

Report of Provincial Fisheries Department

Valuable Contribution on Life History of Sockeye Salmon— Special Papers on Salmon Fisheries of Fraser River.

The Hon. Wm. Sloan, Commissioner of Fisheries, has just issued the report of the Provincial Fisheries Department for the year 1918, which he placed before the Legislature on March 4th last. Its Publication has been delayed, owing to the press work in the hands of the King's Printer. The Report and its Appendix sustains the high character of the publications of that department. It deals at length with the commercial fisheries of the Province, especially its salmon fisheries, containing reports from the spawning grounds, a valuable contribution on the life-history of the sockeye salmon and two special papers on the salmon fisheries of the Fraser.

The report gives the value of the fisheries of Canada from the year ending December 31st, 1917, the last available, at \$52,312,544, of which British Columbia contributed \$21,518,595 or 41 per cent. British Columbia again lead all the Provinces of the Dominion in her fishery products. Her output that year exceeded that of Nova Scotia by \$7,056,276, and that of all the other Provinces combined by \$11,156,941. The total value for the year shows an increase over the previous year of \$6,881,249. Salmon products totalled \$16,828,783, a gain over the previous year of \$6,285,178, due both to an increase in the size of the pack and its market value. The halibut catch was less, and, notwithstanding an increase in price, shows a decrease from the previous year of \$305,658. The value of the plants, vessels and apparatus used in the fisheries totalled \$15,807,058, and 20,883 persons were engaged in the industry. The salmon catch is reviewed in detail by districts.

Reports from the salmon spawning districts of the Fraser River basin disclose that the number of salmon which reached the spawning-beds in 1917 was far less than in any previous year. It is shown that as effecting future runs of sockeye no importance can be attached to the few that did spawn in the basin above Yale, and that less importance than heretofore can be attached to those that spawned in the lower section of the Fraser. Conditions which have brought about the destruction of the runs of salmon to the Fraser are ably reviewed by both Mr. Sloan, the Commissioner, and his assistant, Mr. Babcock. Mr. Sloan states that "the run of sockeye to the Fraser is perilously near to extermination. The runs will be exterminated if conditions remain as they are, and is so short a period as to wipe out all interests of both fishermen and canners. In view of the evidence, there is, in my judgment, but one thing to do. Adopt measures that will insure the spawning beds of that watershed all the sockeye that still survive. To that end I suggest the total prohibition of sockeye fishing in the waters frequented by those produced in the Fraser River, until such time as they have recovered from their depleted condition. I suggest this though it does involve compensation to resident fishermen and canners who can establish that they are entitled to compensation by their respective Governments. It is fruitless to rely upon concurrent regulations in British Columbia and the State of Washington waters. That has been tried and failed. Such efforts will continue to fail. Present commercial and monetary considerations must be eliminated. It must be done internationally, because it is an international question. It is one of the greatest fishery questions in which Canada and the United States are now concerned. The only adequate, the only permanent solution of the question, I submit, is the acquisition by Canada and the United States of all the rights in this fishery, of which they may not now be possessed. That being established, the waters should be closed to sockeye fishing for such a period of time as is necessary to restore the runs. To allow further destruction of the sockeye fisheries of the Fraser would be unnatural, unmoral and unpatriotic policy."

In dealing further with the measures necessary to restore the runs of salmon to the Fraser, the report states that "The measures to be taken must not only include secession of all fishing in tidal limits for a period of years, but must be made to include all fishing above tidal limits by Indians for all time, notwithstanding that they have both a natural and a treaty right to take salmon as they required for food so long as they confine themselves to the methods of capture original with them. It is estimated that Indians resident in the Fraser basin formerly took from their spawning-beds over 200,000 sockeye salmon a year. The numbers taken by them in former years of the big run, were not, until the disastrous blockade of 1913, a serious drain on the spawning run. The numbers taken in the three lean years were a serious drain. Owing to depletion the Indians resident on the Fraser and its tributaries have of late years not been able to get any considerable number. The right of the Indians to take these fish is unquestioned, but the number they now can catch is too small to be of any real benefit. The Commissioner advocates that the Dominion Government, being obligated by the North America Act "to support and encourage the fisheries" should step in and acquire by purchase the Indians' right to take fish above the commercial fishing.

In dealing with the halibut fishery it is shown that the landings at Pacific ports in 1918 was 14,375,000 less than in 1917. Prince Rupert shows a decrease of 3,801,000 pounds, with a total landing of 14,777,000 pounds. Vancouver landings of halibut in 1917 totalled 5,162,000 pounds, as against but 1,992,000 in 1918. "This alarming decrease affords," the report states, "additional evidence of the value of the publications of the department of its halibut investigation of 1915 and 1916, which disclosed the conditions on the fishery banks that indicated depletion and called for early action on the part of Canada and the United States."

"The distinguishing feature of the fishery year," the report states, "was the successful operation of deep-sea trawling vessels from our ports. The trawler "James Caruthers" made forty-nine trips out of Prince Rupert during the season, occupying 151 days, and landed over 2,000,000 pounds of flounders, sole, witch, brill, cod, skate and a limited amount of halibut. Operations were limited because of lack of a market. There is, the season's operations of Prince Rupert show, no lack of supply. The bulk of the catch was marketed in the northwest. The fish taken are the equal of any food fish, except salmon. They have more flavor than halibut and can be and are sold for much less than halibut or salmon. The successful operation of trawlers from Prince Rupert and Vancouver warrants the belief that eventually a large fleet of trawlers will operate from our ports, especially Prince Rupert.

Dr. G. H. Gilbert's contribution to the Department's report on the life-history of the sockeye salmon is most interesting. He conclusively demonstrates that, in the Fraser, at least, the sockeye returns to spawn in the identical tributary in which it was hatched. He demonstrates this, as he has in former reports demonstrated the age and maturity of the sockeye, by a microscopic examination of the scales. The scales of the salmon in general persist throughout life, and grow in proportion with the rest of the fish, principally by additions around its border. At intervals there is produced at the growing edge of the scale a delicate ridge upon the surface, the successive ridges thus formed being concentric and sub-circular in contour, each representing the outline of the scale at a certain period of its development. Many ridges are formed during the course of a year's growth. The numbers vary widely in different individuals and during successive years in the history of the same individual the number of ridges alone cannot be depended upon to determine the age. For this purpose Dr. Gilbert has shown, that we must rely upon the