

Oct. 30, 1942

ALLOCATION OF RESPONSIBILITY FOR THE HATCHING, REARING,
AND PLANTING OF SEA-RUN SALMON FOR MAINE WATERS.

(Summary of conclusions arrived at by discussion
and correspondence)

In order to establish a more definite understanding for handling and planting sea-run salmon in Maine to permit more effective preparation of budget estimates and planning of future operations, and to reduce the truck mileage required for planting, the following allocation of responsibility in respect to these operations has been agreed upon by the three parties to the Salmon Agreement, subject to changes made necessary by war-created limitations.

The Fish and Wildlife Service will be responsible for picking up the brood salmon from collecting gear on the Penobscot or other rivers (this will be handled by the Craig Brook Hatchery, but the actual trapping of the salmon will be carried out by whatever personnel is in the best position to do it), carrying them through to the spawning season in Craig Brook pools, and stripping and carrying all eggs until the eyed stage. Insofar as possible, all eggs not shipped to Tunk Pond Hatchery will be reared by the Craig Brook Hatchery to the stage recommended by the Salmon Research Committee. The Service also will take care of salmon planting operations for the Penobscot and any other rivers to the west which are used for restoration experiments.

Woods Hole Laboratory
Manuscript Report Number

42 - 5

The Maine Department of Inland Fisheries and Game will take about 100,000 eyed eggs each year from Craig Brook, hatch them at Tunk Pond, and, if possible, carry about 50 percent of them into the second year. The Department also will take care of all salmon planting operations for rivers east of the Penobscot, including the fish reared at Tunk Pond and any fish raised at Craig Brook for these rivers.

Insofar as is possible, the Department of Sea and Shore Fisheries will assist in the planting operations on the Pemaquid involving silver salmon.

The number of salmon planted in each river will be based on the recommendations of the Salmon Research Committee after approval by the parties to the Salmon Agreement. The time of planting each batch of young fish for the Dennys, Penobscot, St. Georges, and Pemaquid, will be based on the recommendations of the biologist in charge of the experimental work on each river; the planting time for other rivers will be based on the recommendations of the Salmon Research Committee. These recommendations will take into consideration and be conditioned by the available hatchery capacities and services. Information concerning the latter will be obtained by the Committee from the respective fish culture departments. Recommendations for allocation and rearing of each season's egg take will be furnished the State and Service fish culture departments by the following February 1.

188

5/1/1911

TREATY SERIES, No. 548

BOUNDARY WATERS AND QUESTIONS ARISING ALONG THE BOUNDARY BETWEEN THE UNITED STATES OF AMERICA AND CANADA

TREATY
BETWEEN THE UNITED STATES OF AMERICA
AND GREAT BRITAIN

Signed at Washington, January 11, 1909.
Ratification advised by the Senate of the United States, with understanding, March 3, 1909.
Ratified by the President of the United States, April 1, 1910.
Ratified by Great Britain, March 31, 1910.
Ratifications exchanged at Washington, May 5, 1910.
Proclaimed by the President of the United States, May 13, 1910.



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1931

The official citation for this treaty
is 36 Stat. (Part 2) 2448

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

WHEREAS a Treaty between the United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, Emperor of India, to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, was concluded and signed by their respective Plenipotentiaries at Washington on the eleventh day of January, one thousand nine hundred and nine, the original of which Treaty is word for word as follows:

The United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, Emperor of India, being equally desirous to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, have resolved to conclude a treaty in furtherance of these ends, and for that purpose have appointed as their respective plenipotentiaries:

The President of the United States of America, Elihu Root, Secretary of State of the United States; and

His Britannic Majesty, the Right Honorable James Bryce, O.M., his Ambassador Extraordinary and Plenipotentiary at Washington;

Who, after having communicated to one another their full powers, found in good and due form, have agreed upon the following articles:

PRELIMINARY ARTICLE.

For the purposes of this treaty boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would

flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

ARTICLE I.

The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.

It is further agreed that so long as this treaty shall remain in force, this same right of navigation shall extend to the waters of Lake Michigan and to all canals connecting boundary waters, and now existing or which may hereafter be constructed on either side of the line. Either of the High Contracting Parties may adopt rules and regulations governing the use of such canals within its own territory and may charge tolls for the use thereof, but all such rules and regulations and all tolls charged shall apply alike to the subjects or citizens of the High Contracting Parties and the ships, vessels, and boats of both of the High Contracting Parties, and they shall be placed on terms of equality in the use thereof.

ARTICLE II.

Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary, shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto.

It is understood, however, that neither of the High Contracting Parties intends by the foregoing provision to surrender any right, which it may have, to object to any interference with or diversions of waters on the other side of the boundary the effect of which would be productive of material injury to the navigation interests on its own side of the boundary.

ARTICLE III.

It is agreed that, in addition to the uses, obstructions, and diversions heretofore permitted or hereafter provided for by special agreement between the Parties hereto, no further or other uses or obstructions or diversions, whether temporary or permanent, of

boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line, shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission.

The foregoing provisions are not intended to limit or interfere with the existing rights of the Government of the United States on the one side and the Government of the Dominion of Canada on the other, to undertake and carry on governmental works in boundary waters for the deepening of channels, the construction of breakwaters, the improvement of harbors, and other governmental works for the benefit of commerce and navigation, provided that such works are wholly on its own side of the line and do not materially affect the level or flow of the boundary waters on the other, nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes.

ARTICLE IV.

The High Contracting Parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or protective works or any dams or other obstructions in waters flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

ARTICLE V.

The High Contracting Parties agree that it is expedient to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both Parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from the State of New York, and on the Canadian side of the river under licenses authorized by the Dominion of Canada and the Province of Ontario.

So long as this treaty shall remain in force, no diversion of the waters of the Niagara River above the Falls from the natural course and stream thereof shall be permitted except for the purposes and to the extent hereinafter provided.

The United States may authorize and permit the diversion within the State of New York of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second.

The United Kingdom, by the Dominion of Canada, or the Province of Ontario, may authorize and permit the diversion within the Prov-

ince of Ontario of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet of water per second.

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

ARTICLE VI.

The High Contracting Parties agree that the St. Mary and Milk Rivers and their tributaries (in the State of Montana and the Provinces of Alberta and Saskatchewan) are to be treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries, but in making such equal apportionment more than half may be taken from one river and less than half from the other by either country so as to afford a more beneficial use to each. It is further agreed that in the division of such waters during the irrigation season, between the 1st of April and 31st of October, inclusive, annually, the United States is entitled to a prior appropriation of 500 cubic feet per second of the waters of the Milk River, or so much of such amount as constitutes three-fourths of its natural flow, and that Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of St. Mary River, or so much of such amount as constitutes three-fourths of its natural flow.

The channel of the Milk River in Canada may be used at the convenience of the United States for the conveyance, while passing through Canadian territory, of waters diverted from the St. Mary River. The provisions of Article II of this treaty shall apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk River.

The measurement and apportionment of the water to be used by each country shall from time to time be made jointly by the properly constituted reclamation officers of the United States and the properly constituted irrigation officers of His Majesty under the direction of the International Joint Commission.

ARTICLE VII.

The High Contracting Parties agree to establish and maintain an International Joint Commission of the United States and Canada composed of six commissioners, three on the part of the United States appointed by the President thereof, and three on the part of the United Kingdom appointed by His Majesty on the recommendation of the Governor in Council of the Dominion of Canada.

ARTICLE VIII.

This International Joint Commission shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which under Articles III and IV of this treaty the approval of this Commission is required, and in passing upon such cases the Commission shall be governed by the following rules or principles which are adopted by the High Contracting Parties for this purpose:

The High Contracting Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.

The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which tends materially to conflict with or restrain any other use which is given preference over it in this order of precedence:

- (1) Uses for domestic and sanitary purposes;
- (2) Uses for navigation, including the service of canals for the purposes of navigation;
- (3) Uses for power and for irrigation purposes.

The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary.

The requirement for an equal division may in the discretion of the Commission be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side.

The Commission in its discretion may make its approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the Commission, be made for the protection and indemnity against injury of any interests on either side of the boundary.

In cases involving the elevation of the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters or in waters flowing therefrom or in waters below the boundary in rivers flowing across the boundary, the Commission shall require, as a condition of its approval thereof, that suitable and adequate provision, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby.

The majority of the Commissioners shall have power to render a decision. In case the Commission is evenly divided upon any question or matter presented to it for decision, separate reports shall be made by the Commissioners on each side to their own Government. The High Contracting Parties shall thereupon endeavor to agree upon an adjustment of the question or matter of difference, and if an agreement is reached between them, it shall be reduced to writing in the form of a protocol, and shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

ARTICLE IX.

The High Contracting Parties further agree that any other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from

time to time to the International Joint Commission for examination and report, whenever either the Government of the United States or the Government of the Dominion of Canada shall request that such questions or matters of difference be so referred.

The International Joint Commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

Such reports of the Commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award.

The Commission shall make a joint report to both Governments in all cases in which all or a majority of the Commissioners agree, and in case of disagreement the minority may make a joint report to both Governments, or separate reports to their respective Governments.

In case the Commission is evenly divided upon any question or matter referred to it for report, separate reports shall be made by the Commissioners on each side to their own Government.

ARTICLE X.

Any questions or matters of difference arising between the High Contracting Parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the International Joint Commission by the consent of the two Parties, it being understood that on the part of the United States any such action will be by and with the advice and consent of the Senate, and on the part of His Majesty's Government with the consent of the Governor General in Council. In each case so referred, the said Commission is authorized to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

A majority of the said Commission shall have power to render a decision or finding upon any of the questions or matters so referred.

If the said Commission is equally divided or otherwise unable to render a decision or finding as to any questions or matters so referred, it shall be the duty of the Commissioners to make a joint report to both Governments, or separate reports to their respective Governments, showing the different conclusions arrived at with regard to the matters or questions so referred, which questions or matters shall thereupon be referred for decision by the High Contracting Parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth, and sixth paragraphs of Article XLV of The Hague Convention for the pacific settlement of international disputes, dated October 18, 1907. Such umpire shall have power to render a final decision with respect to those matters and questions so referred on which the Commission failed to agree.

ARTICLE XI.

A duplicate original of all decisions rendered and joint reports made by the Commission shall be transmitted to and filed with the Secretary of State of the United States and the Governor General of the Dominion of Canada, and to them shall be addressed all communications of the Commission.

ARTICLE XII.

The International Joint Commission shall meet and organize at Washington promptly after the members thereof are appointed, and when organized the Commission may fix such times and places for its meetings as may be necessary, subject at all times to special call or direction by the two Governments. Each Commissioner, upon the first joint meeting of the Commission after his appointment, shall, before proceeding with the work of the Commission, make and subscribe a solemn declaration in writing that he will faithfully and impartially perform the duties imposed upon him under this treaty, and such declaration shall be entered on the records of the proceedings of the Commission.

The United States and Canadian sections of the Commission may each appoint a secretary, and these shall act as joint secretaries of the Commission at its joint sessions, and the Commission may employ engineers and clerical assistants from time to time as it may deem advisable. The salaries and personal expenses of the Commission and of the secretaries shall be paid by their respective Governments, and all reasonable and necessary joint expenses of the Commission, incurred by it, shall be paid in equal moieties by the High Contracting Parties.

The Commission shall have power to administer oaths to witnesses, and to take evidence on oath whenever deemed necessary in any proceeding, or inquiry, or matter within its jurisdiction under this treaty, and all parties interested therein shall be given convenient opportunity to be heard, and the High Contracting Parties agree to adopt such legislation as may be appropriate and necessary to give the Commission the powers above mentioned on each side of the boundary, and to provide for the issue of subpoenas and for compelling the attendance of witnesses in proceedings before the Commission. The Commission may adopt such rules of procedure as shall be in accordance with justice and equity, and may make such examination in person and through agents or employees as may be deemed advisable.

ARTICLE XIII.

In all cases where special agreements between the High Contracting Parties hereto are referred to in the foregoing articles, such agreements are understood and intended to include not only direct agreements between the High Contracting Parties, but also any mutual arrangement between the United States and the Dominion of Canada expressed by concurrent or reciprocal legislation on the part of Congress and the Parliament of the Dominion.

ARTICLE XIV.

The present treaty shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the treaty shall take effect on the date of the exchange of its ratifications. It shall remain in force for five years, dating from the day of exchange of ratifications, and thereafter until terminated by twelve months' written notice given by either High Contracting Party to the other.

IN FAITH WHEREOF the respective plenipotentiaries have signed this treaty in duplicate and have hereunto affixed their seals.

DONE at Washington the 11th day of January, in the year of our Lord one thousand nine hundred and nine.

ELIHU ROOT [SEAL]
JAMES BRYCE [SEAL]

AND WHEREAS the Senate of the United States by their resolution of March 3, 1909, (two-thirds of the Senators present concurring therein) did advise and consent to the ratification of the said Treaty with the following understanding, to wit:

"Resolved further, as a part of this ratification, That the United States approves this treaty with the understanding that nothing in this treaty shall be construed as affecting, or changing, any existing territorial or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Mary's river at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's river, within its own territory, and further, that nothing in this treaty shall be construed to interfere with the drainage of wet swamp and overflowed lands into streams flowing into boundary waters, and that this interpretation will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will, in effect, form part of the treaty;"

AND WHEREAS the said understanding has been accepted by the Government of Great Britain, and the ratifications of the two Governments of the said treaty were exchanged in the City of Washington, on the 5th day of May, one thousand nine hundred and ten;

NOW, THEREFORE, BE IT KNOWN THAT I, William Howard Taft, President of the United States of America, have caused the said treaty and the said understanding, as forming a part thereof, to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this thirteenth day of May in the year of our Lord one thousand nine hundred and ten,
[SEAL] and of the Independence of the United States of America the one hundred and thirty-fourth.

WM H TAFT

By the President:

P C KNOX
Secretary of State.

 PROTOCOL OF EXCHANGE¹

On proceeding to the exchange of the ratifications of the treaty signed at Washington on January 11, 1909, between the United States and Great Britain, relating to boundary waters and questions arising along the boundary between the United States and the Dominion of Canada, the undersigned plenipotentiaries, duly authorized thereto by their respective Governments, hereby declare that nothing in this treaty shall be construed as affecting, or changing, any existing territorial, or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Mary's River at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's River, within its own territory; and further, that nothing in this treaty shall be construed to interfere with the drainage of wet, swamp, and overflowed lands into streams flowing into boundary waters, and also that this declaration shall be deemed to have equal force and effect as the treaty itself and to form an integral part thereto.

The exchange of ratifications then took place in the usual form.

IN WITNESS WHEREOF, they have signed the present Protocol of Exchange and have affixed their seals thereto.

DONE at Washington this 5th day of May, one thousand nine hundred and ten.

PHILANDER C KNOX [SEAL]
JAMES BRYCE [SEAL]

¹ This protocol of exchange was ratified by Great Britain June 4, 1910.

Fac 1-1945

Fac Copy

Re: Adams

SUMMARY OF RECOMMENDATIONS MADE BY THE SALMON RESEARCH COMMITTEE
AT ITS FIRST SIX MEETINGS (1942 to 1945, Inclusive)

1. In determining the present suitability for stocking of rivers now containing salmon runs the Penobscot must be considered separately. The other five rivers in eastern Maine were classified from the standpoint of the chances for salmon to pass obstructions, such as dams and nets, as follows:

a. The Denny's and Narragagus rivers are open and were classified as being the most suitable.

b. The Machias river was classified as being less suitable on account of having three fishways and three unscreened water diversions.

c. The Pleasant and East Machias rivers were classified as unsuitable. The Pleasant river dam is leaky and presents a difficult fishway problem; also netting is permitted just below the dam on Tuesdays, Wednesdays, and Thursdays of each week. The East Machias river has a bad obstruction due to the large water diversion of the Bangor Hydro-Electric Company which discharges about 800 feet below the dam. The salmon are attracted into the tailrace and remain there during all low water periods. At such times the main river is almost non-existent from the dam to the tailrace.

2. The recommendations for disposal of the Atlantic salmon remaining at Tunk Lake and Craig Brook hatcheries from eggs taken in 1940 are as follows:

| <u>Hatchery</u> | <u>Derivation of eggs</u> | <u>Approximate number</u> | <u>Disposal</u> |
|-----------------|---------------------------|---------------------------|--------------------------|
| Tunk Lake | Denny's River | 15,000 | Denny's River |
| Do | Penobscot River | 10,000 | East Branch of Penobscot |
| Do | Miramichi River | 17,500 | St. George River |
| Craig Brook | Penobscot River | 15,000 | East Branch of Penobscot |
| Do | Miramichi River | 15,000 | St. George River |

The Denny's river and St. George river plantings are to be made at localities designated by Dr. Cooper and Dr. Houssefall, respectively.

3. Recommendations concerning the disposal of the sea-run salmon from 1941 eggs now hatching at Craig Brook are as follows:

The Miramichi salmon and the Silver salmon from the Pacific coast will be planted respectively in the St. George and Penobscot rivers at the times and places designated by Dr. Houssefall.

Recommendations taken from research committee

Of the 247,000 Atlantic salmon fry from eggs collected from adults taken in the Machias and Penobscot rivers, 120,000 should be planted during 1942 after the first of September, the remainder should be held until 1943.

The 120,000 should be allocated as follows:

| | |
|-------------------|--------|
| Machias River | 55,000 |
| Penobscot River | 40,000 |
| Narraguagus River | 15,000 |
| Dennys River | 10,000 |

If for any reason it becomes necessary to plant over 120,000 during 1942, they should be allocated in the same proportion.

4. Recommendations concerning the obtaining of Atlantic salmon eggs during 1942:
 - a. Attempt to obtain 180 to 200 adult salmon.
 - b. Hold the adults at Craig Brook and mark fish from each river by clipping part of one fin.
 - c. Strip the fish at Craig Brook keeping the eggs from each river separately.
 - d. Attempt to trap fish at Bangor dam on the Penobscot, on the Machias river and at least one other river.
 - e. Attempt to maintain traps all season in any river from which adults are taken to count the entire run.
 - f. Maintain traps at both Bangor and Veazie dams. Mark fish taken at Bangor in excess of those removed for stripping and release them above dam in order to determine the percentage using the Bangor fishway, and to determine whether all fish passing the Bangor dam reach the Veazie fishway.
 - g. At any trap take the first ten fish and only every second fish thereafter until enough have been captured.
 - h. Attempt to rear all sea salmon at not more than two hatcheries.
5. Recommendations concerning pollution are as follows:
 - a. That the laws concerning the dumping of sawdust, shavings, and other wood waste into the Narraguagus and St. Georges rivers be enforced.

- b. That an adequate study be made of the pollution on the Penobscot river from East Millinocket to Sandy Point to determine whether present pollution is detrimental to salmon.
6. Recommendations for legislation are that the laws be amended to define an adequate fishway for salmon as having as a minimum requirement, pools six feet by eight feet or at least 48 square feet with a water depth of at least four feet and having not over 18 inches difference in water level between pools.
 7. About 100,000 Atlantic salmon eggs from the 1942 egg take be transferred from Craig Brook Station to Tunk Lake Station.
 8. Insofar as possible all of the young salmon be carried at the Tunk Lake Station until September 1, 1943.
 9. Insofar as possible, 50 percent of the young salmon be carried until the spring of 1944.
 10. That the young salmon from the 1940, 1941, and 1942 egg takes now on hand at the Tunk Lake and Craig Brook Fishery Stations be released, insofar as practicable, in accordance with the following tables:

Recommendations for allocation and stocking of sea-salmon during 1943

| Stock | Number | Year opened | Source of eggs | Where to plant | Number to plant | Percent to plant | Month to plant | Number to hold | Biologist to mark and/or designate exact place of release |
|---------------------------------|---------|-------------|----------------|----------------|-----------------|------------------|----------------|----------------|---|
| <u>Carried over from 1942</u> | | | | | | | | | |
| Silver salmon | 21,839 | 1941 | Oregon | Pennaquid | 21,839 | 100.0 | April | | Yes |
| Atlantic salmon | 5,872 | 1940 | Miramichi | St. George | 5,872 | 100.0 | May | | Yes |
| | 12,566 | 1941 | Miramichi | St. George | 12,566 | 100.0 | May | | Yes |
| | 67,326 | 1941 | Machias | Machias | 30,900 | 46.0 | May | | No |
| | | | | Fenobscot | 22,200 | 33.3 | May | | Yes |
| | | | | Narraguagus | 8,400 | 12.5 | May | | No |
| Dennys | 5,600 | 8.3 | May | | Yes | | | | |
| <u>From 1942 eggs 1/</u> | | | | | | | | | |
| Silver salmon | 44,764 | 1942 | Oregon | Pennaquid | Ca. 25,000 | | Sept. | 15,000 | Yes |
| Atlantic salmon Tunk Lake 2/ | 100,000 | 1942 | Fenobscot | Three rivers | Ca. 40,000 | | Sept. | 50,000 | No |
| | | | | Narraguagus | | 50.0 | | | Yes |
| | | | | Dennys | | 30.0 | | | No |
| | | | | Machias | | 20.0 3/ | | | |
| Craig Brook | 582,513 | 1942 | Fenobscot | | Ca. 125,000 | | | 400,000 | Yes |
| | | | | St. George | 20,000 | | May | | Yes |
| | | | | St. George | 20,000 | | Sept. | | Yes |
| | | | | Fenobscot | Ca. 85,000 | | Sept. | | Yes |

1/ This is the number of eggs on hand January 15, 1943, no allowance for hatching loss must be made.

2/ Eggs to be transferred from Craig Brook to Tunk Lake hatchery.

3/ Machias river has a low allotment because the Committee considers its suitability somewhat in doubt due to the presence of three fishways and some question as to their efficiency.

Recommendations, subject to revision at a future meeting, for allocation and stocking

During 1944 of sea salmon held over from the 1942 spawning

| Stocks | Number held over | Source of eggs | Where to plant | Number | Percent to plant | Month to plant | Number to hold | Biologist to mark and/or designate exact place of release |
|-----------------------------|------------------|----------------|--|--|----------------------|------------------------------|----------------|---|
| Quak Lake Hatchery | | | | | | | | |
| Atlantic salmon | 50,000 | Penobscot | Harraguagus Dennys Machias | | 50.0 30.0 20.0 | May May May | | No Yes No |
| Craig Brook Hatchery | | | | | | | | |
| Silver salmon | 15,000 | Oregon | Penaquid | | 100.0 | April | | Yes |
| Atlantic salmon | 400,000 | Penobscot | St. George Penobscot St. George Penobscot | 20,000 Ca. 200,000 20,000 Ca. 100,000 | | May May Sept. Sept. | | Yes Yes Yes Yes |
| | | | | | | | 50,000 | |

11. That no bass of any species be introduced into the Pemaquid or Sheepscot river systems until the Committee has decided whether or not these rivers are suitable for the restoration of sea-run salmon. Dr. Cooper (See Fish Survey Report No. 5, Maine Department of Inland Fisheries and Game, 1942) found that some of the lakes in these river systems were suitable for bass but concurs in the opinion of the Committee that they should not be introduced into these river systems unless, at a future date, experiments should prove these rivers to be unsuitable for salmon.
12. That an attempt be made to obtain about 180 to 200 adult salmon to hold at Craig Brook for spawning.
13. That the salmon-counting trap in the fishway at Veazie Dam, which was successfully operated by the Department of Inland Fisheries and Game during 1943, be operated annually as a permanent feature of the Penobscot River management program.
14. That a concrete wall be constructed below the foot of the fishway on the east bank of the Penobscot River at Bangor Dam to facilitate the passage of fish up through the fishway during summer low water periods.
15. That the Rules and Regulations of the Department of Sea and Shore Fisheries 130, Resolves, 1941, c. 84, and the Commissioner's Ruling of March 26, 1942, amending it, be further amended. The present Ruling reads:

"No fish shall be taken, except by hook and line, from the waters of Pemaquid River, above a line drawn from the most southerly end of Cardy's Point to the most southwesterly end of Old Fort Point, EXCEPT, that during the months of May and June fishermen shall be permitted to seine ALEWIVES from the waters of Pemaquid river with seine of not less than two inch mesh and Alewife nets of not more than three inch mesh. March 26, 1942"

The Committee feels that the present restriction will not provide the necessary protection either for the young silver salmon migrating downstream in April and May or for the adult salmon migrating upstream in the autumn. Therefore the Committee recommends that the last Ruling be amended to read:

"No fish shall be taken from the waters of Pemaquid River, above a line drawn from the most southwesterly tip of Thurston Point to the most southwesterly tip of Fish Point, EXCEPT, that during the months of May and June, ALEWIVES may be dipped at Pemaquid Falls in the manner determined by the fish committee of the Town of Bristol, with due regard for the downstream passage of young salmon."

16. That the Ducktrap River be henceforth considered suitable for salmon.
17. That the law prohibiting the taking of salmon after July 15 each year be more strictly enforced for the commercial gear in Penobscot Bay.
18. That accurate statistics of both sport and commercial catches of salmon be obtained for each river in the following manner:
 - a. Statistics will be compiled of individual rivers and shall show number of fish (also weight when obtainable), type of gear used in making the catch, whether sport or commercial, and dates fish were taken as accurately as possible.
 - b. All statistics will be compiled by the fisheries statistician of the Department of Sea and Shore Fisheries.
 - c. Reports will be collected each year immediately after the close of the salmon fishing season in each locality.
 - d. The statistics shall not include kelts (spawned out salmon, thin and emaciated, sometimes taken by so-called sport fishermen).
 - e. The Inland Fisheries wardens will gather all records of salmon caught in fresh water by sport gear or other means (including known cases of fish taken illegally), and of salmon taken while dipping alewives.
 - f. The Sea and Shore wardens will gather the statistics on the remainder of the catch, including the commercial.
 - g. The Sea and Shore Fisheries statistician will make the detailed arrangements with the wardens of both fisheries departments in order to avoid duplication and to insure final centralized compilation.
19. That the collection of adult salmon for spawning purposes be carried out in conformity with the Committee's previous recommendation (4g) made on April 30, 1942.
20. That in carrying out the recommendations of the Committee in collecting adult salmon for hatchery use, the personnel do not select the fish, but take every second fish regardless of injuries, or other factors.

21. That certain vital statistics of hatchery operations, which are essential to the success of the salmon restoration program, be kept as follows:
 - a. Methods of enumeration or estimation of the numbers of eggs or fish will be approved and the counting or estimating supervised by the biologists conducting the salmon research program.
 - b. The number of adults taken by the hatcheries.
 - c. The number of adults of each sex spawned.
 - d. The number of eggs stripped.
 - e. The number of fry hatched.
 - f. The number of feeding fry placed in each pond and the date.
 - g. Records of mortality by individual ponds.
 - h. Records of disease or preventative treatment by pond, showing diagnosis, who made the diagnosis, treatment recommended, date and type of treatments actually used, including exact name of chemical, concentration, and time of exposure, and date and results of reinspection.
 - i. Weight and either an actual count or approved estimate of each planting.
 - j. An approved enumeration or accurate estimation of the total numbers of each lot of salmon held in the hatcheries at the time any stocking is done. This approved estimate to be obtained for all lots, regardless of whether any are planted, at least twice annually, preferably in May and October.
22. That controlled experiments to determine the effects on mortality and growth of crowding, cannibalism resulting when fish are not sorted into size categories, and of differences in the composition, amount and frequency of feeding, be carried out in an attempt to bolster the survival of young salmon in artificial propagation.
23. That all previous recommendations concerning planting of salmon of the 1942 brood year held at Craig Brook and Tunk Lake fishery stations are hereby revised, and planting shall, insofar as practicable, be in accordance with the following table

Recommendations for Allocation and Stocking of Sea-salmon Held Over from 1943 during 1944

| Station | Egg source | Year | Species | Number on hand 10/1/43 | Where to plant | Percent to plant | Month to plant | Percent to hold | Biologist to mark and/or designate exact place of release |
|-------------|------------|------|----------|------------------------|----------------|------------------|----------------|-----------------|---|
| Orwig Brook | Penobscot | 1942 | Atlantic | 224,000 | Penobscot | 25 | May 1944 | 0 | Yes |
| | | | | | St. George | 15 | May 1944 | 0 | " |
| | | | | | Penobscot | 25 | Sep. 1944 | 0 | " |
| | | | | | St. George | 15 | Sep. 1944 | 0 | " |
| | | | | | | | | 20 | |
| " | Oregon | 1942 | Silver | 12,000 | Pennquin | all | May 1944 | 0 | Yes |
| Trink Lake | Penobscot | 1942 | Atlantic | 72,000 | Penobscot | 50 | May 1944 | 0 | Yes |
| | | | | | Narraguagus | 25 | May 1944 | 0 | No |
| | | | | | Henry's | 15 | May 1944 | 0 | Yes |
| | | | | | Hatches | 10 | May 1944 | 0 | No |

24. That no weirs, pound nets, traps, or other fixed gear be permitted within a radius of three-quarters of a mile from the point where U. S. Highway 1 crosses the Ducktrap River.
25. That the planting of salmon of the 1943 brood year held at Craig Brook Station, be in accordance with the attached table:

25. That the planting of salmon of the 1944 brood year held at Craig Brook Station, be in accordance with the attached tablet

Stocking Table - 1944 Brood Year

| Station | Egg source | Year | Species | Number on hand 5/1/45 | Where to plant | Percent to plant | Month to plant | Percent to hold | Biologist to mark and/or designate exact place of release | Lot A } 50% of eggs |
|-----------------------|------------|------|----------|-----------------------|----------------|------------------|----------------|-----------------|---|---------------------|
| Craig Brook Oregon | | 1944 | Silver | 50,000 | Penasquid " | 60 | Sep. 1945 | 40 | Yes | } 50% of eggs |
| | | | | | | Rem. | May 1946 | 0 | " | |
| Craig Brook Penobscot | | 1944 | Atlantic | 240,000 | Penobscot " | 30 | Aug. 1945 | 70 | Yes | } 50% of eggs |
| | | | | | | 30 | Nov. 1945 | 40 | " | |
| | | | | | | Rem. | May 1946 | 0 | " | |
| | | | | | | 50 | May 1946 | 50 | Yes | |
| | | | | | | Rem. | Sep. 1946 | 0 | " | |

CANADIAN SALMON MIGRATIONS

Results From Marking Fish In The Gulf of St. Lawrence

By Piscator Senior

As a result of cooperation between the Dominion of Canada, Newfoundland and the Province of Quebec, marking of salmon was carried out near the mouth of, and in, the Gulf of St. Lawrence in 1937 and was continued in 1938. The second of two papers, and a general summary in French,¹ by Dr. David L. Belding and Dr. Georges Prefontaine on the 1937 results has recently appeared. In these papers the authors give not only a very full discussion of the movements of the marked fish but also copious notes on the fisheries and on the age and life histories of the fish concerned.

Salmon were marked chiefly at two positions, one being near the south-west point of Newfoundland and the other in Miramichi Bay on the eastern shore of New Brunswick (see map). Minor marking was also carried out in the Bay of Gaspé and on the north shore of the gulf of St. Lawrence. At both main stations the fish were caught in drift nets worked in areas where commercial fishing is carried out. The ground covered at Port-aux-Basques (Newfoundland) was from two to nine miles, and sometimes further, off the shore, and at Miramichi Bay (New Brunswick) from three to fourteen miles from land. The commercial season extends only for about six weeks, that at Port-aux-Basques (from early May to mid June) being roughly three weeks earlier than the New Brunswick fishery. At the Newfoundland station 599 salmon were marked between May 11th and June 14th, and at the Miramichi Bay station 411 salmon from May 18th to July 12th. In the latter area the legal season does not commence until June 1st and in the special period during the last half of May only 21 fish were marked.

¹
I. "Studies on the Atlantic Salmon", by David L. Belding and Georges Prefontaine.

II. Report on the Salmon of the 1937 Port-aux-Basques Drift Net Fishery.
III. Report on the 1937 Miramichi Salmon Drift Net Fishery, Institute of Zoology, University of Montreal.

From the Port-aux-Basques marking 80 salmon (13.3 per cent) were recaptured, 73 being taken by commercial nets and 7 by rod and line. Of the 411 salmon marked in Miramichi Bay 72 (17.5 per cent) were recaptured; of these the nets (including hatchery nets) had 69, and anglers only 3 fish.

The type of distribution of the salmon marked at Port-aux-Basques (see map) bears considerable resemblance to the type of distribution from marking on the west coast of Scotland and at stations in the outer island belt on the coast of Norway. Relatively few recaptures were made close to the place of marking and the majority of fish travelled considerable distances (100 to 450 miles). On the map, which has been re-drawn from those published in the original papers, the salmon recaptured in each area (which necessarily has to be rather wide) have been grouped together and the number is indicated by the figures in the circles.

Of the 80 fish recaptured from the Port-aux-Basques marking ten, re-taken almost immediately after marking or in shore nets within about twelve miles of the place of liberation, and a mark found in the stomach of a cod caught near Prince Edward Island, require no comment. Apart from these fish twenty of the nearer recaptures were made on the west side of Newfoundland and had travelled an average distance of over 110 miles. It may be that these represent a general migration to that region round the south-westerly point of the country. But Dr. Belding and Dr. Prefontaine do not necessarily accept that view since they say that the number found in that area, particularly in St. George Bay on the southern part of the west coast, is greater than the importance of the local commercial fisheries would seem to warrant. The real meaning of this movement has yet to be elucidated; one further fish, which apparently continued up the west coast of Newfoundland, was ultimately caught 450 miles away on the coast of Labrador.

But these fish which moved in a westerly and then in a northerly direction were in the minority. The majority were found after they had continued westward and had reached the inner shores of the Gulf of St. Lawrence. Notable concentrations of recaptures occurred in Miramichi Bay and the Bay of Chaleur, a few fish appeared for the second time on the coast of Cape Breton Island and a scattering on both the north and south shores of the gulf approximately from opposite Anticosti Island inwards towards Quebec and Montreal. There was a complete lack of recaptures along the outer part of the north shore where many salmon rivers exist and there was a similar lack of recaptures on the outer, or south eastern, Nova Scotian coast and round into the Bay of Fundy.

The twelve fish recaptured in, or near, Miramichi Bay had covered 270 miles at an average speed of 13 miles per day (eight also went full 300 miles into the river itself) while the nine which were re-taken in the Bay of Chaleur had travelled 310 miles, but apparently at a rate which was slower by 2 miles per day. This apparent difference in rate of travel will, however, be referred to later. The distance for four fish to the Gaspé peninsula was also 310 miles (at nearly 15 miles per day) and the average for ten along the north shore (including Anticosti Island) was 320 miles. The five fish which swam only just west of south to Cape Breton Island covered about 120 miles.

On the west coast of Newfoundland only a number of smaller rivers exist and these would not seem to justify the collection of fish which the Port-aux-Basques marking has revealed. If the 1938 results, which have yet to be published, confirm the 1937 finding, the fish in this area would appear to require further research. The Bay of Chaleur on the other hand leads to the famous Restigouche with its very large stock of salmon and to other well-known rivers, the Grand Cascapédia, Bonaventure and so on, similarly well endowed in proportion to their size. It is therefore not at all surprising to find here a concentration of fish many of which will

ultimately ascend one or other of the rivers tributary to the bay. The Miramichi is again a very important salmon river and some of the marked fish taken in that area were actually in the river, but most of them were found in the commercial drift nets in the bay; it was in this latter area that the second marking station was established. From the combined results of these two stations, together with those from a station of lesser importance in the Bay of Gaspé, we can, as it were, link up and continue the story of at least a proportion of the fish which were marked at Port-aux-Basques.

From the Miramichi-Bay marking the type of distribution of the recaptures is quite different from that which we have just been considering. Quite a number (35 per cent) of the recaptures were made in the actual area of operations, or a very short distance to the south thereof, not in a minimum of time as at Port-aux-Basques, but after intervals of from 3 to 38, with an average of 17, days. Many would therefore seem to be not fish on passage, as were apparently the largest proportion of those off the Newfoundland coast, but fish which had approached the end of their journey and were in no hurry to take the final step into fresh water. This is borne out by the fact that a rather smaller number, although a still quite important proportion of the whole (30 per cent), were taken somewhere in the Miramichi river, the mouth of which may be said to be only about twenty miles from the area where the marking was undertaken. The balance (35 per cent) of the recapture was made in the Bay of Chaleur within from 120 to 160 miles of Miramichi Bay. Incidentally the only fish caught by rod and line in the Bay of Chaleur district ascended the Cascapédia and had covered a minimum distance of 197 miles between marking and recapture.

It seems clear that in Miramichi Bay, and subject to the drift-net fishery there, salmon are to be found which will go to the Miramichi river or rivers in the immediate neighbourhood or to the Bay of Chaleur, and presumably therefore to the

rivers running into it, and, so far as this marking experiment proves, to practically nowhere else.

The average time interval between marking in Miramichi Bay and recapture in the Bay of Chaleur is 14 days with extremes of 4 and 29 days. Fish marked at Port-aux-Basques were found at both Miramichi Bay and the Bay of Chaleur, and from the results of this Miramichi-Bay marking one would be tempted to suppose that the route followed by the Port-aux-Basques to Bay of Chaleur fish was via Miramichi Bay. This may be so for many, or perhaps the majority, of the fish. By the most direct route the Bay of Chaleur is 40 miles further than Miramichi Bay from Port-aux-Basques and on the average the fish takes 8 days longer to reach the Bay of Chaleur than Miramichi Bay, but the apparent average rate of travel to the Bay of Chaleur is slower - 11 as against 13 miles per day. The suggestion, it can be no more, therefore is that the Bay of Chaleur fish did not follow such a direct route as did those going to Miramichi Bay. The Greater time occupied - 8 days - does not quite fit in with the average period between marking and recapture of the Miramichi-Bay and Bay of Chaleur fish, which was 11 days, but allowing for the uncertainties of delay after marking, the difference may not be so significant as it might appear to be at first glance and in point of fact it may support quite satisfactorily the supposition which has been advanced.

Some of the rivers of the Bay of Chaleur, and a little further north in the Caspé country, show a high average weight for their salmon, although many other rivers contain a large majority of small fish. In the more-favoured rivers it would appear that from a quarter to a half of the stock has spent three winters in the sea and consists of what would be called in Great Britain large-spring or, more probably, large-summer fish. On the other hand the marked fish and the commercial drift-net catch, in both areas, consisted very largely (90 per cent) of small-spring or small-summer salmon. The drift net, however, is a selective instrument the average size of the fish taken depending very largely on the measurement of the mesh, which in

turn is naturally fixed so that it will have a reasonable chance of taking toll of the most-numerous class of fish. The relative scarcity of the larger salmon among the commercial catch and marked fish does not necessarily mean that these fish do not pass through the Port-aux-Basques and Miramichi Bay areas but that it is more profitable to set out to catch the smaller and much more plentiful specimens.

Along the main route from the ocean and past Port-aux-Basques the salmon seem to go to a great junction at Miramichi Bay through which the Miramichi fish go on to the estuary and fresh water and from which the fish for the rivers of the Bay of Chaleur pass northwards - the authors estimate that of the smaller fish in the latter (Bay of Chaleur) area some 70 per cent take the route through the junction as I have described it.

From Port-aux-Basques runs another main line further northwards direct into the gulf to both the shore near the Gaspé peninsula and along the north shore from about Anticosti Island inwards. The average distance covered by the Gaspé fish is 50 miles greater than the distance covered by those which go to Miramichi Bay and yet the average time is less than for the Miramichi Bay recaptures. It is also significant that not one fish marked at Miramichi Bay was recaptured anywhere north of the Bay of Chaleur.

The direct route, if direct it be, from Port-aux-Basques to Gaspé does not end in one-way traffic inside the bay itself, nor indeed in the light of all other marking experience would this be expected. A marking station was established at Petit Gaspé a little more than five miles inward from the point on the north side. Here of 100 marked salmon 38 were recaptured; of these last 20 were taken in the bay, or its affluent rivers; of the other 18, four went round the point to the inner shore of the Gulf of St. Lawrence and fourteen were taken southwards between Gaspé and the Bay of Chaleur. This distribution fits in extraordinarily well with

that which we have examined earlier in this paper. Fish come from Port-aux-Basques to Miramichi Bay and thence distribute themselves southwards to Richiboucté and northwards to the Bay of Chaleur. Now from an apparently separate migration to the Bay of Caspé district the fish distribute themselves southwards to the Bay of Chaleur, which therefore receives salmon from both directions, and northwards to the southern shore of the St. Lawrence.

The north shore of the Gulf of St. Lawrence has as yet been little explored for salmon migrations, but one marking station there has given results that are not out of consonance with the recaptures along this shore from the Port-aux-Basques marking. Four of the nets at this station, called Seven Islands, were on islands about three miles off the mainland and the other was on the mainland. The island nets were less than twenty, and that on the mainland less than ten, miles from the mouth of the Moisie river. Such fish (only seven) as were recaptured were marked in the outer island nets and travelled both inwards and outwards along the north shore for at least one hundred miles in each direction, while a single fish went twice that distance across the gulf to the Bay of Chaleur and ultimately into the Restigouche river. In spite of a considerable quantity of nets in the vicinity not one fish was caught within less than 40 miles of the place of marking and none were found in the Moisie river. It would seem therefore that this Seven Islands area may form yet another junction for the migrating salmon, just as does Miramichi Bay, and that the apparently straight line migrations from Port-aux-Basques to the north shore may have to be re-drawn as one main channel to this junction, or possibly as more than one channel to several junctions, and then further lines of distribution drawn from the central area or a reas. But considerable further work must be done and an investigation of the movements through the Strait of Belle Isle must be made, before an understanding of the position can

be attempted. Two or three other small marking experiments along this coast have only shown the movements of salmon close to the mouths, or actually in the estuaries, of rivers although these experiments have also demonstrated some rather striking journeys outwards from the position in the estuaries which the fish first occupied.

Copied from The SALMON AND TROUT MAGAZINE, No. 96, September 1939
The Journal of the Salmon and Trout Association
London, Fishmongers' Hall, E.C. 4

PLANTING OF ATLANTIC AND SILVER SALMON IN MAINE
1942 - 1945

| Year planted | Penobscot | | | St. George | | | Pescadore | | | Rucktrap | | | Demays | | | Machias | | | Harraganus | | | Total |
|--------------|-----------|-------|-----------|------------|-------|-----------|-----------|-------|------------|----------|-------|------------|--------|-------|-----------|---------|-------|-----------|------------|-------|-----------|---------|
| | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | |
| 1942 | 25032 | 1 | Machias | 17645 | 1 1/2 | Miramichi | 15046 | 1 | Oregon | - | - | - | 15000 | 1 1/2 | Demays | 34900 | 1 | Machias | 10000 | 1 | Machias | 126,426 |
| | - | - | - | 3703 | 2 | " | - | - | - | - | - | - | 5000 | 1 | Machias | - | - | - | - | - | - | - |
| 1943 | 2166 | 1 1/2 | Machias | 6728 | 2 1/2 | Miramichi | 19222 | 1 1/2 | Oregon | - | - | - | 4150 | 1 1/2 | Machias | 16000 | 1 1/2 | Machias | 5000 | 1 1/2 | Machias | 74,834 |
| | - | - | - | 3048 | 1 1/2 | " | 10220 | 1 | " | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1944 | 29091 | 1 1/2 | Penobscot | 13680 | 1 1/2 | Penobscot | 10970 | 1 1/2 | Oregon | 9084 | 1 1/2 | Washington | 7500 | 1 1/2 | Penobscot | 5000 | 1 1/2 | Penobscot | 12500 | 1 1/2 | Penobscot | 148,992 |
| | 17350 | 2 | " | 11990 | 2 | " | 11966 | 1 | Washington | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 12561 | 2 1/2 | " | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1945 | 31140 | 1 1/2 | Penobscot | 31975 | 1 1/2 | Miramichi | 5209 | 1 1/2 | Washington | 11924 | 1 1/2 | Washington | - | - | - | - | - | - | - | - | - | 134,060 |
| | 17635 | 2 | " | 10226 | 2 | " | 19976 | 1 | Oregon | 19999 | 1 | Oregon | - | - | - | - | - | - | - | - | - | - |
| Totals | 244975 | | | 87775 | | | 95409 | | | 41003 | | | 13650 | | | 55000 | | | | | | 464,312 |

Prepared by
Louis D. Stringer
Aquatic Biologist
FISH AND WILDLIFE SERVICE
April 1946

PLANTING OF ATLANTIC AND SILVER SALMON IN MAINE
1942 - 1945

| Year planted | Penobscot | | | St. George | | | Pemaquid | | | Ducktrap | | | Deerys | | | Mechias | | | Harranguis | | | Total |
|--------------|-----------|-------|-----------|------------|-------|-----------|----------|-------|------------|----------|-------|------------|--------|---------|-----------|---------|---------|-----------|------------|---------|-----------|---------|
| | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | No. | Age | Source | |
| 1942 | 25032 | 1 | Machias | 17645 | 1 1/2 | Miramichi | 15046 | 1 | Oregon | - | - | - | 15000 | 1 1/2 | Deerys | 34000 | 1 | Machias | 10000 | 1 | Machias | 126,426 |
| | - | - | - | 3703 | 2 | " | - | - | - | - | - | 6000 | 1 | Machias | - | - | - | - | - | - | - | |
| 1943 | 9166 | 1 1/2 | Machias | 6726 | 2 1/2 | Miramichi | 19022 | 1 1/2 | Oregon | - | - | 4150 | 1 1/2 | Machias | 16000 | 1 1/2 | Machias | 5000 | 1 1/2 | Machias | 74,634 | |
| | - | - | - | 3646 | 1 1/2 | " | 10220 | 1 | " | - | - | - | - | - | - | - | - | - | - | - | - | |
| 1944 | 29091 | 1 1/2 | Penobscot | 15880 | 1 1/2 | Penobscot | 10070 | 1 1/2 | Oregon | 9064 | 1 1/2 | Washington | 7500 | 1 1/2 | Penobscot | 5000 | 1 1/2 | Penobscot | 12500 | 1 1/2 | Penobscot | 148,992 |
| | 17350 | 2 | " | 14990 | 2 | " | 14966 | 1 | Washington | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 12561 | 2 1/2 | " | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 1945 | 34140 | 1 1/2 | Penobscot | 14975 | 1 1/2 | Miramichi | 5209 | 1 1/2 | Washington | 11924 | 1 1/2 | Washington | - | - | - | - | - | - | - | - | - | 134,060 |
| | 17635 | 2 | " | 10206 | 2 | " | 19976 | 1 | Oregon | 19995 | 1 | Oregon | - | - | - | - | - | - | - | - | - | - |
| Totals | 144975 | | | 87775 | | | 95409 | | | 41003 | | | 32650 | | | 55000 | | | 27500 | | | 464,312 |

Prepared by
Louis D. Stringer
Aquatic Biologist
FISH AND WILDLIFE SERVICE
April 1946

SUMMARY OF ATLANTIC SALMON PLANTS
1926 - 1945

| River planted showing age of fish | Year planted | | | | | | | | | | |
|--|------------------|-------------------|-------------------|-----------------|-----------------|-------------------|---------|------------------|------------------|-----------------|--------|
| | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1935 | 1936 | 1937 |
| Aroostook Eggs 1 yr. | 100000 92000 | 100000 | 150000 | 100000 | 125000 | 500000 | 400000 | 100000 | 200000 | 200000 | |
| St. Croix Eggs 1 yr. | 106000 | 170000 | | | 125000 | 200000 | 50000 | 25000 | 25000 | | |
| Dennis 1 yr. 1 1/2 yr. | 75000 | 100500 | 100500 | 8725 | | | | | | 360000 | 30000 |
| Machias 1 yr. 1 1/2 yr. | | | | | | | | | | | |
| Pleasant 1 yr. | 50000 | 100500 | 100500 | | | | | | | | |
| Marraganset Eggs 1 yr. 1 1/2 yr. | 50000 | 100500 | 100500 | 8725 | 115000 | | | | | 200000 85000 | |
| Panobscot Eggs 1 yr. 1 1/2 yr. 2 yr. | 626137 | 50000 766400 | 100000 720500 | 75000 452100 | 250000 88200 | 1000000 700300 | 514530 | 400000 440000 | 300000 179000 | 400000 25000 | 40000 |
| St. George 1 1/2 yr. 2 yr. 2 1/2 yr. | | | | | | | | | | | |
| Kennebec & Androscoegus Eggs | | | | 25000 | 50000 | 500000 | | | 100000 | 100000 | |
| Oquossoc Eggs | | | 50000 | 50000 | 50000 | | | | | 100000 | |
| Saco Eggs | | 50000 | 50000 | 50000 | 125000 | | | | 100000 | | |
| Out of Me. Eggs 1 yr. | | | | 45000 | 40000 | 50000 2000 | 25000 | 24700 | 5000 | | 10000 |
| Total | 1099137 | 1437900 | 1372900 | 974550 | 968000 | 2952300 | 989530 | 989700 | 909000 | 1470000 | 80000 |
| Source of eggs | | | | | | | | | | | |
| S. Sak, H. B. Osage, P. J. Tadousac, E. J. Hamden, Me. Dennis R. Panobscot R. Machias R. | 557000 546000 | 1023220 500000 | 1026500 500000 | 1000000 4500 | 1000000 | 1000000 | 4000000 | 1000000 | 1000000 | 1500000 | 100000 |

| River planted showing age of fish | | | | | | | | Grand total |
|--|--------------|---------------|---------------|--------------|----------------|----------------|--|-------------------|
| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | Total | |
| Aroostook Eggs 1 yr. | 10000 | | | | | | 1,975,000 102,000 | 2,077,000 |
| St. Croix Eggs 1 yr. | 5000 | | | | | | 430,000 276,000 | 706,000 |
| Danys 1 yr. 1 1/2 yr. | | | 6000 15000 | 4150 | 7500 | | 760,725 26,650 | 787,375 |
| Machias 1 yr. 1 1/2 yr. | 7000 | 20000 | 34000 | 16000 | 5000 | | 61,000 21000 | 82,000 |
| Pleasant 1 yr. | | | | | | | 251,000 | 251,000 |
| Narragansett Eggs 1 yr. 1 1/2 yr. | | 20000 | 10000 | 5000 | 12500 | | 315,000 454,725 17,500 | 787,225 |
| Penobscot Eggs 1 yr. 1 1/2 yr. 2 yr. | | 141500 | 25032 | 9166 | 29091 29311 | 34140 17635 | 2,575,000 4,759,299 72,397 47,446 | 7,454,242 |
| St. George 1 1/2 yr. 2 yr. 2 1/2 yr. | | | 17645 3703 | 3648 6728 | 15880 14990 | 14875 10206 | 52,348 28,899 6,728 | 87,975 |
| Kennebec & Androscoggin Eggs | | | | | | | 775,000 | 775,000 |
| Oquossoc Eggs | | | | | | | 250,000 | 250,000 |
| Saco Eggs | | | | | | | 375,000 | 375,000 |
| Out of M. Eggs 1 yr. | | | | | | | 160,000 41,700 | 201,700 |
| Total | 22000 | 221500 | 111380 | 44692 | 114872 | 76956 | | 13,874,317 |
| Source of eggs | | | | | | | | |
| S. Bak, N.B. Gaspé, P.J. Tadmon, R.H. Kempdon, W. Danys R. Penobscot R. Machias R. | | 51150 | 50750 | | 50000 | | 13,354,120 1,046,000 500,000 4,500 113,000 | |
| | | 113000 | | 70845 | 157240 | 144949 | 1,011,174 68,080 | |
| | | | 68080 | | | | | |
| | | | | | | | Total | 16,096,834 |

BOAT Marala DATE June 19,
 SPECIES Raffish SER. NO. Sequins

| L | W | ♂ | L | W | ♀ | L | W | ♂ |
|-----|------|---|-----|------|-----|------|----|---|
| .44 | .98 | | .53 | 1.16 | | | | |
| .45 | .89 | | .51 | 1.12 | | | | |
| .26 | .35 | | .48 | 1.07 | | | | |
| .46 | .98 | | .52 | 1.12 | | | | |
| .48 | 1.01 | | .52 | 1.23 | | | | |
| .46 | .94 | | .51 | 1.09 | | | | |
| .46 | .98 | | .54 | 1.13 | | | | |
| .43 | .81 | | .52 | 1.14 | | | | |
| .33 | .55 | | .55 | 1.28 | | | | |
| .48 | .96 | | .55 | 1.24 | | | | |
| .38 | .66 | | .53 | 1.15 | L | W | | |
| .46 | .94 | | .54 | 1.20 | .56 | 1.25 | | |
| .46 | .95 | | .43 | .86 | .50 | 1.06 | | |
| .44 | .95 | | .53 | 1.14 | .52 | 1.16 | | |
| .42 | .84 | | .50 | 1.13 | .32 | .55 | mm | |
| .48 | 1.01 | | .51 | 1.28 | .52 | 1.10 | | |
| | | | .54 | 1.26 | .51 | 1.10 | | |
| | | | .50 | 1.09 | .48 | 1.02 | | |
| | | | .48 | 1.01 | .50 | 1.11 | | |
| | | | .52 | 1.15 | .49 | 1.08 | | |
| | | | .46 | .95 | .51 | 1.16 | | |
| | | | .48 | 1.04 | .49 | 1.06 | | |
| | | | .50 | 1.10 | | | | |

BOAT Jurriel & Russell DATE July 17
 SPECIES Raffish SER. NO. _____

| L | W | ♂ | L | W | L | W | ♀ | L | W |
|-----|-----|---|---|---|-----|------|---|------------|-------------|
| .43 | .93 | | | | .46 | .84 | | .49 | 1.02 |
| .47 | .95 | | | | .51 | .99 | | .48 | .98 |
| .43 | .85 | | | | .51 | 1.11 | | .48 | 1.02 |
| .40 | .72 | | | | .53 | 1.16 | | .53 | 1.07 |
| .43 | .81 | | | | .38 | .64 | | .47 | .99 |
| .35 | .56 | | | | .55 | 1.14 | | .46 | .99 |
| .42 | .82 | | | | .50 | .99 | | .53 | 1.16 |
| .42 | .77 | | | | .51 | 1.11 | | .52 | 1.13 |
| .36 | .63 | | | | .52 | 1.09 | | .54 | 1.21 |
| .43 | .85 | | | | .43 | .80 | | .53 | 1.12 |
| .44 | .86 | | | | .54 | 1.12 | | <u>.54</u> | <u>1.11</u> |
| .42 | .82 | | | | .50 | 1.01 | | | |
| .45 | .91 | | | | .49 | 1.04 | | | |
| .45 | .95 | | | | .53 | 1.12 | | | |
| .42 | .84 | | | | .48 | 1.01 | | | |
| .45 | .89 | | | | .52 | 1.07 | | | |
| .31 | .46 | | | | .46 | .93 | | | |
| .37 | .65 | | | | .50 | 1.05 | | | |
| .28 | .40 | | | | .45 | .84 | | | |
| .40 | .78 | | | | .50 | 1.03 | | | |

transcribed

Jeffries. 43/69 46
90 Fm.

BOAT Leannora C DATE July 16 -

SPECIES Redfish - SER. NO. -

| L | W | ♂ | L | W | L | W | ♀ | L | W |
|----|----|---|----|----|----|-----|---|----|-----|
| 48 | 97 | | 47 | 96 | 53 | 116 | | 49 | 100 |
| 45 | 89 | | 42 | 76 | 52 | 106 | | 49 | 103 |
| 43 | 83 | | 44 | 89 | 48 | 105 | | 52 | 108 |
| 45 | 90 | | | | 50 | 102 | | 47 | 100 |
| 49 | 98 | | | | 48 | 98 | | 55 | 115 |
| 42 | 77 | | | | 45 | 92 | | 52 | 106 |
| 44 | 84 | | | | 48 | 104 | | 45 | 87 |
| 32 | 45 | | | | 52 | 106 | | 49 | 102 |
| 42 | 85 | | | | 53 | 113 | | | |
| 44 | 89 | | | | 46 | 94 | | | |
| 42 | 81 | | | | 53 | 114 | | | |
| 43 | 86 | | | | 52 | 110 | | | |
| 41 | 80 | | | | 49 | 98 | | | |
| 47 | 97 | | | | 49 | 95 | | | |
| 43 | 81 | | | | 33 | 51 | | | |
| 47 | 93 | | | | 49 | 100 | | | |
| 43 | 79 | | | | 47 | 96 | | | |
| 44 | 84 | | | | 50 | 104 | | 59 | 127 |
| 46 | 91 | | | | 51 | 103 | | | |
| 44 | 91 | | | | 45 | 92 | | | |

Transcribed

BOAT Mary & Julia DATE July 16, 1942

SPECIES Redfish - SER. NO. -

| L | W | ♂ | L | W | L | W | ♀ | L | W |
|----|----|---|---|---|----|-----|---|----|-----|
| 43 | 83 | | | | 52 | 108 | | 49 | 99 |
| 39 | 69 | | | | 48 | 99 | | 51 | 106 |
| 41 | 75 | | | | 49 | 98 | | 46 | 88 |
| 44 | 84 | | | | 47 | 94 | | 47 | 92 |
| 40 | 76 | | | | 50 | 97 | | 45 | 88 |
| 47 | 93 | | | | 41 | 72 | | 39 | 71 |
| 42 | 80 | | | | 51 | 100 | | 52 | 104 |
| 43 | 82 | | | | 48 | 95 | | 51 | 105 |
| 42 | 82 | | | | 50 | 100 | | 50 | 104 |
| 43 | 83 | | | | 54 | 116 | | 46 | 97 |
| 42 | 81 | | | | 50 | 105 | | 35 | 60 |
| 40 | 72 | | | | 48 | 96 | | 50 | 99 |
| 45 | 90 | | | | 46 | 93 | | 46 | 96 |
| 41 | 76 | | | | 41 | 79 | | | |
| 41 | 74 | | | | 50 | 98 | | | |
| 44 | 91 | | | | 46 | 88 | | | |
| 46 | 92 | | | | 48 | 98 | | | |
| 36 | 63 | | | | 50 | 102 | | | |
| | | | | | 50 | 101 | | | |
| | | | | | 49 | 104 | | | |

Transcribed

BOAT Generalina & Phyllis DATE July 14, 1942

SPECIES Redfish - SER. NO. Int Desert

| L. | W | ♂ | | L. | W | ♀ | |
|----|----|---|--|----|------|----|------|
| 46 | 87 | | | 52 | 110 | 52 | 1.07 |
| 45 | 90 | | | 52 | 104 | 53 | 1.15 |
| 39 | 68 | | | 54 | 112 | 50 | 1.02 |
| 44 | 89 | | | 50 | 97 | 48 | 1.00 |
| 43 | 87 | | | 53 | 104 | 50 | 1.03 |
| 44 | 85 | | | 45 | 88 | 52 | 1.06 |
| 48 | 95 | | | 49 | 99 | 48 | 1.00 |
| 41 | 78 | | | 49 | 102 | 52 | 1.10 |
| 44 | 84 | | | 49 | 97 | 51 | 1.03 |
| 44 | 84 | | | 49 | 99 | 51 | 1.10 |
| 46 | 91 | | | 50 | 103 | 58 | 68 |
| 44 | 74 | | | 46 | 96 | | |
| 41 | 82 | | | 54 | 115 | | |
| 39 | 70 | | | 54 | 113 | | |
| 45 | 92 | | | 45 | 85 | | |
| 46 | 96 | | | 41 | 77 | | |
| 46 | 90 | | | 50 | 100 | | |
| 39 | 70 | | | 51 | 109 | | |
| 43 | 84 | | | 50 | 1.05 | | |
| | | | | 47 | 95 | | |

Transcribed

Transcribed

BOAT Sebastian C DATE July 15

SPECIES Redfish - SER. NO. Channel

| L. | W | ♂ | | L. | W | ♀ | |
|----|-----|---|--|----|------|----|------|
| 45 | 90 | | | 51 | 108 | 50 | 1.08 |
| 47 | 97 | | | 49 | 101 | 52 | 1.19 |
| 44 | 85 | | | 48 | 96 | 46 | 86 |
| 45 | 93 | | | 54 | 117 | 47 | 1.02 |
| 47 | 96 | | | 51 | 108 | 51 | 1.15 |
| 48 | 97 | | | 50 | 103 | 51 | 1.13 |
| 47 | 95 | | | 54 | 1.16 | 53 | 1.16 |
| 47 | 95 | | | 49 | 103 | 51 | 1.10 |
| 48 | 100 | | | 51 | 113 | 53 | 1.17 |
| 45 | 93 | | | 51 | 110 | 50 | 1.06 |
| 46 | 95 | | | 58 | 122 | 54 | 1.15 |
| | | | | 53 | 1.07 | 53 | 1.16 |
| | | | | 52 | 104 | 50 | 1.07 |
| | | | | 51 | 108 | 54 | 1.18 |
| | | | | 51 | 105 | 52 | 1.15 |
| | | | | 53 | 1.12 | 50 | 1.06 |
| | | | | 53 | 1.11 | 51 | 1.16 |
| | | | | 49 | 97 | 51 | 1.04 |
| | | | | 51 | 108 | 53 | 1.15 |
| | | | | 52 | 1.12 | | |

Transcribed

Transcribed

BOAT Hanney F DATE July 3, 1942
 SPECIES Redfish SER. NO. Sequin

| L. | Wt | ♂ | L. | Wt | L. | Wt. | ♀ | L. | Wt. |
|----|----|--------------------|----|----|----|------|---|----|------|
| 41 | 81 | | 41 | 78 | 48 | 98 | | 48 | 93 |
| 42 | 83 | | 45 | 91 | 50 | 1.04 | | 45 | 78 |
| 44 | 87 | | 48 | 96 | 50 | 1.03 | | 46 | 95 |
| 39 | 73 | | 46 | 98 | 50 | 1.03 | | 50 | 1.10 |
| 49 | 94 | | | | 52 | 1.07 | | 50 | 98 |
| 43 | 79 | | | | 43 | 80 | | 51 | 1.07 |
| 40 | 76 | | | | 52 | 1.13 | | 45 | 91 |
| 44 | 88 | | | | 46 | 89 | | | |
| 45 | 89 | | | | 50 | 1.09 | | | |
| 30 | 43 | | | | 46 | 86 | | | |
| 46 | 72 | <u>Transcribed</u> | | | 41 | 81 | | | |
| 42 | 87 | | | | 49 | 1.03 | | | |
| 44 | 87 | | | | 46 | 93 | | | |
| 42 | 82 | | | | 44 | 88 | | | |
| 48 | 97 | | | | 48 | 93 | | | |
| 41 | 80 | | | | 49 | 1.00 | | | |
| 43 | 84 | | | | 51 | 1.01 | | | |
| 41 | 79 | | | | 42 | 78 | | | |
| 33 | 54 | | | | 51 | 1.12 | | | |
| 44 | 88 | | | | 48 | 94 | | | |

Transcribed

*None taken in formal study -
 none present -
 two eggs 2 eggs seen.*

BOAT Paulina - DATE July 3, 1942
 SPECIES Redfish SER. NO. off Sla

| L. | Wt | ♂ | L. | Wt | L. | Wt. | ♀ | L. | Wt. |
|----|------|---|----|----|----|------|---|----|------|
| 46 | 95 | | | | 56 | 1.21 | | 51 | 1.10 |
| 45 | 93 | | | | 54 | 1.15 | | 51 | 1.06 |
| 44 | 86 | | | | 50 | 1.03 | | 52 | 1.15 |
| 37 | 65 | | | | 52 | 1.07 | | 45 | 91 |
| 44 | 86 | | | | 54 | 1.14 | | 50 | 1.03 |
| 44 | 88 | | | | 53 | 1.10 | | 52 | 1.10 |
| 44 | 89 | | | | 45 | 89 | | 42 | 87 |
| 45 | 95 | | | | 52 | 1.11 | | 50 | 1.03 |
| 45 | 88 | | | | 40 | 77 | | 51 | 1.01 |
| 41 | 80 | | | | 48 | 99 | | 50 | 1.05 |
| 43 | 86 | | | | 43 | 85 | | 53 | 1.14 |
| 47 | 91 | | | | 52 | 1.10 | | 50 | 99 |
| 48 | 96 | | | | 54 | 1.16 | | 52 | 1.05 |
| 47 | 98 | | | | 49 | 1.05 | | 50 | 99 |
| 46 | 92 | | | | 51 | 1.02 | | | |
| 48 | 1.00 | | | | 47 | 92 | | | |
| | | | | | 50 | 1.00 | | | |
| | | | | | 56 | 1.15 | | | |
| | | | | | 54 | 1.12 | | | |
| | | | | | 52 | 1.15 | | | |

Transcribed

Observed