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SCOUTING FOR HERRING ALONG THE EAST COAST OF QUEEN CHARLOTTE ISLANDS, MARCH, 1949History of the Queen Charlotte islands fishery

Herring fishing in the Queen Charlotte islands (chiefly along the eastern coast of Moresby island) was carried out from 1937-38 to 1942-43 with moderate success, the 1939-40 season being the most successful, resulting in a total catch of 7800 tons. The bulk of the catch was made during January, February and early March; fishing in November and December and summer fishing operations resulted in very small catches. The most productive locality was Burnaby strait and vicinity, including Skaat harbour and Huston inlet. Three seine boats operated throughout the 1938-39 season and two seine boats during the next three seasons, but a few other seiners came from other sub-districts to participate in the late Burnaby strait fishery.

Since 1942-43 no herring have been caught in the Queen Charlotte islands sub-district. Various factors have contributed to this lack of a fishery. After 1939-40 the availability of the fish to the fishermen (number of tons caught per seine per active day's fishing) declined steadily, indicating a progressive scarcity of herring on the fishing grounds during the fishing season (from 40 tons/seine/day in 1939-40 to practically nil in 1942-43). Records of the spawning ground surveys showed a decline in the extent of spawning from 1941 to 1944, suggesting that the reduced availability was the result of a lowered population abundance. It seems unlikely that the fishery was responsible for reducing the size of the population, but rather it appears that the smaller population resulted from natural causes which produce great fluctuations in the abundance of British Columbia herring. During the period from 1943-44 to 1947-48 very little scouting was carried on in Queen Charlotte waters.

The lack of fishing may also be attributed to the fact that after 1943, when the Pacofi reduction plant burned down, all herring would have had to be transported across Hecate strait at a time of year when weather conditions are generally bad. Moreover, in most seasons herring in other sub-districts were sufficiently plentiful to take care of the needs of the industry.

Present conditions of the population

It appears that in recent years the Queen Charlotte islands population has increased considerably. Numerous reports from fishery officers, Indians, and others have mentioned large bodies of herring along the east coast of Moresby island in the spring and early summer months. Spawning reports from the fishery officers have shown an increase in spawning extent from 11.7 miles of spawn in 1946 to 17.4 miles in 1947 and 23.8 miles in 1948. While it is realized that

because of poor weather and lack of suitable boats in most years the coverage of the spawning beaches was not complete, it is believed that these figures are indicative of a progressive increase in population abundance. Scales and length measurements on a small sample of herring in the spring of 1948 obtained through the efforts of a fishery officer suggested that the population had practically reverted to the virgin state, with VII and X year fish being most numerous. The sample was too small to afford sound generalizations regarding the condition of the population, but the data are believed to be indicative of a high average age resulting from the lack of a fishery.

In view of this knowledge regarding the present condition of the population, it was suggested to the industry and to the Chief Supervisor of Fisheries in February, 1949, that fishing operations in the Queen Charlotte islands could probably be carried on with success. With herring meal in great demand, it seemed wasteful to allow a potentially important herring resource to go untouched. The industry requested that the closure date be extended from March 10 to March 30 so that advantage might be taken of possibly better weather conditions for transporting fish across Hecate strait in the latter part of the month. Since spawning records of past years revealed that spawning did not reach its peak in the Queen Charlottes until April, the extension of the closing date was recommended. In addition it was felt that if a later closing date would result in the resumption of the fishery, it would be amply justified by permitting the accumulation of much-needed biological data. However, in early March when the central subdistrict quota extension was taken, the herring fishermen felt disinclined to continue the fishing season, which, by resulting in a record total B. C. catch of almost 190,000 tons, had been amply remunerative to them.

Scouting for herring, March, 1949

In order that some information might be available as to what quantity of herring might have been caught if fishing had gone on in the Queen Charlottes, the Department of Fisheries sent two patrol boats, the "Howay" and the "Kitimat", to scout the east coast of Moresby island. On behalf of the industry, Nelson's Bros. Fisheries Ltd. arranged to have their vessel, the "Twinkle", scout the area also. All three boats scouted thoroughly with echo sounder the east coast of Moresby island from Cumshewa Head to Louscoone inlet. In addition, the "Twinkle" and the "Kitimat" took trips into Skidegate inlet. The "Howay" spent five days (March 4 to March 8) on the assignment, the "Kitimat" six days (March 14 to 19) and the "Twinkle" six days (March 12 to 18). The latter two boats were stormbound for one day (March 17) during their period in Queen Charlotte waters.

As a basis for this report the writer was afforded the opportunity of studying (1) the wireless messages sent by the captains of the two Fisheries Department boats to the Chief Supervisor while they were scouting the area, (2) the log book of the "Twinkle", and (3) the echo sounder records made by all three boats in attempting to locate herring.

In general, the amount of herring in inshore waters was small during the period March 4 to March 8 while the "Howay" was in the area. Fair to good showings

of fish were found in Crescent inlet and in the Selwyn inlet vicinity, (including Lagoon inlet, Sewell inlet, and Rockfish harbour), but outside of these only minor spots were recorded by the echo sounder.

The picture was changed considerably in the March 12 to March 19 period. The reports showed that a fairly large body of herring had moved inshore after March 8. Fish were found in commercial quantities in Selwyn inlet (both in Sewell and Lagoon inlets), in De la Beche inlet, in Bigsby inlet, and in Huston inlet, and fairly good schools were located in Skidegate inlet, at Burnaby narrows, in Werner bay, and at times around Huxley island. Less abundant, but appreciable amounts were found in Dana inlet, in Island inlet, and in Louscoone inlet.

In certain localities the amount of herring changed considerably from one visit to the next. It appeared that prior to and following the scoutings in some places the herring came in or moved to other vicinities.

The value of the scouting operations

It appears clear that the scouting operations have provided valuable information on fishing possibilities in the Queen Charlottes. Two major points emerge from a study of the data accumulated:

(1) The Queen Charlotte islands herring population could have supported a fishery this spring. It is not possible to say what quantity could have been taken, but a very rough guess might be that at least 10,000 tons could have been obtained. It should be kept in mind that by refraining from fishing the area, the population will not necessarily continue to increase and thus provide a greater potential for future years. Factors entirely separate from fishing can and probably will eventually reduce the population from its present relatively large abundance.

(2) The former closing date of March 10 would probably have prevented the possibility of an economically profitable fishery since inshore migration on a large scale did not begin until after March 8. It seems quite probable that this situation also exists in other years. Considering the fact that no authentic spawnings were encountered during the period of the scouting and the fact that the records show no widespread spawning in past years until April, the later closure date of March 30, put into force this year, seems quite justified.

Need for further research

There is a great need for a more complete knowledge of the Queen Charlotte islands herring population, particularly along these lines:

(1) Sampling of the fishable portion of population is urgently needed. At present information on the age composition is very sparse. What year classes comprise the bulk of the population? What year classes in the past few years have been strong and which have been weak? What indications are there regarding

the strength of the year classes which have begun to enter the fishable stocks? Answers to these questions are vital to understanding changes in the population abundance.

(2) More detailed information on the extent of spawning in all the Queen Charlotte areas is highly desirable. Practically no data are available regarding the amount of spawning which takes place on the west and north coasts of the islands.

(3) The degree of discreteness of the Queen Charlotte islands population is not known. It is important to know if there is any appreciable mixture with the populations of the central and northern coasts of the B. C. mainland. A tagging program would provide information on this problem.

(4) It would be valuable to undertake scouting operations at various times of the year. Recent reports have indicated that large schools of herring are present on the west coast of the islands in late spring and early summer. If these reports are correct it appears that a profitable early summer fishery could be carried on at the present time.

The pertinent question is how far into these lines of research should herring investigators go at the present time. There is no doubt as to the deep interest in these matters from the biological point of view. However, the final answer to the question will probably rest largely with the members of industry. The amount of research will probably depend on the extent to which the industry is prepared to utilize the resource.

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Herring Investigation