CANADA

TREATY SERIES, 1944

No. 22

SUMMARY

(July 21 and August 5, 1944)

Appendix A: Letter, dated January 41, 1944, from the Intel national Pacific Selawing Period (II. 1944, from the the second of the s

CANADA

THE UNITED STATES OF AMERICA

RECORDING AN AGREEMENT TO FACILITATE THE ASCENT OF THE SALMON IN HELL'S GATE CANYON AND ELSEWHERE IN THE FRASER RIVER SYSTEM

Effective August 5, 1944

the United States to the



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TREATY SERIES, 1944

SUMMARY

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Appendix C: Order in Council, P.C. 5002, of June 30, 100 authorizing the International Pacific Salmon Fisheries Commission to enter into contracts for the execution of Work at Hell's Gate Canyon and elsewhere on the Fraser River to overcome obstructions to the ascent of sockeye 1 salmon
II. Note, dated August 5, 1944, from the Secretary of State of the United States, to the Canadian Chargé d'Affaires a.i. 1944, Washington

EXCHANGE OF NOTES (JULY 21 AND AUGUST 5, 1944) BETWEEN CANADA AND THE UNITED STATES OF AMERICA RECORDING AN AGREEMENT TO FACILITATE THE ASCENT OF THE SALMON IN HELL'S GATE CANYON AND ELSEWHERE IN THE FRASER RIVER SYSTEM

The Canadian Chargé d'Affaires at Washington to the Secretary of State of the United States

No. 266 SIR,

CANADIAN EMBASSY

Washington, July 21, 1944.

Thave the honour to refer to the Convention between Canada and the United for the Bockeye Salmon States for the Protection, Preservation and Extension of the Sockeye Salmon Sisheries in the Protection, Preservation and Extension on May 26, 1930*. Tales for the Protection, Preservation and Extension of the Sockeye Salmeries in the Fraser River System, signed at Washington on May 26, 1930*.

2. Under Article III of the Convention, the International Pacific Salmon deries Comparison of the Convention, the International Pacific Salmon there is a start of the Convention of the Convent 2. Under Article III of the Convention, the International Pacine Balling Commission is required to "make a thorough investigation into the Balling history sockeye salmon, into hatchery methods, Assorting ground conditions and other related matters". The Commission may dispersion of the Fraser River sockeye salmon, into hatchery methods, also recommend conditions and other related matters". The Commission may dispersion may from the conditions are conditions and other related matters. also recommend to the two Governments "removing or otherwise overcoming to the two Governments that may now exist or may from the conditions to the two Governments to the two Governments where Obstructions to the two Governments "removing or otherwise overcoming to time to the ascent of sockeye salmon, that may now exist or may from the stigation may also occur, in any of the waters covered by this Convention, where to time occur, in any of the waters covered by this Convention, the bedesirable, show such removal of or other action to overcome obstructions

3. As a result of extensive investigation the Commission recommended to obstructions to the ascent of the salmon in Hell's Gate Canyon and further the salmon and remedial measures for overcoming obstructions to the ascent of the salmon in Hell's Gate Canyon and further the salmon and remedial measures for overcoming obstructions to the ascent of the salmon in Hell's Gate Canyon and further the salmon in Hell's Gate Canyon by estigations to the ascent of the salmon in Hell's Gate Canyon and rurtue of the salmon and remedial measures for overcoming obstructions to the ascent the salmon elsewhere elsewhere the salmon elsewhere elsewhere els westigation and remedial measures for overcoming obstructions to the ascent of the salmon elsewhere in the Fraser River watershed. It was estimated that would be \$2,000,000, which, in accordance the salmon and remedial measures for overcoming of the salmon and remedial measures for overcoming of the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the Fraser River watershed. It was estimated that the salmon elsewhere in the salmon elsewhere elsewhere in the salmon elsewhere elsew with Article III, paragraph 2, of the Convention, would be shared equally the Commission under date of January 11, signed by the Chairman and secretary of the hereto as a last attached as appendix B is one copy of the attached hereto as appendix A. Also attached as appendix B is one copy of the remedial. a list ached hereto as appendix A. Also attached as appendix 4. The C. A. The C. T

4. The remedial works recommended by the Commendations of the commission as set forth in its letter and report of January 11. A vote of Order in Commended provide for Canada's share of the costs of these works has been cooks in Council P.C. 5002 of June 30, 1944, to let contracts for the remedial large contracts for the remedial contracts for order in Council P.C. 5002 of June 30, 1944, to let contracts for the remedial attached. One copy of Order in Council P.C. 5002, marked appendix by the contract of the remedial attached hereto.

5. The regular procedure for the payment of expenses properly incurred the Commission is that such expenses are paid by the Canadian Government, the fact that such expenses are paid by the Canadian Government, For the text of that Convention see Canada Treaty Series 1937, No. 10.

one-half being recoverable later by Canada from the United States. procedure was agreed to by the United States by your note of December 10, 1931. It is acceptable to the Canadian Courtee by your note of December 10, 1931. It is acceptable to the Canadian Government that this procedure should be followed with respect to expenditures incurred by the Canadian Government that the procedure should be followed with respect to expenditures incurred by the Commission for the proposed remedial works.

- 6. It would appear desirable that the recommendations of the Commission as set forth in its letter and report of I sion as set forth in its letter and report of January 11, 1944, and the arrangement proposed for implementing these recommendations of the Collins approved by Fally approved proposed for implementing these recommendations should be formally approved by Exchange of Notes between the two Countries of the contribution of
- 7. If these proposals are acceptable to the Government of the United States note and your reply thereto acceptable to the Government of the United States this note and your reply thereto accepting the proposals shall be regarded applacing on record the agreement of the true placing on record the agreement of the two governments concerning this matter.

Accept, Sir, the renewed assurance of my highest consideration. L. B. PEARSON.

trusteles sothe Copy encion between Canada and the United montale produced with the montant Enclosures

APPENDIX A

Document No. 1 Letter from the International Pacific Salmon Fisheries Commission to the Canadian Department of Fisheries Sir, January 11, 1944.

In the Pacific Northwest a particularly valuable species of salmon, known as Sockeye, was once so abundant that in 1912 is beginning and pack of almost a quarter of a billion as Sockeye, was once so abundant that in 1913 it produced a pack of be work over forty million dellers. quarter of a billion one pound cans which, at present prices, would be work good pack.

Now, one-cighth over forty million one pound cans which, at present prices, would be work good pack.

The blasting

The blasting of rocks during railroad construction in a narrow gorge of use relief known as Hell's Gate Canyon in the causing grounds. Fraser River known as Hell's Gate Canyon, is charged with causing grounds decline by obstructing passage of the fish to the spawning and the spawning and the spawning that the spawning the spawning that the spawning the spawning that the spawning decline by obstructing passage of the fish to their up-river spawning grounds this canyon even under It is now believed, however, that great numbers of fish were fatally retarded this canyon even under natural conditions.

Canada and the United States created this Commission to rehabilitate as enormous food supply of the two nations. once enormous food supply of the two nations—for though the spawning all lakes they pass through Provided States fishermen. place in Canada, United States created this Commission to rehabitual lakes are in Canada, United States fishermen get first chance to catch they pass through Puget Sound to approach the After intensive.

After intensive investigation it has been conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that for familie almon run to reach the familie familie and surge of water at Hell's Gate Carreto conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that the familie conclusively shown that for familie and surge of water at Hell's Gate Carreto conclusively shown that the familie conclusively shown that the families co rush and surge of water at Hell's Gate Canyon is largely responsible Councely sion finds that construction rush and surge of water at Hell's Gate Canyon is largely responsible Complication of the salmon run to recover its former magnitude. Furthermore, the illustration of so-called fish-ladders at this point in the construction of so-called fish-ladders at this point. The Treaty requires the Commission to the two the two the ments the removal of observables. The Treaty requires the Commission to recommend to the two the termoval of obstructions ments the removal of obstructions. Accordingly the Commission herewith sub-

hits a biological report showing the necessity for action, an engineering report showing the necessity for two million dollars with which showing the action required, and a request for two million dollars with which to accomplish the desired result.(1)

Respectfully submitted,

International Pacific Salmon Fisheries Commission, By EDWARD W. ALLEN,
Chairman.

By EDWARD W. ALLEIN,
Chairman.

A. J. WHITMORE, Secretary.

mission found large sreas apparently suitable valuation cowming

Document No. 2 Recommendation of the International Pacific Salmon Fisheries Commission for overcoming obstructions to the ascent of sockeye salmon, pursuant to the terms of a treaty between Canada and the United States

The International Pacific Salmon Fisheries Commission was created for purpose of a transportational Pacific Salmon Fisheries Commission was created for The International Pacific Salmon Fisheries Commission was created purpose of rehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitating a Pacific Coast salmon run known as the sockeye of the Prehabilitation run known as the prehabilitation run known run kn almon of the Fraser River. In its largest year this run produced almost a quarter of a billion pounds of finest quality canned salmon which at present prices would the salmon of the Fraser River. In its largest year this run produced almost a quality a billion pounds of finest quality canned salmon which at present prices would the salmon which at present prices would be salmon which are salmon which at present prices which we salmon which are salmon which are salmon which at present prices which we salmon which are salmon which are salmon which at present prices which we salmon which are salmo have a value of more than forty million dollars. An eighth of that amount is now tonsidered a good pack.

Among causes suggested for this great decline were need for international railroad construction and damage to the runs by blasting of rocks and by rock slides during the construction of the Fraser River, up which the fish solation and damage to the runs by blasting of rocks and by rock sinces to bust ascend to the runs by blasting of rocks and by rock sinces to bust ascend to the runs by blasting of rocks and by rock sinces to bust ascend to the runs by blasting of rocks and by rock sinces to bust ascend to the round solution of the Commission ascend to the round solution as hillst ascend to reach their spawning grounds. The first function of the Commission was to determine the spawning grounds. construction in the narrow gorge of the Fraction of the Commission was to determine what were the actual causes, next to suggest remedies, and selection of the Commission was to determine what were the actual causes, next to suggest remedies, and selection of the Commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes, next to suggest remedies, and the commission was to determine what were the actual causes and the commission was to determine what were the actual causes and the commission was the commission will be commission. after eight years to regulate the catch.

Sockeye salmon normally spawn in late summer or fall in gravel beds in the upper salmon normally spawn in late summer or fall in gravel beds in the upper fraser and spring area, some 90,000 square miles in extent. The eggs hatch in the upper fraser and when four years old return to the very stream in which they were born, the prefere depends and when four years old return to the very stream in which they were born, bon the to span old return to the very stream therefore depends when four years old return to the very stream in which they were born, bon the run to spawn and die. The production of each stream therefore depends the run to that and die. The production of each stream therefore depends the run to that and die. pon the run to spawn and die. The production of each stream therefore dependence of the run to that stream four years before. In a big river system like the stream four years before are therefore many separate runs the run to that stream four years before are therefore many separate runs the run to the run to that stream four years before are therefore many separate runs the run to spawn and die. raser with its numerous feeder streams there are therefore many separate runs there is. These many feeder streams there are therefore many separate runs is. aser with its that stream four years before. In a big the stream four years before are therefore many separate rundere is numerous feeder streams there are therefore many separate rundere is much overland occur at different times during a season, though in fact there is much overlapping of such runs.

If the salmon had to keep on their way upstream or die and a run lasted when the fish could not was a period of 30 days right at the time of such run the conclusion would be natural that when the fish could not pass up the river, the conclusion would be natural that the Company of the problem is not that simple. However, the the fish could not pass up the river, the conclusion would be natural that the Commission did for the problem is not that simple. However, the delay and that the delay and the delay and that the delay and that the delay and that the delay and that the delay and the delay and that the delay and delay and the delay and delay an the Comwould not pass up the river, the conclusion would not pass up the river, the conclusion would not reproduce itself. The problem is not that simple. However, if the delaysion did find that salmon could only stand a limited delay and that purposes such limit they dropped downstream and were lost for

Purposes.

It was therefore copies of the Reports were presented to each Government by the Commission.

Of July 21. 1944. unnecessary to attach them to the note of the Canadian Chargé

The Commission further found that there were specific levels of the river during which the salmon were unable to get up through the terrific rush of water at Hell's Gate Canyon and that these impassable levels occurred during salmon season, but varied greatly in time, length, and seriousness from year to year. In some years practically all the runs which had survived to that year got through. In other years the entire season was nearly impassable (in 1941) is estimated that one million fish were unable to ascend the Canyon, dropped down below and died). In some years certain runs were affected; others were not.

It was also found that, although Hell's Gate Canyon was by far the most serious obstruction of this character, there were other places in the river system, each of which took its toll. Some forty such obstructions were specifically notes of greatly varying importance, but a much more thorough survey of the serious ness of each, and of conditions at other points where difficulty may exist than the Commission has thus far been able to make, is essential. Moreover, the mission found large areas apparently suitable to salmon spawning which never had been utilized because of some natural obstruction, and that it was probable that an adequate survey and proper remedial action would be the means of open that areas, thereby increasing the productivity of the system beyond what it had ever been.

A most important consideration is that a depleted run of sockeye salmon if given a reasonable opportunity recuperates rapidly. There are, howevel, great areas to which the runs of certain years have been completely destroyed. Such areas require distinctive treatment. Moreover, any measure of redressing order to be effective, will require the aid of regulation of the catch.

Viewing the entire field, the Commission found that it would be uneconomical and unsound, if not wholly futile, to attempt to resort to any recuperative by regulatory measure if the same might in any year be rendered fruitless reason of the restored runs being again depleted by being obstructed in attempted passage up Hell's Gate Canyon or other points of difficulty.

Accordingly, it is essential that as a first step in an orderly rehabilitation of the sockeye salmon of the Fraser River system as a whole that this continuous threat of destruction at Hell's Gate Canyon be removed. After that many runs will promptly proceed to restore themselves and this natural process can be going on while the Commission effectuates its plan to bring back and the produce runs into new areas. Gradual removal of minor obstructions can be carried on concurrently, as biological and engineering studies indicate the corrective action necessary.

These facts and conclusions are the result of six years of intensive investigation of every available source of information from official and commercial records and from one of the largest fish tagging experiments ever conducted, of the thousands of fish having been tagged in salt water and at different parts means river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags these then having been collected by river with observable celluloid tags there were an experiments and the river with observable celluloid tags there were reconstructed by river with observable celluloid tags there were reconstructed by river with observable celluloid tags there were reconstructed by river with observable celluloid tags there were reconstructed by river with observable celluloid tags there were reconstructed by river with observable celluloid tags there were reconstructed by river with river with observable celluloid tags there were reconstructed by river with river were re

Submitted herewith is a biological report from the Commission's (1) staff which presents a remarkable record of investigation and analysis. Director of the International Fisheries Commission, had been Scientific for the accomplishments of that Commission (Halibut) and was largely responsible recognition. He is now the Scientific Consultant for this Commission.

⁽¹⁾ Identical copies of the Reports were presented to each Government by the Canadian d'Affaires of July 21, 1944.

When the Commission became convinced that a basic difficulty in rehabili-When the Commission became convinced that a basic dimetry in reliable to the Fraser sockeye salmon run lay at Hell's Gate Canyon, it not only to the Fraser sockeye salmon run lay at Hell's Gate Canyon, it not only to the Experienced its biological work to bear upon that point but also engaged the experienced fishery engineers available. Milo Bell, the Commission's chief the commission is the commission of engineer, is the only active engineer in either nation who has specialized in fishery consulted history of the control of the control of the assistance of Professor Charles W. Harris, an outstanding hydraulic engineer,

So-called fish-ladders have been in use for many years as a means of enabling to ascend rivers blocked by dams and natural obstructions. The greatest hstallation heretofore made was at the Bonneville Dam on the lower Columbia The fishery devices at the Bonneville are said to have cost approximately justified the expenditure for they have The fishery devices at the Bonneville are said to have cost approximately 1,000,000. Nevertheless, these fully justified the expenditure for they have demonstrated their effectiveness in passing the well known Chinook demonstrated their effectiveness in passing the well known Chinook Revertneless, these factiveness in passing the well known chinden almon up the Columbia. The practical use of fish-ladders is therefore well in the engineering field.

In the engineering field.

Obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted herewith (1), the use of fish-ladders obviate the engineering report submitted her In the engineering report submitted herewith (1), the use of hish-lated holding obviate the Hell's Gate Canyon obstruction is presented. But although the salmer salmer salmer together and value, the cost of the proposed fish-ladders at Hell's Gate Canyon, together the estimates of the proposed fish-ladders at Hell's Gate Canyon, together and overcoming other obstructions and Talue, the cost of the proposed fish-ladders at Hell's Gate Canyon, together the estimated cost of investigating and overcoming other obstructions and the cost of investigating and overcoming other obstructions and the cost of investigating and overcoming other obstructions and the cost of the the estimated cost of investigating and overcoming other obstructions and being the work at D. Cost of the proposals, all together is less than one-third of the cost of work at Bonneville.

The Commission therefore requests a total appropriation of \$2,000,000, one-light from Canada, one-half from the United States, for the purposes above out-Trom Canada, one-half from the United States, for the purposes above the proposed invost. One good year's run restored should produce a catch ten times the entire state invost. One good year's run restored should produce a catch ten times the oposed investment. And under continued and adequate regulation and particular, this enormous food resource should become recurrent year after year in

Respectfully submitted,

International Pacific Salmon Fisheries Commission,

By EDWARD W. A Chairman. By EDWARD W. ALLEN,

A. J. WHITMORE, Secretary.

January 11, 1944.

it (1) Identical copies of the Reports were presented to each Government by the Commission.

of July 21, 1944.

When the Commission becard XICHAPPANA a basic difficulty in rehabili-

Obstructions on the Fraser River watershed, the investigation and improvement of which is recommended by the International Pacific Salmon Fisheries Commission.

Stream	Name of Obstruction and Location	Description and Importance	Remedial Measures
1. Fraser River	Hell's Gate Canyon	Impassable obstruction at certain water levels. Principal spawning grounds of the Fraser system are controlled largely by conditions at this point.	at por
suspensional agen- sile daugdite int witness de died	nowing (4) sameons	point. Two rapids 900 ft. apart. Both serious obstructions to salmon migration below 20 ft. level.* Over ¾ of available spawning area above this point. Formerly bulk of escapement spawned above this obstruction.	river.
\$2,000,000, cac-	to aditainging a la	escapement spawned above this obstruction. Rapids in constricted, canyon-bound channel. Records of sockeye delayed from 1 to 21 days. Blockade forms above 1ft. level on gauge. Commonly inflicts heavy mortality on important Birkenhead run.	water and and
		on important Birkenhead run. Constricted, bedrock channel with fall of 4 to 6 ft. at obstruction. Blockade above 3 ft. level on gauge. Over 15% of Chilko ** run normally lost at this obstacle.	tuntions.
5. Chilko River	Keighley Holes 7 miles above confluence of Chilcotin River.	ft. level on gauge. Over 1370 of Chilko ** run normally lost at this obstacle. Channel between high dirt banks. Large boulders in bed cause fall of 5 ft. at obstruction. Chilko run ** layed at all common water levels.	Remove boulders and the debris from channel, debris from channel, debris from channel, bank to reduce velocity bank to reduce velocity of flow.
6. Quesnel River	Rapids 4 miles below Likely.	obstruction. Chilko run layed at all common water levels. Obstruction caused by tailings from Boullion mine. Present channel is constricted by dumped rock so that velocity of flow is too great for normal passage of salmon.	channel and resuchannel and conditions.
7. Stellako River I	Falls 4 miles above Fraser Lake.	dumped rock so that velocity of flow is too great for normal passage of salmon. A 3 ft. falls located in spawning area is ascended with difficulty. Elimination of obstruction would encourage extension of spawning area to desirable streams above.	Reduce no main channel and river.
8. Bowron River	Gravel bars, mouth of Bowron River.	difficulty. Elimination of obstruction would encourage extension of spawning area to desirable streams above. At low water stages there is not sufficient water on gravel bars to allow salmon to ascend.	for entire how concentrate flow into one main channel.
	Shallow channel. Mouth s of Morris Creek.	Similar to above. At low water channel nearly dry near caused by seepage near mouth. Run commonly demouth. Run commonly debefore able to enter.	oncen main channel

^{*}Hell's Gate gauge.
**Chilko run composes over 80% total escapement, 1940-1941.

Stream	Control of the Landson of the Control of the Contro	- Constitution	Remedial Measures
O. Bois-	End - Antala serios	Name of the case of facilities !	Name of the Parketon
		spawning area. Numerous	prove spawning condi-
I. D	mag - yourup hop mei nol	some are impassable to sal-	3. Nadina River Fran
Douglas Creek	Harrison Lake	Spawning beds scoured by logs	Remove log jams from
2. Rail	continue and redding to fill	and further damaged by floods. Formerly a very important spawning stream.	channel.
	response programmes so	ing area above dam. Sock-	salmon stream. Remove
Mackenzie C.	nolls at I some not a	part of stream.	100 - 100 -
4. Pa	Upper Lillooet River	eye now limited to lower part of stream. Beaver dam located 20 yards from mouth. Sockeye form- erly spawned above dam but now confined to lower	Transplant beavers to non- salmon stream and re move dam.
emberton Creek	mile from month! pr	part of stream.	DIEG 2001 J 6530000 10
5. Silvan	One-mile Lake	Numerous log jams which not only block salmon but en- courage shifting of channel during high water. Formerly supported run of sockeye.	establish channel in form
Creek	Fragas D:	a that	THE PARTY OF THE P
6. Nahatlatch River	P. P	during high water. Formerly supported run of sockeye. Place of difficult passage 1-5 miles below lake. Caused by log jams and rapids. Excellent spawning area above.	Remove log jams and improve channel.
		by log jams and rapids. Excellent spawning area above. Large log jam at outlet of lake and numerous log jams on spawning areas that limit areas used by salmon. Ex-	
17. Momieh River	Adam	tensive spawning area avail- able and formerly produced large run of sockeye.	Tanks.
18. Scotch Creek	Shuswan Tal	Series of rapids ¾ mile from mouth. Sockeye spawn in lower part of creek. Large log jams near mouth of creek. Channel changes fre- quently during high water. Only remnant of former	Install fishpass in channe so that sockeye can as cend to upper regions.
19. Mann Creek	Lake		Remove log jams and es tablish channel.
· cek	North m	large run remains.	
	Thompson River.	Beaver dams near mouth which limits present spawning area. Log jams and dense brush in stream ½ mile from mouth. Present depleted run spawn at mouth.	Transplant beaver to non- salmon stream. Remove dam and log jams. Im- prove spawning area gen- erally.
21. Gates Creek	North Thompson River.	ing area. Log jams and dense brush in stream ½ mile from mouth. Present depleted run spawn at mouth. Large impassable log jams throughout entire spawning area. Channel frequently changes. Few salmon spawn	Remove log jams and es tablish channel. Make general stream improve ments.
	Anderson Lake	in creek at present. Numerous log jams in creek form definite obstruction to migration of salmon. Formerly important spawning area	Remove log jams and improve spawning area.
		but now runs only spawn near mouth.	

Stream	ment of selsels is	Description	Remedial Measure
2. McKinley Creek	Horsefly River		
	. Francois Lake	ous minor ones. Small run of sockeye and spawn in river. Large areas suitable for spawning in upper portion of stream.	pull a Factor
	dans dans sook- dan	crease the spawning area	SDIT ASSESSED AND ADDRESS OF THE PARTY OF TH
5. Kynoch Creek	. Middle River	Impassable log jams 3 to 4 miles above mouth. Important spawning stream of this district.	ver i
6. Rossette Creek.	Middle River	portant spawning stream of this district. Log jams and brush block stream ½ mile from mouth. Formerly good spawning creek but only remnant of former run remains.	Remove log jar condition prove stream condition log jams and for jams and jor jams and jor jams and ja
7. Narrows Creek.	. Takla Lake	creek but only remnant of former run remains. Numerous log jams cause constant shifting of channel. Formerly excellent spawning stream but now nearly void of fish.	Remove log jams and store stream to for condition.
8. Pomeroy Creek.	. Bowron River	stream but now nearly void of fish. Beaver dam at mouth entirely blocks creek to salmon. This stream formerly supported over \(\frac{2}{3}\) of the Bowron run.	Transplant beaver to no salmon stream. Remodern.
9. Indian-point Creek.		stream formerly supported over ½ of the Bowron run. Four beaver dans on creek and spawning tributaries. Formerly important spawning and nursery area. No sockeye can enter creek at present.	

Stream	Location of Obstruction	Description	Remedial Measuring fish
30. Nicola River	Dam at outlet of Nicola Lake.	Description The irrigation dam has a poorly designed fishway and an unscreened diversion channel just above the dam. This was formerly good salmon spawning area.	Install saturation and revolve channel on diversion channel install saturation of instal
31. Adams River 32. Louis Creek	Dam at outlet of Adams Lake. Dam on creek for	unscreened diversion chan- nel just above the dam. This was formerly good salmon spawning area. The old sluice dam, not in use at present, has an inade- quate fishway. The dam is in poor repair and structure is rotten. Fish-way in dam closed during salmon run. Salmon drop back into irrigation ditches back into irrigation disches	Install resions as guants diversions water guants of fish
	C.N.R. water supply and irrigation.	salmon run. Salmon back into irrigation ditches and die unspawned. Many fry are lost in ditches.	during management during proper operation ways.

Stream	Location of	have been consulted with	National Railways,
	Obstruction	Description	Remedial Measures
Barriere River	Hydro-electric project located ten miles above mouth.	usually dry during salmon run. This was formerly a good sockeye spawning area. Flume to turbines is un-	over dam and screen turbine intake.
	se the Internations	screened. Dam is 32 in, high with no fishway installed and during low water is a complete barrier to salmon migration. Unscreened diversion above dam.	Measures Act. is pld
R. Seton C.	Irrigation dam 21 miles from mouth.	dam. The 3 foot dam has no fishway and cuts off the former main spawning area. Also has unscreened diversion.	Install fishway and construct revolving screen in diversion.
	Hydro-electric and water supply.	Fishway now installed is not satisfactory for passage of salmon. Formerly important spawning area; now nearly depleted.	isoliya vilstod din l
7. Conni Lake	Dry channel	Divert Klokkon creek into original channel emptying in- to Conni Lake. Sockeye formerly spawned in this area.	channel.

APPENDIX C

Order-in-Council P.C. 5002

AT THE GOVERNMENT HOUSE AT OTTAWA

FRIDAY, the 30th day of June 1944.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL:

in the Estimates the Minister of Fisheries reports that the ionocuration the Estimates tabled in Parliament for the fiscal year 1944-45: Whereas the Minister of Fisheries reports that the following item appears the Estimates table 1:

Vote 83: To provide for Canadian share of expenses of the International Pacific Science of the International Pacific Scien Pacific Salmon Fisheries Commission to overcome obstructions to the ascent of sockeye salmon at Hell's Gate Canyon, and for investigation investigating and overcoming obstructions to such salmon at other points on the

That a similar sum has been provided for the same purpose by the Corporation of the United States, thus enabling the work to proceed at joint expense;

Northat Derection of the Province of t That a similar sum has been provided for the same purpose by the Govern-tof the United State has been provided for the same purpose at joint expense;

That persons who, in the opinion of the Minister, may be interested in the contemplated at H. H. Canadian That persons who, in the opinion of the Minister, may be interested in the British Columbia the Columbia the Canadian Railway Company and the Canadian British Columbia, the Canadian Pacific Railway Company and the Canadian National Railways, have been consulted with reference thereto and that such persons have no objection thereto provided their interests are adequately safe guarded;

That by arrangements between Canada and the United States all expenditures properly incurred by the Commission are paid by the Canadian Government, one-half of such payments to be recovered later by Canada from the United States Government; and

That it is, by reason of the war, necessary for the security, defence, peace, order and welfare of Canada that the Order hereinafter set forth be made.

Therefore, His Excellency the Governor General in Council, on the recommendation of the Minister of Fisheries, and under the authority of the Measures Act, is pleased, hereby, to authorize the International Pacific Salmon Fisheries Commission constituted pursuant to the Fraser River Sockeye Convention, confirmed by chapter ten of the Statutes of Canada, one thousand pipe thundred and thirty, to enter into contracts in the name of His Majesty in right of Canada for the execution of the work at Hell's Gate Canyon and other points on the Fraser River, British Columbia, for which money is, or is to be, provided by the said Vote 83 hereinbefore set out; and is further pleased to authorize and doth hereby authorize the chairman and secretary of the said Commission to execute any such contract on behalf of the Commission.

A. D. P. HEENEY,

Clerk of the Privy Council.

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and

reimburse the Canadian Government for one-balf of the joint expense properly incurred by the Commission by the Commissio

the full amount of such expenses having been paid by the Government of Canada it being understood that in the settlement of such amounts the procedure now observed by the two governments in selling the joint expenses of the Commission will be followed

The Secretary of State of the United States to the Canadian Chargé d'Affaires at Washington

For the Secretary of State:

THOM: AND SHAW

THOM: AND SHAW

Washington, August 5, 1944.

I have your Embassy's note No. 266, of July 21, 1944, with enclosures, in to the recommendation of remedial measures for overcoming obstructions and remedial measures for overcoming obstructions and remedial measures for overcoming obstructions to the ascent of the salmon elsewhere in the Fraser River system, which, pursuant to Article III of the Convention between the United States and Canada for the Protection, Preservation and Extension of the Sockeye Salmon Fisheries in the Fraser River system, Governments on January 11, 1944, by the International Pacific Salmon Fisheries commission.

As you point out the estimated cost of the works recommended, which was Convention, dollars, would in accordance with Article III, paragraph 2 of the more than the shared equally between the two governments.

the Commission as set forth in its letter and report of January 11, 1944, and ing Fraser River Fisheries Projects" and the first Deficiency Appropriation Act, following appropriation:

"INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

Restoration of salmon runs Fraser River system: For the share of the United States of expenses incident to the work of improving facilities for sockeye salmon migration in the Fraser River by the International Pacific Salmon Fisheries Commission, under the convention between the United States and Canada, concluded May 26, 1930, including personal services; travelling expenses; rent; purchase, maintenance, repair, and operation of not cexceed four motor-propelled, passenger-carrying vehicles; purchase of furniture, instruments, and equipment; construction of fishways; removal of obstructions and stream improvement; construction of warehouse for storage of equipment; and such other expenses as the Secretary of State may deem proper, to be expended under his direction, \$1,000,000, to remain available until expended."

The Department observes from paragraph 5 of your note that it is accept-broperly to the Canadian Government that the regular procedure whereunder expenses one-half incurred by the Commission are paid by the Canadian Government, followed with respect to expenditures incurred by the Commission for the pro-brocedure and subject to the limits of the above-quoted appropriation, will



reimburse the Canadian Government for one-half of the joint expenses properly incurred by the Commission in connection with the remedial works in question, the full amount of such expenses having been paid by the Government of Canada, it being understood that in the settlement of such amounts the procedure now observed by the two governments in settling the joint expenses of the Commission will be followed.

Accept, Sir, the renewed assurances of my high consideration,

For the Secretary of State:

G. HOWLAND SHAW.