



Canada. Parl. H.of C.  
Standing Comm.on Marine & Fisheries, 1957.  
Minutes of proceedings & evidence. 1957

J

103

H7

1957

M241

Canada. Parl. H.of C. Standing  
Comm.on Marine and Fisheries,  
1957.

J

103

H7

1957

M3

A1



HOUSE OF COMMONS

Fifth Session—Twenty-second Parliament

1957

---

STANDING COMMITTEE

ON

MARINE AND FISHERIES

*Chairman:* T. G. W. ASHBOURNE, Esq.

---

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 1

---

BILL 180

An Act to Implement a Convention Between Canada and the United States of America 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, and a Protocol thereto signed at Ottawa on the 28th day of December, 1956.

---

WEDNESDAY, MARCH 6, 1957

---

WITNESSES:

Dr. Loyd Royal, Director, International Pacific Salmon Commission; Mr. S. V. Ozere, Asst. Deputy Minister, Dept. of Fisheries; Dr. J. L. Kask, Chairman, Fisheries Research Board; Dr. A. L. Pritchard, Director, Conservation and Development Service, Dept. of Fisheries.

EDMOND CLOUTIER, C.M.G., O.A., D.S.P.  
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY  
OTTAWA, 1957.

STANDING COMMITTEE  
ON  
MARINE AND FISHERIES

Chairman: T. G. W. Ashbourne, Esq.

Messrs.

Anderson,  
Arsenault,  
Barnett,  
Bell,  
Bennett,  
Boivin,  
Brisson,  
Bryce,  
Cameron (*Nanaimo*),  
Cannon,  
Ferguson,  
Goode,

Hahn,  
Hardie,  
Harrison,  
Henderson,  
Hodgson,  
Kirk (*Antigonish-  
Guysborough*),  
Kirk (*Shelburne-  
Yarmouth-Clare*),  
MacLean,  
MacNaught,  
Maltais

Matheson,  
McDonald,  
Nowlan,  
Patterson,  
Pearkes,  
Rôbichaud,  
Simmons,  
Stick,  
Stuart (*Charlotte*),  
Thibault,  
Weselak,  
White (*Hastings-  
Frontenac*)—35.

(Quorum 10)

J. E. O'CONNOR,  
Clerk of the Committee.

## ORDERS OF REFERENCE

HOUSE OF COMMONS,

JANUARY 24, 1957.

*Resolved*,—That the following members do compose the standing committee on Marine and Fisheries:

Messrs.

Anderson,	Hahn,	McDonald,
Arsenault,	Hardie,	Nowlan,
Ashbourne,	Harrison,	Patterson,
Barnett,	Henderson,	Parkes,
Bell,	Hodgson,	Robichaud,
Bennett,	Kirk ( <i>Antigonish-</i>	Simmons,
Boivin,	<i>Guysborough</i> ),	Stick,
Brisson,	Kirk ( <i>Shelburne-</i>	Stuart ( <i>Charlotte</i> ),
Bryce,	<i>Yarmouth-Clare</i> ),	Thibault,
Cameron ( <i>Nanaimo</i> ),	MacLean,	Weselak,
Cannon,	MacNaught,	White ( <i>Hastings-</i>
Ferguson,	Maltais,	<i>Frontenac</i> )—35.
Goode,	Matheson,	

(Quorum 10)

*Ordered*,—That the Standing Committee on Marine and Fisheries be empowered to examine and inquire into all such matters and things as may be referred to them by the House; and to report from time to time their observations and opinions thereon, with power to send for persons, papers and records.

THURSDAY, February 28, 1957.

*Ordered*,—That the following Bill be referred to the said committee:

Bill No. 180, An Act to Implement a Convention between Canada and the United States of America 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, and a Protocol thereto signed at Ottawa on the 28th day of December, 1956.

WEDNESDAY, March 6, 1957.

*Ordered*,—That the quorum of the said Committee be reduced from 10 to 8 members, and that Standing Order 65(1)(h) be suspended in relation thereto.

*Ordered*,—That the said Committee be authorized to sit while the House is sitting.

*Ordered*,—That the said Committee be empowered to print from day to day 750 copies in English and 250 copies in French of such papers and evidence as may be ordered by the Committee, and that Standing Order 66 be suspended in relation thereto.

*Attest*.

LEON J. RAYMOND,  
Clerk of the House.

## REPORTS TO THE HOUSE

WEDNESDAY, March 6, 1957.

The standing Committee on Marine and Fisheries begs leave to present the following as its

### FIRST REPORT

Your Committee recommends:

1. That the quorum be reduced from 10 to 8 members, and that Standing Order 65(1)(h) be suspended in relation thereto.
2. That it be authorized to sit while the house is sitting.
3. That it be empowered to print from day to day 750 copies in English and 250 copies in French of such papers and evidence as may be ordered by the Committee, and that Standing Order 66 be suspended in relation thereto.

Respectfully submitted,

T. G. W. ASHBOURNE,  
*Chairman.*

THURSDAY, March 7, 1957.

The Standing Committee on Marine and Fisheries begs leave to present the following as its

### SECOND REPORT

Your Committee has considered the following Bill and has agreed to report it without amendment:

Bill No. 180, intituled: "An Act to Implement a Convention Between Canada and the United States of America 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, and a Protocol thereto signed at Ottawa on the 28th day of December, 1956."

A copy of the Minutes of Proceedings and Evidence adduced in respect of the said Bill is appended.

Respectfully submitted

T. G. W. ASHBOURNE,  
*Chairman.*

## MINUTES OF PROCEEDINGS

WEDNESDAY, March 6, 1957.

The Standing Committee on Marine and Fisheries met at 11.00 a.m. this day. The Chairman, Mr. Ashbourne, presided.

*Members present:* Messrs. Anderson, Arsenault, Ashbourne, Barnett, Brisson, Bryce, Cameron (*Nanaimo*), Cannon, Goode, Hahn, Kirk (*Antigonish-Guysborough*), Kirk (*Shelburne-Yarmouth-Clare*), MacLean, MacNaught, Maltais, Matheson, Nowlan, Patterson, Robichaud, Stick, and Stuart. (21)

*In attendance:* The Hon. James Sinclair, Minister of Fisheries; Dr. Loyd Royal, Director, Interprovincial Pacific Salmon Commission; Dr. J. L. Kask, Chairman, Fisheries Research Board; Dr. A. L. Pritchard, Director, Conservation and Development Service, Department of Fisheries; and Mr. S. V. Ozere, Assistant Deputy Minister, Department of Fisheries.

The Chairman, in opening the meeting, expressed his appreciation on his election to the post.

The Chairman read the Committee's Orders of Reference and then suggested that the Committee proceed with its routine motions for organization.

On motion of Mr. Robichaud, seconded by Mr. MacNaught,

*Resolved*,—That a recommendation be made to the House to reduce the quorum from 10 members to 8 members.

On motion of Mr. Matheson, seconded by Mr. Arsenault,

*Resolved*,—That permission be sought to print, from day to day, 750 copies in English and 250 copies in French of the Committee's Proceedings and Evidence.

On motion of Mr. Kirk (*Shelburne-Yarmouth-Clare*), seconded by Mr. Cannon,

*Resolved*,—That the Committee request permission to sit while the House is sitting.

On motion of Mr. MacNaught, seconded by Mr. Stick,

*Resolved*,—That a subcommittee on Agenda and Procedure, comprising the Chairman and six members to be named by him, be appointed.

The Chairman called Bill 180, An Act to Implement a Convention Between Canada and the United States of America 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, and a Protocol thereto signed at Ottawa on the 28th day of December, 1956.

The Minister of Fisheries introduced the witnesses.

The Chairman called Clause 1 and invited Dr. Royal to make a statement.

Dr. Royal, after a brief general statement, answered questions asked by members of the Committee.

At 12.30 p.m. Dr. Royal's questioning concluded, the Committee adjourned to the call of the Chair.

## AFTERNOON SITTING

The Standing Committee on Marine and Fisheries met at 4.00 p.m. this day. The Chairman, Mr. Ashbourne, presided.

*Members present:* Messrs. Anderson, Arsenaull, Ashbourne, Barnett, Bell, Bryce, Cameron (*Nanaimo*), Cannon, Goode, Hahn, Hodgson, Kirk (*Antigonish-Guysborough*), MacLean, Patterson, Robichaud, Stuart (*Charlotte*), and Weselak. (17).

*In attendance:* The Hon. James Sinclair, Minister of Fisheries; Mr. S. V. Ozere, Assistant Deputy Minister, Department of Fisheries; Dr. J. L. Kask, Chairman, Fisheries Research Board and Dr. A. L. Pritchard, Director, Conservation and Development Service, Department of Fisheries.

The Chairman after observing quorum, announced to the Committee that the following members shall comprise the Subcommittee on Agenda and Procedure: Messrs. Ashbourne, Barnett, Goode, Hahn, MacNaught, Nowlan, and Stuart (*Charlotte*).

*Ordered,*—That a document entitled "Protocol of Exchange of Ratifications of the Convention for the Protection, Preservation and Extension of the Sockeye Salmon Fisheries in the Fraser River System" be tabled and printed as an appendix to this day's proceedings and evidence.

The Chairman called Clause 1 of Bill 180 and introduced Mr. Ozere and Drs. Kask and Pritchard.

Committee members questioned witnesses concerning the conservation of salmon in the Pacific area and the operations of the Department of Fisheries and the International Pacific Salmon Commission.

Dr. Kask made a brief statement concerning fisheries experiments in the Province of Ontario.

Questioning of the witnesses continued and reference was made to the problem of power development on salmon rivers.

Following discussion, Clauses 1 to 11 were adopted.

The Schedule, Protocol, Title and Bill were adopted and the Chairman ordered to report the Bill without amendment to the House.

J. E. O'CONNOR,  
*Clerk of the Committee.*

## EVIDENCE

WEDNESDAY, March 6, 1957.  
11 a.m.

The CHAIRMAN: The meeting will please come to order. Gentlemen, I notice that we have a quorum present and I would like to say how appreciative I am for the high honour you have conferred upon me in electing me as chairman of this committee.

Our order of reference reads as follows:

That the Standing Committee on Marine and Fisheries be empowered to examine and inquire into all such matters and things as may be referred to them by the house; and to report from time to time their observations and opinions thereon, with power to send for persons, papers and records.

Thursday, February 28, 1957, ordered that the following bill be referred to the said committee:

Bill No. 180, an act to implement a convention between Canada and the United States of America 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, and a protocol thereto signed at Ottawa on the 28th day of December, 1956.

Leon J. Raymond,  
*Clerk of the House.*

Now there are certain organizational and routine matters which have to be dealt with. The first one is a motion with regard to a quorum.

Mr. ROBICHAUD: Mr. Chairman I move that a recommendation be made to the house to reduce our quorum from ten members to eight members.

The CHAIRMAN: Thank you. It has been moved by Mr. Robichaud and seconded by Mr. MacNaught that a recommendation be made to the house to reduce our quorum from ten to eight members.

Motion agreed to.

Mr. MATHESON: Mr. Chairman, I move that permission be sought to print from day to day 750 copies in English and 250 copies in French of the Committees' proceedings and evidence.

The CHAIRMAN: Thank you Mr. Matheson. You have heard the motion by Mr. Matheson seconded by Mr. Arsenault. Are you in favour?

Mr. GOODE: Before you ask for a vote, Mr. Chairman, I would like to have your guidance in regard to the number of copies of the daily reports of this committee which are made available to the members of the committee themselves. With some committees we have an arrangement for 25 copies of the proceedings of any given committee to be made available to the members who sit on that committee but it has not always been carried out especially in the case of the external affairs committee. Therefore I would like to have an understanding from you.

The CHAIRMAN: Well, Mr. Goode, in reply to your enquiry I think that the number which the committee has asked for in the motion, namely 750

copies in English and 250 copies in French would be adequate. I would judge that it is up to the members of the committee to make their requisition as early as possible after the records are printed and are available for distribution in order to get the numbers they require. I am not sure myself as regards the number that is allotted to each member. Perhaps the minister knows.

Hon. Mr. SINCLAIR: I understand there has never been any limit on committee proceedings which individual members of the committee wanted. I think there has been an understanding for about 25 copies but it depends entirely on how many you ask to have printed at this time.

The CHAIRMAN: Does that satisfy your question, Mr. Goode?

Mr. GOODE: Not very well because I am very hard to satisfy. A lot of us on this committee have a large congregation of fishermen in our ridings, and I asked this question on a purely personal basis. I think we should have some understanding, perhaps non-official, with the chairman of this committee that he might see the appropriate authorities and give each member of the committee at the outset 48 hours to make his own arrangements after publication of each copy of the minutes of this meeting. Most of the members have large fishing populations in their ridings and they are naturally interested in it. If you could take it upon yourself, Mr. Chairman, to have an unofficial understanding with those who handle these things, it will be quite satisfactory.

The CHAIRMAN: I shall be glad to do so.

Mr. MACNAUGHT: I do not think there would be much difficulty because members of the committee, for example, from the east coast would not have the same interest in it as members from British Columbia. For my part I would be quite pleased to give any copies to which I am entitled to Mr. Goode or to any of the British Columbia members because my fishermen are not so much interested in pink salmon.

Mr. GOODE: We have been all through this in external affairs only to find that there were two copies for each member of the committee after we got through.

The CHAIRMAN: Shall the motion carry?

Motion agreed to.

The next motion is with respect to seeking permission to sit while the house is in session.

Mr. NOWLAN: Before that motion is put I have a protest to make to you about our meeting at this time. I know the practice with the opposition parties has been to have caucus meetings every Wednesday morning, and that has been the case as far as I recall in the short time I have been here. This is the first time except in the pressure of the last few days of a session when a standing committee of the house has been sitting on a Wednesday morning. It has always been an unwritten convention that Wednesday mornings be left open. Moreover, I think there is usually a caucus of the government party as well on Wednesday morning. Speaking for most of the official opposition we do not like having a committee meeting on Wednesday morning unless there is a very grave emergency or unless it has to be done to suit the convenience of a witness or something like that. I would like to meet the minister and yourself half way in continuing with our meeting now and then adjourning until this afternoon. I think we should adjourn this committee after we have formally organized it and then report to the house this afternoon and seek leave to sit while the house is sitting, and thus adjourn until this afternoon.

Hon. Mr. SINCLAIR: I am neither a member of the committee nor a witness. I came here only to introduce the officials of my department. However, it was at my request that this meeting was called at this time. Members of the C.C.F.

and of the Social Credit parties spoke to me yesterday and pointed out this thing. We are very anxious to get this bill approved as quickly as possible because we want it to be in effect for this fishing season.

Dr. Royal, the director of the International Pacific Salmon Fisheries Commission has his headquarters in New Westminster. As soon as the bill passed I wired Dr. Royal to ask him when he could get down here. He replied that he had a long standing engagement in Washington D.C. on fishery matters on Thursday and Friday but that he could come here either today or come back from Washington next week. I felt in view of the urgency of this bill that we should have our meeting here today.

I appreciated that it would mean the absence of one or two from each party caucus but the choice was either that or to dispense with Dr. Royal's evidence. I think since he is the director of the International Pacific Salmon Fisheries Commission his evidence should be proceeded with today.

Mr. NOWLAN: Can it not be taken this afternoon?

Hon. Mr. SINCLAIR: It would be a choice of either hearing him today or having him come back here from Washington next week.

Mr. CAMERON (*Nanaimo*): Would not a meeting this afternoon be satisfactory?

Hon. Mr. SINCLAIR: As I said, I am not a member of the committee.

Mr. HAHN: The minister has indicated that it was one of our party and one of the C.C.F. party who discussed the matter with him, and that we did point out to him, as Mr. Nowlan has indicated, that there were caucus meetings this morning. However in view of the urgency of getting this bill forward we recognized the fact and we are very anxious to go ahead with the meeting. Personally I prefer to carry on this morning and finish with it if at all possible because I find that this afternoon certain estimates are to be before the house in which I am very interested. Of course that might not apply to all the members of the committee. But if it is at all possible I would certainly urge that we carry on with Dr. Royal and get his information before us and carry on until at least 12.30. Then possibly if there is anything further, we might carry on this afternoon.

Mr. KIRK (*Shelburne-Yarmouth-Clare*): I move that the committee request permission from the house to sit while the house is sitting.

The CHAIRMAN: It has been moved by Mr. Kirk and seconded by Mr. Cannon that we request permission from the house to sit while the house is in session.

Motion agreed to.

Next will be a motion to establish a sub-committee on agenda and procedure.

Mr. MACNAUGHT: I move that a sub-committee on agenda and procedure comprising the chairman and six members to be named by him be appointed.

The CHAIRMAN: It is moved by Mr. MacNaught and seconded by Mr. Stick that this motion be adopted. Are you ready for the question.

Motion agreed to.

Now we have as witnesses Dr. Loyd Royal, Director of the International Pacific Fisheries Commission, Dr. A. L. Pritchard, Director of Conservation and Development Services of the Department of Fisheries; Dr. J. L. Kask, Chairman of the Fisheries Research Board and Mr. S. V. Ozere, Asst. Deputy Minister of the Dept. of Fisheries.

I shall now call the bill, which is bill 180, an act to implement a convention between Canada and the United States of America 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, and a protocol thereto signed at Ottawa on the 28th day of December, 1956.

I am glad we have the Minister of Fisheries with us this morning. As he has explained to us, it was at his suggestion that the meeting was called today. I would be glad if he would now introduce the witnesses to the committee.

Hon. Mr. SINCLAIR: Mr. Chairman and members of the committee; as I pointed out, I am neither a member of the committee nor am I a witness. When the bill was before the house I promised to have the technical experts of the fisheries department here so that you could question them directly. There is just one thing more. I promised at the resolution stage to have copies made of the original protocol of exchange requested by Mr. Barnett. These are copies made from our records.

We have four of our experts here. Mr. Loyd Royal, will you stand up please? He is from New Westminster and he is director of the International Pacific Salmon Fisheries Commission. Without flattering him I can say that he is regarded in the fisheries world as one of the ablest men in the fishing industry. Dr. J. L. Kask is chairman of the Fisheries Research Board. He has worked for both the west coast and the international commission.

The Deputy Minister of Fisheries, Mr. Clark, is at the west coast at the present time in connection with this agreement to ban off-shore fishing, but we have the Assistant Deputy Minister, Mr. Ozere with us. We also have Dr. A. L. Pritchard, director of Conservation and Development Services, Department of Fisheries. I expect that Dr. Royal will be your principal witness. As I pointed out, Dr. Royal has just come from attending a meeting of the five governments in Seattle last week which dealt with this matter of banning off-shore fishing because it was such a threat to the techniques of establishing conservation there. He is also an authority on this matter, and I am quite sure that you will be very interested in the evidence which he will give.

The CHAIRMAN: We would be very glad if Dr. Royal would come up to the head table. Clause 1 is before the committee.

Mr. CAMERON (*Nanaimo*): Well, Mr. Chairman, are we not going to have a statement from Dr. Royal?

The CHAIRMAN: Yes, I think we might.

**Doctor L. A. Royal, Director of International Pacific Salmon Fisheries Commission, called:**

The WITNESS: Mr. Chairman and hon. members, the pink salmon protocol was brought about primarily because of the increasing economic demand for pink salmon destined for the Fraser river and reproduced there. Pink salmon do exactly what the sockeye do; they migrate from the high seas into the straits of Juan de Fuca which are international waters, and then into the Puget Sound, which is strictly the State of Washington, and the United States waters, and then back into the Fraser river, where they proceed upstream to spawn.

They were subject to exactly the same decimation, as a result of the Hell's Gate slide, which is famous all over North America. But because of the relatively poor quality of pink salmon when taken in inland waters of Canada, they were not a major economic factor to the Canadian government, or to the Canadian people, until the new fishery was established in the Strait of Juan de Fuca, and a market was established for these fish in the United States.

The pink salmon decimation was about 80 per cent. The index of abundance in 1913 was approximately five times that of the index of abundance after that date. After this original decimation the pink salmon remained

at a fairly consistent level until the new demands on the part of the fishing industry of both countries, and the competitive fishing that grew up as a result of those demands between the fishing industries of the two countries, created a very serious situation which may have led to serious over-fishing even in 1955.

I understand the pink salmon only run every other year, so far as the Fraser river is concerned. Farther north they run every year. There have been some attempts by the Department of Fisheries of Canada to introduce an even year run.

The situation regarding pink salmon is a serious one, unless unified control regulations and management is brought about. The Salmon commission which has been responsible for the sockeye salmon, has been very fortunate in having only one species to deal with, and one river. And that, I think, has been the principal reason for success.

We are not seeking further power, but we would acquiesce, naturally, to the will of the two countries when a similar problem of equally serious magnitude arises, such as has arisen with the pink salmon of the Fraser river.

I could say that the fishways which started the rehabilitation of the sockeye have started the rehabilitation of the pink salmon as well. Already the Department of Fisheries records show several hundred thousand pink salmon spawning above Hell's Gate. That is the area so far as I can tell—although history is a little obscure about pink salmon—that produced many times the present total production of pink salmon in the Fraser river.

Early records show that millions of pink salmon spawned in the upper Fraser, particularly in the Thompson or, I should say, the main Thompson river; so that international control is extremely important.

Just how that control can be brought about seems to be best represented by the sockeye condition. I might have different comments to make in respect of any other species, especially in view of the wonderful meeting we had at Seattle, where the high seas troll fisheries, or regulations for the high seas troll fisheries were set out between the two governments on a very informal basis. At this time the minimum size limit was set out very informally—the limit for high seas troll fishing. Also the high seas net fisheries from the Behring Sea to San Diego were closed, with a minimum of formality.

Here in the case of the pink salmon we have the problem of day-to-day regulations, the problem of dividing the catch equally between the two countries. The commission found that that must be, in a sense, almost as important as the rehabilitation itself, because it eliminates the competition between fisheries. And when we make an emergency closure with little or no notice, not only for rehabilitation but for the division of the catch, the fact that we have a number of years of record behind us to show that we were right creates faith with the fishermen; so that even though they may not think we are right, they will say, "Well, they have always been right up to now, and until they are wrong we will make no objection".

So that that delicate control of the pink salmon is necessary to the rehabilitation of the species which, incidentally, can become just as valuable as the sockeye in the Fraser river.

I need not dwell upon the fact that the Fisheries commissions have been the leaders in the settling of international affairs, for the rest of the world to follow. The commission itself is not in two sections; there is not a Canadian section and not an American section. It is a fraternity, and it has always operated in that way.

I should be glad to answer any detailed questions any hon. members may wish to ask. I trust that this will give you the basis behind the presentation of this measure for your approval.

*By Mr. Stick:*

Q. Mr. Royal, when you speak of pink salmon, do you mean sockeye salmon only, or are there other species of pink salmon in British Columbia?—A. The pink salmon is the common name which refers to one of five species of salmon. The common names for the five species is first, the sockeye, of which the commission has presently control. Sockeye matures at four years of age and the pink salmon matures at two years of age. Then there is the coho salmon which usually matures at three years of age and also spawns in the Fraser river. There is the chum salmon which matures at three, four or five years of age and spawns in the Fraser river. It is sometimes called the dog salmon and spawns principally below Hell's Gate. Then there is the spring salmon which is given a number of names, one of which is the tyhee, which matures from three to six years of age and it is one of the principal sport fishes.

The chum pink and the sockeye are the commercially economical fishes and the other two are sport fishes.

*By Mr. Stick:*

Q. Then this agreement applies to all those species of salmon that you describe as pink salmon?—A. This agreement is to include the pink salmon in the present convention covering the sockeye salmon. It does add in Article VII of the protocol, which reads as follows:

Nothing in the convention or this protocol shall preclude the convention from recording such information on stocks of salmon other than sockeye or pink salmon as it may acquire incidental to its activities with respect to sockeye and pink salmon.

If there is any need for cooperation with the existing agencies with respect to these other species we would be most happy to give that. On the other hand, the circumstances with the other three species are entirely different. The Americans in their territorial waters do not catch large numbers of these other three species. They do catch them on the high seas, but the problem of competitive fishing can best be handled between the two national groups themselves in these informal conferences rather than in formal meetings as regards the sockeye and pink salmon.

Q. This treaty is between the United States and Canada only?—A. That is right.

Q. What have you done regarding Japanese fishermen, or Russian fishermen? Have you done anything about that?—A. There is reason to believe, on the basis of existing knowledge, that no Fraser river salmon is involved in the western Pacific where the Japanese fish. However, the Japanese treaty would protect Canada and the United States, if any of the Fraser river species were taken by the Japanese under their existing fishing agreement. But at present the Japanese abstain from fishing any salmon, halibut or herring in the entire eastern Pacific.

*By Mr. MacLean:*

Q. Did I understand, Dr. Royal, that you said pink salmon migrate in the Fraser river only every second year?—A. That is true.

Q. Has this always been the case, or does it mean that the population of salmon that would normally migrate in the alternate years have been completely wiped out?—A. In the history of man there has never been, to our knowledge, an even year run of pink salmon in any stream, either in Canada or the State of Washington, south of the Johnstone strait. As you proceed to the southern part of the province, you also proceed to the southern limits of the range of pink salmon. Puget Sound streams are the extreme southern limit of the range of the pink salmon. There are no pink salmon, for instance, in the Columbia river, which is so famous for other species.

Just whether or not a run of pink salmon can be built up every year is a matter for science to determine. As I have said, the Department of Fisheries has transplanted some even-year pinks to a tributary of the Fraser river, and have got a remarkable return back. But there has never been a natural run, to the knowledge of man.

Q. I understood you to say that there is in the northern rivers?—A. There is a run every year in the north, also in Asia.

*By Mr. Goode:*

Q. You spoke about competitive catches. How do you propose, or how do Canada and the United States propose to control competitive catches between fishermen on the Fraser river, for instance, and United States fishermen fishing just outside the Fraser river?—A. It would be handled in exactly the same way as we do with the sockeye. The intensely known fishing area designated by each country is recognized. The legal type of gear authorized by each country is recognized. Its efficiency in catching fish is recognized, with the number of expected units. And the season is set in each country and in each area. This is to bring about two things, the first of which is to bring about adequate escapement of each race of sockeye or pink salmon, and also to end the season with an equal division of the catch, without over-fishing or underfishing any particular race. You cannot say, "We will go only two-thirds of the season," for instance, and if Canada is behind, then we would catch up in the last quarter of the season. Because you have different races than you had when you were over-fishing or under-fishing. You have to keep balancing it up by emergency regulations throughout the season. It has worked very successfully. I might say in the last eight years the difference between the catch of the two countries is less than half of one per cent. Last year I believe it was considerably less than half of one per cent. It was in the neighbourhood of about 20,000 fish difference, in the fifty-fifty division, in the total catch of 1,800,000 sockeye. The same principle would be followed.

Q. Let us take a later day, or a month after the fishing season has started, when we will suppose the Americans have caught 5,000,000 fish—and I am using rough figures—and the Canadians then have caught 2,500,000; how do you propose, then, to equalize the catch?—A. I do not think you can do it effectively, if you let it go that long. You would have to make regulations before that date.

Q. When would these regulations be made? Let us say that the situation prevails two weeks after the fishing season starts; what would you do?—A. If the Americans were 2,500,000 ahead, and we knew, according to the historic situation between the fisheries of the two countries, that the Canadians could not catch up, the Americans would be arbitrarily closed for the time necessary for the Canadians to make their share of the catch.

Q. You just take the American fisherman right off the water?—A. You take them right off the water, with 24 hours' notice.

*By Mr. Barnett:*

Q. I wonder if I might ask Dr. Royal one or two questions on points about which I am not quite clear. I am interested in what relation the run of pink salmon through the Johnstone strait system has to the Fraser river system. Is there any substantial portion of the pink run that enters the Fraser, which comes down through Johnstone strait and into the Strait of Georgia, rather than following the south end of Vancouver island? I think that is something rather important for us to understand, in this question of equal division of catch.—A. It is open to some question, as to the exact percentage of pink salmon destined for the Fraser river, which come through Johnstone strait. But Johnstone strait is definitely outside the convention waters, and any catch in that area is not included in Canada's 50 per cent share.

Secondly, it does provide for a portion of the escapement, and it would provide to the Fraser river gill-net fisheries, after it got into the convention waters—that is, after the run coming south got into the convention waters—it would provide a share of the fish count, to offset the American catch. The convention water lies—in other words, the international waters which we would control specifically exempts all of Johnstone strait and a considerable portion of the water of the Gulf of Georgia south of Johnstone strait.

So, whatever goes on up there is of no concern to the commission. We are only concerned in the amount of fish that escapes the fishing up there and might provide escapement to add to the run that comes around through the other way.

Q. You have not any exact statistics on the proportion of the run that enters the Fraser river that does at the present time come in that way?—A. No, it has been confused, and it will take a great deal of a certain type of scientific work to measure that, because there are other streams than the Johnstone strait that support substantial runs of pink salmon. Those are of strictly Canadian concern. The same applies to southern Puget Sound.

If you leave this international area, there are streams in southern Puget Sound. And if there are fish left that can be taken as they approach these streams, those will not count in the division either. It is only fish that are taken in convention waters.

*By Mr. Cameron (Nanaimo):*

Q. Has there been a special agreement about uniformity of gear as between Canada and the State of Washington?—A. I would say yes. As a matter of fact the international agreement did not come about until the gear was standardized. The trap fisheries gave the United States a very decided advantage. But that was voted out by public initiative in 1934, and went into the act in 1935, and the sockeye treaty immediately followed, and this happy state of affairs has continued for nineteen years. There has never been a nationalistic question raised. There has never been any jealousy. There has never been any ill-feeling between the fishing industries of the two countries. They sit down at a table, like they did at Seattle—and in two short days on that occasion they worked out many major problems including closing the entire high seas and the territorial waters adjacent thereto at the west coast of Vancouver Island, outside of along the Pacific coast. This was done without any arguments other than just technical discussion. It is a very happy situation. But both countries have purse-seines and gill-nets, and those two are the major forms in relation to either of these species you are talking about.

*By Mr. Hahn:*

Q. I am interested in the statement you gave Mr. Barnett a few moments ago. Do we understand that working on the fifty-fifty basis of the catch, that would not take into consideration any fish that the Americans might catch in the Puget Sound area, or what the Fraser river fishermen might catch as gill-netters on the Fraser river itself?—A. No. All the Fraser river gill-net catch—this map is not very large, I may say; however, the shaded area is the convention water area we are talking about. Here is the area indicating the high seas which is now closed to all net fishing. So that there would be neither Canadian nets nor American nets outside of this area. Here is the Strait of Juan de Fuca, including the northern areas of Puget Sound, the Strait of Georgia and San Juan islands. This is American waters. These are Canadian waters immediately adjacent to the Fraser river. Any fish caught in that area would be included in the provision calling for some division of catch. Any fish destined for the Fraser river—that is, north of this line, in words up to Johnstone strait, would not count; and any fish that got by the Canadian gear,

and then by the American gear, and got into the southern part of Puget Sound, south of Mount Vernon, would not be included provided the Americans felt that they could still catch fish after the fishery got through with them out here.

Frankly, I think the day has come when this fishery will be dead; there will not be any fish left, other than the required escapement. So that this will be a basic fishery.

Q. How about the Fraser river itself?—A. The Fraser river itself counts toward the division.

Q. It counts toward the division?—A. Yes, it is the same situation with pink as it would be with sockeye. We do not count the sockeye in Johnstone strait. We do not have any sockeye runs in southern Puget Sound. There are substantial pink salmon streams in that area.

Q. How would you regulate the control of them within the Puget Sound area and the Fraser river itself? Would you include the whole of the Fraser river area and the Puget Sound area, as well as the area south of Johnstone strait, let us say—convention waters—as one closure area at one time, or will there be specific fields that would have to be closed?—A. There will have to be a synchronization of closure. Naturally we would not close all our Canadian waters unless it was absolutely essential. We would not close all the United States waters unless it was absolutely essential. It would be worked out in conjunction with our industrial advisory committee, combining the knowledge that we have and the needs for racial escapement. We might find a new race was coming out here that has not been fished at all, and another race that we tended to over-fish is passing through here. So that we might regulate it here, and not regulate here, or vice versa. We might regulate in all Canadian waters, but not regulate in United States waters or vice versa.

Hon. Mr. SINCLAIR: Dr. Royal, would you explain the word "race"? It is a term with which all members of the committee might not be familiar.

The WITNESS: Well, the race of any species of salmon is the population of fish which, roughly speaking, spawns in a specific stream, generally under the same environment. And it has adapted its timing of migration from the sea to that stream so that it will arrive at the proper time to reproduce at a maximum; and it is a separate population.

Once you destroy one of these races, it does not matter whether twenty miles away you have another large population, or not, that population may not be suited to replace the one you have destroyed. So that you have to treat each one of these populations separately, and consider them just as important as any individual new population, as if you were dealing with Bristol bay sockeye and Fraser river sockeye.

That is one of our major problems in these times. No one population of a given species has the same tolerance to change as another race would have. Because you must remember, these are cold-blooded animals with which we are dealing and there is every reason to believe that everything they do has an inherent response to and is tied in with the sun, which sets the cycle. So that we have to treat each one of these separately. It is very important that we do so. We have certain races that are exterminated—certain races of sockeye that are exterminated on the Fraser river. We tried to get them back by using a very careful selection of brood stock. They do not eat after they leave the sea until after they arrive in water of exactly the same temperature.

Now, we are having some success with transplanting these populations, but there is 40 years of history relating to hatchery operation on the Fraser river that shows no benefit whatsoever. For that reason the Canadian government closed them.

*By Mr. Hahn:*

Q. One more question before we leave that; in regard to the escapement of fish, has the commission found, in the case of sockeye, that it is desirable to have a continued escapement, or would you do your heavy catching early in the year, or late in the year, or let the later sockeye by, in respect to the escapement for spawning purposes? Just how is it regulated?—A. You have each race migrating about 30 days, with the bulk of the fish passing in about five days. Now you have populations passing through from June 20, we will say, to November 1, so you have a series of races, some of which are almost separate. Then you have several that overlap one another. In regard to those that overlap, the only way you can get an adequate and proper escapement of each and every race is to have a continual weekly escapement. Contrary-wise, the great Adams river run, which produced 10 million fish in 1954, runs in almost exclusively by itself, so we treat that as a unit. So, in this case we get our escapement in four days, for the entire run, and when it starts to pass up the Fraser river the season is closed. As a matter of fact, a million and one quarter fish went up the Fraser river in 24 hours.

*By Mr. Patterson:*

Q. There is another question allied to this. I do not know whether it should be directed to Dr. Royal or to one of the officials of the department, but in 1954, I believe, an announcement was made to the effect that early closure methods were to be put into effect. There were two methods; one was conservation, and the other was closure. Is there any data available which would indicate the success or otherwise of those methods?—A. I will have to refrain from answering that question, because it was not promulgated by the commission.

Q. That is why I wondered if it was a proper question to direct to Dr. Royal.

The CHAIRMAN: There are two other witnesses, Mr. Patterson.

*By Mr. Goode:*

Q. You did say, Dr. Royal, that there was a poor quality of salmon in inland waters. I was thinking along the same lines as Mr. Patterson; what do you mean when you say "inland waters"? Could that mean some part of the Fraser river?—A. Certain races of fish that migrate straight through—in other words, that proceed immediately from the high seas up the Fraser river—do not deteriorate greatly in quality.

The quality of a salmon is set by the amount of oil that it has in its muscles. That oil is the energy it uses to live and to migrate, and to spawn before it dies. That energy is fixed, and is not replaceable. Now, if the fish comes in later in the season, like the Adams river sockeye, and lies off the mouth of the Fraser river—in the fresh water area—for as long as three weeks, that fish has deteriorated in quality, and does so at a very rapid rate. So that there is a difference in quality between the fish caught fresh out of the sea, and those caught in the river fishing areas. So, as you proceed through the season—and I am speaking of sockeye now—the later races present a problem in regard to quality when caught in the Fraser river.

The question of quality has come up many times in the commission's hearings over the regulations in respect of the late-running sockeye. The American packers had never really understood what it was about. A group of them were up on the Fraser river at the time this one and one quarter million sockeye went up the river. They then said that they thoroughly understood the problem, after looking at the fish which we were catching. We were measuring the escapement, because there was no commercial fishing going on. They understood then that the quality had to be considered in respect of late-running fish in Canadian waters.

In regard to late-running fish of various species there is definitely a quality problem as to where they are taken. In early runs there is no quality problem of any consequence.

Q. May I proceed with that question? What do you mean, then, when you say that some salmon is of poor quality in inland waters? What do you mean by "inland waters"?—A. "Inland waters" would relate to this delaying area, such as off the mouth of the Fraser river, and in the Fraser itself.

Q. And in the Fraser itself?—A. Yes. As a matter of fact, you would have difficulty in marketing the pink salmon caught in the Fraser river proper, on the American market, because of the deterioration in quality as compared to the quality of the American catch, caught in salt water.

Q. May I ask another question on that, because, as Mr. Patterson indicated, it is very interesting to those of us who live on the Fraser. I would like to have this clear: you say that pink salmon, if it is shipped from Canada to the United States market, the United States market is not ready to accept the pink salmon from the Fraser river itself. Is that what you just said?—A. I would say that they would not accept them, on a competitive basis with their own.

Q. Because of the quality?—A. Because of the deterioration in quality.

Mr. HAHN: Mr. Chairman, I am interested in that subject, as well, before we leave it. Am I to understand from your remarks, Mr. Chairman, that we will be leaving Dr. Pritchard and Dr. Ozere Later?

The CHAIRMAN: Yes, they will be here as witnesses.

*By Mr. Hahn:*

Q. There is one question arising out of an answer that Dr. Royal gave to Mr. Goode in respect to quality, and relating to what I asked earlier. From the statement Dr. Royal just made, am I to take it that it would be preferable to have a late escapement rather than an early escapement, because a late escapement is possibly not as good a quality as an earlier run, and thereby we can expect some closures in the late season?—A. No, that is not true. We have to get back to the fact that you are dealing with specific populations all the way through the season. The earlier populations, for some reason, will go right up the river. Actually you can catch the fish at Hells Gate, and they would be competitive with the American market, but that is with regard to sockeye. But the pink salmon come in late, and they, together with the late sockeye, enter the Gulf of Georgia and drift back and forth from, we will say, Point Grey down towards Saturna island, and gradually, day by day, they will come in closer to the sheltered waters in the mouth of the Fraser. In the case of the Adams river sockeye, the peak period is from about August 25 to September 10 or 15, when the entire population will move up the Fraser river just like trained seals. In the meantime, they have deteriorated from, what has been considered to be one of the best populations of sockeye for canning, to one of the poorest, by this time.

Now, they have still got oil left to migrate from, we will say, New Westminster to the Adams river, which is 300 miles, but they had a lot more oil then than when they arrived off the mouth of the Fraser river. This happens just the same in respect to the pink salmon. They delay in the mouth of the Fraser, and even further away than the mouth of the Fraser, for a while, when they first arrive. At this time they are just as good as if they were caught at Pt. Roberts. It is only after this migration begins, and after they have laid there for a long period of time, that they begin to deteriorate.

Q. It is the relationship to the pink salmon that I was interested in.—A. We like to get our escapement from the peak of each race, but due to the overlapping of so many races, we cannot always do that.

Q. So you would prefer to have all your catch caught early in the season so that we get our best quality in our canned salmon?—A. No. It is a matter of where you catch the fish. It does not make any difference, early in the season, where you catch the fish, whether it is away up the river, or out in the ocean. But, as the season progresses, then you do have to worry about the quality of the fish in the river, having regard to the competitive market, because of this delay period. But, they are different fish than the ones you are dealing with earlier.

Q. Perhaps I should have rephrased my question by including "early in the race of that particular species"?—A. Yes. It is better to catch the first part of the run, and get your escapement from the peak. We do not like to take our escapement from the later portion of the run, because, like any population of animals, you have got what we call normality—which represents the bulk of the run—and then you have got variants on each side, which are not functioning quite right. This applies whether it is human beings, or grasshoppers, or anything else.

Q. By doing that you can regulate the escapement better, can you not?—A. Yes.

*By Mr. Cannon:*

Q. Why do they deteriorate, as you say, and lose oil? Is it because they do not eat?—A. Because they do not eat.

Q. Because they do not eat?—A. Yes.

Q. That is what I thought. I just wanted to make sure of that.

*By Mr. MacNaught:*

Q. Dr. Royal, would you care to make a statement on the effect of the Fraser power dams on the work of the commission?—A. Yes, I would particularly like to make a statement in order to bring home the need for arriving at an equitable settlement with the United States in respect of the Columbia river, more than anything else. Because, without a settlement in respect of the Columbia river, it may be necessary to have power dams on the Fraser river, and there is no answer to the problem of fish versus power on the main Fraser. You cannot, for instance, have one dam on the Fraser river. You can talk about building one dam on the Fraser river, but you have got to have several. Anyone, who is an engineer, knows that when you have a spring flow of 280,000 cubic feet per second, and a winter flow of 12,000 cubic feet per second, and you have to provide industry with power all year round, you have got to modify the spring flow and raise the winter flow. So, there is not such a thing possible as one dam.

Another thing that must be considered: what government is going to say that you can have one dam on the Fraser, but after that, no one can have any more? That is not democratic psychology, if you will pardon that expression. Once it starts, it needs full development of the Fraser river, and coincident with the full development is the destruction of salmon. I could take half an hour to tell you why, but I can assure you, gentlemen, that there can be no such thing as dams and salmon on the main Fraser river.

We are currently negotiating with the British Columbia Power Commission, for instance, in the hopes that 700,000, or 800,000 kilowatts, or horsepower can be developed by the Fraser without damaging any appreciable amount of fish, but that is in a tributary area. There is a three million horsepower potential in the Columbia river, and three million horsepower will support three million people in British Columbia on their current standard of living. Whatever you get from the United States, and from the downstream effects, will add that much more power. Of course, if you put it into aluminum, or something of that kind, it will be used up very shortly and will not support that type of

population. I am not speaking against the aluminum industry, or the Kittingmat development, which produces 500,000 tons. That is a very wonderful thing, because that power was not much good for anything else. But, on the Columbia river, and the lower mainland, their economic future is in fisheries. So, without looking at it from solely a fish standpoint, or a biased standpoint, it depends on the effect of general industry, and that includes fish.

If you can get the Columbia river development, by agreement, isolating it from all of these international ramifications, then everyone will be willing to develop the Columbia river, and to bring the power to wherever it is needed—whether it is to the Kootenays—to the lower mainland—or even Victoria. But, it is important that the agreement be settled, because they are going to need power.

Now, I am not going to suggest that either atomic energy or gas plants is the answer today, but I am going to say this; that if you read the technical literature of atomic energy, you will know that Canada and the United States are producing 30,000 tons of uranium a year now. In addition to that, they are building reactors and scattering them all over the United States. In another ten years you are going to have atomic power in the Northwest, and people will recognize it as a common thing. Then, if you have saved your fisheries on the Fraser river, they will probably be worth twice what they are today, and the people will be perfectly happy to pay another mill for power, or another two mills to maintain that fishery.

So, it is quite important that you meet the power needs now, and that you do not stop the development of British Columbia, or the adjoining regions—Alberta, for instance, but give them their power until this other development comes along. The only place you can provide it, without any large complication, is the Columbia river. You have got to have an agreement with the United States before you start that development, or you will not get any downstream advantages. That is human nature. I am an American, and I am speaking quite frankly.

Mr. STICK: Dr. Royal—

The CHAIRMAN: Has this to do with the power question?

Mr. STICK: Yes.

The CHAIRMAN: Mr. MacLean indicated he wished to be allowed to ask a question before.

*By Mr. Stick:*

Q. You say definitely in your view, that you cannot have power and salmon on the Fraser?—A. You might save much of the salmon run in the lower part of the river, but the salmon industry, as we once knew it, and the salmon industry as we know it today, cannot exist with power development on the main Fraser.

Now, we have the Kittingmat development on the Fraser watershed which is currently doing very little damage, and which produces one million horsepower. We hope that we can produce or allow the development of another 700,000 or 800,000 horsepower in another region of the Fraser off of the main river without seriously damaging the fishing industry.

When you put a series of dams on the Fraser, you will be interfering with the normal migration. You are dealing with fish, and all the ingenuity of man cannot teach a fish to swim over a vertical flow without hesitating, nor will it teach a fish to swim into water that has suddenly been lowered 10 degrees lower in temperature than that which he has an inherent ability to accept as normal. If for instance you lengthen the migration period of the Stewart lake race, which migrates a distance of 850 miles at a rate of 30 miles a day without eating, for three days it will seriously interfere with the fish's ability to

propagate itself. If the time were lengthened to six days they would not even get there. There are eight dam sites including the Moran dam, if the Moran dam could be built, between Prince George and the Delta area. We believe it would be impossible—and I am speaking about people who have years of experience in this and I have had twenty-nine years experience myself—on the basis of current research or on what we know from past experience that you could ever eliminate time delays at a dam which would be less than two days per dam. There is not a fish in the Fraser river which would get to the spawning grounds if delayed twelve days. Some of them will in six days but none in twelve days. Even then we have the problem of downstream migrants. We have a tremendous river, we have debris, and a huge volume of water. These fish are coming down the river just like chips following in the current. They have no shoreline or bottom to orient themselves and you have to put something there to say, no you do not go there you go here, but every instinct that a fish has says, I have got to go with the current, there is something wrong here but I must go with the current. There is your problem.

You will hear a lot about easy ways of solving the fish problem, but if they ever do develop the Fraser river I am saying here on record that it cannot be done and have the fishing industry as you knew it in the past and as you know it today. It is going to happen on the Columbia river and the fish are much more tolerant there.

I was at a meeting of the army engineers private power companies and fish people to speak at a luncheon on this very problem. Their attitude is that in little more than ten years we will have wrung every kilowatt out of the Columbia river that is there and what are we going to tell the people if we do not have some fish left. They were speaking about a \$5½ million research programme to see if they could save what remains of their salmon runs. They have built the finest facilities in the world and I do not think that you could improve on them very much, but they are not quite good enough. They will lose most of their fish.

*By Mr. Goode:*

Q. You mentioned the Moran dam. You might tell our eastern friends where the Moran dam would be located.—A. It is just above Lillooet, above the Thompson river. It would not interfere with any species except the sock-eye and spring salmon, but 60 per cent of the original Fraser sockeye run was produced above the Moran dam. If you had the 1913 pack which was produced above the Moran dam you could sell it in Seattle or England today for \$105 million. Now it is up to \$105 million and maybe in a few more years you could sell it for \$150 million. It is becoming a luxury item.

Q. There was a speech made in the British Columbia legislature to the effect that the Moran dam will not affect fisheries in British Columbia. Would you be of a contrary opinion to that?—A. Absolutely. I think the man had no facts upon which to make that statement except information provided by a man who has no experience in the fishing business.

Q. You would think that the man does not know what he is speaking about?—A. Definitely.

*By Mr. Hahn:*

Q. I have a question following a statement by Doctor Royal and I must say I am very pleased to hear his remarks. I think he recognizes that all members of this committee as well as in the house have supported him in this respect. You did say, if I heard it correctly, that probably seven or eight hundred thousand horsepower more in the river could be developed. Were you referring to the Fraser river?—A. The Fraser water-shed, not the main Fraser.

Q. I have another question in connection with the Columbia river development. What effect would it have in the development of the Columbia river if they found it necessary to divert the water from the Columbia into the Fraser; would it affect the salmon industry?—A. There is an official report which was issued by the department and prepared by the technical staff of the Department of Fisheries and the salmon commission which clarifies that whole thing. It would be worse than the Moran because it would destroy the tremendous pink salmon potential in the Thompson and flood out the spawning grounds. The report actually states that the fish protective facilities would cost over \$300 million for the dams to be constructed, and the technicians in preparing their report could not recommend their constructions because they do not think they would do any good even when built.

Q. Could I interpret your remarks to mean then that the salmon commission would be opposed to any diversion of the Columbia waters into the Fraser because of its effect?—A. I should clear up one point. The salmon commission as an international agency would not oppose anything in Canada but we would give technical reports as to the complete negative effect on the Fraser. We are required, under our terms of the reference, to make recommendations to the government on any of these projects affecting the fisheries.

Q. Your recommendation would be no diversion.—A. That recommendation has already been made.

*By Mr. Barnett:*

Q. If this discussion on the question of the dams on the Fraser or the diversion of the Columbia is dealt with, there is one other aspect of the matter on which I would like to ask one or two questions. I am wondering what consideration the commission may have given to anticipation of the pink salmon being brought under their jurisdiction in order to plan for the rehabilitation of the pink salmon fisheries. Doctor Royal made several references to the potential development of the pink runs in the lower Thompson. He also made several references to the effect of the elimination of certain races of various species, and the fact that the Hell's Gate slide largely eliminated the pink runs above Hell's Gate. If I understand those facts correctly it must mean that there will have to be a tremendous job done if the pink runs above Hell's Gate are to be restored to what they were at one time.—A. The only reference that has been made to restoration work was the creation of an off-year run in this experiment at Jones Creek. I believe that is being done by the department.

Q. There is also the question of the restoration of the odd-year run to its former proportions. Can you give us some information as to the plans which the commission have in mind?—A. The number one item, of course, is to eliminate the serious probability of destroying what I have referred to as competitive fishing. In other words the promulgation of more drastic regulations on both countries to guarantee that the rapid increase in gear does not result in overfishing. The number two item is that by determining the true timing, which no one knows exactly, of these various sections of the run, particularly the ones to the Fraser river, we would so direct our regulations or promulgate them in such a manner that there would be a greater escapement to the upper river where the rehabilitation potential is so great. Then there is the long term plan of deciding exactly what the size of this numerical escapement should be which requires an actual survey of the spawning grounds to determine the proper density so that we can say 20,000 fish is enough for this stream and 50,000 is enough for that and we are going to regulate it in order to get that 20,000 and 50,000.

Because the pinks go to sea immediately there is a much larger variation in survival for the returning pinks than the sockeye which spend a year in fresh water. You do have a higher variation in ocean survival with pink salmon than with sockeye. That is the basic thing.

Where we operate more or less in an isolated manner with respect to the sockeye we will be working in liaison with both the Washington Department of Fisheries and the Canadian Department of Fisheries on the pink salmon, and it is so provided in this protocol because the catch in convention waters would affect the escapement in waters outside the convention not related to the Fraser river. Any research work to determine time of passage of these races through convention waters would require the recovery of tags on the spawning grounds and on the streams outside convention waters. The commission do not want to become involved in expanding their activities and infiltrating into all these other areas. We would want the Washington and the Canadian Department of Fisheries, in this case, to come and work with us as a team and we would work with them as a team, we in our area, because of its international character and they in their own areas. With one minor exception the sockeye spawn in the Fraser river and migrate through the international waters so this liaison was not required with respect to the sockeye but is required with respect to the pink.

Hon. Mr. SINCLAIR: Did you mean to say with one exception within the Fraser water-shed?

The WITNESS: There are lots of sockeye runs in Northern British Columbia but in respect to our convention waters there is only one minor exception, for instance, in the Skagit River, Puget Sound.

*By Mr. Barnett:*

Q. Are there remnant survivors up-stream on which you can rebuild or do you have to start from scratch?—A. As a matter of fact they are rebuilding fairly rapidly right now. When salmon are knocked down they have a tremendous ability to compensate for that excessive mortality, so the few pairs left are producing at a tremendous rate. When the fishways were put in in 1945 a few fish went through. Now I believe the Department of Fisheries estimate there were 70,000 spawners in Seton Creek and about 250,000 in the area above Hell's Gate in 1955. They are coming back, but they have to come back in the millions to get the true rehabilitated value for the industry.

Q. Are those fish which started back through Hell's Gate survivors of fish which had spawned above Hell's Gate or of fish that had previously spawned below gradually moving up?—A. We assume that they are fish that spawned just below Hell's Gate which could not get through. A few got through and spawned above; but Seton Creek was not observed to have any fish for two cycles. Pinks stray more than do sockeye and have more tolerance to a change in environment than do sockeye.

The CHAIRMAN: Mr. MacLean.

*By Mr. MacLean:*

Q. Did I understand Dr. Royal correctly when he said the late races are actually slow races; that they take the difference in time because the late races take longer to get to the spawning grounds and the earlier races tend to go right through?—A. That, generally, is a true statement.

Q. Following on that, it would seem that the further away you are from the spawning ground, some migration of the different races would overlap. In other words, it happens even though you may start from where they start at approximately the same time?—A. No. that does not follow as far as salt water migration is concerned. They all have about the same speed in salt water. It is the late races that stop at the mouth of the Fraser river and delay.

Q. But before they stop there?—A. Their migration is approximately at the same speed as that of the early races.

Q. There would be a greater overlapping?—A. Why they rush in and get to the mouth of the Fraser to drift around there for three weeks, we do not know, but it is because of some necessity for their survival. Some hereditary characteristic requires it.

*By Mr. Kirk (Shelburne-Yarmouth-Clare):*

Q. Why is it that in the east we encourage off-shore fishing while in your comments I would judge that you do not encourage it. Why is there that difference?—A. In the first place, when you get into the off-shore area the fish are feeding, are not mature, and they have not reached their maximum size. Secondly, we have developed a fishery which requires so much regulation for inside waters that we are almost in a desperate situation to try to control inside gear.

Thirdly, we are regulating fishing on the basis of each racial population. We actually identify the sockeye population and the fishing mortality of each individual race from the scales samples. By characteristics of the fresh water growth which is recorded on the scales we can tell in which lake the fish grew up. Therefore we know what races are there and their approximate abundance. We can do that because we know there are several general categories or groups of races which are due but we do not know exactly when they will come in or how large the population will be.

But when you get out in the ocean two things happen; you are mixing races from all the other sockeye streams, and the situation becomes so confused that you do not know what you are catching. You do not know when you are catching too much or too little of one race.

Secondly, the fish are immature. In the case of sockeye and pinks, these pinks are only two years old. They are only about twelve inches longer than when they started their second growing summer, and they average about six pounds when they come in to spawn. So it is very important whether they are mature or not.

We have too much fishing now and we have immature fish. We cannot identify the fish and in addition the Japanese are abstaining from fishing off our coasts of North America because we are harvesting these fish to the maximum.

Recognizing all these adverse effects, why should we allow new fisheries to develop which requires new boats, new types of gear, and which will bring about a complete economic revolution in the existing fisheries and for what reason? For possible economic advantage to a few, but to the detriment of, and probably to the destruction, of our agreement with Japan. The situation calls for proper scientific management of fishing and proper regulation and control. That is why, to my knowledge, there has been no major objection to the high seas closure to net fishing by anybody in either country, because they recognize these things.

The meeting at Seattle was completely harmonious. Mr. Clark, the Canadian Deputy Minister was there, and Dr. Kask was there, and everyone agreed that it was not only a necessity, but also that it had to be done before all this economic disruption set in.

If we let it go for a couple of years, you would have an inside fleet almost twice as big as you needed to harvest the fish in inside waters and a new additional fishery off-shore and because of that you would not get the proper economic returns. There is a lot of difference between bringing your fish in two or three hundred miles and when you catch fish of the same quality much closer to home.

*By Mr. Cannon:*

Q. Would you go so far as to say that you think it is a mistake for us to have off-shore salmon fishing in the east?—A. No. In the first place I know nothing about it. It is a different species. There are many ramifications and I would be the last even to volunteer a suggestion about it.

Q. The reason you gave then is peculiar to the Pacific coast?—A. That is true.

*By Mr. Robichaud:*

Q. Is there such a thing as off-shore salmon fishing on the east coast?

Dr. PRITCHARD: Not in the sense in which Dr. Royal was talking about it. Your fishing is pretty close to shore on the east coast. In fact it is all done within five, six or seven miles of the coast. So in the sense that you are talking about off-shore fishing, it does not prevail there. This is fishing which may take place from 25 to 75 miles off-shore. In fact, it could go all the way to Japan.

The WITNESS: We have off-shore fisheries and we have had them for 50 years for the fresh fish market and for spring and silver salmon. The fish are very carefully handled, iced and cleaned with the result that they demand a very high price in the fresh fish market. But when they are caught with other forms of gear they do not present as attractive a product.

*By Mr. Barnett:*

Q. Earlier in your remarks you made reference to your meeting on off-shore fisheries, and I wondered if you would care to expand a little on the discussions concerning the control of fisheries and some agreement that was being reached in regard to the regulation and the control of fisheries between the two countries.—A. Due to the fact that there is no international treaty and due to the fact that the three states, Washington, Oregon and California have no right to negotiate with Canada because of the constitution of the United States, there has never been any way; nobody could see a way whereby they could get together on regulating troll fishing because troll fishing takes place seven days a week and with unlimited size of boats, gear and everything else. There has been no regulation. In the meantime their catch is substantial, and with the many problems arising in the fisheries, there was a great need for them to seek methods of conservation and not do it all in inside waters. So through that, the meeting in Seattle was brought about primarily for net fishing. It was recognized that there was no formula, but so long as the State Department in Washington D.C. represented the three states, and so long as the Canadian Deputy Minister of Fisheries was there representing Canada, they could do the talking, and the states, and the other people could sit down and tell them what they thought ought to be done. In that way it was entirely constitutional. I heard no objection from the trollers. They did not object because the three states had asked their trollers to close down for an extra two months or so, but they could not tell their own fishermen that if they closed down the Canadian fishermen would not come down and fish in the same waters. But when they had this meeting of both countries and got the trollers together, they were very happy to do their share towards conservation, and to reduce their catch.

Dr. PRITCHARD: The overlapping was merely as to the size limit regulations, and the season at the first of the year, to start on April 15.

The WITNESS: Yes. Before that they could fish the year around; but the season was set from April 15 to October 15, I believe.

Dr. PRITCHARD: Yes, and a size limit on spring salmon was suggested at a minimum of 26 inches or the equivalent by weight to that of spring salmon. Those are regulations that the three states have had for the last two or three years.

Mr. BARNETT: The understanding was that the Canadian fishing regulations would be drawn into conformity with them?

Dr. PRITCHARD: That is right. We do not have an exact agreement yet, whether it will be 25, 26 or 27. That is yet to be settled. A recommendation will be brought in. Those were the only two things. There was no change in the coho season because ours is pretty much the same.

The CHAIRMAN: Are there any other questions?

Hon. Mr. SINCLAIR: Could we spare Dr. Royal, Mr. Chairman? We have our other three experts here as far as the Canadian side of the bill is concerned, so could we spare Dr. Royal?

The CHAIRMAN: I think so. Thank you very much, gentlemen. The meeting is now adjourned until 3.30 this afternoon.

#### AFTERNOON SESSION

3.30 p.m.

The CHAIRMAN: The meeting will please come to order. I see that we have a quorum. I would like at this time to announce the personnel of the sub-committee on agenda and procedure for 1957. It is as follows: the chairman, Mr. Barnett; and Messrs. Hahn, MacNaught, Nowlan and Stuart (Charlotte).

This morning the minister brought along in response to a promise which he had made in the house a protocol of exchange of ratifications of the convention for the protection, preservation and extension of the sockeye salmon fisheries in the Fraser river system, done at Washington, this 28th day of July, 1937, and signed by Cordell Hull, Secretary of State of the United States of America, and Herbert M. Marler, Canadian Minister.

I would suggest, if it is agreeable to the committee, that this document be included as an appendix to the evidence today.

Agreed.

(See appendix A.)

Before Dr. Royal left at the conclusion of this morning's session I thanked him for his statement on your behalf. I may say there are no other statements to be made, but we have with us, from left to right, Mr. Ozere, Assistant Deputy Minister of the Department of Fisheries, Dr. Kask, Chairman of the Fisheries Research Board, and Dr. Pritchard, director of Conservation Development Services of the Department of Fisheries. They are here to answer any questions that you may care to put to them. I am also glad to see that the minister is also here this afternoon.

Now, Mr. Barnett have you a question?

Mr. BARNETT: There are one or two matters which were touched upon in the statement we had this morning and I thought perhaps that Dr. Kask or Dr. Pritchard might be able to give us some further information about those matters this afternoon.

The CHAIRMAN: Yes.

Mr. BARNETT: I would like to hear, as I mentioned this morning, what evidence we have on the relative importance of the pink salmon stock entering the treaty area from the south end of Vancouver Island, that is, the waters off the south end as compared with stock entering down through the Johnson

Strait from the north end of Vancouver Island. I wonder if we could have any additional information which may be available, and if research has been done to determine the relative importance of those stocks, or whether in connection with pink salmon it is possible to identify the different races as I understand they have been able to do in the case of sockeye salmon.

Dr. KASK: Speaking to that for a moment, we do have some information on your question, Mr. Barnett, arising out of tagging experiments which we conducted in various parts of the Johnstone Strait. Pink salmon are not confined to the Fraser river. There are some large populations which migrate to and grow in small streams and creeks on the coast of Vancouver Island as well as on the west coast of the mainland. Consequently a large number of fish which we tagged went into the small streams and were recovered in the local fishery on Johnstone Strait and a little to the south; but there was a substantial number which have gone into the treaty area, as well, and a few have gone into the Fraser river but the proportion varies from year to year. We have had only two years of experiments to go by. There is a substantial number, up to one quarter or more of the fish which were tagged in the Johnstone Strait area and which were found in the treaty area, and a similar percentage have been found in the mouth of the Fraser and in the Fraser itself.

Mr. BARNETT: I wonder what the plans are in the Department of Fisheries in regard to the regulation and control of the fisheries in the area above the treaty waters in respect to those pink salmon stocks. What I am getting at is this: what proportion of those stocks is going to be excluded from equal division of the catch, and also what co-operation will there be between the international commission and our Canadian Department of Fisheries in respect to ensuring proper escapement of those particular stocks?

Dr. PRITCHARD: According to the treaty, that exigency is allowed for. We are asked to carry on experiments in areas outside the treaty waters in co-operation with the commission. That is, we will carry on tagging in these areas just outside the treaty waters to discover, if we can, just what effect on fisheries this salmon control has had. I think what is worrying you is if it can be proven that exploitation outside the treaty waters is the thing that is affecting them. This of course never occurs on the basis of these results to carry out the necessary protection.

It is the same with the case of sockeye. In the case of sockeye when it is proven that a certain run is coming through, then we automatically put a closure on that run, and they go through the Johnstone Strait into the treaty area. There is no division, however, of the Fraser river pinks which actually never enter into the international fishery; that is, they go through the Johnstone Strait and never enter into the international fishery so they are not counted in a division of the catch.

Mr. BARNETT: Are our Canadian regulations designed to allow Canadian fishermen to make a fair exploitation of that fishery before they enter the treaty area waters?

Dr. PRITCHARD: That is true.

Mr. BARNETT: So long as it does not interfere with the conservation?

Dr. PRITCHARD: Exactly.

Mr. GOODE: I admit that this may be raising a question of importance because I have quite a large number of fishermen in my riding, but in these treaty water how many American fishermen are affected, and how many Canadian fishermen? Can you give me an estimate on it? And following that I want to proceed with another question after you answer the first one.

Dr. PRITCHARD: I do not think I have those figures here.

Mr. GOODE: Could you estimate the number?

Dr. PRITCHARD: No, I am sorry.

Mr. GOODE: Would there be more American than Canadian fishermen?

Dr. PRITCHARD: I would doubt it. I would think they would be almost the same in number because at times the Canadian fishing there is extremely heavy, especially when the gill netters move down there.

Mr. GOODE: You have no idea then of the number involved?

Dr. PRITCHARD: No, but I think I could get that number for you. We have the catch figures, and we can get that number for you.

Mr. GOODE: Looking at this treaty, as the next part of my question, what is this going to do to the average Canadian fisherman? Dr. Royal said this morning, if I understood him correctly, that under certain circumstances American fishermen would be put off the water if the Canadians were not catching sufficient pink salmon. Is that right?

Dr. PRITCHARD: That is right.

Mr. GOODE: Then what is the anticipated picture of the whole situation? Are Americans now catching more than Canadians in these waters we are talking about?

Dr. PRITCHARD: In these waters the Americans at one time did catch as much as 75 per cent of the catch but after they abolished the traps, we began to catch up and last year we were up to about 46 per cent of the catch, so that right now as it stands at the moment, the Canadian fisherman stands to benefit.

Mr. GOODE: He stands to benefit by this treaty?

Dr. PRITCHARD: Yes, up to 4 or 5 per cent.

Mr. GOODE: I would expect that to be the case because our Minister of Fisheries comes from British Columbia and he had a very important part to play in the formation of this treaty. You would say then that it could be expected that because of this treaty Canadian fishermen would get more days of fishing under this treaty?

Dr. PRITCHARD: Not more days of fishing, but it could be expected that the Canadian fishermen under this treaty would get a bigger portion of the fish which are there, such as pink salmon. Do you see what I mean?

Mr. GOODE: Yes, but still going back to my point, are saying that Canadian fishermen will not get more days of fishing? What will happen if it is found that the American fishermen are catching more fish than they should catch under this treaty and what are you going to do? Are you going to give the Canadians more fishing or are you going to cut off the Americans?

Dr. PRITCHARD: I am afraid that while we both have the same idea we are perhaps arguing against one another. The actual fact is that there has been a 50-50 division of the pink salmon catch in the convention area, and if the American fishermen are catching more, and if you are asking how it is controlled, let me say that it is controlled on a day to day basis. The American fisheries are closed while the Canadian fishermen catch up, therefore there would be as close to 50 per cent of the fish going into the area as possible.

Mr. GOODE: Does it mean more fish for the Canadian?

Dr. PRITCHARD: That is right, because we give you the promise of more days of fishing; and if the run were larger, there would be more days of fishing providing that the gear did not catch much more fish than it caught before. All these things would change, when it would be expected that more fish are going to Canadians through this treaty; that is a final statement.

Dr. KASK: Yes.

Hon. Mr. SINCLAIR: I think we are missing the most important point. It is true that immediately we will get half of all the fish that are available. Up to now we have been getting less than half. But the real advantage is that this commission will be able to rebuild the pink salmon fishery to its old level, as they have the sockeye fishery, and so there will be a lot more fish for the fishermen of both the United States and Canada in years ahead, because of the job they will do. They are getting more at the moment out of the fifty-fifty share. They will get much more as the years go by as they rebuild this fishery to its old level.

Mr. GOODE: What system have you got?

Dr. PRITCHARD: There is a system in British Columbia and Washington called the pink slip system. Every fish landed is reported, and those slips are collected every day. We have been collecting them all the time.

Mr. HODGSON: Inspectors?

Dr. KASK: Yes.

Mr. ROBICHAUD: We all know in the last 25 years the Atlantic coast catch of salmon has declined. Could Dr. Pritchard give us that information; could he give the information to the committee as to what was the trend of the catch in the last 20 or 25 years on the Atlantic coast, as compared with the Pacific coast.

Dr. PRITCHARD: The general trend of the catch?

Mr. ROBICHAUD: Yes, either downward or upward, or at a level.

Dr. PRITCHARD: The Pacific coast has not been like the Atlantic coast. The Pacific coast has had its ups and downs but, generally speaking, except for this catastrophe on the Fraser, the Pacific coast, especially the British Columbia catch, has maintained a relatively stable level. It has been done slowly. But this catastrophe on the Fraser river which was caused by the Hell's Gate slide, made a sudden drop in one of the biggest rivers. But, since that time, and with the rebuilding of the Fraser river, our British Columbia catch has stayed pretty well. We had a bad year that year, but that happened to be one of the years that all of the cycles hit the same level.

Mr. GOODE: It was pretty well stabilized?

Dr. PRITCHARD: Yes, and we hope it can be increased.

Mr. GOODE: What is the attitude of the department in regard to the number of fishermen fishing, for instance, in the mouth of the Fraser river? Most likely most of the officials have seen a number of fishermen fishing on a spare-time basis. Does licensing come into this treaty in the final analysis, in regard to the conservation of fish. Many are the problems we have had from the Fraser river. We are having part time fishermen who come in there where the fishermen are not getting enough catch, really to keep them going. I was wondering whether the department has any future plans for allocating licences on the Fraser river.

Hon. Mr. SINCLAIR: Perhaps it is not fair to ask an administrator in the department that question. So far as the commission is concerned, it has no control over licensing, at all. Whatever fishing effort there is on the Canadian and the American sides is reflected in the catch. They control the catch day to day. So, if, first of all, sufficient salmon get through and spawn, then the catch is equally divided between the Americans and the Canadians. We have many more fishermen and much more gear than we need out there to catch our salmon. But we have never restricted the issue of fishing licences. There are some fields where there is control exercised over licences; but just as taxicabs are licensed in the big cities, for example, these licences become very valuable because they are restricted.

We have not restricted the issue of fishing licences on either of the two coasts. On the west coast a man has to be a Canadian citizen before he can be issued a commercial licence. The job of the commission is to handle the fishery, accepting the number of fishermen who take out licences to fish.

Mr. PATTERSON: We understand that in the event of American fishermen getting more than their share, they are taken off until the Canadians catch goes up. Does that work in reverse?

Mr. PRITCHARD: Yes.

Mr. PATTERSON: In the event of the Canadians out-fishing the others, they are taken off?

Dr. PRITCHARD: Yes.

Hon. Mr. SINCLAIR: It is only fair to add that the commission has had remarkable success. In eight years of controlling this big and dynamic fishery, the difference between the total Canadian catch and the total American catch, as Dr. Royal said, is less than half of one per cent. And that edge is in favour of the Canadians at the present time. It could quite as easily go the other way, of course; but it has been remarkably successful, and that is mainly because of the control we have over the landings of fish. Every fish caught is reported that night, because of our system in British Columbia and in the State of Washington of having immediate reports on the fish landings.

The CHAIRMAN: Shall clause 1 carry?

Mr. BARNETT: Mr. Chairman, I did not wish to ask too many questions, but one of the matters that was touched upon in the discussion we had in the house was what we called the Jones Creek experiment, in the establishment of a new or artificial run or a new run of pinks in an artificial stream.

I notice in the annual report, that is the last annual report of the fisheries research board, only brief mention has been made of that. I wonder perhaps if we could have a little more information as to just what was done, when it was done, and what was done, so far as the scientific knowledge in connection with it goes. The potential significance of it, in relation to this treaty would be of interest to us.

Dr. PRITCHARD: Perhaps we can have a double-barrelled answer. It is a double-barrelled experiment. I think you know why it was installed there. The Department of Fisheries engineers and biologists installed it. It is because, in an attempt to provide spawning areas for fish that were in Jones creek with the establishment of the Jones creek power station all the water was used. It is diverted to a power station on the Fraser river. Therefore there would have been no water in Jones creek, except on an over-flow basis.

Now, we could have asked for three things. One was a hatchery, which would carry all the fish that went in there—the eggs from the fish. The other was enough water to cover the spawning ground, and the third was to try out this prepared spawning channel.

Now the Fisheries Research Board has done a lot of work on special channels in your constituency at Nile creek. On the basis of its results, we asked the company to build this 2,000-foot channel with a special level in it, which they did, and a special control of the water going in. In this way we use less water, and we have a prepared good spawning channel. They have also put a fence in, and divert the fish to the special channel. The runs that come up there now are diverted into one section, which is prepared. We get a much better return. From the natural run which came in, we got a return of eggs to fry—that is, fry in proportion to eggs deposited, of 35 per cent. This compared with the natural return of from about 8 to 20 per cent. It is perhaps three to four times as efficient.

Now, the second phase of the experiment is one which was conducted by the Fisheries Research Board of Canada, and had to do with off years, making use of this special channel. So I think Dr. Kask should report upon it. We sometimes do not know which is which, but I believe this is one that they have suggested.

DR. KASK: Gentlemen, there is no reason, so far as we can see, scientifically, why there should be an off year for pink salmon. The pink salmon occur in quantities, as you heard this morning, from the southern part of British Columbia, in the odd years, and the northern part, curiously enough, in the even years.

But there is no reason, that we can see, why there should be an off year. The pink salmon are born in streams and as young they do not spend any appreciable time in fresh water at all. They feed on their yolks after they are born, for a little time, and then immediately go to sea. So they are not dependent upon fresh water, a sizable body of fresh water, at any rate, for their early nourishment.

So, so far as we know, there should be no reason, that is, no known scientific reason, why we cannot build up these off years. And the potential of that is remarkable, if it can be done.

We have tried to do this on several occasions. This Jones creek experiment we have just reviewed is the first one to show promise. We got a sizable return in the even year from an even year's spawning, from eggs we introduced from the north, where the even year pinks occur.

But the fact that we did have this encouraging result does not mean that the final success has yet been achieved. One reason is that we have to do it on a sufficiently substantial scale that the usual enemies of the salmon will not be able to eat them all up. That is what usually happens in an attempt of this kind, when done on a small scale.

So we establish a minimum basis upon which the transplantation in an off year should be carried out. Now that we have a small natural basis upon which to work, we are trying to build it up by artificial means, added to the normal returns.

In order to build it up from there, and extend it from there, we will have to build the potential of this small creek up, first, and then we hope—because the pink salmon stray more from their home stream than some of our other species—we will then just have to hope that the strays will spawn in the adjacent streams. So actually it is a small stream program. But we think after two years, if we are lucky as we were in the first year, we can build up this and immediately adjacent streams. Over a period of a sufficient number of years, if we can give a transfusion of new stock by introducing salmon from the north, we can possibly establish a run which will be substantial and permanent. But it has to be started at a focal point. You cannot do it haphazardly. We have to build up a potential in the Jones Creek area first, so that it will carry itself before we move on to another area. That is the situation we are in today.

DR. PRITCHARD: I could add that our success thus far has been outstanding. That is true; but we must establish a self-perpetuating run. The point is that it is all right to talk about prepared spawning channels, such as we have; but, first, you have got to get the fish to come into the channel. We have succeeded with that. Then, when you are building up runs, you must have self-perpetuating runs, because you cannot take eggs from other areas. It is all right for the people in the Fraser river to be able to take eggs from Skeena but, eventually, the Skeena people may decide that their run is getting too low and they will want those eggs. So, we are hoping to build up self-sustaining runs. We have to prove that, first.

Mr. CAMERON (*Nanaimo*): Were there any pinks at all in the off year? It was not a case of just a peak?

Dr. PRITCHARD: No.

Mr. CAMERON (*Nanaimo*): Literally none at all.

Dr. PRITCHARD: That is right.

Dr. KASK: On occasionally pink, but not of any significance. There was no pink fishery.

Dr. PRITCHARD: In the Queen Charlotte islands, one of the biggest pinks areas, it is simply astounding, the tremendous runs in even years, and then, absolutely no pinks in the off years. That is the most extreme example.

Mr. CAMERON (*Nanaimo*): It must be a matter of calendar-conscious fish.

Hon. Mr. SINCLAIR: Since there are members here from Manitoba and Ontario, I wonder if you would tell them what we are doing, in conjunction with the Ontario government, trying to establish pink salmon in Hudson Bay.

Dr. KASK: One of the new developments in biological management is the introduction of new species into areas where they have not occurred before. This, as our minister knows, is being carried out extensively in the Soviet Union. In fact, in some fields, the Russians are leading in that field. We are doing some of it in Canada, too.

The experiment to which the minister referred is one in which we have co-operated with the government of Ontario in an effort to introduce two species of salmon, Pacific salmon, into streams flowing into Hudson bay and James bay. That area has been established as being entirely marginal, where salmon may be able to survive, and where they may not. It is not a good area to try out, but it is good in this sense, that we have in Hudson bay a little private ocean of our own. If we can establish even a marginal run in that area, and that salmon can go into Hudson bay through their growing period, then we will have a private Canadian salmon run.

But we are not putting too much faith on the possibilities here, because of the cold temperatures of that area. We find that the water stratification in the Hudson bay is cold in winter from the surface to the bottom. There is not a warmer area where these fish may hide. One of the things when the salt water, which can, as you know, before it freezes, get below the freezing point of fresh water, that happens is, the water on the eyeballs of the salmon freezes. That has been established experimentally, and that is one of the limiting factors that we think might limit the success of this otherwise possible story.

The first returns from that planting of two years ago are pink salmon, that are expected back, if there are any, this fall.

The Ontario government, with our help, I hope, are going to go and see if this matter has resulted in some success.

Mr. MACLEAN: Am I correct in assuming that the salmon return to the beds where they spawn regardless of what race they belong to? In other words, their migratory habits are established by their original environment rather than something they inherit?

Dr. KASK: The evidence seems to be, that if you plant eyed eggs, very early in their history, that that will be their home area. It is on that basis that all these transplantings are made. There are some very precise experiments to prove that. In the relatively small areas of Cultus lake — and I will tell you how very sensitive they are to this — there is a little stream, about a mile and a half long, where an artificial spawning bed was made. The sockeye from Cultus Lake run never went into it. Salmon were planted there as eyed eggs, and four

years later they returned. They were not able to spawn and perpetuate themselves. But they did go, not only to the mile and a half of stream, but back to the spring itself which fed the stream—they went to the spring and tried to fight into the spring. So, the actual homing instinct is very precise and very sensitive.

Mr. WESELAK: The fact that the water freezes on the eyeballs, would that kill the fish, or blind them?

Dr. KASK: It would eventually kill them. In our experimental tanks, where we brought the water artificially to that temperature, just to see if they were able to survive in such an area, it did not kill them immediately, but it finally did.

Mr. BARNETT: Are the conditions of food somewhat similar in the Hudson bay to that Pacific area?

Dr. KASK: The condition of feed in the Hudson bay is not as good. It is not a highly productive area, for the production of food, but there is enough food, of the kind that young salmon would live on, and grow on, that would support quite a substantial population.

Mr. HODGSON: In the province of Ontario, the lake salmon are becoming almost extinct in a lot of our inland lakes. They have been getting eggs from Georgian bay, and Lake Superior, and so on, but they can only get enough eggs to take care of about 25 per cent of their hatchery facilities.

Dr. PRITCHARD: That is because the so-called salmon progeny are lake trout, and are becoming extremely scarce in the one big area where they have a supply, and that is the Great Lakes. That has been the result of lampreys.

Mr. HODGSON: Do you know of any place where we can get the eggs to put into these hatcheries in Ontario?

Dr. PRITCHARD: There is really only one major source of supply of trout in tremendous quantities, and that is Great Slave lake. The government of Ontario actually did go up there and have a look. We have not given up that project, because when the time comes for rehabilitation of the Great Lakes, if it has to be done, this looks to be the one major source of supply in Canada for lake trout.

Mr. HODGSON: Do you think the province of Ontario could get some eggs if they looked after them very carefully?

Dr. PRITCHARD: In the case of the ones they are after, we would be very happy if they could be brought down in order to rebuild the Great Lakes, since we are involved in that.

Mr. HODGSON: I am interested in building some great lakes in my own riding.

Mr. BELL: Are these salmon, that we are speaking of, in the Great Lakes?

Dr. PRITCHARD: They call them salmon trout in Ontario. They are lake trout. They are actually char. They are Great Lakes trout, or lake trout. They call them tobies down in New Brunswick, but you only have a few of them in the deeper lakes of New Brunswick.

Mr. PATTERSON: Mr. Chairman, that raises a question in respect to the availability of data establishing the effects of the early closure on the Fraser as a conservation measure. I wonder if we could have any clarification of this? My colleague, Mr. Hahn, and myself are very interested in the matter.

Dr. PRITCHARD: Dr. Royal pointed out that there was a quality matter involved there. The other matter was conservation. I think that one of the main difficulties is, that there is the conservation of several species involved. This is conservation of the sockeye, of course, but the late run, fall fish, which include nearly all the chum salmon that go up there, are also involved. Now,

I know that, after you see the reports on the chum salmon spawning this year, you will say that there has been no success. But, we feel there has been some success in protecting these later runs. We feel that if they had not been protected there would be practically none in the Fraser river. We still feel that there has been some success in protecting these very late runs, particularly the chums, and to some extent the late cohoes.

Mr. PATTERSON: There is not any data to prove that statement, though?

Dr. PRITCHARD: The only data we have is, that we have a spawning there this year. We have had these chums spawning in those areas. Now, the unfortunate part of it is, the chum planting, generally in southern British Columbia, has been very low this year. This, we think, is due to something else entirely. But, if you mean; is it greater than it was before, then as far as I am aware, it is not much greater, but it is still there.

Mr. PATTERSON: You mentioned as well, the quality factor. How is it, that according to the reports we get, the salmon, that are caught in that area and canned, are classed as the highest grade—grade A?

Dr. PRITCHARD: I do not know what your samples involve. You perhaps can tell me this, but it is quite obvious that it would be—for instance, if most of your catch from there was taken from these early runs—which Dr. Royal described this morning; these that come and go right through—then your quality would be high. Dr. Royal actually said, in respect of these early runs, that you could even catch them at Hells Gate and they would still be graded high. But, if you caught nothing but the later runs, your quality would be low. Now, I do not know what year you are talking about. If it is either this year or the year before, we would suspect that they would be grade A, mainly, because you were not fishing very late in the fall.

Mr. PATTERSON: I placed correspondence on the record in 1955, in respect to the previous year, I think. I believe I am right in that, and it indicated that the salmon graded as A even back then, no matter what time of the season in which they were caught.

Dr. PRITCHARD: This is something that we would like to know about. There is no difference in the grade, after the ones that were caught after October 1—was it October 25, 1954, or back to October 15 in 1955? It was shoved back a little.

Mr. PATTERSON: Yes, it was set down to the end of September, and then back to September 16, I believe it was.

Dr. PRITCHARD: You would have to take those last fish to make sure, because in the over-all they should grade A.

Mr. PATTERSON: The indications were that all the salmon that were taken were grade A.

Dr. PRITCHARD: Canned salmon?

Mr. PATTERSON: All the salmon that were caught in the Fraser river were graded A, and therefore the fishermen cannot see why that quality factor enters into it.

Dr. PRITCHARD: I do not like to argue with quality, because quality is a little out of my line. But, the point is; in canned salmon you have certain definite standards to meet.

Mr. PATTERSON: I understand that.

Dr. PRITCHARD: It would be expected that any canner, canning salmon, would only can those fish that met those standards. So, there might be a discard of some of the fish. We would not know about that. So that actually the grade of the canned salmon does not indicate the actual grade of these

fish up the river. Now, as Dr. Royal pointed out this morning, on the basis of the American grading, they would not be accepted at any time, probably.

Mr. PATTERSON: The American grading would be more strict than Canadian grading?

Dr. PRITCHARD: Yes, it would. They probably use more fish for the fresh market than for the canning market.

Mr. MACLEAN: Does this mean that, of the late runs of salmon, there are some that may have come more quickly to the Fraser than others, or does it mean that some are just of better quality, and healthier fish, so to speak, and can stand the long journey, and the delay without deteriorating so much?

Dr. PRITCHARD: It is a little difficult to say, Mr. MacLean. We are talking about five species here, and this makes it very complicated. For instance, the species that I have mentioned here, chum salmon, as soon as they hit fresh water, begin to go down very quickly, and begin to get black lines on them, as most people know, and humps on their backs, and big jaws, and their flesh gets very poor. It does not matter what river they go into, as soon as they hit fresh water they begin to take on these characteristics. Pink salmon also go downhill fairly quickly. Sockeye salmon—and Dr. Royal covered them this morning—the first run comes in, and seems to go right through the fisheries, so they are very fresh when they are in the bottom of the river, even after they get up 100 or 125 miles. But, the later run that comes in, for some reason that we do not know, appear to loiter off the mouth of the Fraser river for two or three weeks. All the time they are loitering they are not feeding, and all the time they are not feeding, the oil is being used up, and their flesh is getting dry. As they start up the river, they start to go downhill, qualitywise.

Mr. MACLEAN: Yes, I understand that, but what I had in mind, and this may sound like a rather naive question, but of those late arrivals, do they all go through the same cycle, and do they all delay some amount of time, or are there some that are late starters, so to speak, and go very quickly, but arrive late?

Dr. PRITCHARD: That is right, there are.

Mr. MACLEAN: It would seem to me that you could build up the quality by trying to protect those races that start late and arrive quickly, and therefore arrive late, but in relatively good quality.

Dr. PRITCHARD: I think that is the utopia, but unfortunately, there are not too many of those, and if you are going to get any bulk catch, you have got to protect those others too. You have got to use them when they are at their best quality, because there is a tremendous number of salmon that mature there.

Dr. KASK: This is a subject which seems to be of quite some interest. Our chemists in British Columbia are currently and have for a couple of years been running tests on the oil content of salmon which we are studying particularly to determine the energy reserve because we are interested in the reserve or the energy which these fish have at the time they face or fight their way across water and past dams or through fishways and one thing and another. We find, if you would think of that energy as gasoline in a tank of a car, that the sockeye and pink salmon both of which have a large reserve of oil, when they arrive at a river they have a fairly uniform oil content, but as they start fighting their way up the river their oil is progressively used up and when they go a certain distance say the half way mark their gas tank is half empty and when they go further only a quarter of the tank is left and if they have to fight a dam or something they will utilize the rest of their oil reserve. As this oil is used up they get progressively less valuable for a canned product. That is an almost

universal law. That is, all the fish go through the same stage of deterioration. We have large samples now from specific races and we find that all respond to energy expenditure about the same. The further they get up the river in general the less acceptable they are for a first class canning product.

Dr. PRITCHARD: I might say that you can eat these things even after they have lost their oil. I myself have had occasion to eat them. They are not very palatable, I can tell you that, with the fungus all over them; they are simply just dry.

Mr. BARNETT: I have one further question relating to the matter concerning the reestablishment of these pink runs. I am wondering whether this programme that the Fisheries Research Board has been carrying on in respect to transplanting eggs in Jones Creek and so on will continue to be carried on by the Fisheries Research Board or whether we are going to get some help from the commission either in the way of personnel or in the way of sharing the costs of the programme. As I understand it under the original sockeye treaty all costs were shared equally. I am wondering whether we will be able to speed up this programme by way of having financial assistance under the treaty.

The Hon. Mr. SINCLAIR: The commission has asked for an extra budget of \$148,000 from the two countries for the extra scientists and of course they will touch now on the pinks on the Fraser river water-shed. Our Fisheries Research Board will continue the work we have been doing on the pinks on all the other streams of British Columbia. Actually, you will have much more work done on pinks because of the entry of the salmon commission into the pinks field.

Mr. PATTERSON: I take it that the \$148,000 is the gross?

Hon. Mr. SINCLAIR: No. The net. There will be a supplementary estimate of \$74,000 for Canada's share of the extra scientific work to be done this coming year on the pink salmon. As Dr. Royal pointed out this morning a great deal of the work has already been done by the sockeye salmon commission. The fishways and so on are as applicable to pink as to sockeye salmon.

The CHAIRMAN: Is there a high percentage of loss in these transplants?

Dr. PRITCHARD: In actually getting the eggs in?

The CHAIRMAN: Yes.

Dr. PRITCHARD: Very low. We actually eye them at the place where they are taken and the percentage of loss is relatively low, about five or ten per cent, or something like that. They can be handled quite efficiently.

Mr. GOODE: Mr. Chairman, I have a question with respect to power versus fish on the Fraser. I am wondering if this is the proper point to ask the question.

The CHAIRMAN: Yes.

Mr. GOODE: My notes say that Dr. Royal said that permission had been granted for two million horsepower on the Nechako and I think he mentioned half a million was available on the Fraser without affecting fishing.

Hon. Mr. SINCLAIR: The two million horsepower refers to the aluminum company project when they turned the Nechako river down to the sea. The Nechako river did not support any salmon and therefore we are happy to have them up there. The 500,000 horsepower development is on Taseko lake at an elevation of 4,440 feet. It does not support very much of a salmon run and they would like to reverse the flow and put it down to the headwaters of Butte inlet on the coast. The British Columbia Power Commission would like to turn the Taseko into Chilko lake at 3,800 feet elevation. That is is the second largest source in the whole Fraser river

watershed. We estimated that the gravel banks around the edges are worth \$100,000 per year in our production of sockeye salmon. That is the lake which the aluminum company originally wanted to put their power development on but were stopped by the Fisheries Act from doing so. We do not want to have Chilko lake touched. The problem is to get the water from Taseko lake down to the coast. It would have to go across Chilko lake. You cannot pour the water from Taseko lake into Chilko because the change in water and taste and temperature would immediately affect the salmon runs. We are suggesting that the water be carried through in a floating pipe across lake Chilko. Taseko lake is not of much value for fishing but could be of potential value for power development.

Mr. BARNETT: May I ask the minister if that proposal is tied in with use of the Homathko?

Hon. Mr. SINCLAIR: They both support salmon populations but neither support the sockeye. One of them will be used for a dam and that of course will affect the salmon runs. In the case of the pinks and the chums if this experiment of the transplanting works out we can transplant them to the other rivers. That is the type of development I am anxious to be cooperative in because there is the use of water for power and the use of water for fish, but dams on the main stream of the Fraser would mean you would only have a choice of either fish or power, and that is why we are opposed to those dams.

Mr. BARNETT: Has there been any discussion about the proposal for power development in the upper Quesnel system?

Hon. Mr. SINCLAIR: The Quesnel system is the third greatest producer of salmon on the Fraser water-shed. There are two forks, and one of the forks is a large producer of salmon and the other is not because there is a canyon which is impassible to fish. We suggest that they put the power in that canyon. The power commission studied the matter for a year or two and decided they were not going to build at the moment.

Clause 1 agreed to.

Clauses 2 to 4 inclusive agreed to.

On clause 5.

Offence and  
penalty.

5. Every person who violates a regulation made under this Act is guilty of an offence against this Act and is liable upon summary conviction to a fine not exceeding one thousand dollars, or to imprisonment for a term not exceeding one year, or to both such fine and such imprisonment.

Mr. BARNETT: On clause 5 and the following clauses I wonder if we could be told whether there are any changes made in these clauses from the original treaty. I suggest that should be drawn to the attention of the committee.

Hon. Mr. SINCLAIR: I think the wording is changed to bring it into line with the provisions of the treaties. The actual enforcement will be carried out in exactly the same way. There is no change.

Mr. BARNETT: The change is more a formal change than a change in substance.

Hon. Mr. SINCLAIR: Yes.

Clause 5 agreed to.

On clause 6.

#### SEIZURE, ARREST AND FORFEITURE

Seizures.

6. (1) A protection officer may, anywhere in the convention waters except the territorial waters of the United States, seize

- (a) any fishing vessel belonging to or operated by a citizen, national or resident of Canada by means of or in relation to which vessel he suspects on reasonable grounds that an offence against this Act was committed;
- (b) any fishing vessel belonging to or operated by a citizen, national or resident of the United States by means of or in relation to which vessel he suspects on reasonable grounds that an offence against this Act was committed in the territorial waters of Canada;
- (c) any goods aboard a fishing vessel described in paragraph (a) or (b), including fish, tackle, rigging, apparel, furniture, stores and cargo; or
- (d) a fishing vessel described in paragraph (a) or (b) and any of the goods mentioned in paragraph (c).

## Arrests.

(2) A protection officer may, anywhere in the convention waters except the territorial waters of the United States, arrest without warrant,

- (a) any citizen, national or resident of Canada whom he on reasonable grounds suspects of having committed an offence against this Act; or
- (b) any citizen, national or resident of the United States whom he on reasonable grounds suspects of having committed an offence against this Act in the territorial waters of Canada.

## Custody of seized vessels, etc.

(3) Subject to this section, the fishing vessel and goods seized under subsection (1) shall be retained in the custody of the protection officer making the seizure or shall be delivered into the custody of such person as the Minister may direct.

## Perishable goods.

(4) Where fish or other perishable articles are seized under subsection (1) the protection officer or other person having the custody thereof may sell them, and the proceeds of the sale shall be paid to the Receiver General of Canada or shall be deposited in a chartered bank to the credit of the Receiver General of Canada.

The CHAIRMAN: You will notice that in clause 6 at line 28 there is a typographical error. It should read United States instead of United Sates. I understand that the law clerk will make the necessary change before it goes into the statutes. It is not necessary to amend the act I am informed.

Mr. HAHN: I would like some explanation in connection with this clause as to the way in which the act works in connection with an American citizen on Canadian waters and a Canadian citizen on American waters. Has there been any change under the act as now constituted.

Mr. OZERE: Mr. Chairman, we have had these reciprocal arrangements between us and the United States in several treaties. The sockeye salmon is one of them; the halibut treaty is another one. We have since then incorporated another in the north Pacific which includes Japan. However we have had so far no experience in this connection insofar as Japan is concerned. Between the United States and ourselves this has worked very satisfactorily. Insofar as our own territorial waters are concerned we have complete jurisdiction both as to vessels of our own nationals and any United States vessels which might drift in there. When it comes to outside the territorial waters we only have jurisdiction as given by the other party to the treaty. The United States has given us the jurisdiction over its vessels outside territorial waters and we have given reciprocally jurisdiction to the United States enforcement agencies over

our own vessels. When a vessel is caught by either country it is immediately surrendered to the country to which it belongs for trial and prosecution. We have always cooperated in producing the necessary evidence and witnesses and it has worked very satisfactorily.

Mr. HAHN: The charge is actually laid in the country in which the person is arrested?

Mr. OZERE: Yes.

Hon. Mr. SINCLAIR: With the exception of an American boat found in Canadian waters. In that case the trial is in Canadian courts. Our fishermen watch very closely the punishments on both sides to make sure that the American authorities fine an offender as severely as the Canadian magistrates. There is remarkable uniformity in the punishments handed down on both sides.

Mr. HAHN: How does the number of violations compare?

Mr. OZERE: I think they are more or less equal. Fortunately there have not been too many.

Mr. GOODE: When these men are placed under arrest by protective officers can they be arrested without warrant?

Mr. OZERE: Yes.

Mr. GOODE: What is their position upon arrival on shore?

Mr. OZERE: They are held in custody only for the time before they can be turned over to the proper authorities. If vessels are seized on the high seas there is generally a necessity to arrest the whole crew. You could not apply for a warrant. That is why there is the provision for arrest without a warrant, but the moment they come in they are immediately turned over to the proper authorities.

Mr. GOODE: Let us suppose a fisheries boat went out and it had two men on it, both qualified men, and they arrested a vessel which had six men on the boat. I ask this question merely out of curiosity. What then, in court, would be the effect of the evidence of the two men as against the six, and what has your experience been with it.

Mr. OZERE: Under our system, as you know, Mr. Goode, the judge is the sole judge of the law and the facts. It would be a question of credibility. If the judge wished to believe one witness as against six, it would be entirely up to him. We rely completely upon the impartiality of our judicial officers.

Clauses 6 to 10 agreed to.

On clause 11.

Coming  
into force.

11. This Act shall come into force on a day to be fixed by proclamation of the Governor in Council and shall continue in force until a day to be fixed by proclamation of the Governor in Council following upon the termination of the Convention, and no longer.

Mr. BARNETT: I have one question on clause 11, Mr. Chairman. I notice that it says that this act shall come into force on a day to be fixed by proclamation of the governor in council. I presume it is intended to proclaim the act as soon as the necessary procedure is taken by the United States?

Hon. Mr. SINCLAIR: That is right.

Clause 11 agreed to.

On the schedule.

Mr. BARNETT: I have one question in connected with the schedule. I appreciate the fact that the minister brought down, and we are having it put in the minutes of the committee, this protocol of exchange of ratifications of the convention. I did make some reference to this act at the resolution stage

of the bill and I wonder really what objection there would be to having this protocol of exchange of ratifications appended as part of the schedule in between the original convention and the new protocol? My real concern with the matter—I am not going to argue on the constitutional aspects of it, although I did refer to an earlier debate in the house—is actually as a matter of convenience for reference. I wonder why there would be any objection to including this protocol in between the documents I mentioned. One of the reasons I bring up the point is that I notice that such seems to be the practice followed in the United States. In the house I found that it was included in the American statutes in the library. It may be that at some future date parliament may be asked to amend this act when, for convenience of reference for future members of the house I wonder if it would not be possible simply to have it included as part of the schedule.

Hon. Mr. SINCLAIR: Everything in the first part is included in the actual convention. This goes back to 1937 as the effective date of the convention. We might do it as a matter of historical interest, but our aim is to keep the act as compact as possible and to have all the effective things there. This is on record in the library as well as in the department and in the Department of External Affairs of course. And as far as the Americans are concerned, they have a different practice because their Senate must ratify all treaties entered into by the administration since the administration is not part of the legislative branch. But we have never followed that custom and I do not think it would add anything at all to an understanding of the bill. Here we have the actual act of parliament to carry out the things we have agreed to in these two conventions, the original convention of 1930 and the amended convention of 1956.

The CHAIRMAN: You will notice on page 12 of the protocol that it says “the understanding stipulated in the protocol of exchange of ratifications signed at Washington on the 28th day of July, 1937 . . .”

Hon. Mr. SINCLAIR: That is the protocol to the main product.

Mr. BARNETT: Yes.

Schedule agreed to.

Protocol agreed to.

Title agreed to.

Bill agreed to.

The CHAIRMAN: Shall I report the bill without amendment?

Agreed.

## APPENDIX A

PROTOCOL OF EXCHANGE OF RATIFICATIONS OF THE CONVENTION  
FOR THE PROTECTION, PRESERVATION AND EXTENSION OF THE  
SOCKEYE SALMON FISHERIES IN THE FRASER RIVER SYSTEM

The undersigned, the Secretary of State of the United States of America, and the Canadian Minister at Washington, met this day for the purpose of exchanging ratifications of the convention between the United States of America and Canada for the protection, preservation and extension of the sockeye salmon fisheries of the Fraser River System, signed at Washington on May 26, 1930.

The Secretary of State of the United States of America stated that the convention is ratified on the part of the United States of America subject to the three understandings contained in the resolution of the Senate of the United States of America advising and consenting to ratification, a copy of which resolution was communicated to the Secretary of State for External Affairs of Canada by the Minister of the United States of America at Ottawa in his note of July 7, 1936. These three understandings are as follows:

- (1) That the International Pacific Salmon Fisheries Commission shall have no power to authorize any type of fishing gear contrary to the laws of the State of Washington or the Dominion of Canada;
- (2) That 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; and
- (3) That the Commission shall set up an Advisory Committee composed of five persons from each country who shall be representatives of the various branches of the industry (purse seine, gill net, troll, sport fishing, and one other), which Advisory Committee shall be invited to all nonexecutive meetings of the Commission and shall be given full opportunity to examine and to be heard on all proposed orders, regulations or recommendations.

The Canadian Minister stated that he was authorized by his Government to state that it accepted the foregoing understandings,

The exchange then took place in the usual manner.

In witness whereof they have signed the present protocol and have affixed their seals hereto.

Done at Washington this twenty-eighth day of July, 1937.

CORDELL HULL

*Secretary of State of the  
United States of America*

HERBERT M. MARLER,  
Canadian Minister.

HOUSE OF COMMONS

Fifth Session—Twenty-second Parliament

1957

---

STANDING COMMITTEE

ON

MARINE AND FISHERIES

*Chairman:* T. G. W. ASHBOURNE, Esq.

---

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 2

---

BILL 410

An Act to implement the Interim Convention on Conservation  
of Northern Pacific Fur Seals

---

MONDAY, APRIL 8, 1957

---

WITNESSES:

*From the Department of Fisheries:* Mr. G. R. Clark, Deputy Minister;  
Mr. S. V. Ozere, Assistant Deputy Minister; Dr. J. L. Kask, Chairman,  
Fisheries Research Board; Dr. A. L. Pritchard, Director, Conservation  
and Development Service; Dr. W. M. Sprules, Assistant Director,  
Conservation and Development Service.

EDMOND CLOUTIER, C.M.G., O.A., D.S.P.  
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY  
OTTAWA, 1957.

STANDING COMMITTEE

ON

MARINE AND FISHERIES

*Chairman:* T. G. W. Ashbourne, Esq.

Messrs.

Anderson,  
Arsenault,  
Barnett,  
Bell,  
Bennett,  
Boivin,  
Brisson,  
Bryce,  
Cameron (*Nanaimo*),  
Cannon,  
Ferguson,  
Goode,

Hahn,  
Hardie,  
Harrison,  
Henderson,  
Hodgson,  
Kirk (*Antigonish-  
Guysborough*),  
Kirk (*Shelburne-  
Yarmouth-Clare*),  
MacLean,  
MacNaught,  
Maltais,

Matheson,  
McDonald,  
Nowlan,  
Patterson,  
Pearkes,  
Robichaud,  
Simmons,  
Stick,  
Stuart (*Charlotte*),  
Thibault,  
Weselak,  
White (*Hastings-  
Frontenac*)—35.

(Quorum 10)

J. E. O'CONNOR,  
*Clerk of the Committee.*

ORDER OF REFERENCE

SATURDAY, April 6, 1957.

*Ordered*—That the following Bill be referred to the said Committee:

Bill No. 412, An Act to implement the Interim Convention on Conservation of North Pacific Fur Seals.

*Attest.*

LEON J. RAYMOND,  
*Clerk of the House.*

The Standing Committee on Marine and Fisheries begs leave to present the following as its

THIRD REPORT

Your Committee has considered the following Bill and has agreed to report it without amendment:

Bill No. 412, intituled: "An Act to implement the Interim Convention on Conservation of North Pacific Fur Seals."

A copy of the Minutes of Proceedings and Evidence adduced in respect of the said Bill is appended.

Respectfully submitted.

T. G. W. ASHBOURNE,  
*Chairman.*



## MINUTES OF PROCEEDINGS

MONDAY, April 8, 1957.

The Standing Committee on Marine and Fisheries met this day at 3.00 p.m. The Chairman, Mr. Ashbourne, presided.

*Members present:* Messrs. Ashbourne, Barnett, Brisson, Bryce, Cannon, Goode, Hahn, Kirk (*Shelburne-Yarmouth-Clare*), MacNaught, Matheson, Patterson, and Robichaud. (12).

*In attendance:* Hon. James Sinclair, Minister of Fisheries; *From the Department of Fisheries:* Mr. G. R. Clark, Deputy Minister; Mr. S. V. Ozere, Assistant Deputy Minister; Dr. J. L. Kask, Chairman, Fisheries Research Board; Dr. A. L. Pritchard, Director, Conservation and Development Service; and Dr. W. M. Sprules, Assistant Director, Conservation and Development Service.

The Chairman observed the presence of quorum, read the Committee's Order of Reference and called for consideration of Clause 1 of Bill 412 "An Act to implement the Interim Convention on Conservation of North Pacific Fur Seals."

The witnesses were introduced by the Chairman and the Minister was asked to make a short explanatory statement concerning the Bill. Members were invited to question the Minister and witnesses concerning the Bill.

Following questioning of witnesses, Clauses 1 to 15 were adopted.

The Schedules, Title and Bill were adopted and the Chairman ordered to report the Bill without amendment to the House.

The Committee adjourned at 4.00 p.m. to the call of the Chair.

J. E. O'CONNOR,  
*Clerk of the Committee.*



## EVIDENCE

MONDAY, April 8, 1957.  
3 p.m.

The CHAIRMAN: The meeting will please come to order. I notice that we have a quorum. The order of reference reads as follows:

Ordered that the following bill be referred to the said committee, Bill 412, an act to implement the interim convention on conservation of North Pacific fur seals.

LEON J. RAYMOND  
*Clerk of the House.*

This bill was given its first and second readings in the house on Saturday and it has been referred to our committee.

We have with us today the Hon. James Sinclair, Minister of Fisheries, Mr. George R. Clark, deputy minister, Mr. S. V. Ozere, assistant deputy minister, Dr. J. L. Kask, chairman of the Fisheries Research Board, Dr. A. L. Pritchard, and finally, Dr. W. M. Sprules. I feel sure that if there are any questions which members of the committee would like to ask, we have the gentlemen present who can answer them.

Have copies of the bill been distributed?

Clerk of the COMMITTEE: Yes, Mr. Chairman.

The CHAIRMAN: Then we shall begin with the bill.

On clause 1.

Mr. BARNETT: I wonder if it is the desire of the minister to have one of his officers make a statement or to give us a general statement, or would he prefer that we just ask questions on the subject matter which is uppermost in our minds?

The CHAIRMAN: If the minister is satisfied, we might have a short statement at this time.

Hon. Mr. SINCLAIR: Mr. Chairman, my parliamentary assistant, Mr. MacNaught, made a statement on second reading of the bill. It is to be found in Saturday's Hansard, and I think it pretty well cover the situation.

The fur seals of the North Pacific have been under international conservation since 1911. Before 1911 there was pelagic hunting on the high seas which was so extensive that it reduced the herd almost to the point of extinction.

There was action then taken by Canada, the United States, Russia and Japan which countries agreed to abolish pelagic sealing, that is, killing on the sea—and to have controlled killing in the rookeries and the Pribilof islands, on the American side and in the Commander and Robben islands on the Asian side.

Japan and Russia later left this agreement. In recent years it has been Canada and the United States who have maintained it, and divided the catch 80 per cent to the United States and 20 per cent to Canada.

Canada's share is compensation for not killing the seals as they move northward along the coast of British Columbia in their annual migration from California to the Pribilof islands.

This has been a remarkably successful international control because the herd, which was less than 100,000 in 1911 is now somewhere between  $\frac{1}{2}$  million and 2 million; and our share of the annual kill, that is, the gross, is better than \$1 million. Last year it netted us \$828,520.

However, the fishermen of the North Pacific became exercised because they thought that a herd which had swollen to this magnitude, between 1 $\frac{1}{2}$  and 2 million, was eating an awful lot of fish, and it might be fish which could be commercially used.

When I was in Japan three years ago I spent an afternoon before the fisheries committee of the Japanese parliament when the members there questioned me, and pointed out that Japan was still abstaining from hunting on the high seas but was getting no return by way of compensation in a share of the kill.

Then when I was in Russia two years ago the director of conservation, Dr. Babayan, in Moscow, raised the question with me and suggested that the time had come for a scientific study of this whole problem.

The Russians now control both rookeries on the Asian side, the Commander and Robben islands.

Because of that we had a meeting of the four powers last year in Washington. That meeting lasted for a year before any agreement was reached, and that agreement is represented by the protocol which is attached as a schedule to this act. It provides for a sharing of the kill from all the rookeries and also for a six year period of study during which time there will be a very careful investigation of the migration, the size of the herd, and the amount of commercial fish which the herd consumes. That, in essence, is the background of this bill.

We Canadians think it is a good bill. We certainly are getting more out of sealing this way than we would by unrestricted high sea killing.

I think other questions could be answered because we have here all the officials of my department in connection with this aspect. Dr. Kask, chairman of the Fisheries Research Board, is one of the scientists who worked on fur seals. He has visited the Pribilof islands and he could give you first hand information about the fur seal problem.

The CHAIRMAN: Thank you, very much.

Mr. BARNETT: The minister touched on one point which I think is of general interest today, and to which no reference was made in the statement in the house by his parliamentary assistant. I refer to the economic value of the catch so far as Canada is concerned. The statement referred to the percentage of catch but I wonder if that figure of \$828,520 net which the minister mentioned is a fair average figure of what the actual kill has been worth to Canada over a period of years?

Hon. Mr. SINCLAIR: It has been going up steadily. I could give you the entire revenue right back to 1912; I could put it on the record if you would like to have it.

The CHAIRMAN: Is it agreed?

Hon. Mr. SINCLAIR: In 1918 we got only \$842 out of it as there was no activity because of the war. But in recent years, let us go back: from 1946, this is the net revenue; \$600,000; \$500,000; \$600,000; \$500,000; \$800,000; \$700,000; \$800,000; and \$800,000. You see it runs between \$600,000 and \$800,000 as net revenue.

Mr. HAHN: What charges are sustained against it to bring it up to the net which you mention?

Hon. Mr. SINCLAIR: A fur seal pelt is an unusual thing. The pelt itself is covered with very coarse hair, and the curly fur is only found very close to the skin. Before the first world war these skins were all processed in London, England by a firm there which had been at it for a century. But this firm was bombed out during the first world war. Then two experts came to America from this firm and worked for the Fouke Fur Company, in St. Louis and taught the process. There are almost 100 operations in turning a raw skin into a fine pelt.

First of all there is the transportation cost from the Aleutian islands to St. Louis. Then there is this cost of tanning, plucking and dyeing which at the present time runs around \$30 per skin, roughly. Then we take our share of the skins to Montreal where they are auctioned off by the Canadian Fur Auction Company who add on a 2 per cent charge. That is just half the customary charge which is made for auctioning fur skins, and there are two reasons for it: first, this is a prestige item, and they handle the entire production; secondly, they have consistently got a much better price than American auctioneers.

The CHAIRMAN: How many seal skins were there represented in that figure of \$828,520?

Hon. Mr. SINCLAIR: Last year roughly there were 123,000 seals killed, and we got one-fifth, or 24,560 odd.

Mr. HAHN: There is very little change actually in the range from \$600,000 to \$800,000; there is very little reflected in the value per skin. Has there been an increase in the number of skins each year?

Hon. Mr. SINCLAIR: There is a very slight variation. The kill has been between 60,000 to 70,000 over the last ten years. Last year the kill was up a bit.

Mr. HAHN: It has been quite constant then. Has the number of seals been increasing in the last five year period?

Hon. Mr. SINCLAIR: The rookeries are just about at their maximum capacity now.

Mr. HAHN: So we need not expect an increase in future years?

Hon. Mr. SINCLAIR: No. It would depend on the fur market. But one thing about fur seals is this: they have always been prestige skins. Other furs may come and go from favour to disfavour; but there has always been a good sale for fur seal skins. It is a very restricted product, and there is always a market for it.

Mr. HAHN: What becomes of the net revenue? Does it go into the general revenue?

Hon. Mr. SINCLAIR: Yes, it goes into the general revenue.

Mr. PATTERSON: It seems to me that the division is somewhat unequal. I wonder on what considerations it is made?

Hon. Mr. SINCLAIR: It is a very simple thing. If you look at the coast of America, these fur seal females with their pups spend the winter off the coast of California. Then late in March they start their journey north. They pass 15 miles to 50 miles off the California coast, up the entire west coast of North America, to the Aleutians and the Pribilof islands. They pass our coast for 400 miles along it. That is, the opportunity to kill them off our coast exists for 400 miles whereas off the American coast it exists for almost 2,000 miles. We abstain from hunting them as they pass along our 400 miles of coastline.

Mr. PATTERSON: So it is based pretty well on the coastline along which they travel?

Hon. Mr. SINCLAIR: Yes, and on the opportunity to kill. We refrain from killing them as they pass our coastline.

Mr. CANNON: Does this mean that we received more in the consolidated revenue fund?

Hon. Mr. SINCLAIR: Yes.

Mr. CANNON: We do not give a contribution to the people as a result of this?

Hon. Mr. SINCLAIR: I am glad you raised that question. Mr. Pearkes, who has always taken a very great interest in these matters, raised the point that we should pay these funds out to the fishermen on the west coast in the same way as a certain bounty is paid out to the fishermen on the east coast. But the situation is very different on the east coast where we received \$5½ million under the Ashburton award, as adjustment for American fishing rights in that area, which affected our fishermen. We have always paid the interest on this amount, \$160,000 a year, to the fishermen, who are full time fishermen of the three maritime provinces. It varies between \$6 to \$10 per fisherman per year, I think \$9 was what the fisherman got last year. There is a good reason for the original payment to fishermen because they were compensated by the settlement. But a great number of fishermen in the maritimes are of the opinion today that if that \$160,000 were put to use to improve fisheries production in the maritimes each year, it would be better than merely giving \$9, which some say does not amount to more than a couple of bottles of rum for the fisherman. However, that is the way they want it, and that is the way they get it.

But on the west coast there is a different situation. The Americans abolished pelagic sealing in 1891. They did it voluntarily because they were disturbed by the rate of killing. Then all the sealing vessels, 70 or 80 in number, based their operations in Victoria B. C. and continued pelagic sealing despite the fact that the Americans were abstaining.

A great many of those sealers were manned by American personnel displaced by the American ban. The Canadian sealing companies and the Russians and the others who were doing high seas killing were so ruthless in their operations that they practically wiped out the seal herds. Many seals wounded or killed were not recovered, so there was heavy waste. And a second, and more dangerous thing, was the fact that there were as many females killed as males. Only three year old bachelor bulls are killed under our present operations on the Pribilof islands, and all pelts are collected. Since one adult bull can serve a harem of from 50 to 60 females there is always a surplus of young bulls. So the killing of fur seals has been restricted to them. They are the ones that have the best pelts.

In 1911 there were just two sealers left of the big fleet which had operated out of Victoria. These two boats received \$60,000, I think, when the ban on pelagic sealing was enforced in 1911. They were the only two boats still in operation. The rest of the sealing vessels, operated by the Victoria Sealing Company, had ceased operations two or three years before the ban, because the seals were so few it was unprofitable.

This Victoria Sealing Company launched a claim for compensation. There was a royal commission which denied the claims since the company had ceased operations well before the ban.

Mr. CANNON: The treaty is not depriving anyone of any revenue?

Hon. Mr. SINCLAIR: No. We took over a sealery which was on the point of extinction because of over-killing. The revenue goes to the general revenue of Canada.

General Pearkes suggested that this money, if not paid to the fishermen, should be paid to the Department of Fisheries for specific projects. I said this

before in the house, that there has never been a time since I have been Minister of Fisheries where we have been turned down on any requests for money from the government. The problem has been a shortage of personnel rather than one of money. If we received this \$1 million from fur seals it would be \$1 million less we would get from the federal treasury on general account, since we now receive all the money we can usefully employ.

Mr. HAHN: Is there a glut on the market?

Hon. Mr. SINCLAIR: No. I read a story in the paper this morning by Patrick Nicholson. Mr. Murphy, the member from Sarnia, claimed I was unable to get sufficient money for the lampreys and I am supposed to have said this to him:

"I'm only a junior minister," he told Murph. You press for more money yourself.

So Mr. Murphy did and he got the money.

I said no such thing. I have repeatedly said in the house we have all the money we need for our work on lampreys. Each year we have had an unspent balance. Our only shortage is of trained scientists. Murphy's talk is sheer nonsense. So when anyone suggests turning over the \$1 million from the fur seals to the Department of Fisheries I say we do not need it because it should go to the Receiver General of Canada, from whom we draw our funds.

In the five years I have been minister I have not been turned down on a request for money for any fisheries project.

Mr. PATTERSON: What was the reason the Japanese and the Russians withdrew? Was it so that they would be able to go ahead and engage in indiscriminate killing?

Hon. Mr. SINCLAIR: Not the Russians. They withdrew at the time of the revolution. The Commander islands are under the control of the Russians and the Robben islands did belong to Japan. The Japanese withdrew from the treaty just before they entered the second world war. After the war the Japanese wanted to start pelagic sealing again but they were restrained, first of all by the government of occupation, and then they agreed to abstain until such a time as we had a new treaty. They had quite an interest because some seals from the Pribilof islands do go down the Asian coast, although most are on the American coast. Some seals from the Commander and Robben islands may come down our coast too, so there is an intermingling. That is why there is a pooling arrangement of 15 per cent of the kill.

Mr. HAHN: What percentage of those seals going up the west coast of Canada go along the coast of Vancouver Island?

Hon. Mr. SINCLAIR: Every now and then a few get lost and turn up off the west coast of Vancouver Island quite close to shore.

There is another aspect of this, and that is concerned with the Indians who still have the right to kill these seals on the high seas, as do the aborigines in Japan, the Ainos. They have the right to kill seals for their own use as clothing or food, provided they use aboriginal methods—spears, bow and arrow and canoes. Three or four years ago I was called to a meeting of the Indians on the west coast who complained that the departmental officials were stopping them from using powered boats and high-powered rifles. I said, "you will have to use bow and arrows, spears and canoes, under the terms of the treaty." They said that was for the Indians. I said they would have to make up their minds whether they were using the methods of Indians or white men. We had a survey of the number of serviceable canoes on the west coast and found there was only one war canoe that could go to sea. Those Indians would be permitted to paddle this out to sea and kill by bow and arrows.

Mr. BARNETT: The minister was not in the house when I made reference to this matter on Saturday. I did so on the basis of some recent correspondence I have had from certain Indians in my constituency who were aware of the fact that we are entering into a new treaty. As I explained in the house one of their complaints is that the deer population is so decreased on the west coast of Vancouver Island they were hopeful that under the new treaty some provision would be made so that they could use something more than their non-existent canoes and spears for securing seals for food purposes. I raised this matter in the house. The minister knows as well as I do it is a matter of some considerable interest, I would imagine, particularly to the group of Indians on the west coast of Vancouver Island. I do not know whether or not any are concerned in the Queen Charlotte islands area. I thought it might be worth while to have some discussion on this point.

Reference has been made to the migratory routes the seals follow. I was wondering how far off shore the routes are, with particular reference to west Vancouver Island. What is the physical situation, as far as going out in a canoe is concerned?

Hon. Mr. SINCLAIR: The closest is generally around fifteen miles, but the main runs have been 25 and 50 miles off Vancouver Island, and much further off Queen Charlotte islands. They are off canoe range, of course.

If we are to abstain from pelagic sealing we cannot have special groups of people using modern boats and modern rifles out there doing the very thing we are prohibiting. The Indians of 100 years ago did go out when the seals were closer to shore and kill some of them for clothing and perhaps for food—although they are not very appetizing, I do not think they kill very many for food. As far as recent kills are concerned, the 30 or 40 skins taken recently by Indians were not used for their own clothing. They sell them on the fur market. It is a bad thing to have these fur seal skins sold on the local fur market in that way. Instead of high quality skins extremely well prepared, we get skins poorly prepared out on the market it spoils the market. When they are killed by a bullet the Indians will drive a spear through the skin in order to try to convince our officers they were killed in that way, and this further damages the skin.

If these people want to hunt in a primitive way they have that right, but if they want to hunt the same as other people, with high-powered boats, and rifles, they have to observe the same laws as do the other people.

Clause 1 agreed to.

Clauses 2 to 7 inclusive agreed to.

On clause 8.

Mr. HAHN: Possibly I misinterpreted the minister's statement. This would not permit the Indian actually to sell his skin on the open market, would it?

Hon. Mr. SINCLAIR: If it is taken by primitive methods and certified by our fisheries officers that that is the way it was taken, those skins would still not pass through the one fur plant which does the high grade processing. They would still go on the market in a poor way.

Clause 8 agreed to.

Clauses 9 to 15 inclusive agreed to.

On the Schedule. "Interim Convention on Conservation of North Pacific Fur Seals."

Mr. BARNETT: Mr. Chairman, I think perhaps before we carry the schedule there might be some interest in having given to the committee first of all the results we have had so far in the field of research into the fur seal and into

its effect upon the commercial fisheries, and perhaps, on the basis of that, what plans as far as our Canadian experts are concerned they feel might be carried forward.

Hon. Mr. SINCLAIR: Dr. Kask can answer that.

Dr. J. P. L. KASK (Chairman, Fisheries Research Board): There is no doubt that the big bull seals weighing around 750 pounds consume a lot of food. Just what this food is has been under study over a number of years. A very extensive study was conducted jointly by scientists of the United States, Canada and Japan in 1952. During that year nearly 3,000 seals were killed and their stomachs carefully examined. It was found that over half of them had nothing at all in their stomachs. That of course does not mean they do not eat anything. However they did not have any evidence of having eaten anything which left some residue or remains in their stomachs.

In studying the stomach contents we looked for skeletal structures such as devilfish beaks, vertebrae, ear bones and so on. Of the half that had residual food matter in their stomachs, most of the food consisted of parts of the squid that have a hard structure such as the devilfish bears. That is what is found is usually the last part of the food consumed. The squid or devilfish in America is not considered an important food, but in Japan it is. Other species that form a considerable part of the diet of the fur seal are such fish as sauries and anchovies, particularly in the area of the Alaska peninsula, and other smaller schooling fish.

The greatest objection to fur seals has been raised by the salmon fisherman. However of the 3,000-odd stomachs examined in 1952 only very, few had any salmon remains in them at all. They doubtless eat salmon if they can get them. They are omnivorous animals in that they will eat what they can get. If they are in regions where salmon can be caught they will take it. Salmon however is not, easy to catch. They feed mostly on large schools of small fish, smaller than salmon.

Percentage-wise, the number of seals that had salmon remains in their stomachs on the North American side amounted to about three per cent. That was only a residual amount of salmon.

On the Asiatic side, in the principal area of migration, during the summer season, when they were being taken in that area, only a fraction of one per cent had salmon in their stomachs. Actually, from the point of view of their predation on salmon, there is no doubt they would eat them if salmon were available. I do not think they are nearly as serious a predator on salmon as most fishermen seem to think.

Mr. BARNETT: Is there an established difference in the feeding habits of fur seal as compared with the hair seal?

Mr. KASK: There is quite a difference, yes. Of course, if the same situation obtained with the fur seal as with the hair seal, they would be a great predator on the salmon. As you know, the hair seal primarily takes salmon out of nets. This happens now on the high seas Japanese operation. Salmon are caught in nets there. Fur seals are not above going and picking the salmon out, but usually their migration routes are not in that area where nets are set for fish.

The CHAIRMAN: What about the quality of the fur, as regard the age groups, doctor? How long do these seals live?

Mr. KASK: Seals live up to about 15 years of age. Under the controlled harvest plan on the grounds, it is primarily the three- and some four-year old bachelor males that are taken. No females are taken for that purpose. As to the present size of the herd,—and this question came up during the

discussion,—it levelled off in about 1935, and since that time, the take off the Pribilof islands varies between 60,000 and 70,000 bachelor seals per year. That is the reason for the uniformity of the take.

Mr. CANNON: What do you mean exactly by "bachelor seals"?

Hon. Mr. SINCLAIR: Explain the whole story. It is a fascinating one.

Mr. KASK: Fur seals in the North Pacific congregate on only three very barren island groups in the northern area, to breed—the Pribilof islands in the eastern part of the Bering Sea, the Commander islands on the western part, and the Robben islands, which are just south of Sakhlin, the latter two under U.S.S.R. control. By far the greatest number—maybe 90 per cent—of all the seals congregate on the Pribilof islands. The biggest problem, therefore, is the Pribilof islands seal problem. Some of the Pribilof islands seals, as the minister pointed out, migrate along the Japanese coast and are subject to pelagic sealing by Japanese as well as Russian seals from the Commander and the Robben islands.

Each summer these seals come on our North American coast, from southern California, where they have been feeding. They start heading north, as their sexual products begin to develop, and arrive at the Pribilof islands some time early in the summer, for the breeding season. There, the bull seals congregate in the positions which they have maintained each breeding season throughout their lives. They come back each year to the same location, and they then start assembling a harem. They assemble their harems, and fight off all the young bulls that are interested in these females, too, and drive them away. Bachelor seals, are driven off into special areas and are congregated into large groups, while the old bull seal stays behind to service his numerous wives. The number of females per harem varies from half a dozen up to 75. The average harem numbers about 30. The bachelor seals are the two, three and four year old males. As they have nothing else to do, they are herded off into killing areas—isolated areas—and are there killed in highly selective manner. Only, those with the very best skins, that is skins that are not seriously damaged by scarring, are taken.

Mr. CANNON: Thank you very much. It is very interesting.

Mr. BARNETT: A certain percentage of these bulls are left for further competition, is that correct?

Mr. KASK: You can never kill off all the bachelors. Even if you wanted to it could not easily be done. Killing is not exactly an easy process, because the bachelors go out into the sea. They do not just sit and allow themselves to be killed. It is a scientific, selective method of killing, and the workmen leave enough young males so that when the old bulls die off, there will always be some new ones to take over. The big bull seal returns, each season to a little well defined patch or area of beach. If anything comes inside that defined area, the big bull seal will fight it off.

Mr. HAHN: In view of the migratory habits of the seal, as I understand them, has there been any indication, in recent years, that they have picked up much of the atomic radiation that we hear so much about?

Mr. KASK: That I cannot answer, sir. All I can say is, the areas where the principal detonations took place—Bikini islands, and off the Christmas islands, where we expect the British to test their bombs—are not in the path of the general migrations. They are located centrally in the Pacific and the migratory routes are on each side. They go up to 90 miles off shore, but very few occur beyond that.

Mr. HAHN: How far south do they actually go?

Mr. KASK: They have been found off the shores of lower California, but those are just stragglers that are found beyond the middle of California, where they appear in considerable numbers.

Mr. BARNETT: Just on a point of interest, are these seals at San Francisco, fur seals?

Mr. KASK: They are actually sea lions.

The CHAIRMAN: Shall the schedules carry?

Mr. PATTERSON: Article II of the schedule has reference here to the necessary scientific research programs, and paragraph 2 gives the specific matters to be studied. Just how is this going to be carried out? Is it to be done by each country separately following its operation, or just how is it going to be carried out?

Mr. KASK: The program is jointly planned by the scientists of the four participating countries. Each of the countries is allotted a certain part of that program. The Canadian part is very definitely established, and we would have been ready to go into that investigation this year, had the matter of negotiation been expedited a little bit in Washington. The over-all program is done jointly by the scientists of the four countries and a portion of the program is allotted to each country to carry out.

Mr. PATTERSON: What would Canada's particular phase be?

Mr. KASK: Canada's particular phase at this time is to take the seals' stomachs and find out more specifically what the effects are on important commercial fisheries on the Pacific Coast.

Mr. HAHN: How much is Canada's research cost expected to be each year?

Mr. KASK: We do not know yet, but it will involve the chartering of a vessel, and the employing of one or two good gunners, in addition to our scientific people.

Mr. CANNON: In regard to the second schedule on page 14, I notice something there which I would like to have explained. Paragraph 4 of the second schedule says:—

The United States of America each year shall take at sea for research purposes in the Eastern Pacific Ocean between 1,250 and 1,750 seals. Paragraph 5, says:

Canada each year shall take at sea for research purposes in the Eastern Pacific Ocean between 500 and 750 seals.

Paragraph 6, referring to Japan, and paragraph 7, referring to the Union of Soviet Socialist Republics, does not mention the words "for research purposes". I was wondering if there was any specific reason for that.

Mr. MacNAUGHT: It says:

—years of pelagic research—.

Mr. CANNON: The others all have reference to pelagic research.

Mr. PATTERSON: It does not necessarily state for research purposes.

Mr. CANNON: They are not necessarily taking them for research purposes. I was wondering why the United States and Canada are limited to taking them for research purposes, but Japan and the U.S.S.R. are not.

Mr. HAHN: There is a difference in respect to pelagic research, is there not? That has regard to the high seas. That may well have reference to a discovery use, and the other may have to do with the actual use.

Hon. Mr. SINCLAIR: Mr. Clark can probably explain this, but these hides are all taken in respect of each country's quotas, in any case. Mr. Clark, or Mr. Ozere can probably tell you what their negotiations have been.

Mr. CLARK: Mr. Chairman, one of the difficulties that we had, during the very lengthy period of negotiations in Washington was, of course, that we carried the negotiations on in three different languages. When you get the English translation, to make it complete, in so far as we could, in the Russian and the Japanese, some wordings in the agreement did not come out exactly and precisely the same. Actually, it is for research purposes in both instances.

Mr. CANNON: It is supposed to be for research purposes, but it does not say so.

Mr. BRYCE: Can you tell me, for my own information, whether the Japanese and the Russians have reached the same stage in the processing of the skins as the firm which you mentioned in the United States, and the other firm in London?

Mr. CLARK: Not so far as we are concerned. The furs that have been seen by different people, and that have been processed, for example in Japan, are far inferior to those processed by the Fouke Company, or the Martin Company in London.

Mr. BRYCE: I asked that once before.

Mr. CLARK: They have not got the technique at all.

The CHAIRMAN: Are there any other questions?

Mr. BENNETT: I was just wondering whether any of the nations signing the treaty have as yet ratified it, or are we the first ones to get to the stage of final ratification.

Mr. CLARK: Mr. Chairman, if I may answer: about two weeks ago in Japan—I was there three weeks ago on another matter—the treaty was up before the Japanese Diet for ratification. As I have not heard anything to the contrary, I presume it went through. We have heard no word from the U.S.S.R. but apparently they do not have to go through the same procedures as we do. In Washington they can do it within twenty-four hours, so there is no problem there.

Mr. ROBICHAUD: We can soon find out.

Mr. CLARK: The treaty is before the United States Congress for ratification now.

Schedules agreed to.

Title agreed to.

The CHAIRMAN: Shall I report the bill without amendment?

Some Hon. MEMBERS: Agreed.







