

Offshore and Newfoundland Scallop Explorations

by

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Since 1952 there has been a general increase in landings of the giant scallop* along the eastern Canadian and United States coasts which has led to expanded markets. As a result the fishing industry of the Maritime Provinces has become interested in developing an offshore scallop fishery like that out of New Bedford, Mass., but fishing nearer home than Georges Bank. To assess the prospects, the Fisheries Research Board in co-operation with the Department of Fisheries, began scallop explorations on the banks off Nova Scotia and Newfoundland in 1953. To encourage fishing we put information on promising beds in the newspapers and on the radio soon after it was obtained. This circular gives more detail about the explorations. It shows the good fishing beds found, as well as areas explored where scallops were not found in commercial quantities. It also describes areas which, although not worth fishing now, seem worth watching.

To carry out the offshore explorations the Department of Fisheries chartered three boats and turned them over to the Fisheries Research Board which supervised the work. In 1953, Captain John Beck in the M. V. "Elaine W." made a trip to the eastern Nova Scotian banks, and Captain James Himmelman in the M. V. "Irish Patriot" explored the

eastern Nova Scotian and St. Pierre Banks. In 1954, Captain Douglas Mosher in the M.V. "Aegir" explored areas on almost all Nova Scotian banks, St. Pierre and Grand Banks.

The scallop boats used the same gear for explorations as they normally use for fishing, that is, two offshore or "New Bedford" drags towed at the same time. The "Elaine W." and the "Irish Patriot" each had one drag about 9 feet wide and the other about 11 feet. The "Aegir" used two 11-foot drags. All boats were well-equipped and had skippers who had shown that they were good scallop fishermen. These things were important so that we should know when a good catch was made that the prospects for commercial fishing were good. But, just as important, when few were caught we could be fairly sure that there was little to catch. All three boats were outfitted with Loran to make accurate determinations of position. Loran is generally considered to be accurate to within $\frac{1}{2}$ mile on most of our banks.

During the work the skipper and a Fisheries Research Board observer plotted the position of each tow. The observer recorded the numbers of different sizes of scallops caught, and the weight of the meats. Where scallops were abundant he also collected samples of shells so that biologists at the Atlantic Biological Station could find out how many different ages of scallops were present and how fast they were

**Placopecten magellanicus*, Gmelin, commonly known as the "deep-sea", the "offshore" or the "Digby" scallop.

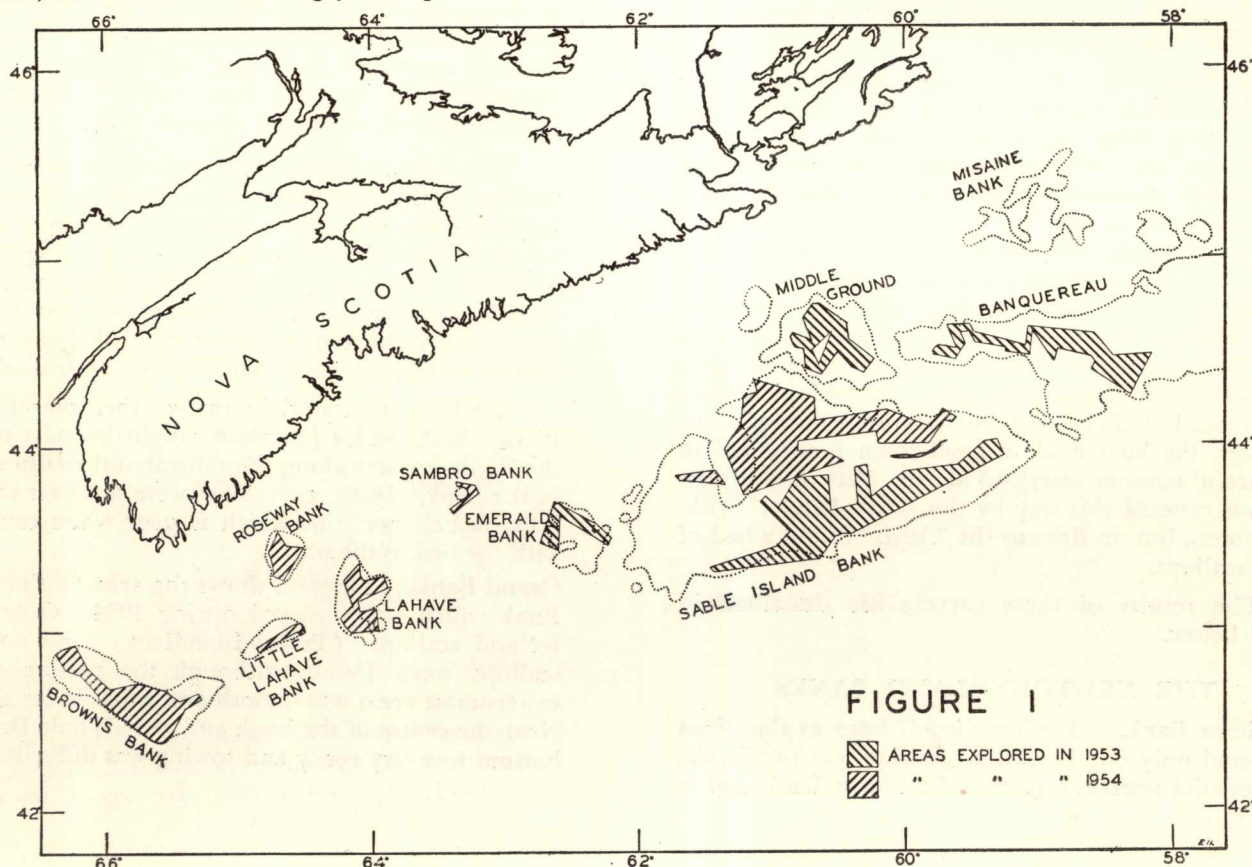
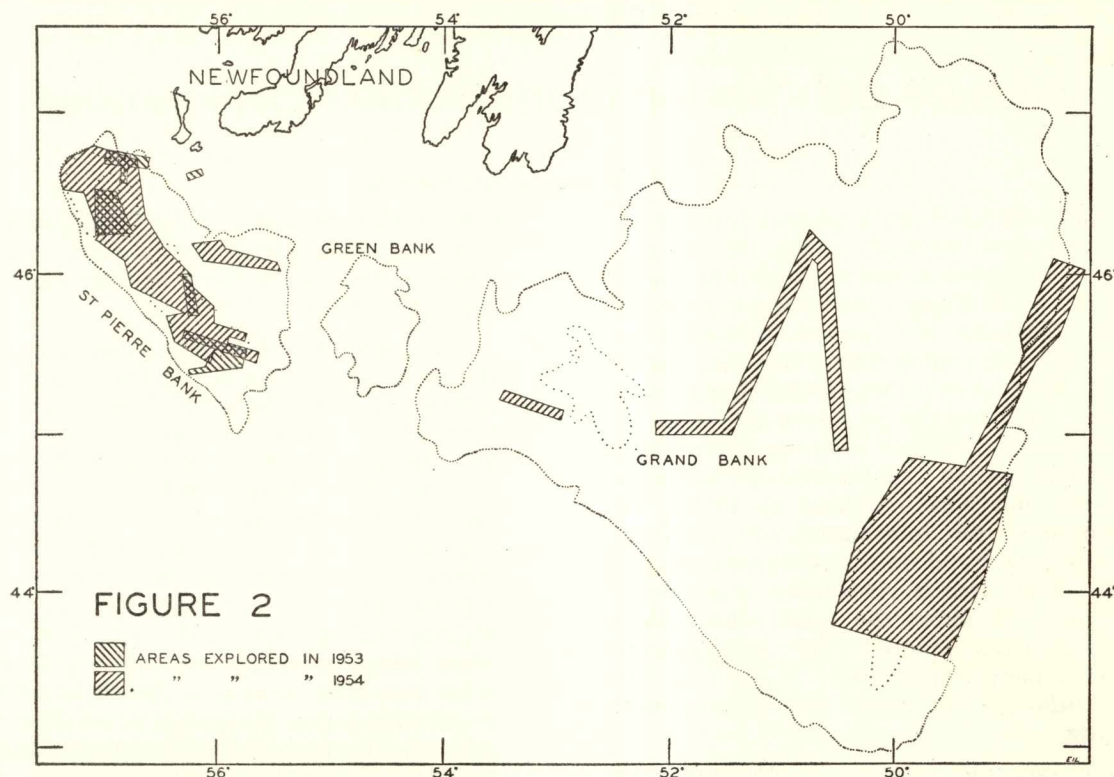


FIGURE 1

▨ AREAS EXPLORED IN 1953
 " " " 1954



growing. We need to have this information to judge how long the stocks on any bed are likely to maintain a fishery.

Figures 1 and 2 show the areas explored. Not all of them were covered with equal care. In deciding where to explore we depended on the reports from skippers of groundfish draggers who occasionally catch scallops in their nets or from line-fishermen who find them attached to their trawls. Type of bottom was also taken into consideration.

In cases where scallops were reported, we explored the area as thoroughly as possible. For example, on St. Pierre Bank, tows were made in an almost continuous line, each tow starting where the previous one ended. Successive lines of tows across the bank were only two to four miles apart. When a better than usual catch was made, the boat stopped and fished. In this way there was little chance that any important bed escaped notice. Where no scallops were reported but the bottom was suitable for dragging, we were mainly interested in knowing if there were scallops in the general area. In such cases tows were spaced farther apart to cover more bottom. If, however, the boat made a good catch it surveyed in the careful manner described above. Part of Banquerneau was covered this way by the "Irish Patriot" without success, but on Browns the "Aegir" found a bed of small scallops.

The results of these surveys are described in detail below.

THE NEWFOUNDLAND BANKS

St. Pierre Bank. During the offshore explorations we found only one bed where fishing was profitable. It is on the northern part of St. Pierre Bank and is

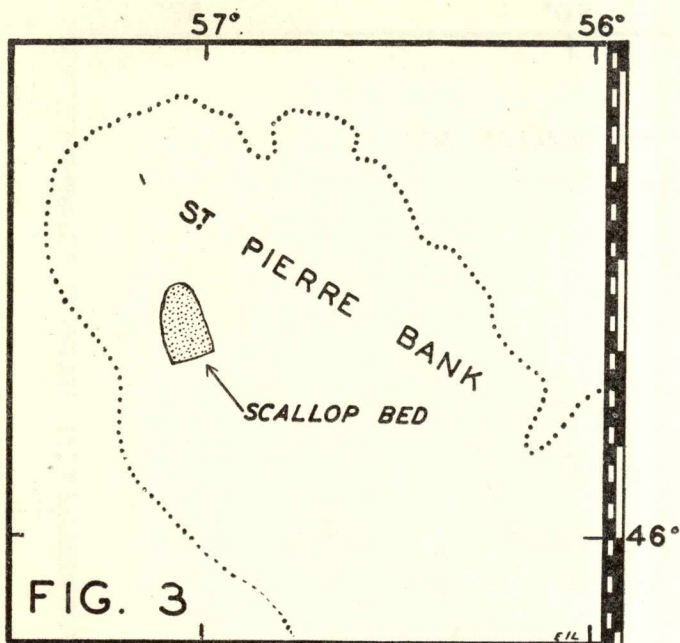
shown in Figure 3. This figure, like the others following, has been traced directly from Loran Chart 6610-L, issued by the Hydrographic Office, Washington, D. C., in September, 1949. Those interested in fishing should have little difficulty plotting accurate boundaries of the beds from these small figures.

The St. Pierre bed was discovered in late 1953 and its position published soon after. In late winter of that year and during the spring and early summer of 1954 several boats fished there. From catch records, we have estimated that up to the end of June, 1954, the three most successful boats landed a total of over 175,000 pounds of scallop meats from it.

It seems likely that there will continue to be good fishing on this bed for at least another year or two. But fishermen must not expect it to last long. Almost all of the scallops are the same age, indicating that the bed is the result of a successful spawning and settling in only one year. Unless there are new sets of young there, and we have no evidence that this has occurred, fishing on this bed must soon become unprofitable.

Scallops are found in many other places on St. Pierre Bank, and a few were caught in most tows in the shallow water along the central and southern part of the bank. However, catches were not over three or four bushels per tow, which is poor when compared with the bed to the north.

Grand Bank. Figure 2 shows the area on the Grand Bank which was explored during 1954. Only a few Iceland scallops (*Pecten islandicus*) and no giant scallops were found, although the bottom on the easternmost areas was smooth and suitable for towing. Near the centre of the bank and near Whale Deep the bottom was very rocky and towing was difficult.



THE NOVA SCOTIAN BANKS

The fishing areas off the Nova Scotia coast are of most interest to the industry in the Maritimes and have been explored as thoroughly as possible in the time available. Results to date have been disappointing, although there is the possibility of limited fishing now and several areas may be worth a closer examination in the future.

Browns Bank. The most promising bed found off the Nova Scotia coast is on Browns Bank (Figure 4). When this bed was found in 1954 the scallops on it had shells averaging only about three inches in diameter and it would take about 70 of them to make a pound of meats. Examination of the shells shows that these scallops are very slow growing.

Up to 20 bushels of these little scallops were caught in a single 11-foot drag in a 45-minute tow. This means that there must be very large numbers present. But the enormous job of shucking them is so costly that it probably will not pay a fisherman to go there while fishing is good elsewhere. Their abundance, however, holds promise for fair fishing in a year or two when they have had a chance to grow. In two years they should average about $3\frac{1}{2}$ inches in shell diameter and the weight of the meats should be nearly doubled.

On Browns Bank, unlike St. Pierre, there are some indications of new sets of scallops younger than the present abundant group. This means that the stock may maintain a fishery for several years. However, the absence of old scallops or shells and the slow growth mean that the bed is probably a new one and is a poor producer. It is unlikely that a long-term fishery can be developed there.

No scallops were taken on Browns outside the immediate vicinity of this one bed.

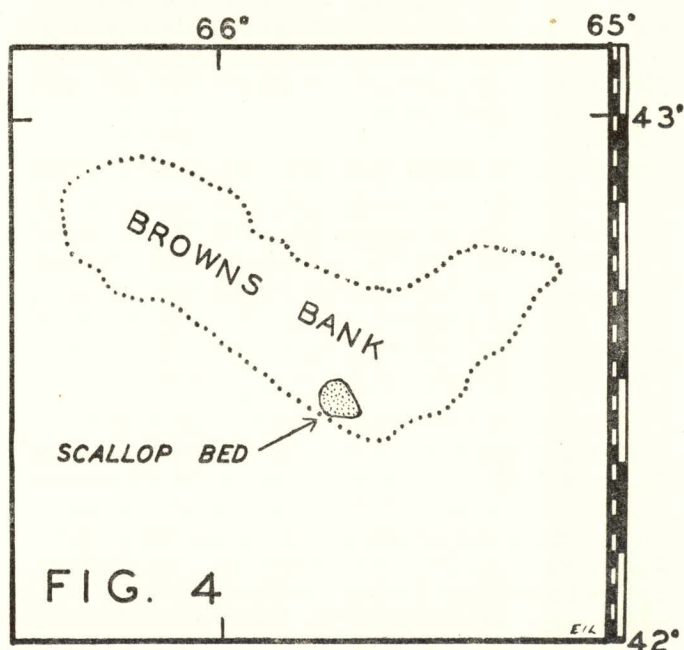
Western Nova Scotian banks. As is shown in Figure 1, Little Lahave, Lahave, Roseway, Sambro and Emerald Banks were explored. In every case the bottom was

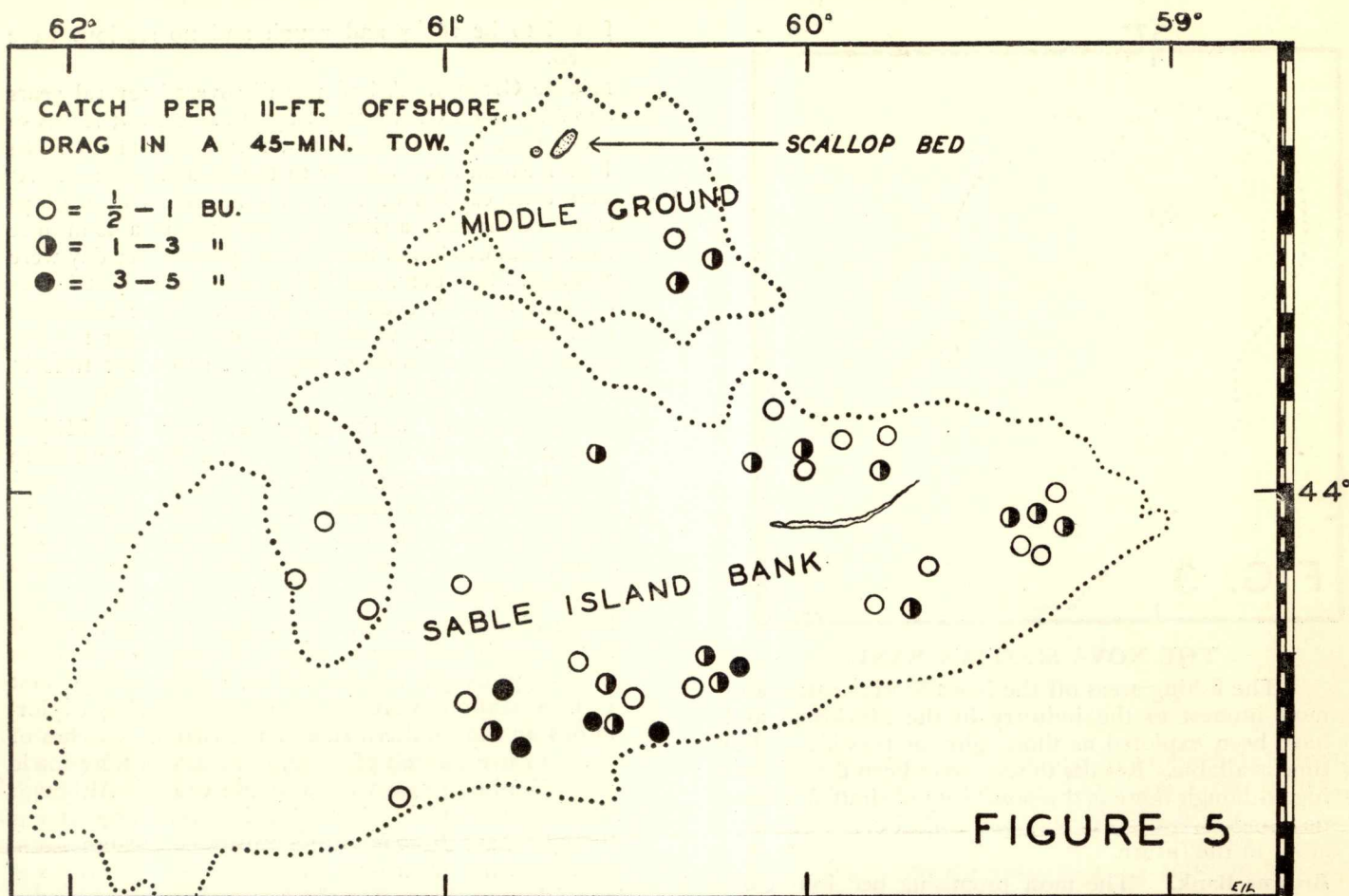
found to be rocky and rough and no scallops were taken.

Middle Ground. A bed was discovered several years ago on middle Ground by Captain Beck, but it was so small that he did not consider it worth fishing. In 1953 he took our observer to the area (Figure 5). At that time catches of four to six bushels of scallops could be made in a single 11-foot drag in a 45-minute tow. Total catches of about 1,000 pounds per day were possible. However, the bed was so small that it was difficult to find, even with Loran. The fishermen on board felt they would rather make longer trips to equally good areas on Georges than to waste time in trying to find this bed.

Exploratory work on other parts of Middle Ground showed that scallops were not present in commercial quantities outside this one bed. However, catches of two to three bushels were made on the southeast part of the bank. This shows that they are widely distributed and suggests that the whole area may be worth surveying again in a few years.

Sable Island Bank. The total area explored around Sable Island is shown in Figure 1, and the quantities of scallops caught are marked on Figure 5. The best beds of scallops were found in 1953 during explorations on the southern side of the island. Catches of three to five bushels of large, old scallops were made in a 45-minute tow with a single drag. Although landings from this bed could not be very large, it was thought that fishing might be profitable because of the short distance from port and a second trip was made to try fishing there. On the more westerly bed, where scallops were most abundant (five bushels per tow), the meats were so poor and stringy that the total catch was only about 250 pounds per day. On the easternmost bed where abundance was less (three bushels per tow), meats were large and firm and the catch averaged about 500 pounds per day. Since large boats cannot fish profitably where catches are this small,





trials were discontinued for the year. In 1954 the "Aegir" explored to the north of the island and found scallops (Figure 5), but they were too scarce for commercial fishing.

All the beds found on Sable Island Bank are considered too poor for commercial fishing. But, the widespread occurrence of scallops, the variety of sizes and ages, the good growth rate, and in some places, the firm meats, all mean that good beds may occur there at times. If the interest in offshore scallop fishing continues, further investigation of this area may be well worth while.

INSHORE NEWFOUNDLAND EXPLORATIONS

In October and November, 1954, after the offshore explorations were completed, the M.V. "Alfred D.", skipper Douglas Conrad, was chartered for preliminary inshore exploration along the west and south coasts of Newfoundland. Since the beds discovered are unimportant, when compared with the offshore beds described above, no charts are included.

In exploratory dragging in St. John Bay and Bonne Bay on the west coast and around Burgeo and in Placentia Bay on the south coast we found nothing worth while commercially. Some good catches of large scallops were made in 3 to 5 fathoms of water just southeast of Governor's Island in York Harbour, Bay of Islands, but the bottom was covered with kelp so that dragging was difficult. It is doubtful if a boat could do as well here as at Port au Port Bay where, in

1954, the large offshore draggers made catches of over 2,000 pounds of meats per fishing day, and where several small Newfoundland draggers have been fishing successfully for several years. The "Alfred D." also found a small bed of scallops off Sandy Point in St. George's Bay in 11 to 12 fathoms of water. The scallops there, however, are so small that fishing is not likely to be profitable for at least another year.

CONCLUSIONS

From the results of these explorations we must conclude that scallops are not abundant on the offshore Nova Scotian and Newfoundland banks. The development of a large offshore scallop fishery in the near future is therefore unlikely. The boats left the offshore St. Pierre Bank about July, 1954, when they were still catching more than 1,500 pounds of meats per day, because fishing was better inshore in Port au Port Bay. But the known inshore Newfoundland beds are small and catches will soon drop. A continuation of the fishery will therefore depend on a combination of the inshore and offshore areas. However, results are not entirely discouraging and further expansion is possible through new discoveries or new sets of young scallops on areas such as Sable Island.

Further details on these explorations conducted by the Fisheries Research Board may be obtained by writing to the Director, Atlantic Biological Station, St. Andrews, N. B.