by time spent. The explanation lies in the fact that lobster is the principal component of the fishery. The high value lobster catch is taken in a relatively short season.

### Policy Renewal

The prospects of the 200-mile limit generated a renewed enthusiasm on the part of the federal government to rationalize the fishery [6]. In anticipation of Canada's declaration of a 200-mile limit, effective in 1977, the government issued an elaborate policy document [3]. This recognized that "in the inshore fisheries . . . the labour force far exceeds the industry's capacity for employment at an adequate level of income." Among elements of the government's fisheries management strategy, it listed the application of "entry control in all commercial fisheries" along with "withdrawal of excessive catching capacity."

The federal government has taken some steps to implement a policy of controlled access licensing in commercial fisheries. In some sectors licences have been denied to individuals with major sources of income outside the fishery and a few "buy-back" programs have been introduced in which fishermen are compensated for surrendering their licence and quitting the fishery.<sup>9</sup> However, with respect to inshore fishing, particularly in Newfoundland, conditions of entry remained rather relaxed, at least until 1980, allowing for a large increase in the number of licences issued in response to local pressures (see Table 5).

Despite the record of increased numbers of fishermen, the federal government has reiterated its commitment to fisheries rationalization through effort control. The fisheries minister, Roméo LeBlanc, speaking publicly in October 1981, confirmed that his department, through licensing policies and other measures, was

<sup>9</sup>Such attempts at rationalization have been made in the Pacific salmon fishery and the Atlantic lobster fishery.



striving to rationalize participation in the industry [17]. He acknowledged explicitly that the fishery "will never have the capacity to absorb Atlantic Canada's excess labour" and that his department "had to shatter the notion that the fishery could ever serve as the employer of last resort."

### The Recent Record

The fisheries minister, in his speech, stated that his department had "accomplished [much] toward controlling the input of capital and labour in the industry." The overall record of that control will be explored in this section.

Table 6 illustrates changes in the number of fishermen in the provinces of the Atlantic Coast Region between 1976, the year before extended fisheries jurisdiction, and 1979 and 1980, the most recent years for which data are available.<sup>10</sup> The total number of registered fishermen in the Atlantic Provinces increased by 58.3 percent over the period 1976-1980. In terms of the FTE count by time spent, the increase amounted to 38.7 percent. It should be noted that the increase was confined to only two provinces. By far the greatest increase took place in Newfoundland, the province that gained the largest increase in fishing potential as a result of the 200-mile limit. A modest increase in numbers took place in Nova Scotia, the one other province to benefit from the 200-mile limit. The remaining provinces, being "shelf-locked", did not gain directly from the 200-mile limit. The number of fishermen in these provinces indeed declined modestly between 1976 and 1979. In Prince Edward Island and New Brunswick the number increased again in 1980.

Measuring the change in capital inputs in the fishing industry is not easy. A count of the number of fishing vessels is meaningless in view of their disparate sizes and capacities. However, one may make a comparison of the aggregate value of vessels over the years, as shown in Table 7. The figures need to be interpreted with caution. Comparability may be reduced by accounting and reporting practices that vary among provinces and years. Most important, the figures represent in part an inflation of monetary values. The increases shown, however, are vastly in excess of any margin that may be attributed to inflation over the three-year period concerned. This may be ascertained by comparing available price indexes that illustrate the order of magnitude of price increases in relevant areas of the Canadian economy (Table 8). The conclusion is that capital investment in fishing craft increased substantially in all Atlantic Coast provinces, although least severely

<sup>10</sup>Quebec data are not yet available for 1980.

Table 6  
CHANGE IN SIZE OF THE FISHERIES LABOUR FORCE IN THE ATLANTIC COAST REGION, BY PROVINCE AND TYPE OF COUNT, DURING PERIODS 1976-1979 AND 1976-1980

Province and type of count	Absolute increase (+) or decrease (-) over period		Percentage increase (+) or decrease (-) over period	
	1976-1979	1976-1980	1976-1979	1976-1980
Newfoundland				
Registered	+ 17,001	+ 19,729	+ 110.7	+ 128.5
FTE, time spent	+ 5,040	+ 6,464	+ 89.1	+ 114.2
FTE, occupation	+ 9,445	+ 11,663	+ 98.0	+ 121.1
Nova Scotia				
Registered	+ 390	+ 1,023	+ 3.7	+ 9.8
FTE, time spent	+ 45	+ 496	+ .7	+ 7.4
FTE, income share	+ 5	+ 398	+ .1	+ 6.8
Prince Edward Island				
Registered	- 445	- 209	- 15.5	- 7.3
FTE, time spent	- 272	- 141	- 18.2	- 9.4
FTE, income share	- 341	- 175	- 18.2	- 9.3
New Brunswick				
Registered	- 911	- 323	- 15.0	- 5.3
FTE, time spent	- 539	- 263	- 17.8	- 8.7
FTE, income share	- 547	- 276	- 18.3	- 9.2
Total, Atlantic Provinces				
Registered	+ 16,035	+ 20,220	+ 46.2	+ 58.3
FTE, time spent	+ 4,274	+ 6,556	+ 25.2	+ 38.7
Quebec				
Registered	- 935	n.a.	- 15.4	n.a.
FTE, time spent	- 35	n.a.	- 1.6	n.a.
Total, Atlantic Coast				
Registered	+ 15,100	n.a.	+ 37.0	n.a.
FTE, time spent	+ 4,239	n.a.	+ 22.1	n.a.

Source: Calculated from data in Table 5.

in Quebec and Newfoundland and most severely in New Brunswick and Nova Scotia.

It is instructive to compare 1979 and 1980 catch levels in the various provinces with the pre-extended-jurisdiction levels of 1976 and with historically high catch levels during the preceding decade (Table 9). In general, catches have recovered considerably from the low levels of 1976 that were the legacy of years of over-fishing. For the Atlantic Coast as a whole the 1979 catch was

Table 7  
AGGREGATE VALUE OF FISHING VESSELS IN ATLANTIC COAST  
PROVINCES, 1976, 1979 AND 1980

Province	1976	1979	1980	Percentage increase over period	
				1976-1979	1976-1980
	(thousands of current dollars)				
Newfoundland	115,890	215,331	261,801	85.8	125.9
Nova Scotia	72,303	271,825	363,192	276.0	402.3
Prince Edward Island	5,642	14,280	20,357	153.1	260.8
New Brunswick	21,715	95,040	88,133	377.7	305.9
Total, Atlantic Provinces	215,550	596,476	733,483	176.7	240.3
Quebec	25,420	45,805	n.a.	80.2	n.a.
Total, Atlantic Coast	240,970	642,281	n.a.	166.5	n.a.

Source: Calculated from Canada, Department of Fisheries and Oceans, *Annual Statistical Review of Canadian Fisheries*, Vols. 10-13.

Table 8  
INCREASE IN SELECTED PRICE INDEXES IN CANADA OVER THE  
PERIODS 1976-1979 AND 1976-1980

Index	Percentage increase over period	
	1976-1979	1976-1980
Gross National Expenditure implicit price index	25.5	38.8
Industry selling price index:		
transportation - motor vehicle		
manufacturers	32.2	47.9
Industry selling price index (overall)	34.8	53.0

Source: Calculated from Statistics Canada, *Canadian Statistical Review* (11-003E), January 1978 and July 1981, and *Industry Price Indexes* (62-011), April 1980 and January 1981.

almost on a par with the record level of 1968.<sup>11</sup> Newfoundland indeed established a new record catch level in 1979 and Nova Sco-

<sup>11</sup> A modest overall drop in the catch from 1979 to 1980 may be attributed to particular circumstances in Newfoundland and New Brunswick. The volatile herring stocks were down in 1980 in both provinces. In Newfoundland the squid fishery (dependent on special foreign marketing arrangements) was cut back severely and a fisheries strike occurred.

Table 9  
COMPARISON OF 1979 AND 1980 FISH CATCHES IN ATLANTIC COAST  
PROVINCES WITH CATCH IMMEDIATELY PRIOR TO EXTENDED  
JURISDICTION (1976) AND RECORD HIGH CATCHES PRIOR  
TO EXTENDED JURISDICTION

Province	Previous high catch		1976	1979	1980
	Year	Amount			
			(metric tons, live weight)		
Newfoundland	1969	484,743	339,211	569,107	499,199
Nova Scotia	1968	429,024	367,883	421,154	436,822
Prince Edward Island	1970	48,909	17,134	31,059	33,463
New Brunswick	1968	250,356	114,709	137,217	105,356
Total, Atlantic Provinces	1968	1,169,434	838,937	1,158,537	1,074,804
Quebec	1970	125,646	41,955	79,165	81,284
Total, Atlantic Coast	1968	1,267,539	880,892	1,237,702	1,156,088

Source: Canada, Department of Fisheries and Oceans, *Annual Statistical Review of Canadian Fisheries*, Vols. 9-13.

tia did so in 1980. These two provinces benefited both from stock recovery and displacement of foreign effort. Both have a potential for some further catch expansion with additional stock recovery, displacement of remaining foreign fishing and exploitation of underutilized stocks of lower value.

The less fortunate shelf-locked provinces, on the other hand, in 1979 and 1980 did not come close to reaching previous catch records. Even with further stock recovery their catches may remain, generally, below those record levels, for the latter may have represented a degree of overfishing of some stocks and an exceptional, infrequently recurring abundance of some others, as a result of particularly strong year-classes.

Changes in catch per fisherman provide one significant indicator of progress in fisheries rationalization. The relevant figures are shown in Table 10. Comparisons should be made with caution, as the figures mask differences and changes in species composition, market prices, capital intensity and fishing costs. For instance, in Prince Edward Island the small catches per fisherman contain a large proportion of high value lobster. In Nova Scotia, the large catches per man are related to the effect of the large trawler fleet. By the same token the proportion of full-time fishermen is high in that province.

As the structure of the fishing fleets of the different provinces has not changed greatly in recent years in respect of species fished and capital intensity, the figures of Table 10 do give a



Table 10  
COMPARISON OF THE 1979 AND 1980 CATCH PER FISHERMAN, BY TYPE  
OF COUNT, WITH THAT IMMEDIATELY PRIOR TO EXTENDED  
JURISDICTION (1976) AND THAT IN YEAR OF RECORD HIGH TOTAL  
CATCH PRIOR TO EXTENDED JURISDICTION,  
FOR ATLANTIC COAST PROVINCES

Province and type of count	Previous high catch		1976	1979	1980
	Year	Amount			
		(metric tons per fisherman)			
Newfoundland	1969				
Registered		27.3	22.1	17.6	14.2
FTE, time spent		51.3	59.9	53.2	41.2
FTE, occupation		34.7	35.2	29.8	23.4
Nova Scotia	1968				
Registered		32.7	35.3	39.0	38.2
FTE, time spent		54.6	54.5	62.0	60.3
FTE, income share		63.9	63.0	72.0	69.9
Prince Edward Island	1970				
Registered		17.5	6.0	12.8	12.6
FTE, time spent		34.3	11.4	25.4	24.7
FTE, income share		27.3	9.1	20.3	19.7
New Brunswick	1968				
Registered		43.4	18.9	26.6	18.3
FTE, time spent		94.8	37.9	55.2	38.2
FTE, income share		98.5	38.4	56.3	38.9
Total, Atlantic Provinces	1968				
Registered		28.2	24.2	22.8	19.6
FTE, time spent		52.1	49.6	54.6	45.8
Quebec	1970				
Registered		24.7	6.9	15.4	n.a.
FTE, time spent		60.9	18.7	35.8	n.a.
Total, Atlantic Coast	1968				
Registered		27.7	21.6	22.1	n.a.
FTE, time spent		51.6	45.9	52.9	n.a.

Source: Calculated from data in Tables 5 and 9.

rough indication of changes in physical productivity per fisherman within each province. What is particularly striking is that the catch per fisherman in Newfoundland has continued to decline significantly, since 1976, no matter which count of fishermen is used, despite the increase in the aggregate catch to a record level. This means that the increase in the number of fishermen has outrun the increase in the size of the catch. In Nova Scotia, in

contrast, the catch per fisherman reached a new record high level in 1979. In Prince Edward Island and Quebec productivity per man has improved generally since 1976, but is still far short of record levels. Output per fisherman in New Brunswick was about the same in 1976 and 1980.

The level of fishermen's incomes is an important consideration in assessing the record of fisheries management. Unfortunately there are no readily available data that provide a really clear insight. As a first crude indication the landed value of the catch per fisherman may be considered. This is shown in Table 11 for 1979 and 1980. Again, these figures should be interpreted with caution. The landed value shown overstates fishermen's net returns, insofar as a significant portion represents fishing costs. These typically run in the range of 35-65 percent of landed value - at the lower end for small inshore vessels and at the higher end for some of the large offshore trawlers.

### The Newfoundland Problem

The foregoing account suggests that in all Atlantic Coast provinces but Newfoundland there has been some progress lately towards rationalization of the fishing industry. But in Newfoundland, despite the exceptionally favourable resource situation, the catch per fisherman has declined still further. One may indeed speak of a further "derationalization" of the fishery in this province. The value of the catch per fisherman remains extraordinarily low and much below that in any other province.

Newfoundland is subject to the same kinds of pressures on the fishery that are present in the other Atlantic Coast provinces. The most serious pressure is that of the high level of unemployment in the surrounding economy, which induces so many men to join the fishery or to remain in the industry despite the meagre returns. Ministerial protestations to the contrary, the fishing industry continues to be for thousands of men "the employer of last resort."

The difference between Newfoundland and the other provinces in unemployment pressure is one of degree - but of a sufficient degree to make the difference between improvement and regression in fisheries rationalization. The tradition of open access to the fishery has also been a common feature of all Atlantic Coast provinces. But the tradition has been pursued with greater intensity in Newfoundland than elsewhere. The provincial government in Newfoundland has been strongly set against limitation of entry to the fishery. The character of the province's position in this matter - in contrast with the federal government's position -

Table 11  
TOTAL VALUE OF FISH CATCH AND VALUE PER FISHERMAN,  
BY TYPE OF COUNT, FOR ATLANTIC COAST PROVINCES  
1979 AND 1980

Province and type of count	Total landed value (\$'000)		Value per fisherman (\$)	
	1979	1980	1979	1980
Newfoundland	159,258	161,286		
Registered			4,923	4,598
FTE, time spent			14,885	13,304
FTE, occupation			8,347	7,573
Nova Scotia	225,527	231,572		
Registered			20,881	20,256
FTE, time spent			33,205	31,972
FTE, income share			38,558	37,069
Prince Edward Island	29,377	26,772		
Registered			12,134	10,076
FTE, time spent			23,981	19,743
FTE, income share			19,176	15,767
New Brunswick	53,620	48,575		
Registered			10,381	8,443
FTE, time spent			21,577	17,593
FTE, income share			21,993	17,931
Total, Atlantic Provinces	467,782	468,205		
Registered			9,220	8,525
FTE, time spent			22,064	19,938
Quebec	40,017	41,870		
Registered			7,773	n.a.
FTE, time spent			18,075	n.a.
Total, Atlantic Coast	507,799	510,075		
Registered			9,086	n.a.
FTE, time spent			21,687	n.a.

Source: Calculated from Canada, Department of Fisheries and Oceans, *Annual Statistical Review of Canadian Fisheries*, Vol. 13, and Table 5, above.

is captured in the following citation from a joint statement by the Premier and the Minister of Fisheries of Newfoundland [22]:

Federal licensing policy places restrictions on the individual and the number of individuals in the fishing industry. The Provincial Government has taken the view that the right to fish is a local birthright. . . . we would put limitations on the number of larger boats and the amount of gear, not the number of fishermen. . . . we do not favour restricting the number of small boats (under 20 feet) in the industry.

The provincial government evidently has favoured the great escalation in the number of licensed fishermen in Newfoundland that has taken place since 1976. The Premier has been reported as saying that he would rather see 20,000 fishermen earning \$5,000 a year, than 10,000 earning \$10,000 a year [28]. To encourage the expansion of the fisheries labour force, the provincial government has subsidized vessel and gear acquisition by new entrants. The provincial policy of easy access to the fishery has had strong support among elements of the media and non-economist academics [7; 10].

The federal government has remained committed in principle to restricted entry and a degree of fisheries rationalization. It has found an ally in the powerful Newfoundland Fishermen, Food and Allied Workers Union, which represents inshore and offshore fishermen, as well as plant workers. While the union originally tended to condone a liberal attitude towards entry, it came to realize that its existing membership is ill served by a flood of additional fishermen, whose efforts can only result in diminished catches and reduced incomes per man. The Union has called for limitations on licensing that will discriminate in favour of "bona fide" fishermen which it claims to represent, and against "moonlighters" who are part-time fishermen with a significant share of income from alternative sources [21; 25; 26; 27; 28]. Essentially, the Union is seeking a "professionalization" of the fisheries labour force. The evidence suggests, however, that between 1976 and 1980 the Newfoundland fishing industry was moving in the opposite direction. The data in Table 6 show that the number of registered fishermen was increasing more rapidly than the number of FTE fishermen during this period, indicating that part-time participation in the fishery was increasing relatively faster than full-time participation.

In 1981 the federal government tightened entry regulations and raised licence fees in the inshore fishery. Together with a decline in some fish prices, this appears to have been successful in reducing significantly the number of licensed fishermen.<sup>12</sup> This turn-around may well endure. Probably there are now few men left with a potential interest in the fishery who have not already obtained a licence. Moreover, the current low returns in the fishery have crushed the optimistic expectations initially generated by the 200-mile limit.

All the evidence suggests that the attainment of adequate unsubsidized incomes for Newfoundland inshore fishermen will

<sup>12</sup>Information released to the author in advance of publication indicates that the number of licensed fishermen in Newfoundland dropped to 28,495 in 1981.



require not just a halt in the expansion of the fishery labour force, but a substantial reduction in numbers. The prospects for a sufficient reduction remain bleak, so that the inshore fishery is likely to remain a "kept" industry, dependent on a significant volume of government financial assistance, for the foreseeable future.<sup>13</sup>

### Conclusion

Despite a favourable resource endowment, recently reinforced by the security of a 200-mile fishing limit, Canada's Atlantic Coast fishing industry remains in a precarious economic position. In common with mature fishing industries around the world, it has suffered from the legacy of open access to a common property resource. In addition, it continues to suffer from the unhealthy economic environment of a depressed regional economy, with exceptionally high unemployment rates.

There is no secret about the kind of management regime that could bring prosperity to Canada's Atlantic Coast fishing industry. One single major measure, namely a drastic reduction in the number of fishermen, would establish a firm base for the industry's prosperity. But the existing economic, political and social circumstances in the Atlantic Region preclude any decisive effort to resolve the fishery problem. With a chronic lack of alternative employment opportunities, no government wishes to be resolute in reducing surplus manpower in the fishery. With the need for a political commitment to support disadvantaged regions, the federal government has to remain prepared to relieve the distress in the fishing industry that follows from that government's failure to rationalize fishing operations. The support given to the industry, in turn, reinforces the industry's proclivity to attract and hold surplus manpower.

In places, modest progress has been made in improving the fortunes of Canada's Atlantic fishing industry. In Nova Scotia, emphasis on offshore operations is helping to raise productivity and boost incomes. In New Brunswick, Prince Edward Island and Quebec the erosion of productivity has been reversed. But in Newfoundland the state of the fishing industry has remained most parlous. Here unemployment pressures have outweighed improvements in resource abundance.

<sup>13</sup> The Newfoundland Fishermen, Food and Allied Workers Union, noting that even in the best year ever, 1979, fishermen earned too little, has called for an income stabilization plan incorporating some subsidy (*Canadian Fishing Report*, September 1981, p. 1).

The historic mission of the fishing industry as a leading sector in the economic development of Canada's Atlantic Coast Region faded long ago. In recent times the fishery has been forced into the unattractive role of a welfare industry, serving as employer of last resort and dispenser of subsidized incomes. With the advent of extended jurisdiction it has a reinforced potential to become a truly prosperous sector of the economy. But it appears that the industry will not be allowed to regain its health and independence until the oppressive constraint of unemployment in the Atlantic Coast economy has been removed by action outside the fisheries field.

### Addendum

Early in 1983 the Canadian government's Task Force on Atlantic Fisheries released a summary version ("Highlights and Recommendations") of its forthcoming main report. At that time this article was already being processed for publication. A few useful data gleaned from the Task Force's summary report [29] that bear particularly on the analysis of this article are recorded in this addendum. The data were developed from a major survey of fishermen's incomes and expenditures for 1981 carried out by the Task Force. The survey was confined to the four Atlantic Provinces. Quebec fishermen are therefore excluded from the figures that follow.

In 1981 a total of 48,434 personal commercial licenses were issued to fishermen in the Atlantic Provinces. They were divided into approximately equal numbers of full-time (24,269) and part-time (24,165) licences.<sup>14</sup> It was found that 97 percent of full-timers and 72 percent of part-timers actually used their licences to fish during 1981. Of the just under 41,000 commercial licence holders who actually fished that year, the Task Force estimated 27,800 to be "bona fide" fishermen. This included all of the full-timers who actually used their licences (about 23,400). One-quarter of the users of part-time licences (about 4,400) were considered "bona fide" because they earned fishing revenues at a level similar to that of full-timers.

The Task Force calculated that a full-time "average" fisherman in a year would spend 23.1 weeks fishing, 6.3 weeks preparing gear and 2.5 weeks doing other paid work. The part-time "average" fisherman spent 11.3 weeks fishing, 2.7 weeks preparing gear and 8.2 weeks doing other paid work.

<sup>14</sup> This classification was independent of, and not consistent with, that of time commitment recorded above in Table 5.

Net fishing income of full-timers for the year averaged \$11,907, with "highliners" (top 10 percent) earning \$23,350 or more, but with half of the total earning less than \$6,500. The average for part-timers was \$2,783, with highliners earning \$6,000 or more and half of the total getting less than \$840. The median income from all sources, including substantial unemployment insurance benefits, amounted to \$11,000 for full-time fishermen and \$8,648 for part-timers. In 1981 total personal income in Canada, averaged over all employed members of the labour force, amounted to \$25,648. The Task Force noted that a sizable majority of both full-time and part-time fishermen had total incomes that would place their households below the recognized poverty line for rural residents, if they were the sole earners in their households.

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