

ARTICLES

TRENDS IN THE ATLANTIC SEA SCALLOP FISHERY

By Julius A. Posgay*

Great changes have occurred in the Atlantic sea scallop fishery during the past 10 years. New boats for this fishery have been built in Canada; the U. S. fleet has declined. At first, landings went to unprecedented high levels but lately have declined. Prices dropped in the face of abundance, recovered, then rose dramatically when abundance declined moderately. This article explains the changes.

As recently as 10 years ago, the Atlantic sea scallop fishery was almost a monopoly of the U. S. Landings in 1957 were about 24 million pounds of meats, 88 percent of which was landed in U. S. ports by U. S. vessels. By 1962, landings had risen to 38 million pounds, but only 63 percent was made in the U. S.; the rest was landed in Canada. During 1966, landings were about 34 million pounds, and the U. S. share had dropped to 47 percent (table).

the fishing grounds. This rose to 16,000 in 1962 and 17,000 in 1966. What has changed is the relative amount of effort put in by fishermen of the two countries. The percentages are almost the same as those for landings: in 1957, 87 percent of the effort was contributed by the U. S.; in 1962, 68 percent; and in 1966, 47 percent (table). As Canadian vessels entered the fishery, U. S. vessels dropped out.

Landings of Sea Scallop Meats (Millions of Pounds); Effort (Thousands of Days Fished); Landings Per Day Fished, L/E (Hundreds of Pounds); and a Research Vessel Abundance Index (AVAI) for Georges Bank								
Area and Item	Years							
	'45-'59	'60	'61	'62	'63	'64	'65	'66
Subarea 4:								
Landings	1.0	0.2	0.4	1.4	3.2	2.8	2.0	1.2
Effort (Can.)	1/0.6	1/0.2	1/0.3	1/0.5	1/1.5	1/1.4	1/1.2	1/0.5
Subarea 5:								
Landings	14.0	29.4	33.7	34.4	30.6	26.6	13.8	11.1
Effort (U. S.)	8.2	8.0	8.7	9.1	7.7	6.7	2.0	1.1
Effort (Can.)	0.6	2.3	3.1	4.6	5.9	6.7	5.7	5.5
L/E	17	29	29	25	22	20	18	17
R.V.A.I.	N.A.	112	92	98	46	40	34	48
Subarea 6:								
Landings	4.3	2.8	2.9	2.2	1.7	2.0	23.6	19.3
Effort (U. S.)	1/2.8	1/1.4	1/1.4	1.8	1.1	1.2	7.6	6.3
Effort (Can.)	0.0	0.0	0.0	0.0	0.0	0.0	1.8	2.3
L/E	N.A.	N.A.	N.A.	12	15	17	25	22
All areas:								
Landings	19.3	34.3	38.0	38.0	35.5	31.4	39.4	34.1
Effort (U. S.)	1/11.0	9.4	10.1	10.9	8.8	7.9	9.6	8.0
Effort (Can.)	1/1.2	2.5	3.4	5.1	7.4	8.1	8.7	8.3
Total effort	1/12.2	11.9	13.5	16.0	16.2	16.0	18.3	16.3
L/E	16	29	28	24	22	20	22	21

1/Estimated.
N.A. = not available.

Fishing effort has only increased about 10 percent during the past 10 years. In 1957 the total amount of effort was 15,300 days on

Only about 10 percent of the Canadian catch is consumed in Canada. The rest is sold in the U. S. (fig. 1).

*Fishery Biologist, BCF's Biological Laboratory, Woods Hole, Mass. 02543.

U. S. DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Sep. No. 814

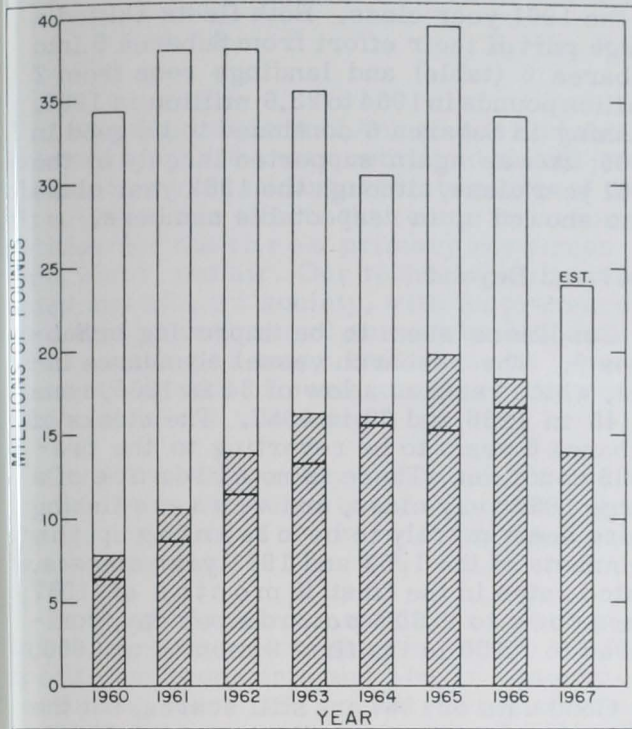


Fig. 1 - Annual landings of sea scallop meats 1960-67. The unshaded parts of the bars show United States landings and the shaded parts Canadian landings. The portion of the Canadian landings below the horizontal line in each bar shows the amount that was exported to the United States in that year.

The Fishing Grounds

The sea scallop grounds extend from the Gulf of St. Lawrence south to the waters off the Virginia Capes (fig. 2). U. S. vessels have never fished the northern grounds and, until 1965, Canadian vessels had never fished the southern grounds. These northern (ICNAF Subarea 4) and southern (ICNAF Subarea 6) grounds have a history of providing only a small fraction of the total landings. During the years 1945-64, about 80 percent of the landings came from Georges Bank (ICNAF Subarea 5).

Abundance

One should not regard Subarea 4 and Subarea 6 during the years before 1965 as containing large unexploited stocks of sea scallops. Both areas have extremely active otter trawl fisheries, and any news of good concentrations of sea scallops noticed by these vessels soon reaches the scallop fishermen. In addition, occasional surveys have been made by research vessels in Subarea 4 by Canada, and in Subarea 6 by the U. S.

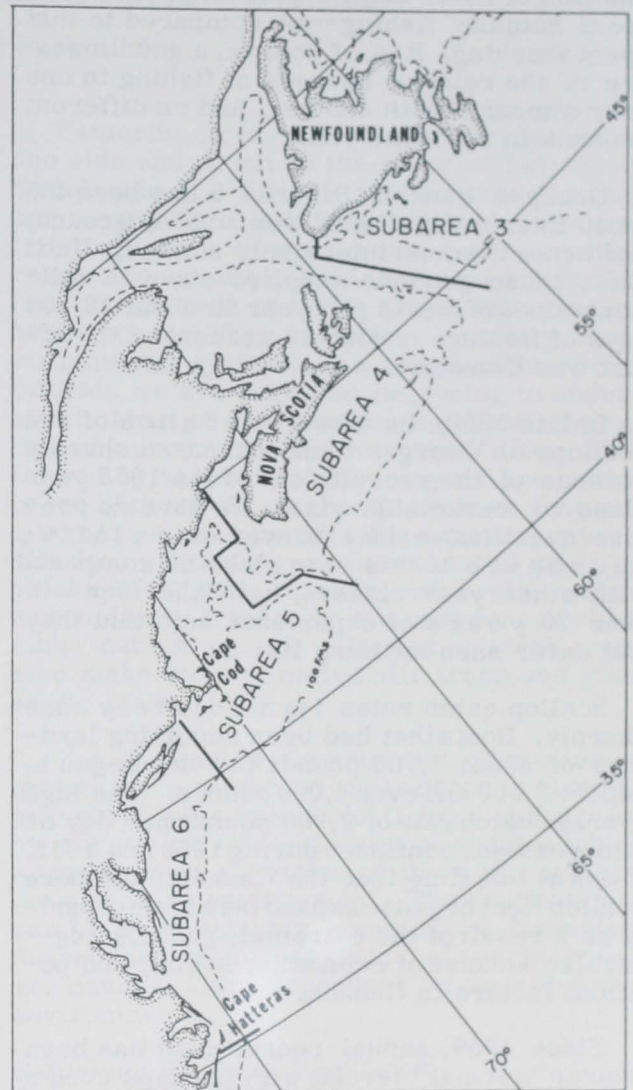


Fig. 2 - Chart of the ICNAF Subareas along the range of the sea scallop.

These investigations, as well as the analysis of the commercial landings from these areas, have all shown the same general situation. Wherever concentrations of sea scallops were found, they were less dense and covered a smaller area than those on Georges Bank and, almost invariably, they were composed of scallops of a single year class. The consensus has been that these grounds received only occasional spat fall and were of low productivity compared with the Georges Bank grounds.

The average annual landings per day spent on the fishing grounds (L/E) shown in table is not a good measure of abundance. It does not take into account the discards, the size com-

position of those kept, or the amount of time spent actually fishing--as compared to that spent shucking. It is, of course, a good measure of the relative success of fishing in one year compared with another, and on different grounds in the same year.

Georges Bank in Subarea 5 has been the most intensively fished sea scallop ground, and hence the most intensively studied. Until 1959, these grounds supplied about 19 million pounds of meats per year in about 12,000 days of fishing. About 10 percent of the effort was Canadian.

In late 1959, the true abundance of sea scallops on Georges Bank increased sharply because of the recruitment of the 1955 year class to marketable size. We have no precise quantitative idea of even the relative abundance of this year class as compared with other year classes, but fishermen with over 20 years of experience said that they had never seen anything like it.

Scallop catch rates immediately rose sharply. Boats that had been reporting landings of about 1,700 pounds per day began to report 3,500 and even 4,000 pounds. The high average catch rate of 2,900 pounds per day on Georges Bank continued during 1960 and 1961. It was at this time that the Canadian offshore scallop fleet began to expand (see table), partly as a result of the extremely good fishing--but also because of economic, social, and political factors in Canada.

Since 1959, annual recruitment has been nearer "normal" levels, with perhaps even a few very poor years. Our estimates of pre-recruits are not good; small scallops do not seem to be available to any of the sampling gear we have tried. The abundance index of our research vessel--the number of scallops larger than 70 mm, taken per 10,000 square feet dredged--declined from 112 in 1960 to 34 in 1965. Catch-per-day figures declined similarly.

An unprecedented increase in abundance of sea scallops appeared in Subarea 6 in 1965. Samples from the commercial landings were

composed almost entirely (over 95 percent) of the 1961 year class. Both fleets shifted a large part of their effort from Subarea 5 into Subarea 6 (table) and landings rose from 2 million pounds in 1964 to 23.6 million in 1965. Fishing in Subarea 6 continued to be good in 1966; it was again supported largely by the 1961 year class, although the 1962 year class also showed up in respectable numbers.

1967 and Beyond

Conditions seem to be improving in Subarea 5. The research vessel abundance index, which reached a low of 34 in 1965, rose to 48 in 1966 and 63 in 1967. The stocks of Subarea 6 seem to be reverting to the pre-1965 condition. There is no evidence of a large 1963 year class, and vessels fishing there seem merely to be cleaning up the remnants of the 1962 and 1961 year classes. Catch rates in the first 9 months of 1967 were down to 1,600 pounds per day, compared to 2,100 in the first 9 months of 1966.

Good data on 1967 are still scarce, but the data available seem to indicate that total landings in Subareas 5 and 6 will be about 24 million pounds--about 10 million landed in the U. S.--compared with 34 million in 1966. About half the trips covered by interview through October 1967 still reported fishing in Subarea 6, but it was likely that most would shift their efforts back to Subarea 5 in the latter part of the year.

The size of the Canadian fleet seems to have stabilized, but there is no evidence that it will decline much. It is difficult to predict what will happen in the U. S. fleet. One reason for its decline has been the high abundance and good prices paid for yellow-tail flounder; a second may be a shortage of men. Flounder fishing requires only 5 or 6 men, but scallopers need at least 11. Many boats that converted to flounder fishing might have been expected to go back to scallop fishing when the exvessel price rose. They may not be able to find the extra men, however, or the present low catch rates might discourage them--unless exvessel prices remain at the high levels of early 1968.

