

**INTERNATIONAL PACIFIC SALMON
FISHERIES COMMISSION**

**APPOINTED UNDER A CONVENTION BETWEEN CANADA AND THE UNITED
STATES FOR THE PROTECTION, PRESERVATION AND
EXTENSION OF THE SOCKEYE SALMON FISHERIES
IN THE FRASER RIVER SYSTEM**

ANNUAL REPORT

1939

COMMISSIONERS

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NEW WESTMINSTER, B. C.

CANADA

1940

REPORT OF THE INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION FOR THE YEAR 1939

The season of 1939 was the second since organization of the work of the Commission. Established in the fall of 1937, its organization and program were outlined and work was begun by the summer of 1938.

The Commission is required to investigate the natural history of the sockeye salmon, hatchery methods, spawning ground conditions and related matters. It may conduct fish cultural operations, improve spawning grounds, stock the Fraser with sockeye by such methods as it may deem advisable, and recommend removal of obstructions to migration. It is empowered to limit or prohibit the taking of sockeye salmon in Convention waters and regulate the sizes of mesh in fishing gear, subject to certain conditions. The objective of these provisions in the Convention is to restore and maintain the former great runs. The last of these, in 1913, would be worth \$35,000,000 at present prices.

As is provided in the understandings attached to the Convention* "The Commission shall not promulgate or enforce regulations until the scientific investigations provided for in the Convention have been made, covering two cycles of sockeye salmon runs, or eight years."

The principal concern of the Commission during these first years has therefore been the scientific investigations. The program for these was formulated, discussed, and approved in 1938. It was explained to the Advisory Board from the industry and to the members of the Scientific Council, and approved by them at a meeting in August, 1938. Once established, the main features of the program must be continued from year to year until the information necessary is obtained.

During 1939, the Commission held a meeting on July 2, 3, and 4, in Vancouver, B. C. The resignation of Mr. W. A. Hawley as representative of the Canadian trollers on the Advisory Committee was accepted. Mr. E. Larum was chosen unanimously to take his place.

At this meeting the scientific investigations were reviewed and the program continuing the work of the previous year was approved. Necessary extensions of the program were discussed and formally approved by the Commission.

The Commissioners were of the opinion that minor improvements of the spawning grounds could be taken care of by the Commission under its appropriations and under the terms of the Convention. But major obstructions at points on the migration routes must be cared for by recommendation to the respective governments. It is plainly the duty of the Commission to make these recommendations, and to frame them the Commission must have funds for the employment of necessary engineers and biologists.

The preparation of material bearing on dams and their effects was recognized as being a duty of the Commission under the Convention terms requiring

*Sockeye Salmon Fisheries Convention, signed at Washington, May 26, 1930, ratifications exchanged July 28, 1937.

recommendations for "removing or otherwise overcoming obstructions to the ascent of sockeye salmon, that may now exist or may from time to time occur. . . ." The necessary biological and engineering investigations for this were also authorized, subject, of course, to the obtaining of the funds required.

Another needed expansion of the program was deemed to be the stricter control of certain spawning areas within which could be exercised the function of the Commission "to improve spawning grounds, construct, and maintain hatcheries, rearing ponds and other such facilities as it may determine to be necessary for the propagation of sockeye salmon in any of the waters covered by this Convention, and to stock any such waters with sockeye salmon by such methods as it may determine to be most advisable." The Commission decided to prepare recommendations for two such areas.

For these extensions of the already existing program, it was recognized that \$5,000 in additional funds for the year 1940 would be required from each country. The Commission decided to ask a total of \$40,000 from each country and so resolved by formal minute of the July 4, 1939, meeting. It was concluded that such work must be undertaken if the purposes of the Convention were to be attained.

The Commission has thus placed itself on record regarding what is necessary for proper fulfillment of the terms of the Convention. It cannot, however, act until the governments provide the funds required.

In considering the extent of the work undertaken by the Commission, it must be realized that the amount of money appropriated by the two governments is the governing factor. The season of 1939 was the second since organization of the work of the Commission. Established in the fall of 1937, its first season of investigation in 1938 was preliminary and exploratory in character, since the appropriations were only those initially made before the Commission had estimated its requirements. The appropriations have been made as follows:

<i>Fiscal Year</i>	<i>Canada</i>	<i>United States</i>	<i>Expenditure April 1-March 31</i>
1937-38	\$15,000	\$ 7,500	
		7,500 deficiency	\$14,758
1938-39	25,000	15,000	
		10,000 deficiency	41,773
1939-40	35,000	40,000	69,415

The Canadian fiscal year is from April 1 to March 31; that of the United States from July 1, to June 30.

Under the terms of the treaty expenditures must be paid in equal part by the two governments. As a result the smaller appropriation available at any given time controls the total amount. The expenditures of the Commission, as shown in the last column therefore do not equal the sum of the appropriations made by the two countries. The deficiency appropriations by the United States in the first two years, being made after the close of the Canadian fiscal year, could not be made full use of, and the expenditures were limited accordingly in those years. In no year thus far have sufficient funds been obtained to put a full program into effect.

From the figures given as to expenditures by the Commission it can be seen that its program has been developed further each year since the beginning late in the fall of 1937. This is a reasonable, and indeed inevitable course of action. A research program cannot spring into full being without exploration of the problems it must meet, and until staff and equipment have been developed.

The Commission wishes to call attention to the character of the work done thus far as constituting organization of a staff, development of a program, and collection of necessary material for research. It must look forward to increased emphasis upon laboratory analysis and preparation of special reports (other than annual) indicating the conclusions from the "thorough investigation into the natural history of [the Fraser River sockeye salmon . . ." etc., required by Article III of the Convention. Specific provision is being made for this phase of the program.

The headquarters of the Commission have been established at New Westminster, B. C., formerly in the Westminster Trust Building but now in the Dominion Building. Laboratories are maintained there also. During the year the University of Washington provided laboratory quarters for research carried on in the United States by this Commission, adjacent and similar to those occupied by the International Fisheries Commission (Halibut) in Seattle.

It must therefore report to the two governments that it has duly considered the steps necessary for fulfillment of its duty and has asked for the necessary funds. It has reported upon the research projects already under way in 1938, and hereby submits a further report of research in 1939 by the Director of Investigations, Dr. W. F. Thompson.

INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

A. L. HAGER, *Chairman*
EDWARD W. ALLEN
CHARLES E. JACKSON
TOM REID
A. J. WHITMORE
B. M. BRENNAN, *Secretary*

APPENDIX A
REPORT ON THE
INVESTIGATIONS OF THE INTERNATIONAL PACIFIC
SALMON FISHERIES COMMISSION
ON THE
FRASER RIVER SOCKEYE FOR THE YEAR 1939

By W. F. THOMPSON, *Director*

The major problems and objectives of the Commission's research program may be outlined briefly as a basis for an understanding of the work done during the year.

The runs of sockeye salmon to various tributaries of the Fraser River are very unevenly depleted. It is apparent that the run to the river as a whole is not a unit. Each stream, perhaps each spawning ground has what may be termed its race of sockeye whose young are thought to return to it as spawning adults. These races have been unequally affected by fishing activities and by obstructions such as the great slide at Hell's Gate in 1913. Hell's Gate is in the lower canyon of the Fraser, and the greater number of the races pass it. They were affected by the slide in varying degrees, in accord with the time they should have passed the Gate. They have also been affected differently by fishing operations. The problems faced by the Commission are therefore not simply those of dealing with a single homogeneous run, but rather those of adapting its measures of protection and rehabilitation to a complex of races with unequal needs. Each such race migrates as adults, usually in the fourth year, from the ocean to headwaters distant as far as a thousand miles, to a spawning ground which is believed to be its own; and its young return, usually after a year in a lake, to the sea.

There is undoubtedly needed, and needed greatly, a thorough study of the history of the river and its salmon runs. This might bring to light facts as to where depletion has occurred, in what races, and for what causes. It might also indicate the possibilities of each spawning ground. But whether such a study is completed or not, and regardless of what it may show, preparations must be made for rational, scientific treatment of each so called race.

The Commission has found that it must act to preserve and rehabilitate the sockeye salmon in each of these unevenly depleted races or runs in the following ways:

(a) Prevention of overfishing while each race is in the commercial fishery of salt water or the lower river, and while they are in the Indian fishery of the river itself. To do this the time and place of migration of each race as it is affected by each section of the fishery, must be known; a system of statistical information as to the fishery, its gear, and its habits, must be devised; and personnel must be trained to collect statistics when they are needed for the formulation and application of regulations. Foremost among the necessities is an accurate system of estimating the numbers which escape to each spawning ground.

(b) Discovery and removal of obstructions to facilitate the ascent of mature fish, to open new areas for reproduction, and to safeguard the descent of the young to the sea. This requires a survey of the river, of falls and rapids, of possible dams and fishways, and of the migrating habits of the fish itself.

(c) Assisting and protecting propagation. The spawning grounds and streams leading from and to them must be protected from injury by logging, dredging, pollution, or changes in water flow. Spawning may be assisted by methods of artificial propagation or stream improvement. Mortality during the early stages may be lessened by retention in ponds or by destruction and control of predatory fish, animals and poachers. There is required a survey of the river at the time of spawning, a study of the Indians and their fishery, and of the habits of the sockeye and of fishes or other organisms affecting its survival. The young sockeye emerge from the gravel of the spawning ground, and migrate to lakes or other deep water, where it may or may not be possible to assist their survival. Means of counting or estimating the number of mature fish, of the fry and of the yearlings produced must be devised to guide action in their behalf.

The sockeye of the Fraser River tends to return as a four-year-old, so that the runs occur in cycles of four years. Each year of the four is assumed to be more or less independent, very likely composed of races which differ from those of other years of the cycle. This is, of course, an approximation only to what actually happens, since close to 20 per cent of Fraser sockeye are five-year-olds and some straying from stream to stream may occur. Moreover, the runs may not differ from year to year as much as surmised. But any program must be continued through several years in such form as to give a basis for distinction and study of the constituent runs.

The results obtained can only be shown in their full significance after completion of the experiments and careful analysis. They must await research extending over several years. The scientific work of the Commission is now in its first stage, that of organization and collection of material. Although to guide these, some analysis is proceeding, yet the emphasis must shift gradually to a more thorough analysis and the publication of results as the research projects come to maturity. This means greater and greater provision for laboratory work and diversion of staff members to it. This normal sequence of organization, collection and report must be allowed for in the plans of the Commission.

For that reason this report is a statement of the various projects undertaken, supplemented by brief comment on some of the interesting facts which have become apparent from a preliminary review of results. It should be expected that the most important conclusions will come to light only after proper study of material collected over several years.

During the sockeye salmon season of 1939 the activities of 1938 were continued with such expansion as necessity required and the funds available permitted. These activities are outlined in the same general sequence as in the report for 1938.

Dr. R. E. Foerster conducted the collection and study of material bearing on races. Dr. J. L. Kask supervised the tagging operations and the experiments at Cultus Lake upon methods to determine the escapement. Mr. M. B. Schaefer conducted the experiments in estimation of escapement to the Harrison system.

Mr. C. E. Atkinson collected the historical material bearing on the Fraser and assisted in supervision of the observers on the spawning grounds. Mr. F. H. Bell advised in the collection of statistics, and Mr. H. B. Hinkle assisted him.

It will be noted that the tagging experiments were carried on in various localities, in the Straits of Juan de Fuca, Puget Sound, the Gulf of Georgia, and at Hell's Gate in the Fraser River canyon. Provision was made for the recovery of tags when recaptured by the commercial fishermen, the Indians, or by observers on the spawning grounds.

The tags used were white celluloid disks 13.5 mm. in diameter, with a red spot on one side 7 mm. in diameter. As was the case when disks were used in studies of other fish, they were attached on either side of the body immediately below the dorsal fin by means of a nickel pin run through from disk to disk. Upon one of the two disks a number was printed, with the address of the Commission and an offer of reward. The other disk was blank except for the red spot. The red spot of each tag was turned outward when attached. They were particularly vivid and easily seen and this, together with the reward offered, has been responsible for the unusually high percentage returns.

The various projects were as follows:

1. The tagging of sockeye at the Sooke traps at the southern end of Vancouver Island was carried on under the same arrangements as in 1938, with the cooperation of the trap operators and the Canadian Department of Fisheries.

The total tagged was 1,051 as compared with 980 in 1938. Of these 535, or 51 per cent were recovered in 1939 as compared to 432, or 44 per cent in 1938.

The fish marked prior to July 2nd were again returned from streams other than the Fraser. In 1938 this was true of 41 of the 432, or nearly 9½ per cent of the recoveries. In 1939 there were 72, or about 13 per cent. The rivers from which tags were returned will be of interest, as follows:

<i>River</i>	<i>No. Tags Returned</i>
Nitinat.....	44
Skagit.....	10
Barkley Sound.....	9
Alberni Canal.....	3
Rivers Inlet.....	1
Cowichan Bay.....	1
Pilchuck River.....	1
Elwah River.....	1
Tofino Inlet.....	1
Nooksack River.....	1
	—
	72

Of all tags placed at the Sooke traps, American vessels returned 34 per cent, Canadians 46 per cent, Indians 5½ per cent, and observers the remainder from the spawning grounds.

In view of the extraordinarily high rate of return of tags in the experiments on the Fraser River runs proper, the recapture of so many tags in other rivers in somewhat higher percentage than before is noteworthy.

2. In 1938 the Commission, with very limited funds, operated one boat to capture and mark fish over a period of a month, thus during only a part of the season. In 1939 two boats were employed over a period of three months each, thereby covering the whole season. One of these was a small seiner, the other an even smaller boat which purchased fish from vessels. Whereas in 1938 but 2,587 fish were tagged, in 1939 the total was 6,152.

1939 recoveries were much more numerous than in the previous year. In 1938, 1,231 fish or 47½ per cent were retaken. In 1939 there were 3,990 or 65 per cent retaken. The increase was from the salt water fishing and fewer were returned from the spawning grounds.

Those sockeye marked by the vessel which purchased its fish were mostly taken in the vicinity of the San Juan Islands. Those caught by the seine vessel were taken in the vicinity of the Fraser Sand Heads, where gill-nets are fished exclusively and the fish they take are not in a condition to tag.

Analysis of these returns promises to give an entirely new understanding of what happens during a migration.

3. So interesting and valuable were the results of marking sockeye salmon at a station just below Hell's Gate in 1938, that the experiment was repeated. A total of 4,344 fish were tagged, compared to 2,128 in 1938. The recoveries were 54 per cent in 1939 compared to 27 per cent in 1938.

The high percentage of recoveries was due in part to the fact that in certain eddies in the Fraser near Hell's Gate it is possible to see and catch practically every fish passing through the river at the time. The fish are unable to pass the swifter parts of the stream or are fatigued after doing so, consequently school densely in these eddies. The experience with the tags indicated that those runs which are already badly reduced in numbers must be carefully guarded during passage through the eddies. Their capture is so readily accomplished that the limit of catch is the demand and an excessively large part of a small run could be destroyed.

The experiment was begun at an early date, July 24, and continued to December 1. But even as early as July 24 the run was of considerable magnitude, and indicated the necessity of a still earlier beginning in 1940. The end of the run was the last of November.

As before, gill-nets were used, but the results showed that these were markedly selective as to size and sex. In 1940 every effort must be made to develop some better method of capture in a rapid river. In the meantime several different sizes of mesh are being used.

Recoveries from the spawning grounds indicate a distribution of the runs as they pass Hell's Gate, as follows:

Stuart Lake	Before July 25
Bowron	Between July 25-August 15
Chilco	Between August 27-August 31
Nechako	Between August 21-September 12
Adams River	September 19-end of season
Canyon streams	At end of season

This listing is tentative only and must not be assumed to hold until further observations and a study of returns are made.

The tagging also brought to light very clearly the fact that fish passed Hell's Gate and adjacent difficult places with unequal facility at different times during the season. For instance, in the weeks immediately prior to September 18 the fish accumulated and an increasing number were recaptured after tagging. Those recaptured had been out a long time and many were recaptured a second time. Others drifted down the river, perhaps to die unspawned. But after September 18 the fish began to pass rapidly, and few recaptures were subsequently made, these being retaken after only a day or two out. The Indian fishery of the vicinity corroborated these results. There is at hand in these experiments, patently, a means of studying the degree to which migration is obstructed. Our observations indicate that a study of several points in the Fraser is badly needed.

It is apparent from returns on spawning grounds, that when fish were obstructed, a very high percentage of any run passing at the time was tagged. This became obvious in such cases as the run to the Nechako. We believe as high as one in twenty was tagged in some of these runs. If so, the escapement to certain regions is very small indeed.

Other facts were brought to light by this experiment but cannot be summarized here until the work is more advanced.

4. The organization for recovery of tags and payment of rewards was made somewhat more complete and effective in 1939. It is doubted, however, that this was responsible for the marked increase in recoveries.

Recaptures of tagged fish by Indians constituted a constant problem for efficiency in recovery. The time and place of recovery cannot be ascertained with accuracy unless the Indians are contacted often.

5. During 1939 there were again four observers stationed at the canneries at Steveston, Friday Harbor, Bellingham, and Anacortes. They (a) recovered tagged fish, (b) took representative samples of sockeye, and (c) began work on a statistical system. Their work was as comprehensive and complete as in 1938.

In 1939 it was not possible to give the statistical work the attention it needed. But the catches were recorded by the area of origin as ascertained by inquiry. A great deal more attention to this phase of the work is necessary.

The samples examined now form a splendid series for 1938 and 1939. Scales for age determination, sex, length and weight were taken. They will be indispensable in studies of the variations in size, sex ratio, etc., as associated with the presence of particular races of fish, with the effects of different types of gear, etc. The analysis of this material has been begun in conjunction with that of other data bearing on races.

6. The observers on the spawning areas again surveyed the streams in which sockeye were found, and estimated the number of spawners which had returned to each. The areas were the same as in 1938; one man being assigned to each, designated as the Stuart Lake, Quesnel, Chilco, Thompson River, and Harrison-Seton Lake districts. An observer also reported on the streams of the lower Fraser, including Pitt River, Morris Creek, and the canyon streams up as far as Lytton. As before, spawning grounds, obstructions, stream conditions and numbers of fish in the streams, were observed. Data were collected to assist in

the distinction of races, such as scales for age analysis, length, weight, sex proportions, etc. Maps were completed, and full information collected regarding each section.

The closest cooperation was maintained with the officers of the Canadian Department of Fisheries. The objective was to render the estimation of the spawning escapement more accurate by increasing the number of observers and by using careful methods.

This is, of course, the most vital objective of the Commission's investigations, as only by such accuracy can regulation, or indeed any method of increasing the runs, be judged on its merits.

The net result has been that the Commission's observers believe either the escapement to the spawning grounds was very low in 1939, or a large share of it was not observed. This is a serious matter and has driven home not only the approximate nature of the estimates of the escapement but the more serious question as to whether existing methods are competent to detect a large part of the escapement, such as late spawners, or those in deep or turbid streams. The observations at Cultus Lake, where a known number were counted over a weir, showed that but a fraction were seen again or could be estimated at all.

7. This conclusion from the reports of the observers has emphasized the importance of developing accurate methods of measuring the escapement which reaches each spawning ground. No reflection is thereby made upon the ability of the present observers. Existing methods should be improved or supplanted.

In 1938 experiments to this end were conducted at Cultus Lake. These were for the purpose of comparing the actual number of migrants counted through a weir with that determined by observation and by a new method. The latter was described in the Report for 1938. It made use of a sample tagged at the weir, of the later determination of the percentage of this which could be observed, and of the ratio the sample bore to the number of untagged fish, thereby allowing an indirect calculation of the total passing the weir. It was successful.

In 1939 the extension of this method to a large tributary of the Fraser, the Harrison River, was begun. This tributary includes Harrison Lake, the Lillooet and Birkenhead Rivers and many smaller streams. Weaver Creek and the Birkenhead, two spawning grounds well known to be very productive, are included, as well as a number of smaller ones.

A first step was to establish traps at the lower end of the system and weirs on the spawning grounds. A pile-driven trap was built in Harrison Bay and fished throughout the season. There were 763 fish tagged. Those passing prior to September 15 were retaken in the Birkenhead River, those subsequently in Weaver Creek and a few at the mouth of the Lillooet River. The day by day catches reflected the closed seasons in the river in a faithful way.

To assist in studying the runs in the Birkenhead, from the standpoint of their time of passage and the ratio of fish tagged, a weir was constructed near the site of a former hatchery weir. In addition, the spawning grounds were carefully studied. A cheaper design, a wire fence weir, was tried and can be used where desired.

The tentative conclusions from this first and preliminary study are that there are probably a large number of sockeye entering the Harrison system which

cannot be accounted for on the known spawning grounds by known methods of observation. But the errors in the estimation are so large as to make any definite estimate doubtful at this time.

It therefore remains to develop the experiment and perfect the methods used.

8. During 1939, a study of the so-called races of sockeye in the Fraser and other streams was made. The cannery and stream observers examined samples of sockeye and collected material for age determinations, etc. In addition, visits were made to other rivers, where sockeye passing through treaty waters might be found, as indicated by recovery of tags. Material for racial studies was thus obtained from the Skagit River, Quinault, Nitinat, Barkley Sound, and throughout the Fraser. During the winter months intensive study was made of this material.

If sockeye return to their home streams, and races exist which perpetuate themselves and do not intermingle extensively, it could be expected that differences in bodily structure or growth would arise and be characteristic for each race. Or if the environment alters physical characters, it would be expected that the returning adults could be thus distinguished. The possibility that this may be true is indicated by the belief of fishermen that they can distinguish fish bound for certain streams.

To settle this, and to determine whether these racial characteristics are usable in this way, the material collected has been analyzed for size, growth, age, and physical characteristics of different kinds. It seems to be indicated that there are racial peculiarities and that the home stream theory is thus supported. The differences found are large and distinct enough to be used for separation of these races in certain cases but it must be shown by continuation of the study whether they are constant from year to year. The material at hand is extensive and a great deal of work is involved. But it will be indispensable in exploring possibilities apparent even to fishermen and in answering questions which cannot be neglected. So far as the staff is aware, no similar comprehensive study has been made of the variations within a large river system.

9. The collection and study of the voluminous records of all kinds which have to do with the Fraser River run of sockeye are proceeding as outlined in the Report for 1938. It is an extensive task, but is proving well worth while. It cannot be completed for several years, as it can be carried on only while other duties of the staff permit. As pointed out in the first part of this report, this is one of the projects which it is most necessary to complete.

10. The experiments at Cultus Lake—capturing predators, counting the spawning sockeye which arrive and the resultant young which leave—were continued during 1939. It is hoped that further light will be thrown on the effect of predators upon the survival of young sockeye. During the 1939 season 216,874 young sockeye of the first and second age groups were counted through the fence on their seaward migration. Gill-nets were operated for the capture of predators from January to June, inclusive. Adult migrants entering the lake in the fall numbered 73,189. The significance of these figures awaits completion of reports comparing the migrations of former years.

APPENDIX B
CANADIAN ACT RESPECTING SOCKEYE
SALMON CONVENTION

An Act respecting a certain convention signed the 26th day of May, 1930, between His Majesty in respect of Canada and the United States of America for the preservation and extension of the Sockeye Salmon Fisheries in the Fraser River System.*

(Assented to 30th May, 1930.)

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

1. The Convention relating to the protection, preservation and extension of the sockeye salmon fisheries in the Fraser River System between His Majesty in respect of Canada and the United States of America, signed at Washington on the 26th day of May, 1930, and set out in the Schedule to this Act is hereby confirmed and sanctioned.

2. Any law of Canada repugnant to the provisions of the said Convention is hereby amended and altered so as to permit, authorize and sanction the performance of the obligations undertaken by His Majesty in and under the said Convention; and so as to sanction, confer and impose the various rights, duties and disabilities intended by the said Convention to be conferred or imposed or to exist in Canada.

3. Section eighty-two and all sections following, except section ninety of the *Fisheries Act*, chapter seventy-three of the Revised Statutes of Canada, 1927, shall be deemed to apply, *mutatis mutandis*, for all purposes of this Act and shall have effect as if enacted herein.

4. (1) The owner or master of every vessel or any other person who,
(a) uses any port or place within Canada for the purpose of furnishing, providing, preparing or outfitting in any manner, whether in whole or in part, any vessel for the purpose of engaging in the Sockeye Salmon Fishery in contravention of any regulation or order made in pursuance of the said Convention; or
(b) causes or permits any vessel to depart from any such port or place with the intention of fishing for sockeye salmon in contravention of any regulation or order made in pursuance of the said Convention;
shall be guilty of an offence against this Act.

(2) The owner or master of any vessel shall, if the said vessel enter or come to any port or place in Canada while upon or in the prosecution of any voyage at any time during which the said vessel fished or was used in fishing for sockeye salmon as aforesaid, or having on board the said vessel any sockeye salmon so caught, be guilty of an offence against this Act.

5. Every person who contravenes any provision of this Act or of any order or regulation made by the International Pacific Salmon Fisheries Commission, shall be guilty of an offence, and shall be liable upon summary conviction to a

*20-21 George V. Chap. 10.

penalty of not less than one hundred dollars and not more than one thousand dollars, or to imprisonment for a term not exceeding one year, or to both such fine and imprisonment.

6. This Act may be repealed by the Governor in Council provided that it shall not be so repealed during the existence of the International Pacific Salmon Fisheries Commission.

SCHEDULE

Convention between Canada and the United States for the protection, preservation and extension of the Sockeye Salmon Fisheries in the Fraser River System, signed at Washington on the 26th day of May, 1930.

His Majesty the King of Great Britain, Ireland, and the British dominions beyond the Seas, Emperor of India, in respect of the Dominion of Canada, and the President of the United States of America, recognizing that the protection, preservation and extension of the sockeye salmon fisheries in the Fraser River System are of common concern to the Dominion of Canada and the United States of America; that the supply of this fish in recent years has been greatly depleted and that it is of importance in the mutual interest of both countries that this source of wealth should be restored and maintained, have resolved to conclude a Convention and to that end have named as their respective plenipotentiaries:

His Majesty, for the Dominion of Canada:

The Honourable Vincent Massey, a member of His Majesty's Privy Council for Canada and His Envoy Extraordinary and Minister Plenipotentiary for Canada at Washington; and

The President of the United States of America:

Mr. Henry L. Stimson, Secretary of State of the United States of America;

Who, after having communicated to each other their full powers, found in good and due form, have agreed upon the following Articles:

ARTICLE I

The provisions of this Convention and the orders and regulations issued under the authority thereof shall apply, in the manner and to the extent hereinafter provided in this Convention, to the following waters:

1. The territorial waters and the high seas westward from the western coast of the Dominion of Canada and the United States of America and from a direct line drawn from Bonilla Point, Vancouver Island, to the lighthouse on Tatoosh Island, Washington—which line marks the entrance to Juan de Fuca Strait—and embraced between 48 and 49 degrees north latitude, excepting therefrom, however, all the waters of Barklay Sound, eastward of a straight line drawn from Amphitrite Point to Cape Beale and all the waters of Nitinat Lake and the entrance thereto.

2. The waters included within the following boundaries:

Beginning at Bonilla Point, Vancouver Island, thence along the aforesaid direct line drawn from Bonilla Point to Tatoosh Lighthouse, Washington, described in paragraph numbered 1 of this Article, thence to the nearest point of Cape Flattery, thence following the southerly shore of Juan de Fuca Strait to Point Wilson, on Quimper Peninsula, thence in a straight line to Point Partridge

on Whidbey Island, thence following the western shore of the said Whidbey Island, to the entrance to Deception Pass, thence across said entrance to the southern side of Reservation Bay, on Fidalgo Island, thence following the western and northern shore line of the said Fidalgo Island to Swinomish Slough, crossing the said Swinomish Slough, in line with the track of the Great Northern Railway, thence northerly following the shore line of the mainland to Atkinson Point at the northerly entrance to Burrard Inlet, British Columbia, thence in a straight line to the southern end of Bowen Island, thence westerly following the southern shore of Bowen Island to Cape Roger Curtis, thence in a straight line to Gower Point, thence westerly following the shore line to Welcome Point on Seachelt Peninsula, thence in a straight line to Point Young on Lasqueti Island, thence in a straight line to Dorcas Point on Vancouver Island, thence following the eastern and southern shores of the said Vancouver Island to the starting point at Bonilla Point, as shown on the British Admiralty Chart Number 579, and on the United States Coast and Geodetic Survey Chart Number 6300, as corrected to March 14, 1930, copies of which are annexed to this Convention and made a part thereof.

3. The Fraser River and the streams and lakes tributary thereto.

The High Contracting Parties engage to have prepared as soon as practicable charts of the waters described in this Article, with the above described boundaries thereof and the international boundary indicated thereon. Such charts, when approved by the appropriate authorities of the Governments of the Dominion of Canada and the United States of America, shall be considered to have been substituted for the charts annexed to this Convention and shall be authentic for for the purposes of the Convention.

The High Contracting Parties further agree to establish within the territory of the Dominion of Canada and the territory of the United States of America such buoys and marks for the purposes of this Convention as may be recommended by the Commission hereinafter authorized to be established, and to refer such recommendations as the Commission may make as relate to the establishment of buoys or marks at points on the international boundary to the International Boundary Commission, Canada and United States-Alaska, for action pursuant to the provisions of the Treaty between His Majesty in respect of Canada and the United States of America, respecting the boundary between the Dominion of Canada and the United States of America, signed February 24, 1925.

ARTICLE II

The High Contracting Parties agree to establish and maintain a Commission to be known as the International Pacific Salmon Fisheries Commission, hereinafter called the Commission, consisting of six members, three on the part of the Dominion of Canada, and three on the part of the United States of America.

The Commissioners on the part of the Dominion of Canada shall be appointed by His Majesty on the recommendation of the Governor General in Council. The Commissioners on the part of the United States of America shall be appointed by the President of the United States of America.

The Commissioners appointed by each of the High Contracting Parties shall hold office during the pleasure of the High Contracting Party by which they were appointed.

The Commission shall continue in existence so long as this Convention shall continue in force, and each High Contracting Party shall have power to fill and shall fill from time to time vacancies which may occur in its representation on the Commission in the same manner as the original appointments are made. Each High Contracting Party shall pay the salaries and expenses of its own Commissioners, and joint expenses incurred by the Commission shall be paid by the two High Contracting Parties in equal moieties.

ARTICLE III

The Commission shall make a thorough investigation into the natural history of the Fraser River sockeye salmon, into hatchery methods, spawning ground conditions and other related matters. It shall conduct the sockeye salmon fish cultural operations in the waters described in paragraphs numbered 2 and 3 of Article I of this Convention, and to that end it shall have power to improve spawning grounds, construct, and maintain hatcheries, rearing ponds and other such facilities as it may determine to be necessary for the propagation of sockeye salmon in any of the waters covered by this Convention, and to stock any such waters with sockeye salmon by such methods as it may determine to be most advisable. The Commission shall also have authority to recommend to the Governments of the High Contracting Parties removing or otherwise overcoming obstructions to the ascent of sockeye salmon, that may now exist or may from time to time occur, in any of the waters covered by this Convention, where investigation may show such removal of or other action to overcome obstructions to be desirable. The Commission shall make an annual report to the two Governments as to the investigations which it has made and other action which it has taken in execution of the provisions of this Article, or of other Articles of this Convention.

The cost of all work done pursuant to the provisions of this Article, or of other Articles of this Convention, including removing or otherwise overcoming obstructions that may be approved, shall be borne equally by the two Governments, and the said Governments agree to appropriate annually such money as each may deem desirable for such work in the light of the reports of the Commission.

ARTICLE IV

The Commission is hereby empowered to limit or prohibit taking sockeye salmon in respect of all or any of the waters described in Article I of this Convention, provided that when any order is adopted by the Commission limiting or prohibiting taking sockeye salmon in any of the territorial waters or on the High Seas described in paragraph numbered 1 of Article I, such order shall extend to all such territorial waters and High Seas, and, similarly, when in any of the Canadian waters embraced in paragraphs numbered 2 and 3 of Article I, such order shall extend to all such Canadian waters, and when in any of the waters of the United States of America embraced in paragraph numbered 2 of Article I, such order shall extend to all such waters of the United States of America, and provided further, that no order limiting or prohibiting taking sockeye salmon adopted by the Commission shall be construed to suspend or otherwise affect the requirements of the laws of the Dominion of Canada or of

the State of Washington as to the procuring of a license to fish in the waters on their respective sides of the boundary, or in their respective territorial waters embraced in paragraph numbered 1 of Article I of this Convention, and provided further that any order adopted by the Commission limiting or prohibiting taking sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention shall apply only to nationals and inhabitants and vessels and boats of the Dominion of Canada and the United States of America.

Any order adopted by the Commission limiting or prohibiting taking sockeye salmon in the waters covered by this Convention, or any part thereof, shall remain in full force and effect unless and until the same be modified or set aside by the Commission. Taking sockeye salmon in said waters in violation of an order of the Commission shall be prohibited.

ARTICLE V

In order to secure a proper escapement of sockeye salmon during the spring or chinook salmon fishing season, the Commission may prescribe the size of the meshes in all fishing gear and appliances that may be operated during said season in the Canadian waters and/or the waters of the United States of America described in Article I of this Convention. At all seasons of the year the Commission may prescribe the size of the meshes in all salmon fishing gear and appliances that may be operated on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, provided, however, that in so far as concerns the High Seas, requirements prescribed by the Commission under the authority of this paragraph shall apply only to nationals and inhabitants and vessels and boats of the Dominion of Canada and the United States of America.

Whenever, at any other time than the spring or chinook salmon fishing season, the taking of sockeye salmon in Canadian waters or in waters of the United States of America is not prohibited under an order adopted by the Commission, any fishing gear or appliance authorized by the laws of the Dominion of Canada may be used in Canadian waters by any person thereunto duly authorized, and any fishing gear or appliance authorized by the State of Washington may be used in waters of the United States of America by any person thereunto authorized by the State of Washington. Whenever the taking of sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention is not prohibited, under an order adopted by the Commission, to the nationals or inhabitants or vessels or boats of the Dominion of Canada or the United States of America, only such salmon fishing gear and appliances as may have been approved by the Commission may be used on such High Seas by said nationals, inhabitants, vessels or boats.

ARTICLE VI

No action taken by the Commission under the authority of this Convention shall be effective unless it is affirmatively voted for by at least two of the Commissioners of each Contracting Party.

ARTICLE VII

Inasmuch as the purpose of this Convention is to establish for the High Contracting Parties, by their joint effort and expense, a fishery that is now largely nonexistent, it is agreed by the High Contracting Parties that they should share equally in the fishery. The Commission shall, consequently, regulate the fishery with a view to allowing, as nearly as may be practicable, an equal portion of the fish that may be caught each year to be taken by the fishermen of each High Contracting Party.

ARTICLE VIII

Each High Contracting Party shall be responsible for the enforcement of the orders and regulations adopted by the Commission under the authority of this Convention, in the portion of its waters covered by the Convention.

Except as hereinafter provided in Article IX of this Convention, each High Contracting Party shall be responsible, in respect of its own nationals and inhabitants and vessels and boats, for the enforcement of the orders and regulations adopted by the Commission, under the authority of this Convention, on the High Seas embraced in paragraph numbered 1 of Article I of the Convention.

Each High Contracting Party shall acquire and place at the disposition of the Commission any land within its territory required for the construction and maintenance of hatcheries, rearing ponds and other such facilities as set forth in Article III.

ARTICLE IX

Every national or inhabitant, vessel or boat of the Dominion of Canada or of the United States of America, that engages in sockeye salmon fishing on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, in violation of an order or regulation adopted by the Commission, under the authority of this Convention, may be seized and detained by the duly authorized officers of either High Contracting Party, and when so seized and detained shall be delivered by the said officers, as soon as practicable, to an authorized official of the country to which such person, vessel or boat belongs, at the nearest point to the place of seizure, or elsewhere, as may be agreed upon with the competent authorities. The authorities of the country to which a person, vessel or boat belongs alone shall have jurisdiction to conduct prosecutions for the violation of any order or regulation, adopted by the Commission in respect of fishing for sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, or of any law or regulation which either High Contracting Party may have made to carry such order or regulation of the Commission into effect, and to impose penalties for such violations; and the witnesses and proofs necessary for such prosecutions, so far as such witnesses or proofs are under the control of the other High Contracting Party, shall be furnished with all reasonable promptitude to the authorities having jurisdiction to conduct the prosecutions.

ARTICLE X

The High Contracting Parties agree to enact and enforce such legislation as may be necessary to make effective the provisions of this Convention and the orders and regulations adopted by the Commission under the authority thereof, with appropriate penalties for violations.

ARTICLE XI

The present Convention shall be ratified by His Majesty in accordance with constitutional practice and by the President of the United States of America, by and with the advice and consent of the Senate thereof, and it shall become effective upon the date of the exchange of ratifications which shall take place at Washington as soon as possible and shall continue in force for a period of sixteen years, and thereafter until one year from the day on which either of the High Contracting Parties shall give notice to the other of its desire to terminate it.

In witness whereof, the respective plenipotentiaries have signed the present Convention, and have affixed their seals thereto.

Done in duplicate at Washington, the twenty-sixth day of May, one thousand nine hundred and thirty.

VINCENT MASSEY,
HENRY L. STIMSON.