

# SEA SCALLOP INDUSTRY OF CANADA

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## INTRODUCTION

The Canadian sea scallop industry is centered in the Province of Nova Scotia, which accounts for practically all of the sea scallop landings in Canada (table 1). The recent tremendous growth in Nova Scotian landings with a consequent increase in exports of scallops to the United States has prompted those interested in the United States industry to seek the cause of this growth and to inquire into its effects.

The concern evidenced is not without foundation. In the period 1951 to 1961, Canadian landings of scallops grew from some 600,000 pounds to more than 10,000,000 pounds; and in the same period, imports to the United States from Canada grew from 239,000 to more than 8,000,000 pounds. Nor is this trend expected to abate, since, for reasons which will be pointed out, the Canadian scallop industry is now in a process of rapid growth and expansion.

This article will outline the background of the growth of the Canadian sea scallop industry and assess the implications of such growth for the United States industry, which is centered at New Bedford, Mass.

Table 1 - Total Canadian and Nova Scotian Scallop Landings, 1951-1961

Year	Total Canadian	Nova Scotia	Nova Scotia Landings as a % of Total Landings
	. . . . (1,000 Lbs.) . . . . .		
1961	10,582	10,368	98.0
1960	7,737	7,656	98.9
1959	4,928	4,822	97.8
1958	3,332	3,232	97.0
1957	3,331	3,163	95.0
1956	2,577	2,314	89.8
1955	1,685	1,522	90.3
1954	1,746	1,415	81.0
1953	1,922	1,334	69.4
1952	1,199	816	68.1
1951	617	458	74.2

Sources: Total Landings from Monthly Review of Canadian Fisheries Statistics; Nova Scotia landings supplied by the Economics Branch, Department of Fisheries, Halifax, Nova Scotia.

## THE INSHORE FISHERY

The Canadian industry had its beginning about 1920, with the development of a fleet of small boats to fish the inshore areas. Active inshore fisheries developed in the Bay of Fundy, along the south shore of Nova Scotia, and in the Gulf of St. Lawrence.

The largest and most productive scallop beds for this inshore fishery are found along the Digby shore of the Bay of Fundy. They lie between 3 and 12 miles offshore and extend along the shore for a distance of about 30 miles in 30 to 60 fathoms of water.<sup>1/</sup> The boats involved in this fishery are all fairly small, and usually go out in the morning and return at night.

Although the inshore fishery of Nova Scotia is widely dispersed along its shoreline, the principal inshore fishery is located at Digby, on the southwest coast of Nova Scotia. Digby has become the center of the inshore fleet because the town is situated midway along the scallop fishing area and affords the only sheltered harbor in the long rocky coastline.

In 1960, there were about 33 draggers engaged in the inshore scallop fishery, the great majority of them operating out of Digby. Those vessels ranged from 45 to 60 feet in length,

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<sup>1/</sup> MacPhail, J. S., "The Inshore Scallop Fishery of the Maritime Provinces." Circular No. 22, Fisheries Research Board of Canada, February 1954.

Note: A study performed as partial fulfillment of Contract #14-17-007-31 with the Bureau of Commercial Fisheries of the U. S. Department of the Interior, with funds made available under the Saltonstall-Kennedy Act of 1954.

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Fish and Wildlife Service  
Sep. No. 681

carried a crew of 3 to 5 men, and landed an average daily catch of 500 pounds of shuck scallops.<sup>2/</sup>

Until recent years, the inshore fishery accounted for the bulk of the Nova Scotia scallop landings. However, with the tremendous expansion of offshore scalloping on Georges Bank, in the Atlantic Ocean, the offshore fishery has now come to dwarf the inshore fishery. Even though there is evidence that the inshore fishery has increased its annual landings to a level of 1.5-2 million pounds, this fishery now accounts at most for 20 percent of the total Nova Scotia catch.<sup>3/</sup>

It cannot be stated what will be the most likely level of future inshore operations, but in 1961, inshore landings had continued to increase, although the much more rapid absolute and relative growth of the offshore fishery had much overshadowed this increase. At some stage the offshore development may act as a damper on the growth of the inshore fishery and also perhaps suppress it entirely. The future of inshore scallop fishing will depend, among other things, upon the price structure which emerges as offshore landings expand.

### THE OFFSHORE FISHERY

Prior to 1956, offshore fishing for scallops in Nova Scotia was done only irregularly. Subsequent growth of the offshore fishery was extremely rapid and it has come to dominate the Canadian scallop industry. It now accounts for at least 80 percent of all scallop landings in the Province of Nova Scotia.

Notwithstanding, it is difficult to pinpoint the beginnings of the offshore industry, since the early offshore fleet was seemingly composed mainly of large, older vessels designed for fishing groundfish and converted to scallop fishing. Information supplied by the Canadian Department of Fisheries indicates that in 1956, the offshore fleet consisted of 11 older boats which had been converted to scallopers and 9 new vessels, built between 1953 and 1956.

Analysis of scallop landings by ports in Nova Scotia would seem to indicate that 1956 was the year in which the offshore fishery became firmly established. (Offshore landings, which had remained at about 250,000 pounds per year for the prior three years, increased by 500,000 pounds in 1956, as contrasted with an estimated increase in inshore landings of only 300,000 pounds.)

A significant number of new boats has been added to the offshore fleet since 1957: 2 were added in 1958, 4 in 1959, 1 in 1960, and 5 in 1961.<sup>4/</sup> Thus, in 1961, the offshore scallop fleet consisted of some 32 draggers. These range in length from 65 to 130 feet, but the majority of them are in the 90- to 95-foot class. They carry a crew of 12 to 14 in the 65- to 80-foot class, and 18 to 21 in the 90- to 130-foot class.<sup>2/</sup>

The expansion of the offshore fleet in itself suggests the profitability of the fishery. There were apparent advantages in exploiting more intensively the high-unit value scallop fishery on the readily accessible Georges Bank scallop grounds. The scallop resource was quite unlike the low-unit value product (groundfish) traditionally landed in the Provinces. It would also appear that the differential between ex-vessel prices--usually from 5¢ to 10¢ a pound lower in Canada--was such that costs in Canada were sufficiently low to justify such an expansion.

There is also some evidence that government subsidies in Canada were and are an important consideration in the expansion of the Canadian fleet. While direct subsidies prior to September 1961 affected only the smaller offshore vessels (those between 60 and 70 feet), indirect subsidies have made it possible to borrow from the Government on a low-interest loan as much as 50 percent of the cost of constructing a larger vessel. And there is the

<sup>2/</sup>Homans, R. E. S. "Sanitary and Quality Control of the Canadian Scallop Industry." Paper presented at the Fourth National Shellfish Sanitation Workshop, Nov. 28-30, 1961, Washington, D. C.

<sup>3/</sup>Ibid. (Footnote 1.)

<sup>4/</sup>Data supplied by the Canadian Department of Fisheries, Halifax.

added benefit of depreciation write-off policies allowed by the Government, which enable an owner to write off 15 percent of construction cost per year, and 33 $\frac{1}{3}$  percent per year of the cost of converting a vessel to scallop fishing. Statements made by Canadian operators indicate that this governmental assistance contributed to the expanding of the fleet.

**OUTPUT AND PRODUCTIVITY OF OFFSHORE VESSELS:** The average landings per trip<sup>5/</sup> (productivity per vessel) of the entire offshore fleet are difficult to assess since, until recent years, those vessels engaged in both scallop fishing and fishing for groundfish. However, some implications can be gleaned from a consideration of the performance of five vessels for which information was made available for the present study.

Of the five vessels, 2 were built in 1956, 1 in 1955, 1 in 1954, and 1 in 1949. Three of the boats are between 90 and 100 feet in length, one is 80 feet in length, and the other is 120 feet in length. The average performance of the boats is shown in table 2.

A consideration of table 2 shows that the increased output (average landings per year) of the vessels is not merely a result of more trips and slightly larger crews, but there has been an increase in the efficiency of the vessels. This is evident from the fact that while the average number of trips increased by some 17 percent and average crew size by some 13 percent over the four-year period, output per year increased by 95 percent and productivity increased by 67 percent over the same period. Thus, not only average landings per trip, but the average landings per day and per man have increased absolutely over the period.

	1960	1959	1958	1957
Average no. of trips per year . . . . .	21	20	19	18
Average length of trip (days) . . . . .	12.5	12.3	13	13
Average landings per year (1,000 lbs.) . . . . .	615.9	475.6	361.0	315.5
Average crew size . . . . .	15.2	13.6	13.6	13.4
Average landings per trip (lbs.) . . . . .	29,329	23,270	19,000	17,528

<sup>1/</sup>Based on operations of 5 Nova Scotia scallopers for the years 1957 through 1960.  
Source: Information submitted by vessel owners.

It is doubtful whether the resource will sustain this increasing rate of productivity, but it is not possible to say precisely what effect the intensified fishing effort will have. A logical conclusion is that productivity will drop in the face of a large expansion in fishing effort, since this is a fishery much dependent upon successful recruitment, and in similar fisheries, (e.g., haddock and ocean perch) intensified fishing effort has been accompanied by lowered productivity.<sup>6/</sup>

FURTHER EXPANSION OF THE OFFSHORE FLEET

The growth of the Canadian scallop industry was given further impetus with the passage by the Canadian Parliament in September, 1961 of "The Ship Construction Assistance Regulations."<sup>7/</sup> This legislation, as later amended<sup>8/</sup>, provides for Federal subsidies of 40 percent of the cost of constructing wooden fishing vessels over 100 gross tons, and 50 percent of the cost of constructing steel fishing vessels of 75 feet or more in length. The pertinent provisions are as follows:

- 5. (1) A subsidy, in respect of the construction in Canada of any eligible ship, may be paid in an amount not exceeding
  - (a) forty percent of the approved cost incurred for work performed under a contract between May 12, 1961, and March 31, 1963; and
  - (b) thirty-five percent of the approved cost incurred for work performed under a contract after March 31, 1963.

<sup>5/</sup>The term "productivity per vessel" will be used to denote average number of pounds landed per trip, based upon the operation of the vessel for the year. The term "output" will be used to designate total pounds landed per vessel during the year.  
<sup>6/</sup>This proved to be the case in 1962, when landings, which had been at very high levels in the first six months of the year, dropped in the last half of the year due to a decline in the available stocks on Georges Bank.  
<sup>7/</sup>P. C. 1961-1290, September 8, 1961. Canada Gazette Part II, Vol. 95, No. 397.  
<sup>8/</sup>P. C. 1962-1122, August 8, 1962. Canada Gazette Part II, Vol. 96, No. 297.

- (2) A subsidy in respect of the construction in Canada of a fishing trawler to be operated out of a port in any of the Provinces of New Brunswick, Nova Scotia, Prince Edward Island or Quebec may be paid in an amount not exceeding fifty percent of the approved cost incurred for work performed under a contract after May 12, 1961.

Section 2 (f) defines "eligible ship" as "...a ship that is intended for use in commercial enterprise and that is

- (i) a self-propelled vessel of one hundred tons gross tonnage or over; or
- (ii) a tug of fifty tons gross tonnage or over; or
- (iii) a vessel, not self-propelled, of two hundred tons gross tonnage or over."

Section 2 (g) defines "fishing trawler"<sup>9/</sup> as

"...a fishing vessel that has a steel hull of not less than seventy-five feet in length and that uses an otter trawl or a similar device."

A number of features of this legislation are worth noting. First of all, it is aimed primarily at assistance in constructing ships for the maritime fleet. The provisions relating to other types of vessels are, then, secondary to this object. Secondary or not, however, the 40 percent grant, retroactive to May 12, 1961, has spurred an unprecedented rate of construction of scallopers in Nova Scotia.

Secondly, to be eligible for the subsidy, a ship must be one hundred gross tons or over. Thus, this assistance has been of prime benefit to the offshore scallop fleet, and the vessels built and planned under the new Act are all over 90 feet in length and over 100 gross tons in tonnage.

Third, the Act provides that one condition to the granting of the subsidy is that the vessel be maintained on Canadian registry for five years, during which time the owner may not sell or transfer the ship without the consent of the Canadian Maritime Commission. It further provides that the Commission may refuse its consent unless the shipowner agrees to refund "an amount equal to the product obtained by multiplying the amount of the subsidy received by the fraction of the five-year period that the vessel will not be maintained on Canadian registry. . . ."

One further point should be noted. The Act defines "shipowner" as "...a Canadian citizen, a corporation incorporated under the laws of Canada or of any Province, or Her Majesty in right of any Province. . . ." (Emphasis added.) Thus, it is possible that non-Canadians can take advantage of this and other Federal and Provincial subsidies by forming a Canadian or Provincial corporation, and maintaining the ship under Canadian registry for five years. It is not inconceivable, then, that this Act could stimulate the flow of foreign investment funds into the scallop industry of Nova Scotia.

#### FLEET EXPANSION UNDER THE NEW SUBSIDY ACT

The scallop industry in Nova Scotia was quick to take advantage of the recent subsidy. In an attempt to discover the amount of construction which the Act had engendered, a staff member from Boston College's Bureau of Business Research made a field trip to Nova Scotia in late January 1962.

In the course of this field trip, each of the major scallop producers was interviewed by the staff member, in company with an official of the Canadian Department of Fisheries. With one exception, all of the producers were most cooperative, both in giving their knowledge of the Canadian industry and in supplying the project with detailed information on the operations and finances of their boats.

<sup>9/</sup>It would appear that Canadian authorities have interpreted the term "trawler" to include "scallopers."

All producers stated they were then having scallopers constructed under the provisions of the new Act. It was impossible, however, at that time to document the total number being built or contemplated, although the figures given by the producers indicated that at least 18 new vessels were then under construction or planned for early construction.

In June 1962, however, with the cooperation of the Fisherman's Loan Board of Nova Scotia, it was possible to obtain more detailed figures not only on the magnitude of new construction, but also on the timing of the expansion. This information is shown in table 3.

Table 3 - New Vessel Construction Under P. C. 1961-1290, 1962 and 1963

	Number of Scallopers	Length	Average Cost
Entering Nova Scotia scallop fleet by June 1962 . . . . .	9 new 2 conversions	92-100 feet	\$153,000
Entering fleet between June and December 1962 . . . . .	10 new	92-100 feet	200,000
Entering fleet in 1963 . . . . .	1/8	92-100 feet	n. a.
Total number entering fleet by end of 1963 . . . . .	1/29		

1/Minimum number estimated by the Fisherman's Loan Board.  
n. a. - not available  
Source: Fisherman's Loan Board of Nova Scotia.

One salient fact evidenced by the figures in table 3 is this: Nova Scotia scallop boats will double in number by the end of 1963. Furthermore, the boats added to the fleet will be of such size (92-100 feet) that they are capable of staying on Georges Bank longer and landing larger catches than the smaller New Bedford scallopers.

#### ESTIMATED PRODUCTIVITY AND LANDINGS OF THE NEW SCALLOPERS

The new subsidized Canadian boats, by virtue of their subsidy character alone, leaving out any labor advantage or superior built-in productivity they may have by virtue of being new, should be able to outproduce on a dollar-cost basis either other existing Canadian boats or the majority of New Bedford vessels. Put another way, the new Canadian vessels should be able to fish and make money (or take minimum losses) under adverse resource and market conditions which work serious economic disadvantage for the other vessels in Canada or New Bedford. Though such adverse market conditions may not occur, it should be obvious that mere mention of the possibility points up the advantage of the new Canadian vessels. And it underscores the vital necessity of taking steps to see that such conditions do not occur.

#### CANADIAN SCALLOP LANDINGS IN 1963

The impact of the new boats began to be felt in 1962, when Canadian scallop landings were a record 14 million pounds, an increase of 3.5 million pounds over 1961 landings. It is not possible to state how much of this increase was accounted for by the new boats, since part of the increase is attributable to increased productivity of the boats which were already in the fleet--at least during the first half of the year.

However, given the decline in landings for the fleet as a whole in the last half of 1962, it seems evident that had there not been the addition of the new boats to the fleet, 1962 Canadian landings would not have attained such a level, and would probably not have been any greater than in 1961.

Because of uncertainty as to the location and size of the scallop resource on Georges Bank, both United States and Canadian biologists are hesitant to predict the availability of scallops in 1963. "Indications are that the 1963 class of scallops is not particularly strong and is about the same strength as the one that entered the fishery in 1962."<sup>10/</sup>

If this is the case, it seems probable that total Canadian landings will rise slightly in 1963 due to the increase in fleet size, but that catch per boat will continue the decline begun in the Fall of 1962. On this basis Canadian landings of scallops in 1963 should be in the neighborhood of 16,000,000 pounds.

<sup>10/</sup>Canadian Fisherman, February 1963, Vol. 50, No. 2, p. 19.

## EFFECT OF CANADIAN LANDINGS ON EXPORTS

Prior to 1956, the bulk of Canadian scallops were sold domestically, and only some 40 percent were exported to the United States. Since then, however, the scallop industry has become primarily an export industry.

As table 4 shows, in recent years, exports to the United States have increased to the point that now some 82 percent of all scallops landed in Canada are destined for the United States market. This ratio has remained constant since 1960, which means that both the Canadian and United States markets for scallops have been expanding since that year. It is reasonable to conclude, then, that this ratio will remain the same throughout 1963. On that basis, Canadian exports of scallops to the United States in 1963 will be over 13,000,000 pounds.

This growth in exports of scallops has greatly expanded the supply in the United States. However, only in one year--1960--has this had a depressing effect on ex-vessel prices.

It is possible that the joint cooperative promotional campaign of the industry and the U. S. Bureau of Commercial Fisheries was the major factor in counteracting this price depression by expanding the market for scallops and pushing the ex-vessel price back up to profitable levels. In retrospect, the 1960 period of oversupply may have been a blessing in disguise, through the fact that it unequivocally demonstrated that the demand for scallops is strong and they are a highly marketable product.

Again in 1962, when, in the face of a great increase in supply (New Bedford landings of 19.3 million pounds plus imports of 11.4 million pounds), ex-vessel prices not only held firm but rose to higher levels than in previous years.

## SUMMARY AND CONCLUSIONS

The United States sea scallop industry faces its most severe competition over the next few years. The source of this competition is the offshore scallop industry of Canada, centered in Nova Scotia, which, under the stimulus of a Federal construction subsidy of 40 percent of the cost of the vessel, will add some 30 new scallopers to the fleet before the end of 1963.

These new boats, all of wooden construction, are between 90 and 100 feet in length, and fish the same scallop grounds--Georges Bank--as does the United States fleet. It is most likely that the new vessels accounted for the greater part of the increase of 3.5 million pounds of scallops landed in Canada in 1962 over 1961, and that additions to the fleet in 1963 will add at least another 2 million pounds to total landings, so that 1963 landings will be about 16 million pounds.

As a consequence of this increase in Canadian scallop landings, imports to the United States will also increase. In 1960, 1961, and 1962, some 82 percent of scallops landed in Canada have been exported to this country. If this percentage remains the same in 1963--and there is no reason to expect that it will not--Canadian scallop imports will amount to over 13 million pounds in 1963.

The traditional decrease in price associated with increased supply has not taken place for scallops. This is partly due to the increased promotional efforts of the New Bedford industry. Ex-vessel prices have, in fact, risen in the face of the increased supply.

Table 4 - Canadian Sea Scallop Landings and Exports to the United States, 1951-1962, with Projection for 1963

Year	Landings ..... (1,000 Lbs.) .....	Exports to U. S.	Exports to U. S. as Percent of Landings
1963 (est.)	16,000	13,120	82.0
1962 (P)	13,922	11,370	81.7
1961	10,582	8,653	81.8
1960	7,737	6,340	81.9
1959	4,928	3,174	64.4
1958	3,332	2,374	71.2
1957	3,331	2,463	73.9
1956	2,577	1,275	49.5
1955	1,685	679	40.3
1954	1,746	1,119	64.1
1953	1,922	667	34.7
1952	1,199	381	31.8
1951	617	239	38.7

(est.) - Estimated.

(P) - Preliminary.

Source: 1951-1961, *Monthly Review of Canadian Fisheries Statistics*; 1962, *Fishery Market News Service*, U. S. Bureau of Commercial Fisheries, Boston, Mass.