DEPARTMENT OF FISHERIES

ANNUAL REPORT

ON

FISH CULTURE

1936

OTTAWA
J. O. PATENAUDE, I.S.O.
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1937

FISH CULTURE

ANNUAL REPORT BY J. A. RODD, DIRECTOR

Fish cultural operations of the Department of Fisheries are confined to those provinces in which it administers the fisheries in whole or in part, that is, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia. The hatcheries located in the National Parks, Alberta, were in 1936 also directed by the Department of Fisheries but at the expense of the National Parks bureau; Lands, Parks and Forests branch Department of Mines and Resources.

The total distribution from the hatcheries operated by this department in 1936 was 111,672,400. The numbers of each species distributed were:—

STATEMENT BY SPECIES OF THE FISH AND FISH EGGS DISTRIBUTED FROM THE HATCHERIES DURING THE YEAR ENDED DECEMBER 31, 1936

Species	Green eggs	Eyed eggs	Fry	Advanced fry	Fingerlings	Yearlings and Older	Total distribution
Salmo salar—Atlantic salmon	6,000	9,000	1,298,453	5,432,500	19,280,643	823	26,027,419
Salmo salar sebago—Landlocked salmon	.....	.....	.....	.....	.....	22,119	22,119
Salmo irideus—Rainbow trout	.....	.....	.....	1,192,353	720,660	10,725	1,923,738
Salmo clarkii—Cutthroat trout	.....	171,800	.....	410,343	1,088,303	35	1,670,481
Salmo rivularis—Steelhead salmon	.....	25,000	.....	.....	370,739	23,042	418,781
Salmo rivularis Kamloops—Kamloops trout	.....	4,505,651	3,592,475	.....	6,500	.....	8,104,626
Salmo levenensis—Loch Leven trout	.....	.....	.....	.....	158	719	877
Salmo fario—Brown trout	.....	.....	.....	140,000	316,510	.....	456,510
Salmo fario—Hybrid brown trout (Brown trout-Atlantic salmon)	.....	.....	.....	.....	1,021	7,025	8,046
Oncorhynchus nerka—Sockeye salmon	.....	8,913,255	48,116,430	4,951,525	2,408,669	.....	64,389,879
Oncorhynchus kennerlyi—Kennerly's salmon	.....	425,000	561,501	.....	.....	.....	986,501
Oncorhynchus kisutch—Coho salmon	.....	.....	393,600	.....	.....	.....	393,600
Salvelinus fontinalis—Speckled trout	.....	60,500	184,876	774,630	6,063,924	17,879	7,101,809
Cristivomer namaycush—Salmon trout	.....	.....	.....	96,180	71,834	.....	168,014
	6,000	14,110,206	54,147,335	12,997,531	30,328,961	82,367	111,672,400

In addition to the above 553,070 cuttthroat trout eyed eggs and fry were purchased from the Cranbrook Rod and Gun Club and planted direct as follows:—

Arrow lake	69,350	eyed eggs
Dunbar, Twin, (Fish lakes)	50,000	" "
Elk river	210,920	" "
Goat river	137,800	" "
Paddy Ryan lakes	35,000	" "
Summit lake	50,000	fry
	553,070	

The following classification of green eggs, eyed eggs, fry, advanced fry, No. 1 fingerlings, etc., applies to all statements and references in this report:—

Green eggs; eggs until they are "eyed."
Eyed eggs; eggs showing the eyes of the developing fish.
Fry; fish from date of hatch until free-swimming with the food sac fully absorbed. (No fry are distributed until the food sac is fully absorbed.)
Advanced fry; fry that are feeding systematically.
No. 1 fingerlings; fish that are feeding from two to eight weeks.
No. 2 fingerlings; fish that are feeding from eight to fourteen weeks.
No. 3 fingerlings; fish that are feeding from fourteen to twenty weeks.
No. 4 fingerlings; fish that are feeding from twenty to twenty-six weeks.
No. 5 fingerlings; fish that are feeding from twenty-six weeks to one year from date of hatch.

Inspections were continued with a view to locating waters where fish eggs might be obtained in sufficient quantities to warrant the establishing of collecting camps and also with a view to locating sites where the Fish Cultural Service might be extended advantageously to districts that are not readily accessible from existing hatcheries.

Experiments with equipment, methods and foods of various kinds were continued at several hatcheries. The experiments and the investigations in relation to fish cultural problems that were made by the Biological Board of Canada are referred to in Appendix No. 4 of the Report of the Department of Fisheries for 1936-37.

In the Okanagan district, British Columbia, a total of some 4,766 carp, squawfish and suckers were destroyed in four traps operated for the purpose at the outlet of Duck lake, in the connecting stream between Woods and Long lakes, at the outlet of Long lake, and in Otter creek. These traps were attended to by the Kelowna Rod and Gun Club, and the Vernon and District Fish and Game Protective Associations. Some 4,451 suckers were also destroyed in a trap in Sweltzer creek, British Columbia.

Twenty-three main hatcheries, eight subsidiary hatcheries, two rearing stations, eight salmon-retaining ponds and several egg-collecting stations were operated in 1936. The output from these establishments was as follows:—

THE FOLLOWING TABLE SHOWS THE HATCHERIES OPERATED, THEIR LOCATION, DATE OF ESTABLISHMENT, THE SPECIES AND THE NUMBER OF EACH SPECIES DISTRIBUTED FROM EACH HATCHERY DURING 1936

Established	Hatchery	Location	Species	Green eggs	Eyed eggs	Fry	Advanced fry	Fingerlings					Yearlings and older	Total distribution by species	Total distribution by hatcheries
								No. 1	No. 2	No. 3	No. 4	No. 5			
1929	Antigonish	St. Andrews, N.S	Atlantic salmon				165,000	1,930,000	195,000					2,290,000	
			Rainbow trout							455				455	
			Speckled trout					870,341	85,000	30,035	68,400		5,225	1,059,001	3,349,456
1876	Bedford	Bedford, N.S.	Atlantic salmon		8,000		275,000	1,406,860	108,185					1,798,045	
			Speckled trout					780,900	9,665					790,565	2,588,610
1936	Grand lake *(f)*	Wellington Station N.S.	Atlantic salmon						285,000	20,000		33,200		338,200	
			Landlocked salmon										19,335	19,335	357,535
1912	Lindloff *(a)*	St. Peters, N.S.	Atlantic salmon					250,000	160,000	233,000				643,000	
			Speckled trout							27,628				27,628	670,628
1902	Margaree	N. E. Margaree, N.S.	Atlantic salmon			475,000	1,600,000	1,110,000	220,000	160,000	355,960			3,920,960	
			Speckled trout					155,000	125,000	20,000	230,000	91,017	2,872	623,889	4,544,849
1913	Middleton	Middleton, Annapolis Co., N.S.	Atlantic salmon					625,000	440,000	364,144				1,429,144	
			Salmon trout					68,725		2,747				71,472	
			Speckled trout					103,000	57,000	133,200	5,900		12	299,112	1,799,728
1933	Nictaux Falls *(d)*	NictauxFallsN.S.	Atlantic salmon					30,000		15,000	14,390			59,390	59,390
1929	Yarmouth	South Ohio, N.S.	Atlantic salmon			100,000	375,000	350,000	325,000	240,000	9,600	35,000		1,434,600	
			Kamloops trout									6,500		6,500	
			Rainbow trout									15,050	10,655	25,705	
			Speckled trout				340,000	168,000			2,000	9,050	6,974	526,024	1,992,829
1928	Florenceville	Florenceville, N.B.	Atlantic salmon				555,000	1,395,000	200,000	219,496				2,369,496	
			Speckled trout					889,000					62	889,062	3,258,558
1880	Grand Falls	Grand Falls,N.B.	Atlantic salmon					1,405,000	650,000	419,000				2,474,000	
			Speckled trout				10,000	445,000	125,000	688,616				1,268,616	3,742,616
1874	Miramichi	South Esk, N.B.	Atlantic salmon		1,000		1,067,500	2,003,200	751,570					3,823,270	
			Speckled trout						1,745				98	1,843	3,825,113
1874	Restigouche	Flatlands, N.B.	Atlantic salmon			443,453		1,975,706	213,673					2,632,832	
			Speckled trout				5,000	99,063						104,063	2,736,895
1914	Saint John	Saint John, N.B.	Atlantic salmon	*(e)*6,000		100,000	975,000	502,574					823	1,584,397	
			Brown trout, hybrids								1,021		7,025	8,046	
			Landlocked salmon										2,784	2,784	
			Loch Leven trout								158		719	877	
			Speckled trout				163,500	569,200	70,000	1,256	1,500		2,636	808,092	2,404,196
1906	Kelly's Pond	Southport, P.E.I.	Atlantic salmon			180,000	420,000	630,085						1,230,085	
			Speckled trout					129,400	73,008					202,408	1,432,493
1914	Banff	Banff, Alberta	Brown trout				140,000	316,510						456,510	
			Cutthroat trout		150,000			650,910	221,410					1,022,320	
			Kamloops trout		95,590									95,590	
			Rainbow trout				20,000	471,405	159,325					650,730	
			Salmon trout				96,180				362			96,542	
			Speckled trout		500		256,130							256,630	2,578,322
1928	Jasper Park *(a)*	Jasper, Alberta	Rainbow trout				603,703							603,703	603,703
1928	Waterton lakes	Twin Butte, Alta.	Cutthroat trout		21,800		391,900	135,500				16,202	35	565,437	
			Rainbow trout				568,650	74,425					70	643,145	1,208,582

THE FOLLOWING TABLE SHOWS THE HATCHERIES OPERATED, THEIR LOCATION, DATE OF ESTABLISHMENT, THE SPECIES AND THE NUMBER OF EACH SPECIES DISTRIBUTED FROM EACH HATCHERY DURING 1936—*Concluded*

Established	Hatchery	Location	Species	Green eggs	Eyed eggs	Fry	Advanced fry	Fingerlings					Yearlings and older	Total distribution by species	Total distribution by hatcheries
								No. 1	No. 2	No. 3	No. 4	No. 5			
1916	Cultus lake	Cultus lake, Vedder Crossing, B.C.	Coho salmon			393,600								393,600	
			Cutthroat trout				18,443							18,443	
			Kamloops trout			69,460								69,460	
			Sockeye salmon			42,435								42,435	
			Steelhead salmon		25,000			103,052						128,052	651,990
1927	Smiths Falls *(a)*	Cultus lake, Vedder Crossing, B.C.	Cutthroat trout									64,281		64,281	
			Steelhead salmon					232,580				35,107	23,042	290,729	355,010
1906	Pemberton	Owl creek, B.C.	Kamloops trout		197,500	147,170								344,670	
			Sockeye salmon			23,493,960								23,493,960	23,838,630
1917	Pitt lake	Pitt river, Alvin, B.C.	Sockeye salmon			2,879,380								2,879,380	2,879,380
1908	Babine lake	Babine lake, via Topley, B.C.	Sockeye salmon			6,149,736								6,149,736	6,149,736
1906	Rivers Inlet	Rivers Inlet, B.C.	Sockeye salmon		7,459,530	10,459,947								17,919,477	17,919,477
1911	Anderson lake	Anderson lake, Kildonan, Vancouver Island, B.C.	Sockeye salmon			5,090,972								5,090,972	5,090,972
1911	Kennedy lake	Kennedy lake, Tofino, Vancouver island, B.C.	Sockeye salmon		1,453,725		4,951,525	2,408,669						8,813,919	8,813,919
1933	Beaver lake *(a)*	Kelowna, B.C.	Kamloops trout		443,438	477,320								920,758	920,758
1922	Lloyd's creek *(a)*	Kamloops, B.C.	Kamloops trout		1,929,000	897,735								2,826,735	2,826,735
1936	Murtle lake *(c)*	Blue river, B.C.	Kamloops trout		43,820									43,820	43,820
1934	Argenta *(a)*	Argenta, B.C.	Kamloops trout			437,260								437,260	437,260
1923	Nelson	Nelson, B.C.	Kamloops trout		441,303	408,749								850,052	
			Kennerly's salmon		425,000	561,501								986,501	
			Speckled trout		60,000	184,876								244,876	2,081,429
1928	Penask lake *(a)*	Penask lake, via Quilchena, B.C.	Kamloops trout		630,000	589,758								1,219,758	1,219,758
1928	Summerland *(a)*	Summerland, B.C	Kamloops trout		725,000	565,023								1,290,023	1,290,023
				6,000	14,110,206	54,147,335	12,997,531	22,284,105	4,475,581	2,574,577	689,291	305,407	82,367	111,672,400	111,672,400

(a) Subsidiary hatchery. *(d)* Pond and rearing station combined.
(c) Eyeing station. *(e)* Autumn collection 1936. *(f)* Rearing station.

The eggs, fry and fingerlings included in this distribution, with the exceptions indicated, were from collection in the autumn of 1935 and the spring of 1936.
In addition to the above 553,070 Cutthroat trout eyed eggs and fry were planted direct in British Columbia waters as detailed in previous statement.

HATCHERY OUTPUT, BY PROVINCES, OF EGGS, FRY, FINGERLINGS, YEARLINGS AND OLDER FISH DURING 1936

—	Green eggs	Eyed eggs	Fry	Advanced fry	Fingerlings					Yearlings and older	Total distribution by species	Total distribution by province
					No. 1	No. 2	No. 3	No. 4	No. 5			
Nova Scotia—												
Atlantic salmon	.....	8,000	575,000	2,415,000	5,701,860	1,733,185	1,032,144	379,950	68,200	.....	11,913,339	
Kamloops trout	.....	.....	.....	.....	.....	.....	.....	.....	6,500	.....	6,500	
Landlocked salmon	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,335	19,335	
Rainbow trout	.....	.....	.....	.....	.....	.....	455	.....	15,050	10,655	26,160	
Salmon trout	.....	.....	.....	.....	68,725	.....	2,747	.....	.....	.....	71,472	
Speckled trout	.....	.....	.....	340,000	2,077,241	276,665	210,863	306,300	100,067	15,083	3,326,219	
	.....	8,000	575,000	2,755,000	7,847,826	2,009,850	1,246,209	686,250	189,817	45,073	15,363,025	15,363,025
New Brunswick—												
Atlantic salmon	6,000	1,000	543,453	2,597,500	7,281,480	1,815,243	638,496	.....	.....	823	12,883,995	
Brown trout hybrids (Brown trout—Atlantic salmon)	.....	.....	.....	.....	.....	.....	.....	1,021	.....	7,025	8,046	
Landlocked salmon	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,784	2,784	
Loch Leven trout	.....	.....	.....	.....	.....	.....	.....	158	.....	719	877	
Speckled trout	.....	.....	.....	178,500	2,002,263	196,745	689,872	1,500	.....	2,796	3,071,676	
	6,000	1,000	543,453	2,776,000	9,283,743	2,011,988	1,328,368	2,679	.....	14,147	15,967,378	15,967,378
Prince Edward Island—												
Atlantic salmon	.....	.....	180,000	420,000	630,085	.....	.....	.....	.....	.....	1,230,085	
Speckled trout	.....	.....	.....	.....	129,400	73,008	.....	.....	.....	.....	202,408	
	.....	.....	180,000	420,000	759,485	73,008	.....	.....	.....	.....	1,432,493	1,432,493
Alberta—												
Brown trout	.....	.....	.....	140,000	316,510	.....	.....	.....	.....	.....	456,510	
Cutthroat trout	.....	171,800	.....	391,900	786,410	221,410	.....	.....	16,202	35	1,587,757	
Kamloops trout	.....	95,590	.....	.....	.....	.....	.....	.....	.....	.....	95,590	
Rainbow trout	.....	.....	.....	1,192,353	545,830	159,325	.....	.....	.....	70	1,897,578	
Salmon trout	.....	.....	.....	96,180	.....	.....	.....	362	.....	.....	96,542	
Speckled trout	.....	500	.....	256,130	.....	.....	.....	.....	.....	.....	256,630	
	.....	267,890	.....	2,076,563	1,648,750	380,735	.....	362	16,202	105	4,390,607	4,390,607
British Columbia—												
Coho salmon	.....	.....	393,600	.....	.....	.....	.....	.....	.....	.....	393,600	
Cutthroat trout	.....	.....	.....	18,443	.....	.....	.....	.....	64,281	.....	82,724	
Kamloops trout	.....	4,410,061	3,592,475	.....	.....	.....	.....	.....	.....	.....	8,002,536	
Kennerly's salmon	.....	425,000	561,501	.....	.....	.....	.....	.....	.....	.....	986,501	
Sockeye salmon	.....	8,913,255	48,116,430	4,951,525	2,408,669	.....	.....	.....	.....	.....	64,389,879	
Speckled trout	.....	60,000	184,876	.....	.....	.....	.....	.....	.....	.....	244,876	
Steelhead salmon	.....	25,000	.....	.....	335,632	.....	.....	.....	35,107	23,042	418,781	
	.....	13,833,316	52,848,882	4,969,968	2,744,301	.....	.....	.....	99,388	23,042	74,518,897	74,518,897
												111,672,400

In addition to the above 553,070 cutthroat trout eyed eggs and fry were planted direct in British Columbia waters as detailed in a previous statement.

The Canadian National, The Canadian Pacific, the Esquimalt and Nanaimo and the Dominion Atlantic Railway Companies continued their generous assistance and co-operation by furnishing free transportation for shipments of game fish and game fish eggs with their attendants. The extent of this co-operation is indicated in the following summary:—

Railways	Total mileage on trip passes	Number of passages	Mileage baggage car permits			Number of cases or cans			Number of permits
			Full	Empty	Total	Full	Empty	Total	
C.N.R.	11,792	29	6,386	5,517	11,903	143	118	261	52
C.P.R.	10,167	58	11,609	6,273	17,882	299	277	576	98
E. & N.R.	61	1	61	61	122	3	3	6	2
D.A.R.	434	8	217	217	434	35	35	70	8
	22,454	96	18,273	12,068	30,341	480	433	913	160

NOTE:—Number of passages refers to transportation one way, a return trip counting as two passages. Number of permits refers to one way passage for cases or cans.

An increased interest is being shown in fish cultural operations and assistance was tendered by private individuals and local organizations such as the boards of trade and fish and game clubs, angling and protective associations, service clubs, etc.

Officials and employees of other dominion departments, provincial officials, officers and crews of fishery patrol and protection boats, and other branches of this department have cordially co-operated in all instances where they could be of assistance.

An exchange of Atlantic salmon for cutthroat trout eyed eggs was made with the United States Bureau of Fisheries, Kamloops trout for salmon trout eyed eggs with the Department of Game and Fisheries, Toronto, and speckled trout for ouananiche eyed eggs with the Department of Mines and Fisheries, Quebec, details of which are given in a subsequent statement.

As a further test of the influence of environment on Atlantic salmon some 507,800 fingerlings, the progeny of " early " fish taken at New Mills, Chaleur bay, and which contribute to the summer angling in the Restigouche river, were distributed in the Saint John river and its tributaries; 275,200 from the Grand Falls hatchery in 1935 and 232,600 from the Grand Falls and Florenceville hatcheries in 1936. A good portion of these fingerlings were marked and when they are due to return the catches of the Saint John harbour nets and up-river anglers will be closely observed with a view to ascertaining if these fish transplanted to a large river system retain the characteristics of their parents or assume the characteristics of the salmon native to the Saint John river in regard to the season of the year at which they enter fresh water from the sea and ascend to the angling pools. Similar transplantations that have been made by the department in smaller rivers have in no instance changed a " late " to an " early " salmon stream and indicate that the season of the year at which Atlantic salmon enter and ascend fresh water streams from the sea is governed by environmental conditions and not by heredity. The experiment made by the Biological Board with the fry of " early " Restigouche river salmon in Apple river, Colchester county, Nova Scotia, (Apple river is a small " late " salmon stream) confirms the department's experience in regard to environment versus heredity in the smaller rivers.

Selective breeding of speckled trout continues to give satisfactory results. One hundred speckled trout fingerlings at the Yarmouth hatchery, the progeny of parents produced by selective breeding, weighed 204 ounces on January 1, 1937,

while the same number of fingerlings from the general hatchery run weighed 92 ounces only. Both groups of fingerlings were retained under similar conditions, given the same food for the same length of time and treated in all respects in the same way. Yearlings from the selective breeding stock at this hatchery produced 903 eggs per fish in 1936 as compared with 623 in 1934, an improvement of nearly 45 per cent in productivity.

Increased production of speckled trout eggs in 1936 over 1935 per female stripped occurred at the following hatcheries: Antigonish in the two and three year stock; Margaree in the two year trout; Yarmouth in the yearlings, two and three year fish; Florenceville in the five year, and Saint John in the yearlings, two, three and five year trout.

Some 6,208 Atlantic parent salmon were obtained for fish cultural purposes and retained at the various ponds operated by this department in the maritime provinces. Of these 4,174 were purchased from commercial fishermen and 2,034 caught in departmental traps. The following is the average weight in pounds of the salmon secured from various sources; In Nova Scotia: Margaree harbour, Inverness county, 12; Nictaux river, Annapolis county, 5·4; River Philip, Cumberland county, 15; Sackville river, Halifax county, 6. In New Brunswick: Miramichi river, Northumberland county, 8·3; Benjamin river, Restigouche county, 5; New Mills, Restigouche county, 16; Saint John harbour, Saint John county, 16. And in Prince Edward Island, Morell river, Kings county, 9.

A co-operative arrangement has been made with the Lands, Parks and Forests branch, Department of Mines and Resources, having in view the development of stream improvement in Burpee brook in the Acadian Forest Experimental Station area—a Dominion Government forest reserve—near Fredericton, New Brunswick. Biological, engineering and fish cultural features have been investigated and arrangements made for the construction of a number of V-type dams. Before this takes place an assessment will be made of natural fish food and fish population at the points where the dams are to be constructed by members of the staff of the Atlantic Biological Station and similar assessments will be made in about a year's time to gauge the effect of this type of construction towards improving conditions for fish life. Similar dams were constructed in 1936 in Pass creek in the Waterton Lakes National Park.

In co-operation with other departments and agencies several undertakings were carried to a successful conclusion during the year. Two hundred and ninety-eight small-mouthed black bass from one to three pounds in weight were transferred from Spanish, North Channel Georgian bay, Ontario, to Waskesiu lake in the Prince Albert National Park, Saskatchewan, in June, 1936. The bass were made available by the Department of Game and Fisheries of Ontario and transportation for the fish and their attendants was provided by the Canadian National and Canadian Pacific railways. The shipment left Spanish on May 30 in thirty galvanized tanks in a Canadian National Express car. They were transported by truck seventy miles from Prince Albert to Waskesiu beach and thence by boat to the distributing grounds and to the enclosures which had been provided for a portion of the shipment. Transfer was completed on the afternoon of June 2 without the loss of a single fish. Two hundred and thirteen were released at selected points in the lake and eighty-five were placed in the spawning enclosures. Spawning took place from June 21 to 26. Sixty per cent of the bass held in enclosures spawned, giving an estimated hatch of 85,000 fry. Hatching began June 24. The growth of the fry retained in the enclosures was quite satisfactory, the average length of these fish at the end of August being from two to three inches. A biological survey of the lakes covering several seasons was made, prior to the introduction of the bass, by Doctor D. S. Rawson of the University of Saskatchewan and the experiment was followed by him until the bass fingerlings were released. All expenses were taken care of by the Lands, Parks and Forest branch, Department of Mines and Resources.

Although Atlantic salmon have on numerous occasions been distributed in lakes long distances from the sea, no prolonged experiment has been undertaken by the department with a view to ascertaining if this species, if prevented from going to sea, will reproduce in inland waters and in this respect change from a migratory to a non-migratory fish. Atlantic salmon that have been distributed by the department in inland waters have had in several instances a good growth and have provided some excellent angling, but none of these fish have reproduced and established themselves in such waters.

With a view to gaining definite information as to whether or not Atlantic salmon, if confined to an inland lake, will reproduce and become established therein, 2,600 such fingerlings were transferred in October, 1936, from the Yarmouth hatchery, Nova Scotia, to Indian lake in the Snake River district, Quebec, not far from Mattawa. Prior to this introduction, a biological survey was made of Indian lake and connected lakes and streams by Professor W. J. K. Harkness, Director of the Ontario Fisheries Research Laboratory, University of Toronto, who will follow the experiment to its conclusion. The transportation and all other expenses connected with the experiment were met by an outstanding sportsman and ardent conservationist in the person of Mr. Moffatt Dunlop of Toronto. A further distribution of Atlantic salmon in these waters has been arranged for 1937.

The following biological surveys were undertaken also on a co-operative basis, viz., a preliminary biological survey of the lakes and streams of the Waterton Lakes National Park, Alberta, a more intensive biological examination of the waters of the Banff National Park and a preliminary examination of Astotin lake in the Elk Island National Park. The biological work was in charge of Doctor D. S. Rawson of the University of Saskatchewan. The Canadian Pacific Railway provided transportation for the workers and their equipment. The superintendents of the respective parks furnished assistance, transportation, etc., within the parks and other expenses were taken care of by the National Parks Bureau, Department of Mines and Resources.

Recommendations were submitted as were warranted by the progress made and information obtained in the respective surveys.

Upper and Lower Kananaskis lakes were also surveyed with a view to ascertaining their possibilities and development as sources of supply, respectively, for rainbow and cutthroat trout eggs for fish cultural purposes. In this survey Doctor Rawson was accompanied by the Director of Fisheries for the Province of Alberta. Free transportation was furnished by the railways as it was in the case of the aforementioned surveys. The Calgary Power Company provided transportation from their plant at Seebe, as well as living accommodation and assistance during the examination. The Department of Lands and Mines for Alberta looked after other expenses.

Extending the collection of speckled trout in New Brunswick, the Department secured eggs of this species from Fraser's pond, Three Brooks, near Plaster Rock, N.B., first in 1933 and each year since there has been an increase in the number of eggs taken. In 1933, the collection was 393,316; 1934—872,600; 1935—1,006,910; 1936—1,720,052. The collections were made by or under the supervision of the superintendent of the Grand Falls hatchery and the eggs collected were laid down for incubation in the Grand Falls hatchery.

Dr. Smith of the Biological Board continued to follow conditions at Stevenson's pond near Saint John, New Brunswick, and Wittenburg pond in Colchester county, Nova Scotia. These ponds were created by flooding low or swampy land.

Dr. R. H. M'Gonigle of the Biological Board investigated high mortalities at several of the Maritime hatcheries and gave the following diagnoses:—

Hatchery	Investigation	Diagnosis	Host Species
Antigonish	First	Chilodoniasis	S. Salar.
	Second	Bacterial Fin and Gill Rot	S. Fontinalis
Bedford	First		S. fontinalis
	Second	Ichthyophthirius	S. salar.
Florenceville	First	Gyrodactyliasis	S. fontinalis.
	Second	Bacterial Fin Rot	S. salar.
		Gill Disease	S. fontinalis.
Kelly's Pond	First	Phosphate analyses	
	Second	Ditto and Gas-bubble disease	S. salar and S. fontinalis.
Middleton	First	Chilodoniasis	S. fontinalis.
	Second	Bacterial infection of a furunculosis type	C. namaycush.
Yarmouth			S. fontinalis.

In two cases no diagnosis was made viz. at Bedford and Yarmouth hatcheries. Arrangements have been made for an investigation of longer duration at Yarmouth next year. Dr. Leim also made one trip of investigation, involving three separate hatchery mortalities occurring simultaneously.

In all cases where possible control (remedial) and preventive measures were recommended.

As Atlantic salmon are prevented by hydro development from reaching the greater portion of the spawning beds in the Mersey river, Nova Scotia, three spawning beds were made as an experiment below No. 3 development in that river during the autumn of 1934. As these first beds were used by salmon that year fifteen additional beds were made during 1935 and were also used to a considerable extent that season. In 1936 each one of the artificial beds was used by salmon and there is every appearance that so far as the provision of spawning facilities are concerned the experiment has been a complete success.

In the Saint John river system the sport fishermen captured 755 salmon and 1,182 grilse or 67 more salmon and 380 more grilse than were taken by angling in 1935. On the Miramichi, the sportsmen declared angling conditions had not been so good for fifteen years, and in any event the season's rod and line catch showed very large increase. As a matter of fact, the catch of grilse, approximately 23,000 fish, was nearly five times as large as it had been in 1935 and an increase of more than 1,000 brought the number of salmon captured up to 4,758. A thirty-five pound " black salmon ", reported to be the largest of this kind ever caught in the province, was landed in April on the Southwest Miramichi river. Fishermen claim that this catch is the biggest " black salmon " ever landed in New Brunswick waters. A twenty-two pound salmon measuring forty-three inches in length was landed at the mouth of Cain's river.

The salmon anglers' catch in the Saint Marys river, Guysboro county, Nova Scotia, has progressively increased since that river was regularly stocked from Antigonish hatchery. Some 64 salmon were reported caught in 1934, 241 in 1935 and 930 in 1936. Six salmon caught in Baddeck river in 1936 is the first on record as having been landed on hook and line in this river.

In 1933 Loch Leven trout fry were planted in Upper Guysboro river, Nova Scotia, where a dam cuts off sea trout migration. In 1936 over a dozen good conditioned trout from five to eleven inches long were caught by one angler.

McKeans brook, Guysboro county, was stocked with brown trout in 1925. The trout have reproduced and now fish of all sizes are taken up to sixteen inches long.

Prince Edward Island experienced one of the best seasons for trout angling it has had for a number of years.

Following the closing of the sockeye hatcheries in British Columbia the district supervisor of Fish Culture in that province, Mr. C. W. Harrison, was superannuated as from February 23, 1937. It is with regret that his death, on March 8, has to be recorded. A native of England, Mr. Harrison had been resident in the Dominion for many years. He entered the federal fisheries service in August 1910, joining the staff of the department's British Columbia division. In 1921 he was appointed district supervisor of fish culture, or as the office was then known, district inspector of fish culture. He continued to hold this position until the latter part of 1936 when his retirement leave began. Mr. Harrison was a capable officer with a sound knowledge of fish cultural practice.

MARITIME PROVINCES EASTERN DIVISION

District Supervisor of Fish Culture, James Catt

Considerable progress in fish culture was made in 1936—largely along the lines of improving and adding to the existing plants and in the opening of the new Cobequid hatchery at Jackson, Cumberland county, Nova Scotia.

Further progress in hatchery operations was again made possible through the valuable co-operation of the officials of the administrative branch of the department, the directors and staffs of the Biological Board stations, the maritime provincial governments' officials, the fish and game protective associations, and the guides' associations.

At the annual meetings of the parent fish and game protective associations for Prince Edward Island and Nova Scotia motions expressing the sincere appreciation of fish cultural work was brought forward and carried unanimously.

There was a commendable increase in the number of speckled trout eggs taken at the Eastern hatcheries in 1936 amounting to 49·8 per cent over 1935—the total number taken in this division this year being 18,230,754 as against 12,163,522 last year. Hatcheries showing increased collections were: Antigonish 9,448,727—an increase of 67·3 per cent; Margaree 1,931,696—an increase of 121·1 per cent; Saint John 2,283,286—an increase of 48·0 per cent and Kelly's pond 550,800—an increase of 160·5 per cent. Some 98,900 of the eggs for Kelly's pond hatchery were taken in Fortune river and were of the sea-run variety. Initial collections were made by the superintendent of the Cobequid hatchery at Hart lake of 81,870 and at Poison lake of 8,200. The superintendent of Middleton hatchery collected at Sand lake 160,500.

Fishery supervisors and their staffs made preliminary selections of possible hatchery or rearing pond sites in Madawaska and Restigouche counties, New Brunswick, and in the three counties of Prince Edward Island, which proved of great assistance in expediting final selections from biological, engineering and fish cultural points of view. These investigations were carried out by Mr. H. A. Lynch, senior Assistant Engineer, Doctors M. W. Smith and R. H. M'Gonigle of the Saint Andrews Biological station and Mr. James Catt, District Supervisor of Fish Culture. In Prince Edward Island the president of the fish and game protective association at Charlottetown and members of the Summerside protective association rendered valuable assistance by accompanying the investigators and bringing to their notice possible hatchery and pond sites which otherwise might have been overlooked.

Natural food and water conditions had restored themselves to a sufficient extent in lake Jesse, Yarmouth county, Nova Scotia, which in 1934 was treated with copper sulphate to destroy competitor and enemy fish, to admit of the lake

being restocked in 1936. Consequently, 45,000 speckled trout fingerlings were distributed therein during the year.

As the treatment of this lake had given such satisfactory results, two additional lakes, namely, Tedford in Yarmouth county, and Boar's Back in Digby county, were similarly treated on August 3 and 5 respectively. The treatment was carried out by the staff of the Yarmouth hatchery in cooperation with Doctor M. W. Smith of the Atlantic Biological Station, local fishery officers, volunteers, and members of the Yarmouth Fish and Game Protective Association. Approximately 86,000 fish were killed in Tedford and 27,000 in Boar's Back lake. White perch were the dominant enemies of speckled trout in the former and yellow perch in the latter lake. In Tedford lake no trout whatever were found and in Boar's Back less than 100 trout amongst the fish that were killed. In a population of some 150,000 fish in the three lakes, well over one-half were potential enemies of speckled trout.

An experiment to determine how best to make use of over-stocked trout streams was made. A few such streams are to be found in the less accessible portions of Nova Scotia and New Brunswick. They usually have very efficient spawning grounds and an entire absence of enemy and predatory fishes. For the purpose of the experiment, 930 speckled trout were obtained from Rairdon brook, Kings county, New Brunswick, in October 1935 and transferred to Saint John hatchery. The aggregate weight of these fish was forty-five pounds and the average weight 0·8 ounces. They were retained at the Saint John hatchery where the condition of their habitat was improved by a greatly increased food supply. On May 22, 1936 they averaged 1·3 ounces, on August 26 three ounces, and on October 19 three decimal seven ounces. They had increased in length during the period of retention from 5 inches to 9¼ inches. The average yield of eggs per female of this group was small being 331 as compared with the hatchery pond stock, the yield from which per female was—one year olds 487, 2 year olds 754, 3 year olds, 1,378 and five year olds 2,092. This stock was marked by the removal of the right pectoral fin and distributed, 364 in Beaver lake and 300 in Ping Pong lake in the vicinity of Saint John, from which reports on recaptures will be made. Further investigations were carried out at Rairdon brook in the summer and fall. Many trout were examined; they varied from three and a half to seven inches in length, with an average of approximately five inches. Some of these specimens would have spawned in the fall.

Successful live fish exhibits were made during the year at the Apple Blossom Carnival, Kentville, at the Yarmouth County Exhibition held at Yarmouth and at the Municipality of Clare Exhibition at Little Brook, Nova Scotia, under the supervision of Mr. H. V. Gates, superintendent of the Yarmouth hatchery; at the Fredericton and Woodstock exhibitions under Mr. George Sutherland, superintendent of the Florenceville hatchery, and at the Saint John exhibition under the direction of Mr. J. D. Nichol, superintendent of the Saint John hatchery. Mr. Gates, loaned to the Provincial Government of Nova Scotia, accompanied an exhibit consisting of live rainbow and speckled trout of various ages to the Sportsmen's Shows at Boston, Hartford and New York, and Assistant Wm. T. Owens, loaned to the Provincial Government of New Brunswick, took charge of an exhibit including adult Atlantic salmon and speckled trout of various ages to the three above mentioned cities in the United States. This work was carried out most successfully. It was the first time that adult Atlantic salmon had been successfully included in these exhibits.

At the Margaree and Antigonish hatcheries preventative treatment to combat disease in salmon and trout through the use of constant flow syphons proved of value.

A new rearing station was completed on Mill brook, between Grafton lake and lake Kejimkujik, Nova Scotia, consisting of fifteen circular ponds, ice house and freezer.

A large number of both salmon and trout were again marked by the removal of one or more fins before distribution from hatcheries. Details are given in a subsequent statement.

Antigonish Hatchery

K. G. Shillington, Superintendent

The Antigonish hatchery carried its full capacity of Atlantic salmon and speckled trout and a small collection of rainbow trout eggs amounting to 8,985. Valuable assistance was rendered by the New Glasgow and Pictou Fish and Game Protective Associations in the distribution of some 250,000 speckled trout fingerlings in their districts. In addition to the above an exchange of twenty-seven thousand speckled trout eyed eggs for ouananiche eggs was made with the Department of Mines and Fisheries at Quebec, the eggs being laid down at their provincial hatchery at Gaspé. The ouananiche eggs were allotted to Saint John hatchery.

Three additional fifty-foot circular ponds were completed and put in operation during the year, and much improvement was made to hatchery equipment and grounds; including installation of a 32 volt electric light plant with 1,500 watt generator and 240 ampere hour batteries.

The total collection of speckled trout eggs made from brood stock developed at the hatchery showed a substantial increase to 9,448,727 as against 5,647,161 secured in the fall of 1935, and constituted a new speckled trout collection record for an individual Canadian hatchery.

In March, 2,750,000 Atlantic salmon eyed eggs were received from the Miramichi hatchery. Outgoing shipments of speckled trout eyed eggs to other hatcheries were: 1,000,000 to Bedford, 250,000 to Lindloff, 700,000 to Middleton, 900,000 to Yarmouth, 150,000 to Restigouche, 27,000 to Gaspé and 50,000 to Kelly's Pond. Distributions for the season were: Atlantic salmon 2,290,000, rainbow trout 455 and speckled trout 1,059,001 of which 7,900 were marked by the removal of the adipose and right pectoral fins; total 3,349,456.

Bedford Hatchery and Sackville River Salmon Pond

George Heatley, Superintendent

A good distribution of Atlantic salmon and speckled trout in the advanced fry stage was made from the Bedford hatchery this year.

In March, 1,000,000 Atlantic salmon eyed eggs were shipped to the Yarmouth hatchery, and in the same month 21,000 landlocked salmon eyed eggs and in May, 400,000 Atlantic salmon fry and advanced fry were transferred to the Grand lake rearing ponds to be later distributed from that establishment.

In February, 1,000,000 speckled trout eyed eggs were received from the Antigonish hatchery. The following supplies of eggs were received in the fall of the year: 1,030,000 Atlantic salmon from the Sackville pond and 58,000 landlocked salmon from the Grand lake ponds and camp, in addition to 1,000,000 speckled trout eyed eggs purchased from the American Fish Culture Company, Carolina, Rhode Island. At the request of the Department of Highways, Nova Scotia, twelve parent salmon were transferred to and retained at the Bedford hatchery for future exhibition purposes. Distributions for the year were: Atlantic salmon 1,798,045, and speckled trout 790,565; total, 2,588,610.

At the Sackville river salmon pond this season a great many grilse were caught ranging from three and a half to four and a half pounds in weight after they had been stripped. Scales from these fish were sent Doctor A. G. Huntsman, Editor and Consulting Director of the Biological Board and he advised that he examined a number of these samples from 3½ to 4½ pound fish and found them to be invariably grilse with 2 years' growth as parr and 1+ years' growth

after becoming smolts. The eggs from these fish although somewhat smaller than those from the adult salmon were of good quality. The number of salmon impounded for fish cultural purposes was 329, taken from August 31 to October 29, during which period there was a loss of three. The total collection of eggs was 1,030,000, of which about one-third was taken from grilse and the remainder from adult salmon; all eggs were laid down in the Bedford hatchery.

Cobequid Hatchery and River Philip Salmon Pond

J. W. Heatley, Superintendent

As was previously reported, the Cobequid hatchery buildings were completed in the autumn of 1935. During the season of 1936, 24 circular rearing ponds, each 25 feet in diameter and 2 feet deep in the centre were added to this establishment. The water supply and other conditions admit of a further addition of at least 24 ponds of the same dimensions. The main water supply pipe runs through the middle of the pond area with branch feed pipes to each pond. The main drainage flume is immediately under the supply pipe, running the full length of the system and connected with branch drains to each pond. Consideration was given to various methods of waterproofing the ponds, which are located in a somewhat gravelly and porous formation, and the following method was adopted:—

A concrete slab was built in the centre of each pond to support the overflow and screen arrangements. The balance of the pond bottom was first covered with two inches of sand. On this was placed a layer of "fibreen," a tough quality of building paper with fibres and asphalt between two cemented layers. Clay filling was then puddled four inches thick over the paper, sufficient sand being incorporated to form a binder. Approximately 770 feet of fourteen-inch diameter wood stave pipe was laid and 390 feet of flume ten inches deep and varying from thirty to thirty-six inches in width was built to provide drainage facilities. The grounds were graded and a protecting wall built along the river bank. A thirty-two volt electric light plant with a 1,500 watt generator and 240 ampere hour batteries was installed.

Wild speckled trout ova were collected at Hart and Poison lakes and the possibilities of an increased collection were investigated. A small collection of 81,870 eggs secured at Hart lake may be attributed to some extent to the proportion of only 160 females to 347 males taken from October 21 to November 8. On November 13 the camp was moved to Poison lake where 304 trout ranging from four to six inches in length were dipped from a pool near the outlet of the lake. The number of eggs collected at Poison lake was 8,200.

In November, 3,579,940 Atlantic salmon eggs were received from River Philip pond.

A large number of people visited the hatchery during the summer and are apparently taking a great interest. Fish, forest and game protective associations, rod and gun clubs, etc., have indicated that they will co-operate in every way to make fish culture in this district a success.

On September 15 repairs were commenced to the River Philip power dam and old fishway, which had been damaged by preceding spring freshets. There was apparently a very large run of Atlantic salmon in the river this season, and it was observed that it commenced considerably earlier than in previous years. The first fish were taken on September 25. By November 4, some 1,161 salmon were impounded, which was more than sufficient for the number of eggs required. The fence was then opened and the balance of the run allowed to ascend through the dam. The loss of fish during retention was 4. Of the fish impounded, only 621 were stripped, the remaining 536 being liberated above the dam. The collection was 3,579,940 salmon eggs, which were laid down in the Cobequid hatchery.

Grand Lake Rearing Ponds

E. Barrett, Officer in Charge

The Grand Lake rearing ponds, which were operated by the Provincial Department of Lands and Forests since they were build in 1933, were deeded to the Department of Fisheries and operated by this department from October 1, 1936. These ponds in the first instance owe their existence to the efforts of Dr. A. C. Fales, Wolfville, Nova Scotia, and the officers and members of various fish and game protective associations. The site was purchased by these gentlemen in 1933 and deeded to the province of Nova Scotia. Eight ponds, each 100 feet long and 6 feet 7 inches wide, were built under the supervision of officers of the Department of Fisheries. They have since been operated by the province until transferred to this department. At the time of transfer there were some 69,700 Atlantic salmon fingerlings, 14,500 sebago salmon fingerlings, 800 ouananiche yearlings and 200 two-year-old sebago salmon in the ponds.

Some forty of the female pond-reared sebago salmon were stripped and produced 22,000 eggs. These fish were approximately fourteen inches in length and averaged about one pound in weight. A permanent fence and trap for sebago salmon was built in Rawdon river at Grand lake, principally for the purpose of determining the nature of the run of fish at this point and its possibilities for egg-collecting purposes. Only twenty-eight salmon were taken in the trap and these, with twenty-three from Fletcher's run, yielded 36,000 eggs. After they were stripped, thirty-five of these fish were placed in the Grand Lake rearing ponds and the remaining sixteen were marked by the removal of the adipose and right ventral fins and liberated in Grand lake.

Distributions for the season were: Atlantic salmon 338,200 and sebago salmon, 19,335; total, 357,535. With exception of plantings in Grand Lake, the distributions were carried out with the assistance of the Bedford hatchery staff. Of the above 135 sebago salmon two-year-olds were marked before being liberated by the removal of the adipose and right ventral fins.

Margaree and Lindloff Hatcheries

W. D. Turnbull, Superintendent

Satisfactory distributions of Atlantic salmon and speckled trout from the Margaree hatchery in 1936 were made, although the growth of the salmon fingerlings was not quite equal to that of 1935. All available ponds were loaded to capacity with fingerlings and speckled trout brood stock. Large numbers of salmon and trout fingerlings and yearlings were observed in nearly all streams previously stocked from this hatchery, and good results from earlier plantings were in evidence when distributions were made in the same areas later in the season.

Special work undertaken and completed during the year consisted of the change of the hatchery office into a feed-room with a concrete floor and a drain to the river and construction of a new foundation for the engine. Construction work was also commenced on five new circular ponds, which are expected to be completed early next season.

Although the number of speckled trout eggs collected from the brood stock developed at the Margaree hatchery was less than at either the Antigonish or Saint John hatcheries, the collection set a new record for this plant, showing a large increase over the previous years, namely, 1,931,696 eggs, as compared with 873,574 in 1935 and 186,371 in 1934.

In April 750,000 Atlantic salmon eyed eggs were transferred to the Lindloff hatchery for incubation.

In November and December 3,201,500 Atlantic salmon eggs were received from the Margaree salmon pond. Distributions for the season were: Atlantic salmon 3,920,960 and speckled trout 623,889; total, 4,544,849. Of the above 24,234 Atlantic salmon and 1,876 speckled trout were marked by the removal of the adipose and right pectoral fins.

Distributions from the Lindloff hatchery, which was in charge of Assistant F. F. Annis in 1936, were augmented by those from the Margaree hatchery, particularly in the Sydney area. To prevent the ascent of eels into the ponds a barrier was constructed in the hatchery brook during the year.

The following eyed eggs were received in April: 750,000 Atlantic salmon from the Margaree hatchery and 250,000 speckled trout from the Antigonish hatchery. Distributions were: Atlantic salmon 643,000, of which some 15,000 were marked by the removal of the adipose and left pectoral fins, and 27,628 speckled trout; total, 670,628.

Margaree Salmon Pond

J. P. Chiasson, Superintendent

Some 402 parent Atlantic salmon were secured between September 17 and November 18. Only three were lost during the retention period which terminated when the last eggs were taken on December 9. A collection of 3,201,500 eggs of good quality was obtained and laid down in the Margaree hatchery.

Middleton Hatchery and Nictaux Salmon Pond and Rearing Station

F. M. Millett, Superintendent, J. W. Heatley and W. T. Owens, Officers in Charge

The output of Atlantic salmon, salmon and speckled trout fingerlings from the Middleton hatchery in 1936 was very satisfactory, and much favourable comment was received during the year on improved fishing in lakes stocked from this establishment especially those on the North Mountain. During August the hatchery pond was drained and 12 speckled trout yearlings taken and distributed in Lily lake, Annapolis county. The pond was again filled and restocked with some 500 speckled trout No. 4 fingerlings.

Sand lake, Annapolis county, was stocked from the Middleton hatchery in 1926 and 1929, and following these years was fished very intensely until there were hardly any more fish being caught and the lake appeared to be practically barren when it was again stocked in 1934. The speckled trout fingerlings planted that year made a remarkably rapid growth and in the fall of 1935 the superintendent of the Middleton hatchery made a small experimental collection at this point.

In 1936 a collection of wild speckled trout ova of good quality was made at this lake on the North Mountain. The lake has been closed to the angling public and posters to this effect prominently displayed. From November 3 to 8 inclusive 224 trout averaging one pound in weight were taken, from which 160,500 eggs were secured.

In addition to general improvements at the Middleton hatchery, extensive repairs were made at nearby Stevens ponds.

Atlantic salmon transferred to the Nictaux rearing station were: in May 200,000 advanced fry (156,600 of these were returned to Stevens ponds at the end of the same month as the Avon River Power Company had to repair their power dam; 30,000 were distributed), and in August 30,000 fingerlings.

Eyed eggs received during the year were: in February 100,000 salmon trout from the Provincial Department of Game and Fisheries, via Belleville hatchery, Ontario, in March 700,000 speckled trout from the Antigonish hatchery and in

December 1,545,000 speckled trout purchased from the American Fish Culture Company, Carolina, Rhode Island, U.S.A. In the autumn 514,700 Atlantic salmon eggs were received from the Nictaux salmon pond.

Distributions from Middleton hatchery were: Atlantic salmon 1,429,144, salmon trout 71,472 and speckled trout 299,112; total, 1,799,728. Of the above 2,747 salmon trout and 1,000 speckled trout were marked by the removal of the adipose and left ventral fins.

At the Nictaux pond owing to a break in the power dam of the Avon River Power Company, the salmon from the early run were lost. Although a number of the fish were stopped by a rack over the waste gate at upper dam and later captured and returned to the pond, a greater number of salmon under normal conditions would have been impounded this season if the break had not occurred. Out of the 162 salmon obtained from June 17 to October 18, there was a loss of 28 due mostly to extra handling and injuries. The total collection of 514,700 eggs was laid down in the Middleton hatchery.

Operations at the Nictaux rearing station were quite limited this year, as repairs were being made to the power dam during a greater part of the summer. In May 200,000 Atlantic salmon advanced fry were received from the Middleton hatchery; 30,000 of which were released in the Nictaux river and the balance, 156,600, returned to Stevens ponds, Middleton hatchery, at the end of that month. In August 30,000 Atlantic salmon fingerlings from the Middleton hatchery were placed in the station, resultant from which 29,390 were distributed. The total distribution for the season was 59,390 Atlantic salmon of which 13,000 were marked by the removal of the adipose and left ventral fins.

Yarmouth Hatchery

H. V. Gates, Superintendent

After the first weeks of June the result of rearing at the Yarmouth hatchery was better than usual. The stock was of excellent size and quality and permitted a large distribution of fall fingerlings, as well as the retention of an increased number for release as yearlings. The 1936 distribution consisted of fish of various stages and ages, exceeding the 1935 output by 463,525.

A collection of 336,000 speckled trout eggs which is somewhat smaller than that of the previous year was made from the brood stock developed at the hatchery. The hatchery ponds also produced 192,000 rainbow trout eggs of good quality, exceeding the collections of former years; they also yielded 11,000 Kamloops trout eggs.

Evidence of the importance of selective breeding is apparent at this hatchery as intimated on a previous page of this report.

Live rainbow and speckled trout of different ages were allotted the provincial Department of Highways, Nova Scotia, in connection with their exhibits at the Sportsmen's Shows at Boston, Hartford and New York. Superintendent H. V. Gates accompanied the shipment. Live fish exhibits of rainbow and speckled trout in various stages of development from fingerlings to adult fish were also shown at the Apple Blossom Carnival, Kentville, and at the Yarmouth County Exhibition, Yarmouth, where an additional attraction was adult Atlantic salmon which had been captured in the Tusket river. At the Municipality of Clare Exhibition, Little Brook, adult Atlantic salmon, rainbow and speckled trout were on exhibit.

On October 24 an experimental shipment of Atlantic salmon fingerlings was distributed in Indian lake and tributaries, Snake Creek district, Quebec, as reported in detail on a previous page.

The following eyed eggs were received during the season: in March 900,000 speckled trout from Antigonish hatchery and 1,000,000 Atlantic salmon from Bedford hatchery; and in the fall 1,644,500 speckled trout eggs purchased from

the American Fish Culture Company, Carolina, Rhode Island. In November 1,758,240 Atlantic salmon green eggs were received from the Saint John pond.

Lake Jesse, which was successfully treated with copper sulphate in 1934 for removal of enemy fish was stocked in June with some 45,000 speckled trout No. 1 fingerlings. The hatchery staff assisted in 1936 in treating with copper sulphate Boar's Back and Tedford lakes in order to eliminate the coarse fish therein.

Distributions for the season were: Atlantic salmon 1,434,600, Kamloops trout 6,500, rainbow trout 25,705, and speckled trout 526,024; total, 1,992,829. Of the above 44,000 Atlantic salmon fingerlings and 13,907 speckled trout fingerlings, yearlings and older fish were marked by the removal of adipose and right ventral fins.

Much valuable assistance was afforded by Supervisor H. H. Marshall, by fisheries inspectors, and by fish and game protective associations in distributing hatchery product.

Florenceville Hatchery

George Sutherland, Superintendent

This hatchery had a very satisfactory season and a good distribution of Atlantic salmon and speckled trout advanced fry and fingerlings was made. The collection of speckled trout ova from the hatchery ponds was 1,709,623, which is somewhat smaller than that of the previous year.

The location of the outside troughs was changed from the back of the hatchery to the hatchery dam, and a building 42 feet by 50 feet to enclose these troughs was completed with the exception of roofing. When this building is finished it will augment the hatchery capacity by sixteen troughs.

Two and four year old speckled trout from the hatchery ponds were allotted to the Bureau of Information and Tourist Travel for the Province of New Brunswick in connection with their exhibits at the Sportsmen's Shows at Boston, Hartford and New York, and Atlantic salmon fingerlings, speckled trout fingerlings and older fish were loaned to the New Brunswick Fish and Game Protective Association for their exhibits at the Fredericton and Woodstock Exhibitions, New Brunswick.

In March 597,126 speckled trout eyed eggs were transferred to the Grand Falls hatchery.

Atlantic salmon eyed eggs received from other hatcheries during the year were: in March 1,500,000 from Miramichi, and 30,000 from Restigouche the resultant fingerlings from which were distributed in the Nashwaak river in a continuation of the experiment of introducing progeny from early run salmon to this stream. In September 5,000 speckled trout fingerlings were received from Grand Falls hatchery: in the autumn 1,504,800 Atlantic salmon ova were received from the Saint John salmon pond. Distributions were: Atlantic salmon 2,369,496, of which 24,570 were marked by the removal of the adipose and left pectoral fins, and speckled trout 889,062; total 3,258,558.

Grand Falls Hatchery

W. A. McCluskey, Superintendent

A slightly larger-than-usual distribution of advanced fry and fingerlings of Atlantic salmon and speckled trout was made from the Grand Falls hatchery this year. Much valuable assistance was afforded by the Grand Falls and Madawaska Fish and Game Clubs in the distributing of hatchery product.

Four circular ponds were completed during the year, which will be in operation the coming season. A 32 volt electric lighting plant with 1,500 watt generator and 240 ampere hour batteries was installed. A new verandah was built on the front of the dwelling and a window placed in south side of residence in upper story.

An excellent collection of 1,720,052 wild speckled trout ova, exceeding that of the 1935 collection by over 713,000 was made in the autumn at Fraser's pond, Three brooks. This is the largest collection yet made at that point. The eggs were laid down in the Grand Falls hatchery and 1,290,000 of them purchased from the owner of the pond, when they had reached the eyed stage.

In September 5,000 speckled trout fingerlings were transferred to the Florenceville hatchery.

The following eyed eggs were received from other hatcheries: in March 500,000 and 220,000 Atlantic salmon from Miramichi and Restigouche, respectively, and 597,126 speckled trout from Florenceville; in December 1,000,000 speckled trout purchased from the American Fish Culture Company, Carolina, Rhode Island. In the autumn 2,197,800 Atlantic salmon ova were received from the Saint John salmon pond. Distributions were: Atlantic salmon 2,474,000 and speckled trout 1,268,616; total 3,742,616. Of the above 44,000 Atlantic salmon were marked by the removal of the adipose and right pectoral fins.

Miramichi Hatchery and Miramichi Salmon Retaining Pond

Frank Burgess, Superintendent

The Miramichi hatchery in 1936, produced a good distribution of Atlantic salmon fry and fingerlings and in addition a small distribution of speckled trout from 12,000 trout fingerlings received from Restigouche hatchery in July. Some 98 trout yearlings which were retained in pond No. 1 from the fall of 1935 without a loss were also distributed.

In March the following shipments of Atlantic salmon eyed eggs were made: 1,000 to Doctor A. G. Huntsman, University of Toronto; 2,750,000 to Antigonish hatchery, 1,500,000 to Florenceville hatchery; 500,000 to Grand Falls hatchery, and through an exchange agreement with the United States Bureau of Fisheries, 1,500,000 to Craig Brook hatchery, Maine.

A 32 volt electric lighting plant with 1,500 watt generator and 240 ampere hour batteries was installed.

Distributions for the season were: 3,823,270 Atlantic salmon, and 1,843 speckled trout; total, 3,825,113. Of the above 9,900 salmon fingerlings, 700 trout fingerlings and 98 trout yearlings were marked by the removal of the adipose and right ventral fins.

A collection of 8,957,972 ova was made in the autumn from some 2,000 Atlantic brood salmon purchased and impounded at the Miramichi pond. All eggs were laid down in the Miramichi hatchery. The first fish was captured on September 7 and the last on October 14. Of the fish retained, there was a normal loss of 49 or 2·4 per cent.

New Mills Salmon Pond

Wm. White, Superintendent

Most of the Atlantic salmon for the New Mills pond were from the early spring run, and were purchased from the commercial fishermen of the district between May 26 and July 10. The patrol boat "Gilbert" did the towing of the salmon from the nets to the pond. The number of salmon obtained was 438, from which there was a small loss of 7 due to injuries received in the nets, and not detected when the fish were being placed in the pond. Due to a shortage of male salmon in the New Mills collection a further 39 fish were secured from Benjamin river between September 16 and 23, making a total of 470 salmon available for fish cultural purposes. The total collection of eggs was 2,351,820, which were laid down in the Restigouche hatchery.

A two and one-half pound female grilse was stripped at the New Mills pond this season. This fish was captured some two hundred yards from the mouth of the Benjamin river on September 22 and was heavily spotted. The presence of a female grilse so small and so heavily spotted is quite unusual in that region. An examination of the scales by Doctor A. G. Huntsman, Editor and Consulting Director of the Biological Board indicated that the salmon grew two years in the stream in the usual way and that the rapid growth that followed appeared to be all sea growth which was interrupted after a short time and then continued. It appears that the salmon went to sea as a smolt early in 1935 before starting to feed but that there was an interruption in its sea growth that summer, and that it did not put on any growth this year accounting for its small size.

Restigouche Hatchery

R. O. Barrett, Superintendent

An increased distribution of Atlantic salmon and speckled trout fry and fingerlings was made from this plant in 1936, amounting to over a million more than in 1935.

During the year one twenty foot circular pond was constructed and arrangements made for the installation of a small closed circulating system to test this method of incubation. The barn was converted into a garage for truck, and the stable made over for a fuel storeroom. Other improvements made consisted of the gravelling of roads and around outside tanks, grading of grounds, etc.

In February 1,000,000 Atlantic salmon eyed eggs were received from Kelly's Pond hatchery and in March 150,000 speckled trout eyed eggs from Antigonish hatchery. In the first part of July 12,000 speckled trout No. 1 fingerlings were transferred to the Miramichi hatchery for later distribution from that point. In March the following outgoing shipments of Atlantic salmon eyed eggs were made; 30,000 to Florenceville hatchery and 220,000 to Grand Falls hatchery. In the autumn 2,351,820 salmon ova were received from New Mills pond. Distributions for the season were: 2,632,832 Atlantic salmon and 104,063 speckled trout; total, 2,736,895.

Saint John Hatchery, Saint John Salmon Pond and Chamcook Collecting Station

J. D. Nichol, Superintendent

The collection of speckled trout eggs from the Saint John trout ponds reached a high record of 2,283,286 in 1936, as against 1,543,078 collected in 1935. Other collections of eggs made at the hatchery ponds were: rainbow trout 2,500, brown trout hybrids 4,320 and landlocked salmon hybrids 2,300.

The usual distribution of fry, fingerlings, yearlings and older fish was made from the various species propagated at this plant. In November 3,000 Atlantic salmon green eggs were shipped to Doctor A. G. Huntsman, University of Toronto, for study by Professor Laurence Irving of the changes in protein during development and 3,000 to the Superintendent of State hatchery, Department of Fisheries and Game, Sandwich, Massachusetts. These latter eggs were shipped on request of Doctor David L. Belding, Boston University School of Medicine and will be studied by Mr. W. S. Hoar who is interested in following the early development of the salmon particularly in regard to the swim bladder and to the endocrine glands. Assistance in the distribution of hatchery product was rendered by the various fish and game protective associations, and fish and game wardens.

Live specimens of salmon and trout under the care of Superintendent Nichol were loaned to the Saint John branch of the New Brunswick Fish and Game Protective Association for showing at the Saint John Exhibition.

During the year the sewer draining ponds in series twenty to thirty-nine was renewed by a twenty inch wood stave pipe, the work being done by the hatchery staff. The wood slat gates installed in trout ponds the previous season gave entire satisfaction.

Supplies of eggs received from other sources in addition to collections were: in February 1,000,000 Atlantic salmon eyed eggs from Kelly's Pond hatchery; in March through an exchange agreement with the Department of Mines and Fisheries, Quebec, 15,000 ouananiche eyed eggs, and in the autumn 1,552,320 salmon ova from Saint John pond. Distributions for the year were: Atlantic salmon 1,584,397, brown trout hybrids 8,046, sebago salmon 2,784, Loch Leven trout 877, and speckled trout 808,092; total, 2,404,196. Of the above 773 Atlantic salmon two years and 10,000 speckled trout fingerlings were marked by the removal of the adipose and right pectoral fins, 2,000 sebago salmon yearlings by the adipose and right ventral fins, 784 sebago salmon two years by the adipose and left ventral fins, and 664 wild speckled trout of Rairdon brook stock by the right pectoral fin.

Commencing May 29 and ending July 28 Atlantic salmon for Saint John pond were accepted and impounded as caught on all but a few days during the receiving period—some 1,334 fish of fair size being secured. The loss of brood stock for the season was 19·4 per cent, as compared to 31 per cent the previous season when salmon were not accepted during and immediately preceding periods of high spring tides. The salmon stripped yielded 7,013,160 eggs, which were laid down at the following hatcheries: Florenceville 1,504,800, Grand Falls 2,197,800, Yarmouth 1,758,240 and Saint John 1,552,320.

The collection of landlocked or sebago salmon eggs at Chamcook lakes was under the direction of Assistant W. T. Owens of the Saint John hatchery. Sixty-two fish were captured in traps from October 21 to November 13, and consisted of 44 females and 18 males, from which 74,860 eggs were collected and laid down in the Saint John hatchery. Forty marked fish were captured approximately 8 inches in length and one-quarter of a pound in weight. These are returns of sebago salmon yearlings that were marked and liberated from the Saint John hatchery in 1935.

Kelly's Pond Hatchery and Morell River Salmon Pond

F. C. Hayley, Superintendent

Kelly's pond hatchery in the autumn of 1936 collected more than twice as many wild speckled trout eggs as were taken during the previous year—the numbers being 550,800 in 1936 made up of 228,300 from Ing's pond, 36,200 from Watt's stream, 187,400 from Hardy's stream and 98,900 from Fortune river. In 1935 the collection was 211,422. While an increase was obtained from Ing's pond, the greater part of the increase was from Hardy's stream. The department laid down the eggs secured in their hatchery and when eyed the number that eye from Ing's, Watt's and Hardy's water systems will be paid for. A trap was operated by the department at Fortune river where 202 sea trout were captured from September 28 to November 21 and from which the collection above mentioned of 98,900 eggs was made.

The water supply for the hatchery has greatly improved following treatment last year with copper sulphate and lime. After distribution was completed in 1936 the pond was lowered and exposed portion of the bottom coated with quick lime to further check algal growth.

During the year a new garage was built for the hatchery truck, and repairs made to the hatchery dwelling.

In March 50,000 speckled trout eyed eggs were received from the Antigonish hatchery. From this lot 30,000 of the resultant fingerlings were marked by the removal of the adipose and left pectoral fins, and 28,000 liberated in the feeder stream of Webster's pond at Covehead and 2,000 above Coles pond at Milton.

In February shipments of 1,000,000 Atlantic salmon eyed eggs were made to Restigouche and Saint John hatcheries. In November 1,099,500 Atlantic salmon ova from Morell salmon pond, were laid down in addition to the speckled trout ova mentioned above.

Distributions for 1936 amounted to over five hundred thousand more than the previous year and were: Atlantic salmon 1,230,085, speckled trout 202,408; total 1,432,493.

Operations at the Morell salmon retaining pond were in charge of Assistant A. Tait. A new scow with a watchman's shanty was built and made ready at the beginning of operations. The run of salmon captured exceeded requirements and all surplus fish were released as soon as the necessary number of eggs to fill hatchery requirements had been secured. The number of salmon impounded was 343, taken from October 16 to November 6. The collection amounted to 1,099,500 eggs, which were laid down in Kelly's Pond hatchery.

WESTERN DIVISION

Following an investigation by the Biological Board the sockeye hatcheries in British Columbia (with the exception of Cultus lake where further study is being carried out) were closed as per Order in Council P.C. 518 dated March 2, 1936. Copy of the order follows:—

P.C. 518

CERTIFIED *to be a true copy of a Minute of a Meeting of the Committee of the Privy Council, approved by the Deputy of His Excellency the Governor General on 2nd March, 1936.*

The Committee of the Privy Council have had before them a Report, dated 21st February, 1936, from the Minister of Fisheries, submitting as follows:—

As it was not clear that the hatching of sockeye salmon in British Columbia was justifying the cost involved, it was decided in 1925 to have the Biological Board undertake a thorough investigation into the relative efficiency of artificial and natural reproduction of sockeye salmon, and at the time it was anticipated that it would take twelve years to complete it, but it found it possible to report finally in the premises at its recent annual meeting. The basis of determination as to the efficiency of reproduction in any year was the number of young fish that of their own volition left the lake for the sea. This young sockeye do in the second year of their age and they remain at sea until they reach maturity. The results of the investigation, which comprehend different methods of hatching and also the rearing of the young fish to various ages up to nearly one year are summarized in the following statement:—

Natural Reproduction	1925	1927	1930
Migrants as percentage of total eggs available	1·13	1·05	3·16

Artificial propagation with liberation of fry	1926	1929	1932
Migrants as percentage of total eggs available	3·93	2·38	1·71
Migrants as percentage of total eggs obtained from the adult salmon that were stripped	4·54	2·76	2·43

Artificial propagation with eyed egg planting	1928	1933
Migrants as percentage of total eggs available	0·95	3·55(*a*)
Migrants as percentage of total eggs obtained from the adult salmon that were stripped	1·44	4·67(*a*)

(*a*) Indicates that possible two year old migrants of the 1936 migration have yet to be added.

In the light of the above, the following conclusion was reached by the Biological Board:—

"On the whole it may reasonably be concluded that in an area such as Cultus lake, where a natural run of sockeye occurs with a reasonable expectancy of successful spawning, artificial propagation, for purposes of continuing the run to that area, is unnecessary and, if producing any additional results over natural spawning, these would not appear to be in any way commensurate with the cost.

"This conclusion may not apply to areas where there is no reasonable expectation of successful natural propagation."

The Minister observes that it was the hatching of sockeye salmon only that was in question, and the investigation does not reflect adversely on the hatching of trout and Atlantic salmon that is being carried on in different parts not only of Canada but of several countries in the world, the good effects of which so far as Canada is concerned, have already been reasonably established.

The following sockeye salmon hatcheries in British Columbia are being operated by the Department of Fisheries:—

Babine lake and Lakelse lake on the Skeena river; Rivers Inlet; Anderson lake and Kennedy lake on Vancouver Island; Cultus lake-Smith's Falls, Pitt lake, Harrison lake and Pemberton on the Fraser river.

In the light of the findings of the Board and as a natural run of salmon, with a reasonable expectancy of successful spawning occurs to all the areas in which the above named hatcheries are operated, the Minister, on the advice of the Deputy Minister of Fisheries, recommends that when the present season's operations in the above named hatcheries are completed, they be closed, and disposed of to the best advantage, and that the employees therein be then retired under the conditions provided by law.

The Committee concur in the foregoing recommendation and submit the same for approval.

(Sgd.) E. J. LEMAIRE,
Clerk of the Privy Council.

Most of the supplies and equipment of value or further use at the hatcheries scheduled to be closed were removed and stored at central points. Babine, Stuart, Lakelse and Rivers Inlet hatchery buildings were transferred to the Department of Indian Affairs; Gerrard, Anderson and Kennedy lake hatcheries to the Provincial Department of Lands, Victoria, British Columbia. Pitt lake establishment was sold through the Salvage Officer, Government Contracts Supervision Committee, and the Cultus lake, Harrison lake and Pemberton plants are not being disposed of at present. Due to abolition of positions the following permanent fish culture employees were superannuated or retired under conditions provided by law— Messrs. C. W. Harrison, T. W. Graham, J. W. Dalzell, C. Sayer, E. V. Epps, R. H. Eaton, W. L. Goodlet, Weldon R. Reid, J. McPhail, W. H. Billington, C. R. T. Hearn, Charles Raven, R. A. McRae, D. Bothwell, S. E. Carreck and B. H. Symms.

Water conditions were such in British Columbia in 1936 that many fry, fingerlings, yearlings and some old fish became stranded. These were rescued and transferred to suitable locations as shown in the following statement:—

From	To	District	Date	Length	Number	Species
Bowser creek	Bowser creek	Comox		fry	300	210 coho salmon and 90 trout.
Capilano river	Capilano river	North Vancouver	July	2″	200	Coho salmon.
Chilliwack river	Chilliwack river	Chilliwack	October	2″	700	Cutthroat trout.
Demanuel stream	Demanuel stream	Victoria		fry	500	325 coho salmon and 175 trout.
Dumville creek	Dumville creek	Chilliwack	October	2″	500	Cutthroat trout.
Elk creek	Elk creek	"	"	2″	150	Cutthroat trout.
Fish creek	Bear lake	Kootenay	August 27	2″ to 3″	55	Mountain Kamloops trout.
Goat river	Goat river	"	August 1	3″ to 6″	199	Cutthroat trout.
Gold creek	Gold creek	"	August 12	2″	2,000	Cutthroat trout.
Kidd creek	Meadow creek	"	August 1	2½″	25	Speckled trout.
Little Sheep creek	Little Sheep creek	"	August 5, 7-13	2½″ to 5″	1,119	Speckled trout.
Lorenzetta creek	Lorenzetta creek	Chilliwack	October	3″	600	Coho salmon.
Meadow creek	Meadow creek	Kootenay	August 1	2″ to 3″	92	Speckled trout.
Monte creek	Monte lake	Kamloops	August	2″ to 3″	6,500	Kamloops trout.
Moyie river	Palmer Bar creek	Kootenay	August 14	mature	41	Cutthroat trout.
Smith creek	St. Joseph creek	"	August 8-13	mature	34	Cutthroat trout.
Upper Sumas river	Upper Sumas river	Chilliwack	October	3″	100	Cutthroat trout.
Vedder river	Vedder river	"	"	2″	400	Cutthroat trout.
					13,515	

An experiment in the introduction of brown trout to selected waters on Vancouver island was undertaken in 1931 by this department in co-operation with the staff of the Biological station at Nanaimo.

The Little Qualicum and the Cowichan rivers were stocked yearly from 1932 to 1936 with either brown or Loch Leven trout. In several years yearling trout were liberated and in the first two years many of the fish were marked by removal of the adipose fin. Brown trout have been reported from Cowichan lake and several specimens were caught this year near its head—one fish was reported as weighing four pounds. Last year a few fertile brown trout eggs were recovered from natural spawning in Oliver creek. Several specimens weighing up to a pound and a half have been caught near tidewater in the Little Qualicum. Several brown trout were caught in the tributaries not exceeding nine inches in length. It is understood that most of the anglers report the brown trout, as a game fish, slightly inferior to the native cutthroat. It has provided some angling nevertheless in the Cowichan river during the "off" summer season but the fish are not abundant enough yet to make this an important attraction.

Eggs supplied by this department were laid down in 1936 by the Provincial Game Board as follows:

At their Stanley Park Hatchery—25,000 steelhead trout eggs from Cultus lake and 250,000 Kamloops trout eggs from Penask lake hatchery; at Qualicum ponds—194,000 Kamloops trout eggs from Lloyd's creek hatchery; and at Veitch creek ponds—58,000 Kamloops trout eggs from Lloyd's creek hatchery.

The Kamloops trout eggs taken by the Provincial Game Board at the Beaver lake station were laid down as follows: 109,700 in Stanley Park hatchery and 128,653 in Veitch creek ponds.

As referred to in last report a test was made in 1934-35 of three methods of securing eggs from sockeye salmon. In the expression method the eggs are gently pressed from the ripe female; in the expression and incision method partial expression takes place, the fish is then killed, bled, cut open and the remaining eggs taken out. In the full incision method the fish is killed, bled, cut open and all eggs taken. The loss in incubated eggs using the first method averaged 2·9 per cent; using the second method 5·9 per cent and using the third method 3·3 per cent. The loss in eggs due to opening immature fish in the third method only amounted to 0·8 per cent of total eggs taken by this method.

The expression method leaves some eggs in the female but as shown in the 1934 report most of these are extruded naturally after the fish is released—the average as shown by the 1934 experiments being 83 per cent. Similar experiments were carried out by Doctor R. E. Foerster of the Biological Board a few years ago and it was reported that 14·5 per cent of the eggs were left in the female but that approximately 77 per cent of these were later deposited, leaving an ultimate loss of only 3·3 per cent. For the expression and incision method the losses in eggs unrecovered from the stripped females amounted to 2·2 per cent whereas for incision it was 2·65 per cent. Expression stripping required an average of 20·5 minutes to strip 25 females whereas expression and incision occupied an average of thirty minutes and incision took twenty-nine minutes. In the expression method and in the incision method one stripper was required whereas in the expression followed by incision method two strippers were needed, thus increasing the cost of using this method.

Forbidden Plateau lakes are situated in the vicinity of Courtenay and previous to stocking with Kamloops contained no fish. The results have been eminently satisfactory, resulting in many anglers being attracted each year; some fish are taken up to 6 pounds. Natural spawning took place in 1933. These plantings have been the source of very considerable gratification to the public in the vicinity of Countenay and Comox.

Jones lake in the Hope district was barren previous to stocking with Kamloops trout in 1924. The results have been unusually good and there is an excel-

lent supply of beautiful trout which have reached as high as 18 pounds in weight. This lake has been an attraction to United States anglers as well as residents in British Columbia.

Paul and Pinantan lakes are in the vicinity of Kamloops and were barren until planted by this department. The result is that these lakes are now known all over North America for their excellent sport and many anglers come long distances to enjoy the fishing. Anglers from points as far as England, Honolulu, and China enjoy sport fishing at Paul and Pinantan lakes. The success has been outstanding.

Fish lake is also near Kamloops. At one time it provided unusually good fishing but due to the lowering of the level of the water, and over which circumstances the department had no control, the spawning grounds were dried up and the fish were caught or died off. By means of restocking each year the department has restored this valuable sportfish lake to its original state of productivity, and it has now resumed its reputation as one of the best sportfish lakes in the interior.

Knouff lake—the remarks regarding Paul lake largely apply to this one also. There is splendid fishing every year and good supplies of excellent trout are always available.

Murtle lake is in the Blue River district and is one which has shown remarkable results since stocking by this department with Kamloops trout. There is now an abundance of fish which have provided some excellent sport in recent years. The supply has been so good that the department decided to reserve the lake for fish cultural purposes, although it is probable that this procedure will have to be revised and angling permitted, in order that the individual size of the fish may be maintained.

Beaver lake in the Kelowna district is another outstanding success of the federal department and provides excellent sport for a great many anglers each year. Fish up to 18 pounds in weight are caught. The number of people visiting this lake is increasing each season, particularly from outside Canada. This lake was barren before stocking.

Jewel lake near Greenwood is another instance where, by means of planting Kamloops trout, the department has provided splendid fishing; the fish running from 10 to 12 pounds and in beautiful condition.

Wilson lake, near Nakusp, is a further instance, and conditions here have been most satisfactory since plantings were made. Specimens up to 15 pounds are caught.

Premier lake is near Cranbrook. One of the highlights in the federal department's fish culture is the success in the planting of this barren lake. Fish from 25 to 42 pounds have been taken, but the size is now somewhat smaller, although very satisfactory.

The total number of barren lakes and streams stocked in the Kootenay area, and more particularly in the vicinity of Cranbrook, is 116. The local inspector states, with few exceptions, that the plantings have been a complete success and the lakes now provide good sport fishing, notwithstanding the intensive fishing by residents and numerous tourists who come each year from across the international boundary.

In the Okanagan district the following barren lakes have been stocked with Kamloops trout, with results as shown: Davis, Glen, Echo, Preferle, Summit or Taylor, Silver, Neveau and Jackson lakes—good fishing; Boileen lake—overstocked; Chute, Pillar, and Peter Hope lakes—excellent fishing.

The Kamloops trout planted in the five lakes at Brandywine Falls have reached a good size in two years, being from a pound and a half to two pounds in weight. Good trout fishing was reported in Okanagan lake in 1936—fish being taken up to 14 pounds in weight.

During 1936 the Fish Culture Branch assisted the Biological Board in British Columbia financially to the extent of some $4,900 in connection with surveys and research work it was doing at Nicomekl and Serpentine rivers, Paul and Okanagan lakes, pink salmon investigation at Queen Charlotte islands, Qualicum ponds, and in the furunculosis investigation.

ALBERTA

Banff Hatchery

J. E. Martin, Superintendent

Fish cultural operations at the Banff hatchery in 1936 were quite satisfactory, the progeny of six different species of trout from the eyed-egg stage to No. 4 fingerlings being planted in many lakes and streams in the district. Of the older fish retained several were loaned during the year for display purposes.

There was however, a falling off in the collection of speckled trout eggs from Upper Vermilion lake, which may be attributed to a great extent to the presence of mink, which have become fairly common about the lake, especially in the vicinity of the main spawning area. Two other spawning areas were frozen over before the season was completed. The total collection of this species was 104,000.

With the exception of speckled trout eggs collected locally and 100,000 Kamloops trout eyed eggs received from the Lloyd's creek hatchery, British Columbia, the eggs incubated at this establishment were obtained by exchange and purchase. The following eyed eggs were received during the year: Through exchange agreements 612,510 cutthroat trout from the United States Bureau of Fisheries and 104,160 salmon trout from the Department of Game and Fisheries (via Port Arthur hatchery), Ontario, and through purchase 504,529 Loch Leven trout from the United States Bureau of Fisheries; 469,800 cutthroat trout from the State Fish and Game Department, Anaconda, Montana; 709,660 rainbow trout from the Rainbow Ranch, Troy, Montana, and 102,000 and 153,387 speckled trout from the Trout Brook Company, Hudson, Wisconsin, and the Cape Cod Trout Company, Wareham, Mass., respectively.

The total distribution including fry resultant from eggs received in the fall of 1935, was: brown trout 456,510, cutthroat trout 1,022,320, Kamloops trout 95,590, rainbow trout 650,730, salmon trout 96,542, and speckled trout 256,630; total 2,578,322.

Leman lake at the headwaters of the upper Spray river was barren before being stocked with cutthroat trout. It now produces possibly the largest specimens of that species in any of the Park waters. Cutthroat taken in Marvel lake up to to 13 inches are in good condition but those over that size appear under-nourished. The lower Kananaskis lake is well populated with large specimens of cutthroat and Dolly Varden trout. The Upper Kananaskis lake was stocked with rainbow in 1935, and in 1936 yearlings of that species from six to nine inches long were caught. Fishing was good on the Elbow river and specimens of rainbow from five to ten pounds were taken. The brown and Loch Leven trout are beginning to show in considerable numbers in tributaries of the Red Deer river but anglers find this species difficult to lure, and even when hooked are liable to escape as they are strong persistent fighters. Grant, Castle, Dennison and Spring creeks each has a good showing of these species. Low water conditions during 1936, however, in several of the streams in the Park were detrimental to fish life.

Jasper Park Hatchery

Good sport was enjoyed in the park by anglers during the fishing season. Shipments of rainbow trout eyed eggs, purchased from Rainbow Ranch, Troy, Montana, were received amounting to 650,700 and from which 603,703 fry were produced and distributed.

Waterton Lakes Hatchery

G. E. Bailey, Superintendent

A large number of visitors registered at the Waterton Lakes hatchery this season, showing that the general public are considerably interested in the work of this establishment. The grounds and buildings were maintained at their usual high standard of neatness and attractiveness during the year.

Crypt lake, first stocked with cutthroat trout in 1932, was opened for angling this season and provided excellent results. Good fishing was maintained throughout the summer and many anglers secured their limit. Specimens caught were of fine quality, nicely coloured and of good proportion. The Carthew lakes, Alderson lake and particularly Cameron lake together with other waters of the National Park provided a satisfactory fishing season.

An effort has been made to improve conditions in Blackiston or Pass creek by the construction of log and rock dams which have created satisfactory pools about four feet deep.

During the year the following supplies of eggs were secured from outside sources: 436,940 cutthroat trout from the United States Bureau of Fisheries, and 304,556 cutthroat trout and 815,166 rainbow trout from Rainbow Ranch, Troy, Montana.

Distributions for the season were: cutthroat trout 565,437; rainbow trout 643,145; total, 1,208,582.

Fraser River Watershed

Cultus Lake Hatchery

A. Robertson, Superintendent

At the commencement of the calendar year 1936 there were some 407,000 coho salmon eggs in the hatchery, being eggs from the previous fall collection and from which 393,600 fry were produced and distributed.

Good results were observed from the experiment commenced in November, 1935, when 53,284 water hardened sockeye salmon eggs were planted in prepared gravel beds in the creek formed by the overflow from the settling pond at the hatchery. From May 16 to June 5 the number of fry captured and counted as they rose from the gravel beds was 42,435, that is 79·6 per cent recovery. These fry were liberated in Sweltzer creek.

The run of steelhead salmon to Sweltzer creek in 1936 showed an improvement over previous years. The total collection of ova was 418,000 as compared with 137,400 taken here in 1935 and 125,163 taken in 1934. The period of collection was March 21 to May 8. The disposal of these eggs less normal losses may be summarized, as follows: in May 25,000 eyed eggs to the Provincial Game Board's hatchery at Stanley Park and in May and June 248,900 eyed eggs to Smiths Falls hatchery; in July 94,069 distributed in Sweltzer creek, and on November 6 the remainder 9,019, to Smiths Falls hatchery. In addition to the above collection the ornamental pool at the hatchery produced 31,836 steelhead eggs from April 18 to May 23. Small lots of these eggs were transferred daily as taken to the Smiths Falls hatchery; a total of 7,936. Of the steelhead eggs laid down at the Cultus lake hatchery from the fountain pool

12,530 were transferred on June 2 in the eyed stage to the Smiths Falls hatchery. The remainder were hatched and the resultant fry fed during the summer, being distributed in the No. 1 fingerling stage in July. The number produced less losses was 8,983. It was planned to hold and feed the progeny of the 418,000 steelhead salmon eggs taken but unfortunately the food, which had proved satisfactory for the larger fish, was unsuitable for the fry and they were released at the No. 1 fingerling stage.

This food consisted of a mixture of frozen salmon, frozen salmon eggs and salmon livers, dried milk and milk residue, the latter being a pasty by-product of the dried milk factory.

Some 39 young cutthroat trout caught in Sweltzer creek and retained in a tank at the hatchery were stripped and yielded 4,760 eggs between April 28 and May 20. In May and June 25,128 cutthroat trout green eggs were purchased from Mr. Oliver N. Wells, Sardis. The fry resultant from this species were retained and distributed in the advanced fry stage on July 10. The number of fish distributed from the former was 3,922 and from the latter 14,521.

A collection of 1,087,000 coho salmon eggs, exceeding that of the previous year by 667,000, was made, using the full incision method, from December 8 1936, to February 18, 1937.

In addition to local collections, 70,000 Kamloops trout eyed eggs were received from the Lloyd's Creek eyeing station on June 10 and 17. These were retained to the fry stage and widely distributed in waters in the district. The yield was 69,460.

An innovation in hatchery procedure was carried on this year, which was the freezing of stripped salmon, chiefly coho and sockeye, for fish food. Some fourteen tons of this food was boxed and shipped to New Westminster for storage to be later used as required. For the larger fish this mixture is put through a grinding plate with one-half inch holes, and even the vertebrae bones are devoured.

Between November 13 and December 30 some 17,377,000 sockeye salmon eggs were secured from parent fish captured in Sweltzer creek. These eggs were laid down in the Smiths Falls hatchery for incubation.

The distributions for the calendar year were: coho salmon 393,600, cutthroat trout 18,443, Kamloops trout 69,460, sockeye salmon 42,435, and steelhead salmon 128,052; a total of 651,990.

Through gill nets, seines, set lines and traps the Biological Board have removed from Cultus lake the following: 20,552 squawfish, 453 Dolly Varden char, 915 trout, 999 coho, 2,455 sculpins, 15,925 sticklebacks, 2,344 suckers, 14 chubs, 24 Rocky Mountain whitefish and 35,847 shiners, or a total of 79,528 fish. The presence of so many predators and food competitors is significant in the bearing it would have on the number of migrating sockeye counted as they left the lake during the course of the sockeye salmon investigation.

Smiths Falls Hatchery

A small loss of fifty-one occurred during the year out of 5,816 cutthroat trout yearlings held in the ponds at the Smiths Falls hatchery. These fish have never shown any signs of sickness and the above losses were due chiefly to accident. At the end of the year they ranged from nine to fifteen inches in length. On week ended June 13 ten thousand steelhead salmon fingerlings were selected from the steelhead stock on hand with the intention of holding them for breeding purposes, and the remainder were liberated. At the end of the year, after deducting a normal loss, 9,932 of these were in the ponds.

It was planned to rear a great number of steelhead salmon of the current year's collection but the food combination, which did not include beef liver, was found unsuitable. The following supplies of steelhead salmon were received

from the Cultus Lake hatchery during the year: from the fountain pool 7,936 green eggs received daily as collected, and 12,530 eyed eggs; of the Sweltzer creek stock 248,900 eyed eggs and 9,019 No. 3 fingerlings.

In November and December 17,377,000 sockeye salmon eggs from Cultus Lake hatchery were laid down for incubation.

Distributions consisted of 64,281 cutthroat trout and 290,729 steelhead salmon, making a total of 355,010. Of the above, 15,000 steelhead yearlings were marked by the removal of the adipose fin.

MURTLE LAKE CAMP

F. A. Tingley, Officer in Charge

Steps were taken in 1936 to investigate (as a source of supply for Kamloops trout eggs) possibilities at Murtle lake, which is tributary to the North Thompson via Clearwater river, and situated about fifteen miles west of the town of Blue River. Following a preliminary trip to the lake, preparations for the taking of fish commenced on April 23. The main fence and trap were installed in Trap creek, a second in the stream draining Round and Phyllis lakes, and a third in the stream immediately below the outlet of above-mentioned lakes. The number of parent fish captured in these traps from May 23 to June 16 was 112, which yielded 126,862 eggs. A raft and two eyeing floats to accommodate sixty baskets were built in Round lake and moored in the light current flowing from Phyllis lake. Some 69,000 eggs laid down in these floats were a total loss, due to a disturbance caused by a large school of yearling trout that swarmed around the floats. As a result of egg losses in Round lake a raft and new floats were constructed in Blue lake, in which 57,862 eggs were laid down and eyed. The number of eyed eggs distributed was 43,820, of which 25,721 were planted in Blue river above the falls, and 18,099 in lake Eleanor. In an effort to secure a further collection a net was set in Stevens river, but without success.

A careful study was made of spawning grounds in the tributaries of Murtle lake and especially Bannock creek. Few fish were seen, except in Bannock creek where an abundance of trout were observed on the gravel bars near its mouth.

PEMBERTON HATCHERY

T. W. Graham, Superintendent

The distribution of sockeye fry resultant from the 1935 collection commenced on April 20, 1936 and continued until June 20, by which time 23,493,960 had been liberated in the usual way by allowing them to leave the troughs when so inclined and pass through the ponds to the Birkenhead river, the parent stream.

In June, 347,500 Kamloops trout eyed eggs were received from Lloyd's creek station. From these, 197,500 eyed eggs and 147,170 fry were distributed. The total distribution for the season was 23,838,630. This year a planting of Kamloops trout eggs was made in Evans lake, in the Squamish area, contiguous to the Pacific Great Eastern railway and when examined later, lively fry were everywhere in evidence from a little above the spawning beds right down to the lake water. This lake was previously barren of fish life.

PITT LAKE HATCHERY

R. H. Eaton, Superintendent

The largest number of sockeye salmon ever known to return to the spawning grounds returned this year, which should well seed this area as there were no floods to destroy the eggs.

The total distribution of sockeye fry resultant from the fall collection of 1935 was 2,879,380.

Vancouver Island

Anderson Lake Hatchery

D. Bothwell, Superintendent

At the commencement of the calendar year 1936 there were some 5,211,748 sockeye salmon eggs in the hatchery. From these a successful distribution of 5,090,972 fry was made in the tributaries of Anderson lake.

Kennedy Lake Hatchery

W. P. Forsythe, Superintendent

All fry resultant from the 1935 sockeye salmon egg collection were transferred from the hatching troughs to the retaining ponds, fed for some two weeks and given a widespread distribution in different sections of Kennedy river and lake and Muriel lake. The output for the year was: 1,453,725 eyed eggs, 4,951,525 advanced fry and 2,408,669 No. 1 fingerlings; a total of 8,813,919 sockeye salmon.

An experiment in incubation of green sockeye eggs was carried out. Two lots of 30,000 eggs were used; the first lot being planted in prepared gravel hatching beds and the second cared for in the hatchery troughs. The first lot produced 26,662 free swimming fry or an 88·9 per cent yield, and the second after deducting a loss of 92 fry before the free swimming stage, produced 29,428 free swimming fry or a 98·1 per cent yield.

Sockeye eggs deposited naturally in Muriel lake in the fall of 1935 were examined later and found in good condition with the exception of those spawned in the mouths of David and Donald creeks, two main streams, where some smothering was observed.

All spawning grounds were well seeded generally in 1936 including the lake shore beaches of Clayoquot Arm and Cold creek. Upper Clayoquot river had a much better-than-average seeding, and there was an increased run of sockeye to the upper Kennedy river. Spawning conditions were excellent during the heaviest seeding period. There was also a considerable run of sockeye to Muriel lake again this season.

During the week preceding July 11, heavy rains occurred in the Kennedy lake area resulting in high water in the river and during that period a school of sockeye numbering 1,000 ascended the rapids and arrived at the beach adjacent to the hatchery buildings.

It is unusual for sockeye to ascend to Kennedy lake at that time and the fish were fresh run from the sea. High water and a lowering temperature, 61°, was probably the reason for the fish entering the lake so early.

Cowichan Lake Hatchery

F. A. Tingley, Superintendent

The loss in spring salmon eggs from the 1935 collections was excessive, being 48·5 per cent. This was due chiefly to the abnormally low water temperature that existed in the hatchery during and immediately after the taking of eggs. This explanation of the loss is substantiated by Dr. G. C. Embody in his article published in "Fish Culture" dated January 1936, in which he states that "with lower temperatures the tender stage of the eggs is prolonged to such an extent that losses almost invariably increase as the temperature is lowered". The majority of the fish taken were marked with abrasions, probably the result of fighting their way over the falls in the low water that prevailed during the run. Such injuries, would no doubt, affect the quality of the eggs.

Fishing for parent steelhead salmon in the Cowichan river was commenced on January 6. The river was unusually low for collections. At the commencement of the season fishing was poor and became worse with the fall of the water level. Although the run of steelhead was small in the upper section of the river, sportsmen reported the run unusually heavy in the section below the falls which was probably due to the low stage of water in the river preventing the ascent of the fish over Skutz Falls in normal numbers. The taking of steelhead was terminated on March 5, the total capture being 227, and the ratio of males to females about two to one. Sixty-two females and seventy-five males were stripped and produced 147,352 eggs. These were laid down in the Cowichan lake hatchery with a loss of 6·5 per cent to March 31.

The collection of spring salmon eggs on November 6, 1935 was blended and divided into two lots for comparison as between river and hatchery water for incubation. These lots contained 18,636 and 16,810 for the river and hatchery respectively and the respective temperatures were 50° and 39° F. on the day the eggs were laid down. The hatchery lot was turned into the baskets without previous lowering of temperatures. The eggs in the river developed very rapidly and were eyed on December 3 while the control lot in the hatchery was not eyed until December 28. The eggs in the river were transferred to the hatchery on December 27 when the river temperature was 45° F and the hatchery 44° F. The river lot were all hatched on January 25 with a loss of 13·4 per cent. The loss from the control group to this date was 30·9 per cent.

On March 31, 1935, this hatchery was placed under the management of the officers of the Biological Board to become a part of the sport fish research work being carried on by the Board. It was financed that year by the Fish Culture Branch but on April 1, 1936 this responsibility was assigned to the Board. Stock in the hatchery at this date was 139,150 spring salmon fry and 137,666 steelhead salmon eyed eggs.

Skeena River Watershed

Babine Lake Hatchery

W. R. Reid, Officer in Charge

Sockeye salmon fry resultant from the 1935 collection at Babine Lake hatchery were successfully distributed in Morrison lake and creek, which is tributary to Babine lake, and consisted of 6,149,736.

A comfortable cabin for the officer in charge as an office and living quarters was constructed during the year. A small cabin built by the hatchery staff at the head of Morrison lake during the early years of hatchery operations and at times temporarily used by Indians was destroyed by fire.

Lakelse Lake Hatchery

C. R. T. Hearn, Superintendent

All active fish cultural operations at the Lakelse lake hatchery terminated in November, 1935, owing to abnormal freshets which disrupted the water supply. The hatchery was in charge of a caretaker until disposed of in 1936.

Mainland West Coast

RIVERS INLET HATCHERY

C. R. T. Hearn, Superintendent

The distribution of sockeye resulting from the 1935 collection was 17,919,477 consisting of 7,459,530 eyed eggs and 10,459,947 fry. All plantings were made into Owikeno lake and tributary waters.

Sport Fish Operations—Southern Interior

NELSON HATCHERY

A. P. Hills and P. B. Stratton, Officers in Charge

The distribution from this hatchery in 1936 was 2,081,429, consisting of 850,052 Kamloops trout, 986,501 Kennerly's salmon, and 244,876 speckled trout.

From 1,401 speckled trout fingerlings held in a small rearing tank inside the hatchery, there was a loss of 55 during the year leaving on hand at the end of the year 1,346, ranging from 2½ to 4½ inches in length.

In May, 58,500 Kamloops trout eggs were collected at Cottonwood lake and in the fall 1,582,000 Kennerly's salmon ova at Kokanee creek. These eggs were all laid down in the Nelson hatchery for incubation.

Some 853,000 Kamloops trout eggs were received from Penask lake hatchery in June and July.

Fishing was very good this season in Kootenay lake and river and generally throughout the district, particularly in Wheeler, Beatrice, Loon, Tanal and Leviathan lakes, and Wilson creek and lake, all of which were previously barren of fish life. It is reported that Kokanee eyed ova originally taken in tributaries of Kootenay lake 1932 and planted in Wilson and Christina lakes, were a complete success and that the progeny adopted similar spawning habits to the Kokanee or redfish of Kootenay lake. The native Kokanee of Christina lake are beach spawners.

ARGENTA HATCHERY

H. G. Corder, Officer in Charge

This sub-station was operated on the same site as last year, and consists of a small outdoor hatching station of a temporary nature for the propagation of trout for distribution to Kootenay lake. Hatchery troughs and equipment are set up at the beginning of the season and the equipment dismantled and stored in a building on private property for the winter months.

In June, 500,000 Kamloops trout eyed eggs were received from Penask lake hatchery and the fry produced, viz. 437,260, were distributed in the upper or north end of Kootenay lake.

PENASK LAKE HATCHERY

R. H. Eaton and J. W. Dalzell, Officers in Charge

The weather conditions were very favourable for collection this season and there was an abundance of parent trout. From 6,775 females and 6,888 males 3,997,000 Kamloops trout eggs were secured—some 3,863,000 being obtained from Penask lake, and 134,000 from Spahomin creek. Transfers of eyed eggs to other establishments were: 1,315,000 to Summerland; 853,000 Nelson; 500,000 Argenta,

350,000 Cranbrook; and 250,000 to the Provincial Game Board, Stanley Park. Distributions for the season were : 630,000 eyed eggs which includes shipments made to the Cranbrook hatchery and the Provincial Game Board and 589,758 fry; a total output of 1,219,758.

SUMMERLAND HATCHERY

R. H. Eaton, Superintendent

As no collections of ova are made at this hatchery, it depends entirely on its supply from an outside source which this year was Penask lake hatchery, and supplied it in June and July with 1,315,000 Kamloops trout eyed eggs. The total distribution for the year was 1,290,023, consisting of 725,000 eyed eggs and 565,023 fry planted in waters tributary to Okanagan, Shuswap and Similkameen rivers.

LLOYD'S CREEK HATCHERY

A. P. Hills, Superintendent

The run of parent fish to Paul and Pinantan creeks was unusual, inasmuch as the fish commenced moving three or four days before the ice had gone out, whereas, the run ordinarily begins approximately one week after the lakes are clear of ice. Although the collection of Kamloops trout eggs at Knouff lake was only 150,000, as compared with 513,000 the previous year, the comparatively small collection at this point was due to damage to the fence which allowed parent fish to escape upstream. The spawning run at Fish lake was up to the average for the past four or five years. Egg collections in 1936 amounted to 3,791,000, which is an increase of 718,750 over 1935. The following is the yield of Kamloops trout eggs from the different waters where collections were made: Fish lake 1,274,000; Knouff lake 150,000; Paul creek 1,419,500, and Pinantan creek 947,500. At Paul creek in 1936 the number of fish stripped was 2,033 yielding 1,419,500 Kamloops trout eggs as compared with 1935 when 393 fish were stripped and 388,000 eggs secured. In 1935 all fish were counted over the Biological Board's fence and some subjected to handling, weighing, tagging, scale removal, etc., by the Biological Board before they reached the department's traps. In 1936 approximately 900 were counted over the Biological fence but over 200 fish had entered the hatchery trap and a large number were already in the creek before the fence was placed in commission. Also after the fence was installed this season, owing to high level of Paul lake, fish were able to pass around it. In 1935 some 1,328 fish were tagged by officers of the Board and of these, 16 were recovered in 1936.

A run of parent trout was observed spawning naturally in the outlet creek at Knouff lake and from which there was a large production of fry.

Through an exchange agreement with the Provincial Department of Game and Fisheries, Ontario, 100,000 eyed eggs were sent their hatchery at Brantford. Eyed eggs were also shipped to the following hatcheries: Pemberton 347,500, Cultus lake 70,000 and Banff 100,000.

Distributions for the season were: 1,929,000 eyed eggs and 897,735 fry; a total output of 2,826,735. The above includes allotments of eyed eggs, as follows: to the Revelstoke Rod and Gun Club, Biological Station, Taft, 120,000; to Vancouver Highlands 1,000, and to the Provincial Game Board at Qualicum ponds 194,000 and at Veitch creek retaining ponds 58,000. Fry sold during the year were: 1,000 to Mr. Alex. Philip, Kamloops; 2,000 to Gardner Lake Fishing Club, Salmon Arm, and 1,000 to Mr. A. T. Johnston (Eagle Bay), Notch Hill.

Excellent fishing was available in lakes throughout the Kamloops and Shuswap districts and sport fishing throughout the district was again very good generally this season. Satisfactory showings of yearlings were observed in waters stocked during the season of 1935, particularly in Andy and McConnell lakes which were previously barren of fish life.

Beaver Lake Eyeing Station

R. A. McRae, Officer in Charge

The collection of Kamloops trout eggs at this station in 1936 was 978,520. These were laid down in hatching troughs in Echo creek resultant from which 920,758 were distributed, consisting of 443,438 eyed eggs and 477,320 fry. The distributions were all made in the district; 150,000 eyed eggs and 185,760 fry going to the Kelowna Rod and Gun Club and the balance to Beaver lake and tributaries.

At Dee lake, 100,470 eggs were planted in gravel in troughs supplied and attended to by Mr. D. Sexsmith, who has a fishing camp on the lake. A trough was installed to catch the fry as they emerged from the gravel, after which they were distributed to different parts of Dee lake. Mr. Sexsmith also supplied a boat free of charge for the distribution of fry to the upper lakes and rendered much valuable assistance toward the operations at this station.

During the year a new dam was constructed on Echo creek.

In addition to the eggs collected by the Department, the staff assisted the officers of the Provincial Game Board in collecting some 366,000 eggs which were laid down and eyed in rearing ponds at Kelowna and then shipped to their hatchery at Stanley Park and their ponds at Veitch creek.

STATEMENT BY SPECIES, OF LOCAL COLLECTION AND DISPOSAL OF EGGS DURING 1936

Species	Collection area	Number collected	Disposal—Establishment at	Number	Totals
Atlantic salmon	Margaree pond, N.S.	3,201,500	Margaree	3,201,500	
	Nictaux pond, N.S.	514,700	Middleton	514,700	
	River Philip, N.S.	3,579,940	Cobequid	3,579,940	
	Sackville river, N.S.	1,030,000	Bedford	1,030,000	
	Miramichi pond, N.B.	8,957,972	Miramichi	8,957,972	
	New Mills pond, N.B.	2,351,820	Restigouche	2,351,820	
	Saint John Pond, N.B.	7,013,160	Yarmouth	1,758,240	
			Florenceville	1,504,800	
			Grand Falls	2,197,800	
			Saint John	1,552,320	
	Morell river, P.E.I.	1,099,500	Kelly's pond	1,099,500	27,748,592
Brown trout (hybrids)	Saint John hatchery ponds, N.B.	4,320	Saint John	4,320	4,320
Coho salmon	*(a)*Sweltzer creek, Cultus lake, B.C.	1,087,000	Cultus lake	1,087,000	1,087,000
Cutthroat trout	Cultus lake hatchery (tank), B.C.	4,760	Cultus lake	4,760	4,760
Kamloops trout	Yarmouth hatchery ponds, N.S.	11,000	Yarmouth	11,000	
	Beaver creek, B.C.	463,760	Beaver lake	463,760	
	Crooked creek, Beaver lake, B.C.	115,600	Beaver lake	115,600	
	Echo creek, Beaver lake, B.C.	399,160	Beaver lake	399,160	
	Fish lake, Kamloops, B.C.	1,274,000	Lloyd's creek	1,274,000	
	Knouff lake, Kamloops, B.C.	150,000	Lloyd's creek	150,000	
	Paul creek, Kamloops, B.C.	1,419,500	Lloyd's creek	1,419,500	
	Pinantan creek, Kamloops, B.C.	947,500	Lloyd's creek	947,500	
	Murtle lake, Blue river, B.C.	126,862	Murtle lake	126,862	
	Penask creek, Nicola Valley, B.C.	3,863,000	Penask lake	3,863,000	
	Spahomin creek, Nicola Valley, B.C.	134,000	Penask lake	134,000	
	Cottonwood lake, Nelson, B.C.	58,500	Nelson	58,500	8,962,882
Kennerly's salmon	Kokanee creek, B.C.	1,582,000	Nelson	1,582,000	1,582,000
Landlocked salmon (sebago)	Chamcook lake, N.B.	74,860	Saint John	74,860	
	Grand lake, N.S.	36,000	Bedford	36,000	
	Grand lake rearing ponds, N.S.	22,000	Bedford	22,000	132,860
Landlocked salmon (hybrids)	Saint John hatchery ponds, N.B.	2,300	Saint John	2,300	2,300
Rainbow trout	Antigonish hatchery ponds, N.S.	8,985	Antigonish	8,985	
	Yarmouth hatchery ponds, N.S.	192,000	Yarmouth	192,000	
	Saint John hatchery ponds, N.B.	2,500	Saint John	2,500	203,485
Sockeye salmon	Sweltzer creek, Cultus lake, B.C.	17,377,000	Smiths Falls	17,377,000	17,377,000
Speckled trout	Antigonish hatchery ponds, N.S.	5,973,681			
		*(b)*3,475,046	Antigonish	9,448,727	
	Margaree hatchery ponds, N.S.	1,450,096			
		(b) 481,600	Margaree	1,931,696	
	Hart lake, Colchester and Cumberland Cos., N.S.	81,870	Cobequid	81,870	
	Poison lake, Cumberland Co., N.S.	8,200	Cobequid	8,200	
	Sand lake, Annapolis county, N.S.	160,500	Middleton	160,500	

STATEMENT BY SPECIES, OF LOCAL COLLECTION AND DISPOSAL OF EGGS DURING 1936—*Concluded*

Species	Collection area	Number collected	Disposal—Establishment at	Number	Totals
Speckled trout—*Conc.*	Yarmouth hatchery ponds, N.S.	280,000			
		(*b*) 56,000	Yarmouth	336,000	
	Florenceville hatchery ponds, N.B.	1,657,713			
		(*b*) 51,910	Florenceville	1,709,623	
	Saint John hatchery ponds, N.B.	1,993,946			
		(*b*) 289,340	Saint John	2,283,286	
	Fortune river, P.E.I.	(*c*) 98,900	Kelly's pond	98,900	
	Vermilion lake, Alberta	104,000	Banff	104,000	16,162,802
Steelhead salmon	Cowichan river, B.C.	147,352	Cowichan lake	147,352	
	Sweltzer creek, Cultus lake, B.C.	418,000	Cultus lake	418,000	
	Cultus lake hatchery, fountain pond, B.C.	31,836	Cultus lake	23,900	
			Smiths Falls	7,936	597,188
					73,865,189

(*a*) Includes 201,000 eggs collected January and February 1937.
(*b*) Eggs from yearling fish.
(*c*) Sea-run variety.

EYED EGGS PURCHASED IN 1936

Species	Month laid down	Purchased from	Laid down in hatchery	Number received	Total by species
Cutthroat trout	May, June	Oliver N. Wells, Sardis, B.C.	Cultus lake	25,128	
	June	(a) Rainbow Ranch, Troy, Montana	Waterton lakes	304,556	
	July	(a) State Fish and Game Department, Anaconda, Montana	Banff	469,800	799,484
Loch Leven trout	December	(a) United States Bureau of Fisheries	Banff	504,529	504,529
Rainbow trout	April	Rainbow Ranch, Troy, Montana	Banff	101,722	
	May	(a) Rainbow Ranch, Troy, Montana	Banff	607,938	
	April	Rainbow Ranch, Troy, Montana	Jasper Park	449,820	
	May	(a) Rainbow Ranch, Troy, Montana	Jasper Park	200,880	
	May, June	(a) Rainbow Ranch, Troy, Montana	Waterton lakes	815,166	2,175,526
Speckled trout	November, December	American Fish Culture Company, Carolina, Rhode Island	Bedford	1,000,000	
	December	American Fish Culture Company, Carolina, Rhode Island	Middleton	1,545,000	
	December	American Fish Culture Company., Carolina, Rhode Island.	Grand Falls	1,000,000	
	November, December	American Fish Culture Company, Carolina, Rhode Island	Yarmouth	1,644,500	
	December	Cape Cod Trout Co., Wareham, Mass.	Banff	153,387	
	December	(a) Trout Brook Co., Hudson, Wisc.	Banff	102,000	
	October, November	Donald Fraser, Plaster Rock, N.B.	Grand Falls	1,290,000	
	November, December	Earl Ings, Mount Herbert, P.E.I.	Kelly's Pond	222,000	
	November, December	Harold Taylor, Little York, P.E.I.	Kelly's Pond	185,500	
	November, December	Harold Watts, Little York, P.E.I.	Kelly's Pond	35,500	7,177,887
					10,657,426

(a) Purchased by the Department of Lands and Mines, Edmonton, Alberta.
Summary of eggs received: Total eggs collected, 73,865,189; total eggs purchased, 10,657,426; total, 84,522,615.

EXCHANGED EYED EGGS RECEIVED 1936

From United States Bureau of Fisheries, in exchange for Atlantic salmon:
Cutthroat trout from Yellowstone Park, Wyoming, U.S.A., laid down as follows:—
Banff hatchery 612,510
Waterton Lakes hatchery 436,940
From Department of Game and Fisheries, Toronto, Ontario, in exchange for Kamloops trout:—
Salmon trout from Belleville hatchery, laid down at Middleton hatchery 100,000
Salmon trout from Port Arthur hatchery, laid down at Banff hatchery 104,160
From Department of Mines and Fisheries, Quebec, in exchange for speckled trout:
Ouananiche from hatchery at St. Alexis des Monts, laid down at Saint John hatchery 15,000

IN THE INTEREST OF ECONOMY AND CONVENIENCE IN THE DISTRIBUTION OF FRY THE FOLLOWING TRANSFERS OF EYED EGGS WERE MADE IN 1936

Species	From	To	Number	Date received
Atlantic salmon	(a) Bedford	Yarmouth	1,000,000	March 7
	(a) Margaree	Lindloff	750,000	April 7
	(a) Miramichi	Antigonish	2,750,000	March 28
	(a) Miramichi	Florenceville	1,500,000	March 13
	(a) Miramichi	Grand Falls	500,000	March 12
	(a) Restigouche	Florenceville	30,000	March 7
	(a) Restigouche	Grand Falls	220,000	March 6
	(a) Kelly's Pond	Restigouche	1,000,000	February 6
	(a) Kelly's Pond	Saint John	1,000,000	February 13
Kamloops trout	(b) Lloyd's creek	Banff	100,000	July 5
	(b) Lloyd's creek	Cultus lake	70,000	June 10, 17
	(b) Lloyd's creek	Pemberton	347,500	June 11, 17
	(b) Penask lake	Argenta	500,000	June 28
	(b) Penask lake	Nelson	853,000	June 17, 27, July 1
	(b) Penask lake	Summerland	1,315,000	June 8, 20, July 3
Landlocked salmon	(a) Bedford	Grand lake	21,000	March 24
Steelhead salmon	(b) Cultus lake	Smiths Falls	261,430	May 26, June 2
Speckled trout	(a) Antigonish	Bedford	1,000,000	February 13
	(a) Antigonish	Lindloff	250,000	April 7
	(a) Antigonish	Middleton	700,000	March 14
	(a) Antigonish	Yarmouth	900,000	March 21
	(a) Antigonish	Restigouche	150,000	March 30
	(a) Antigonish	Kelly's Pond	50,000	March 23
	(a) Florenceville	Grand Falls	597,126	March 4

(a) 1935 fall collection. (b) 1936 collection.

Marking of Fish

The marking of Atlantic salmon handled for fish cultural purposes, which commenced in 1913, was continued in 1936 at Margaree, Nictaux, River Philip and Sackville river ponds, Nova Scotia. Atlantic and sebago salmon, speckled and salmon trout of various ages in the east and steelhead salmon yearlings in the west were marked by clipping of fins. The object of tagging the Atlantic salmon was to throw some light on the movements of the fish in the sea, frequency in spawning and the extent to which early fish of any season return as early fish or vice versa. Marking by fin clipping was practised to give information on movements, growth and survival of hatchery product. The extent of marking is shown in the following statement:—

—	Number marked	Species	Stage of development	Liberated	Nature of mark
Nova Scotia—					
Margaree pond	193	Atlantic salmon	Adults	Margaree pond	Silver tag attached to dorsal fin.
Nictaux Falls pond	92	"	"	Nictaux river	" "
River Philip pond	200	"	"	River Philip	" "
Sackville river pond	97	"	"	Sackville river	" "
Antigonish hatchery	3,100	Speckled trout	Fingerlings	Long lake, East river St. Mary	Removal of adipose and right pectoral fins.
	500	"	Yearlings	Copper lake	" "
	500	"	"	Glenroy river	" "
	500	"	"	Meadow Green river	" "
	1,000	"	"	South River lake	" "
	1,000	"	"	West river	" "
	1,300	"	Old fish	"	" "
Grand Lake rearing ponds	135	Sebago salmon	Two years	Grand lake	Removal of adipose and right ventral fins.
	16	"	Wild	"	" "
Lindloff hatchery	15,000	Atlantic salmon	Fingerlings	Salmon river	Removal of adipose and left pectoral fins.
Margaree hatchery	24,234	Atlantic salmon	"	Northeast Margaree river	Removal of adipose and right pectoral fins.
	695	Speckled trout	Yearlings	Lake O'Law	" "
	1,121	"	Two years	"	" "
	40	"	Four years	"	" "
	20	"	Five years	"	" "
Middleton hatchery	1,000	"	Fingerlings	Sandy Bottom lake	Removal of adipose and left ventral fins
	2,747	Salmon trout	Fingerlings	Sherbrooke lake	" "
Nictaux Falls rearing station	13,000	Atlantic salmon	"	Nictaux river	" "
Yarmouth hatchery	24,000	"	"	Clyde river	Removal of adipose and right ventral fins
	20,000	"	"	Mersey river	" "
	5,000	Speckled trout	"	Gardener brook	" "
	2,000	"	"	Kejimkujik lake	" "
	1,500	"	Yearlings	Bonaventure lake	" "
	1,500	"	"	Lake Ellenwood	" "
	900	"	"	Lake Skinner	" "
	1,385	"	Two years	Gardener brook	" "
	1,000	"	"	Lake Ellenwood	" "
	622	"	Three years	Lake Skinner	" "
New Brunswick—					
Florenceville hatchery (a)	24,570	Atlantic salmon	Fingerlings	Nashwaak river	Removal of adipose and left pectoral fins
Grand Falls hatchery (a)	10,000	"	"	Saint John River, at Ortonville	Removal of adipose and right pectoral fins.
	20,000	"	"	Salmon river, head-waters	" "
	14,000	"	"	Tobique river, Millers	" "

—	Number marked	Species	Stage of development	Liberated	Nature of mark
New Brunswick—Conc.					
Miramichi hatchery	5,000	Atlantic salmon	Fingerlings	Northwest Miramichi river	Removal of adipose and right ventral fins
	4,900	"	"	Little Southwest Miramichi river.	" "
	400	Speckled trout	"	Buckley lake	" "
	300	"	"	Votoure lake	" "
	98	"	Yearlings	"	" "
Saint John hatchery	773	Atlantic salmon	Two years	Kennebecasis river	Removal of adipose and right pectoral fins.
	2,000	Sebago salmon	Yearlings	Chamcook lake	Removal of adipose and right ventral fins.
	784	"	Two years	"	Removal of adipose and left ventral fins.
	10,000	Speckled trout	Fingerlings	Red Rock lake	Removal of adipose and right pectoral fins.
	364	"	Rairdon brook, wild	Beaver lake	Removal of right pectoral fin.
	300	"	"	Ping Pong lake	" "
Prince Edward Island—					
Kelly's Pond hatchery	2,000	"	Fingerlings	Coles pond-North river	Removal of adipose and left pectoral fins.
	28,000	"	"	Webster's pond-Black river	" "
British Columbia—					
Cultus lake hatchery	15,000	Steelhead salmon	Yearlings	Sweltzer creek	Removal of adipose fin.

(a) Restigouche stock.

RECAPTURES, 1936—ATLANTIC SALMON

Margaree River, N.S.

Number	Weight (lbs.)	Length (ins.)	Condition	Sex	Date	1. Where liberated 2. Where caught
F6071	11	30	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	.....	.....	.....	F	July , 1936	Friar Head, Inverness county, N.S.
F6073	7	27	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	15½	35	Clean.....	F	July 15, 1936	Friar Head Point, Inverness county, N.S.
F6090	11	28	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	20	36½	Clean.....	F	July 25, 1936	One mile south of Friar Head Point, Inverness county, N.S.
F6136	15	35	Kelt.....	F	Nov. 28, 1934	Margaree Pond, N.S.
	26	39	Clean.....	F	July 8, 1936	La Pointe, Inverness County, N.S.
F6545	15	37	Kelt.....	F	Nov. 26, 1934	Margaree Pond, N.S.
	24	39·4	Clean.....	F	Aug. 1, 1936	Two miles northeast of Margaree Harbour, N.S. (down coast).
F6556	16	30	Kelt.....	F	Nov. 19, 1934	Margaree Pond, N.S.
	23	39½	Clean.....	F	Aug. 5, 1936	Malignant cove, Antigonish county, N.S.
F6559	12	32	Kelt.....	F	Dec. 3, 1934	Margaree Pond, N.S.
	(z) (u) 16	38	Kelt.....	F	Oct. 3, 1936	Mouth of Margaree river, N.S.
F6565	14	37	Kelt.....	F	Nov. 26, 1934	Margaree Pond, N.S.
	23	39	Clean.....	F	July 10, 1936	North of Friar Head Point, Inverness county, N.S.
F6578	8	29	Kelt.....	F	Dec. 5, 1934	Margaree Pond, N.S.
	15	35·8	Clean.....	F	July 25, 1936	Broad Cove Chapel, Inverness county, N.S.
F6581	14	37	Kelt.....	F	Nov. 21, 1934	Margaree Pond, N.S.
	27	41¾	Clean.....	F	Summer 1936	Mouth of Margaree river, N.S.
F6593	8	32	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	21	39	Clean.....	F	July 25, 1936	Two and one half miles west of Margaree Harbour, N.S. (down coast).
F6614	17	40	Kelt.....	F	Nov. 21, 1934	Margaree Pond, N.S.
	30	40½	Clean.....	F	June 22, 1936	Friar Head, Inverness county, N.S.
F6627	12	31	Kelt.....	F	Nov. 26, 1934	Margaree Pond, N.S.
	23	.....	Clean.....	F	July 18, 1936	McArras Brook Antigonish county, N.S.
F6637	13	34	Clean.....	F	Dec. 6, 1934	Margaree Pond, N.S.
	15½	34·6	Clean.....	F	July 18, 1936	One and one half miles northeast of Margaree Harbour, N.S. (down coast).
F6654	14	35	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	24½	38·2	Clean.....	F	June 29, 1936	One and one half miles northeast of Margaree Harbour, N.S. (down coast).
F6660	12	36	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	22	38	Clean.....	F	Aug. 13, 1936	Big Island, Pictou county, N.S.
F6684	17	37	Kelt.....	F	Dec. 3, 1934	Margaree Pond, N.S.
	(z) (u) 23	42	Kelt.....	F	Oct. 11, 1936	Mouth of Margaree river, N.S.
F6730	14	34	Kelt.....	F	Nov. 13, 1934	Margaree Pond, N.S.
	27½	50	Clean.....	F	Aug. 3, 1936	Terre Noire, two and one half miles northeast of Margaree Harbour, N.S.

RECAPTURES, 1936—ATLANTIC SALMON—*Continued*

MARGAREE RIVER, N.S.

Number	Weight (lbs.)	Length (ins.)	Condition	Sex	Date	1. Where liberated 2. Where caught
F6768	13	38	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	28½	40·9	Clean.....	F	July 20, 1936	Two miles northeast of Margaree Harbour, N.S. (down coast).
F6808	11	31	Kelt.....	F	Dec. 3, 1934	Margaree Pond, N.S.
	(z) (u) 19	40	Kelt.....	F	Sept. 22, 1936	Mouth of Margaree River, N.S.
F6864	12	31	Kelt.....	F	Nov. 15, 1934	Margaree Pond, N.S.
	24	37·4	Clean.....	F	July 18, 1936	Two miles northeast of Margaree Harbour, N.S. (down coast).
F6885	10	32	Kelt.....	F	Nov. 19, 1934	Margaree Pond, N.S.
	21	.....	Clean.....	F	July 28, 1936	Judique South, Inverness county, N.S.
F6901	14	34	Kelt.....	F	Nov. 13, 1934	Margaree Pond, N.S.
	15	.....	Clean.....	F	About July 17, 1936	South Manchester, Guysborough county, N.S.
F6921	14	35	Kelt.....	F	Nov. 19, 1934	Margaree Pond, N.S.
	28	39·3	Clean.....	F	Aug. 20, 1936	Terre Noire, two and one half miles northeast of Margaree Harbour, N.S.
F7129	14	38	Kelt.....	F	Nov. 18, 1935	Margaree Pond, N.S.
	10	.....	Kelt.....	F	June 5, 1936	La Pointe, Inverness county, N.S.
F7139	7	30	Kelt.....	F	Nov. 18, 1935	Margaree Pond, N.S.
	13	.....	Clean.....	F	July 8, 1936	St. Anthony Cape, Newfoundland.
F7179	20	40	Kelt.....	F	Nov. 20, 1935	Margaree Pond, N.S.
	15	41	Kelt.....	F	June 12, 1936	Friar Head, Inverness county, N.S.
F7191	15	39	Kelt.....	F	Nov. 20, 1935	Margaree Pond, N.S.
	26	.....	Clean.....	F	July 30, 1936	Antigonish county, N.S.
F7201	17	40	Kelt.....	F	Nov. 20, 1935	Margaree Pond, N.S.
	15	40	Kelt.....	F	June 19, 1936	La Pointe, Inverness county, N.S.
F7310	8	33	Kelt.....	F	Nov. 26, 1935	Margaree Pond, N.S.
	12	.....	Clean.....	F	July 4, 1936	Newfoundland.
F7373	11	36	Kelt.....	F	Nov. 27, 1935	Margaree Pond, N.S.
	.....	.....	Clean.....	F	July 5, 1936	Griquet, Newfoundland.
F7378	13	38	Kelt.....	F	Nov. 27, 1935	Margaree Pond, N.S.
	.....	.....	Kelt.....	F	May 23, 1936	Long Marsh pool, Margaree river, N.S.
F7452	17	39	Kelt.....	F	Dec. 3, 1935	Margaree Pond, N.S.
	12	.....	Kelt.....	F	June 10, 1936	La Pointe, Inverness county, N.S.
F7478	16	32	Kelt.....	F	Dec. 3, 1935	Margaree Pond, N.S.
	14	38	Kelt.....	F	June 10, 1936	One half mile south of mouth of Little Cheticamp river, Inverness county, N.S
F7483	6	28	Kelt.....	F	Dec. 5, 1935	Margaree Pond, N.S.
	6	.....	Kelt.....	F	May 1, 1936	Mouth of Margaree river, N.S.
F7497	22	41	Kelt.....	F	Dec. 5, 1935	Margaree Pond, N.S.
	(z) (u) 26	.....	Kelt.....	F	Oct. 15, 1936	Mouth of Margaree river, N.S.

RECAPTURES, 1936—ATLANTIC SALMON—*Concluded*

MARGAREE RIVER, N.S.

Number	Weight (lbs.)	Length (ins.)	Condition	Sex	Date	1. Where liberated 2. Where caught
F7502	14	39	Kelt.....	F	Dec. 5, 1935	Margaree Pond, N.S.
	24	41	Clean.....	F	July 25, 1936	One half mile south of mouth of Little Cheticamp river, Inverness county, N.S.
F7566	9	32	Kelt.....	M	Dec. 6, 1935	Margaree Pond, N.S.
	.....	.....	Kelt.....	M	Jan. 10, 1936	Mouth of Margaree river, N.S.
F7620	18	37	Kelt.....	M	Dec. 7, 1935	Margaree Pond, N.S.
	16	.....	Clean.....	M	June 18, 1936	North of Cheticamp Island, Inverness county, N.S.
F7702	18	42	Kelt.....	F	Dec. 7, 1935	Margaree Pond, N.S.
	22	.....	Clean.....	F	Aug. 4, 1936	Big Island, Pictou county, N.S
F7742	14	37	Kelt.....	F	Dec. 7, 1935	Margaree Pond, N.S.
	.....	38	Kelt.....	F	June 12, 1936	Friar Head, Inverness county, N.S.

MORELL RIVER, P.E.I.

F1832	(*x*) 10½	31	Clean.....	F	Nov. 8, 1930	Morell river, P.E.I.
	.....	.....	Clean.....	F	June , 1932	At Englee, Newfoundland.

(u) Liberated with same tag attached.
(x) Weight estimated before stripped.
(z) Weight after stripped.

ANTIGONISH HATCHERY

—	Atlantic Salmon			Rainbow Trout Fingerlings	Speckled Trout					
	Advanced fry	Fingerlings			Fingerlings				Yearlings	Old fish
		No. 1	No. 2	No. 3	No. 1	No. 2	No. 3	No. 4		
Antigonish Co.—										
Beaver Meadow river					50,000					
Beech Hill lake								300		
Brierly brook					10,000					
Copper lake					10,000				500	
Glenroy river					25,000			15,000	500	
James river	75,000	70,000								
James river lake					15,000					
Maryvale brook						10,000				
Meadow Green river					40,000				500	
North lake					20,000					
Pinevale lake					10,000					
Polson brook-South river					15,000					
Right river		50,000								
South lake					15,000					
South river		150,000								260
South river lake					20,000				1,000	
Springfield brook-Pomquet river							4,000			
Tracadie river		100,000								
West river					40,000			15,000	1,000	1,465
Colchester Co.—										
Irving lake							3,000			
Rocky lake							3,000			
Cumberland Co.—										
River Philip		100,000								
Guysboro Co.—										
Archibald lake							5,000			
Cooper lake					10,000					
Cooee Coffre lake								8,000		
Country Harbour river		150,000								
Cutler lake								8,000		
Donahue lake					40,000					
Ecum Secum river					20,000					
Eight Island lake					10,000					
Forbes Wall lake								2,000		
Golboro lake							10,000			
Hazel Hill lake					20,341					
Indian Harbour lake					10,000					

Jellow lake					15,000					
Long lake-Salmon river								5,000		
Long lake-East River St. Mary								3,100		
East River St. Mary		685,000	100,000							
West River St. Mary		525,000								
Salmon river		100,000								
Seal Harbour lake							5,035			
Sherbrooke lake					15,000					
Smelt lake				455						
Square lake								5,000		
Three Mile lake					15,000					
Pictou Co.—										
Avondale brook					20,000					
Barney river	75,000									
Big brook-East river					30,000					
Brora lake					15,000	10,000				
Calder lake						15,000		2,000		
Centredale brook					15,000					
Campbell lake						15,000				
Chisholm lake					15,000					
Cummings dam-Brown brook					15,000	10,000				
Dewars dam						15,000				
East river			95,000							
French river	15,000									
French river, branch					15,000					
Grant brook					15,000					
Hopewell brook					15,000					
Little Harbour lake					15,000					
Little Harbour brook					15,000					
MacPherson lake					50,000					
McDougal dam on tributary to Sutherland river						10,000				
McLellan brook					50,000			2,500		
River John					60,000					
Robertson lake					15,000					
Stewart dam on tributary to Little Harbour								2,500		
Taylor lake					25,000					
West river					60,000					
	165,000	1,930,000	195,000	455	870,341	85,000	30,035	68,400	3,500	1,725

Total distribution 3,349,456

BEDFORD HATCHERY

—	Atlantic Salmon				Speckled Trout Fingerlings	
	Eyed eggs	Advanced fry	Fingerlings			
			No. 1	No. 2	No. 1	No. 2
Dalhousie University, Halifax	8,000					
Colchester Co.—						
Economy river				30,720		
Salmon river		75,000				
Stewiacke river			75,000			
Stewiacke river, south branch			30,000		30,000	
Cumberland Co.—						
Isaac lake					35,000	
Maccan river			30,000			
River Philip			200,000			
Shinimikas river			30,000			
Halifax Co.—						
Barrett lake					6,000	
Big salmon river		75,000	30,000			
Brown lake					32,000	
Chezzetcook river			75,000			
Five Island lake					30,000	
Fraser lake					20,000	
Halfway river					30,000	
Heffler lake					35,000	
Higgins brook			30,000			
Ingram river			115,000			
Jack lake						2,000
Kearney lake					35,000	
Kehoe or Second lake					45,000	
Little lake or Davison pond						2,000
Little Quoddy lake					30,000	
Mary lake					35,000	
Maxwell lake					30,000	1,665
Moosehorn lake					30,000	
Nine Mile river			105,000			
Northwest or west brook-Salmon river			50,000			
Oisier river			30,000			
Pentz lake					30,000	
Pine Island lake					30,000	
Porter lake			30,000			
Preeper lake						4,000
Sackville river			145,000	37,465		
Salmon river (Port Dufferin)			56,860			
East River Sheet Harbour					30,000	
West River Sheet Harbour			50,000	40,000		
Ship Harbour lake		50,000				
Stillwater lake—St. Margaret bay					32,000	
Taylor brook			75,000			
Tucker lake					30,000	
Hants Co.—						
Five Mile lake					50,900	
McLellan or Valley lake					30,000	
Lunenburg Co.—						
Corkum lake					30,000	
Gold river		75,000	125,000			
Lily lake					30,000	
Middle river			125,000			
Mill lake					35,000	
Spectacle lake					30,000	
	8,000	275,000	1,406,860	108,185	780,900	9,665

Total distribution 2,588,610

GRAND LAKE REARING PONDS

	Atlantic Salmon Fingerlings			Landlocked Salmon	
	No. 2	No. 3	No. 5	Yearlings	Two years
Cumberland Co.—					
River Philip	140,000				
Halifax Co.—					
Grand lake				16,700	135
Lake Major			4,000		
Nine Mile river	40,000		4,000		
Sackville river			13,200		
Salmon river (Port Dufferin)	40,000				
Ship Harbour lake		20,000			
Springfield lake				1,500	
Third lake			12,000	1,000	
Musquodoboit river	65,000				
	285,000	20,000	33,200	19,200	135

Total distribution 357,535

LINDLOFF SUB-HATCHERY

	Atlantic Salmon Fingerlings			Speckled Trout Fingerlings
	No. 1	No. 2	No. 3	No. 3
Cape Breton Co.—				
Gaspereau river		50,000		
Salmon river	40,000	55,000	173,000	
Richmond Co.—				
Ferguson lake				6,500
Grand river	180,000	55,000	40,000	
McIsaac lake				8,128
McKay brook-Grand river			20,000	
Murchison brook-Grand river	30,000			
Shaw lake				6,500
Tillard river, west				6,500
	250,000	160,000	233,000	27,628

Total distribution 670,628

—	Atlantic Salmon						Speckled Trout								
	Fry	Advanced fry	Fingerlings				Fingerlings					Yearlings	Two years	Four years	Five years
			No. 1	No. 2	No. 3	No. 4	No. 1	No. 2	No. 3	No. 4	No. 5				
Cape Breton Co.—															
Bell lake										20,000					
Brown lake										15,000		996			
English lake										15,000					
Giovanetti lake										15,000					
Grand lake										20,000					
Keefe lake										15,000					
McIntyre lake										20,000					
Pottles lake										10,000	5,000				
Dalem lake (Boularderie island)										10,000					
Inverness Co.—															
Captain John's brook										10,000					
Cheticamp river		200,000	150,000												
Graham brook										5,000					
Indian brook										10,000					
Little Judique river										5,000					
Northeast Margaree river—															
Between Cranton bridge and McDermid pool		100,000													
Between Ingraham bridge and Rock pool						15,000									
Big brook	75,000				5,000	2,000									
Big Intervale bridge		100,000	135,000		40,000	75,000									
Big Intervale above Black Rock				40,000											
Big Intervale above Murray's						15,000									
Big Intervale below Murray's						15,000									
Big Intervale above Old Bridge						15,000									
Big Intervale below Old Bridge						15,000									
Big Intervale above Stewart brook				50,000	10,000	10,000									
Cranton bridge	100,000			20,000		30,000									
Doyle's bridge			150,000												
Dunn brook		50,000	50,000		5,000										
Egypt brook							20,000								
First forks					40,000	20,000									
Gallant brook			40,000												
Hatchery brook							30,000				3,832				
Ingraham bridge	100,000				20,000	15,000									
Island brooks		100,000		20,000											
Lake O'Law brook		50,000			10,000	3,960									
Lake O'Law											68,185	695	1,121	40	20
Fortune brook							15,000								
McKinnon brook							10,000								
Murphy brook							20,000				6,000				
Levis brook			30,000												
McDaniel pool			75,000												
McDonald brook											5,000				
McLean pool			60,000			55,000									
McLeod pool			75,000												

Mill brook			20,000								3,000				
Murray's brook															
Ross Bridge						30,000									
Stewart pool		100,000													
Stewart brook					10,000	10,000									
Tingley crossing	100,000	100,000			20,000	15,000									
Ward's pool				90,000		15,000									
Watson brook							20,000								
Whitley pool	100,000														
Plateau brook							20,000								
Southwest Margaree river		300,000													
McDonnell brook			50,000												
Victoria Co.—															
Baddeck bay brook							20,000								
Baddeck river—															
Gillis brook								20,000							
McDonald brook								20,000							
North Branch		100,000													
Peter brook								15,000							
West branch		100,000													
Barasois river									10,000						
Big Harbour brook								15,000							
Clyburn brook										10,000					
Middle river		70,000													
Beaver brook		30,000													
Black brook								15,000							
Gold brook										10,000					
Indian brook			50,000												
McCharles pool		100,000													
McKenzie brook								20,000							
McLennan's bridge		100,000													
North river			225,000												
Church brook									10,000						
North Aspy river										10,000					
South Gut brook								20,000							
Warren lake										15,000					
Washabuck river										15,000					
	475,000	1,600,000	1,110,000	220,000	160,000	355,960	155,000	125,000	20,000	230,000	91,017	1,691	1,121	40	20

Total distribution..... 4,544,849

MIDDLETON HATCHERY

—	Atlantic Salmon Fingerlings			Salmon Trout Fingerlings		Speckled Trout				
						Fingerlings				Yearlings
	No. 1	No. 2	No. 3	No. 1	No. 3	No. 1	No. 2	No. 3	No. 4	
Annapolis Co.—										
Annapolis river	140,000									
Blanchard lake						4,000				
Butler brook-Shannon lake						4,000				
Chute lake							4,000			
Cranberry lake						4,000				
Elliott lake						5,000				
Foster lake						4,000				
Gesner lake						4,000				
Hatchery pond									500	
Lake Jolly								6,000		
Lequille river	25,000									
Lily lake						5,000			400	12
Little river							4,000			
Little lake-Lequille river						6,000				
Long lake-North Mountain						4,000				
Long lake-Bear river (east branch)							5,000			
Long lake-Medway river							7,000			
Millbury lake						4,000				
Mitchell lake							4,000			
Nictaux river	60,000	175,000	364,144					56,000		
Round Hill river	25,000									
Rumsey lake							4,000			
Sandy Bottom lake								6,000		
Shannon river						5,000				
Stronach lake						4,000				
Trout lake						6,000				
Waterloo lake								6,000		
Worster lake						4,000				
Wright lakes						6,000				
Young lake						4,000				
Cumberland Co.—										
Cranberry lake								6,000		
Digby Co.—										
Eighth and Ninth lakes Sissiboo river									5,000	
Harris lake								7,000		
Mallett lake							4,000			
Porter or Mistake lake							8,000			
Syda lake								5,000		
Hants Co.—										
Canoe lake, north								8,000		
Falls lake								6,000		
Murphy lake							5,000			
Nixes lake								6,000		
Palmer river								7,000		
River Herbert		25,000								
Kings Co.—										
Aylesford rearing ponds (Kings County Fish, Forest and Game Protective Association								1,000		
Burke lake						4,000				
Canning reservoir								200		
Habitant river						5,000				
Hardwood lake								6,000		
Lake George						6,000				
Lake Torment						6,000				
Mack lake						4,000				
Lunenburg Co.—										
Butler lake						5,000				
Cross or Sperry lake								7,000		
Gold river	40,000	100,000								
LaHave river	135,000	40,000								
Middle river	40,000	50,000								
Petite river	50,000									
Sherbrooke lake				68,725	2,747					
Whetstone lake							5,000			
Whitney lake							7,000			
Queens Co.—										
Medway river	110,00	50,000								
	625,000	440,000	364,144	68,725	2,747	103,000	57,000	133,200	5,900	12

Total distribution 1,799,728

NICTAUX FALLS REARING STATION

—	Atlantic Salmon Fingerlings		
	No. 1	No. 3	No. 4
Annapolis Co.—			
Nictaux river	30,000	15,000	14,390

Total distribution 59,390

—	Atlantic Salmon							Kamloops Trout	Rainbow Trout					Speckled Trout						
	Fry	Advanced fry	Fingerlings					Fingerlings	Fingerlings	Yearlings	Two years	Four years	Five years	Advanced fry	Fingerlings			Yearlings	Two years	Three years
			No. 1	No. 2	No. 3	No. 4	No. 5	No. 5	No. 5						No. 1	No. 4	No. 5			
Department of Highways, Nova Scotia									50		8	8					50	12	10	
Indian lake and tributaries, Snake Creek district, Quebec						2,600														
Annapolis Co.—																				
Bear river			60,000	20,000																
Lequille river					10,000															
Digby Co.—																				
Barrio lake														20,000						
Bear lake																	3,000			
Belliveau Cove river														20,000						
Bonaventure lake																		1,500		
Clear lake									5,000	1,200										
Grosses Coques river														20,000						
Hectanooga lake															60,000					
Meadow brook-Carleton river															20,000					
Meteghan river														40,000						
Payson's Meadow															20,000					
Riviere a Margo-Meteghan river														20,000						
Salmon river			50,000	55,000	90,000		30,000													
Silver river														20,000						
Victor lake														20,000						
Wentworth lake															20,000					
Kings Co.—																				
Hardwood lake																		25	12	8
Sunken lake									5,000	3,019	12		8							
Lunenburg Co.—																				
Wiles lake									5,000	4,500										
Queens Co.—																				
Deep lake										1,900										
Hardy lake															3,000					
Kejimkujik lake																2,000				
Medway river		120,000	35,000	45,000	18,000															
Mersey river		60,000	80,000	100,000	8,000	7,000	5,000													
Shelburne Co.—																				
Barrington river														20,000						
Big brook														20,000						
Clyde river		135,000	50,000	55,000	34,000															
East river														20,000						
Green Harbour brook														20,000						
Ogden brook														20,000						
Roseway river		60,000		20,000	20,000															
Yarmouth Co.—																				
Carleton river														40,000						
East branch brook-Tusket river														20,000						
Gardener brook																	5,000		1,385	
Killam brook	100,000																			
Lake Ellenwood																		1,500	1,000	
Lake Jesse															45,000					
Lake Skinner																		900		622
Lake Utley								6,500												
Meadow brook														20,000						
Salmon river			75,000	30,000	60,000															
Simon lake																	1,000			
	100,000	375,000	350,000	325,000	240,000	9,600	35,000	6,500	15,050	10,619	20	8	8	340,000	168,000	2,000	9,050	3,937	2,407	630

Total distribution..... 1,992,829

NEW BRUNSWICK

FLORENCEVILLE HATCHERY

—	Atlantic Salmon				Speckled Trout						
	Advanced fry	Fingerlings			Fingerlings No. 1	Yearlings	Two years	Three years	Four years	Five years	Six years
		No. 1	No. 2	No. 3							
Boston Sportsmen's Show							20		30		
Fredericton Exhibition				500		6		2		2	2
Carleton Co.—											
Becaguimec river	75,000	200,000		10,000							
Big Guisiguit river					60,000						
Little Guisiguit river					40,000						
Big Presquile river	75,000	75,000									
Little Presquile river	70,000										
Big Shiktahawk river		40,000		7,000							
Little Shiktahawk river	50,000			5,264							
Birmingham brook—Becaguimec river					5,000						
Bogan brook—Southwest Miramichi river		16,000									
Bubby brook—Saint John river					5,000						
Bull creek—Saint John river					60,000						
Burntland brook—Becaguimec river					5,000						
Burpee brook—Presquile river					10,000						
Clearwater brook—Southwest Miramichi river		20,000									
Colton brook—Shiktahawk river					10,000						
Day brook—Becaguimec river					5,000						
Elliot brook—Southwest Miramichi river		32,000									
Gallivan brook—Saint John river					10,000						
Gin brook—Becaguimec river					5,000						
Hagerman brook—Saint John river					20,000						
Hardwood brook—Saint John river					10,000						
Second Howard brook—Becaguimec river					5,000						
Lanes creek—Saint John river					5,000						
McLeary brook—Lakeville pond					25,000						
McQuade pond—Saint John river					35,000						
Maynes brook—Little Presquile river					20,000						
Meduxnekeag river	75,000	170,000	30,000	14,000							
Southwest Miramichi river, North branch	75,000	135,000	60,000	6,000							
Southwest Miramichi river, South branch	75,000	135,000	60,000	6,000							
Monquart river		70,000									
River de Chute					50,000						
Simpson brook—Southwest Miramichi river		16,000									

Smith brook—Becaguimec river					10,000						
Teague brook—Southwest Miramichi river		16,000									
Tweedie brook—Saint John river					4,000						
York Co.—											
Brown lake					10,000						
Clincher brook—Magaguadavic river					10,000						
Cross creek—Nashwaak river					10,000						
Davidson lake					40,000						
Second Eel river lake					35,000						
Keswick river		150,000			10,000						
Kingsley brook—Nashwaaksis river					10,000						
Limekiln brook—Nashwaak river					10,000						
Long creek—Saint John river					10,000						
McBean brook—Nashwaak river					10,000						
McCullum creek—Nashwaak river					10,000						
Mactaquac river			25,000	26,000							
Manzer Mill stream—Nashwaak river					10,000						
Middle brook—Nashwaak river					10,000						
Mill brook—Mactaquac river					10,000						
Nackawic river		60,000		14,000	10,000						
Nashwaak river	60,000	150,000	25,000	63,079							
Nashwaaksis river					75,000						
Pidgeon brook—Nashwaak river					10,000						
Pokiok river					50,000						
Risteen lake					25,000						
Russiagornis stream—Oromocto river					20,000						
Shogomoc river					60,000						
Skiff lake		110,000		67,653							
Taffa lake					20,000						
Tay river					15,000						
Tinkettle brook—Nashwaak river					10,000						
	555,000	1,395,000	200,000	219,496	889,000	6	20	2	30	2	2

Total distribution 3,258,558

GRAND FALLS HATCHERY

—	Atlantic Salmon Fingerlings			Speckled Trout			
				Advanced fry	Fingerlings		
	No. 1	No. 2	No. 3		No. 1	No. 2	No. 3
Round lake, Quebec							10,000
Salmon river—Victoria Co.—							
Salmon river, at Estey camp	40,000	20,000					
Salmon river, at Guimont lodge	35,000						
Salmon river, at Migaault lodge	20,000						
Salmon river, at Power's camp	50,000						
Salmon river, mouth of	10,000	20,000					
Salmon river, headwaters		50,000	105,000				
Salmon river flats	95,000						
Aubin crossing	15,000						
Big bogan	40,000						
Boat landing	20,000	40,000					
Cote Mill	75,000	20,000					
Covered bridge	40,000						
Cyr flats	35,000	40,000					
Danish Mill	15,000						
Davis Mill	35,000						
Iron bridge	35,000						
Little Salmon river	90,000	40,000					
Sutherland brook						50,000	
St. John river—Victoria Co.—							
Andover	65,000						
Andover bar		40,000					
Andover, upper	25,000						
Aroostock		40,000					
Aroostock junction	20,000						
Private pond, Boutout brook, Mr. W. J. St. Thomas				5,000			
Cliffordvale	35,000						
Coronation	35,000						
Falls brook					5,000		
Frasers' dead water, Three brooks					20,000		
Hatchery brook, above falls					5,000		
Indian ferry	25,000						
Inman flats	100,000	40,000					
Kilburn		40,000					
Kilburn ferry	100,000	40,000					
Limestone	20,000						
Morill	55,000	20,000					
Mulherin lake							4,000
Muniac river, mouth of	25,000	40,000					
Ortonville	20,000						
Perth	80,000	40,000					
Perth, lower	40,000	40,000					
Perth, upper		40,000					
Pokiok brook					75,000		
Price brook							5,000
Sullivan flats	25,000						
Tobique river, mouth of	25,000	40,000					
Beaver brook						50,000	
Blue mountain bend			44,000				
Fraser lodge			40,000				
Haley brook	50,000						
Millers			40,000				
Millers bogan			30,000				
Two brooks			80,000				
Waters bogan			40,000				
Waters bogan to Millers			40,000				
Undine	10,000						
Madawaska Co.—							
Baker lake							100,000
Baker brook							35,000
Black brook					50,000		
Green river					75,000		205,000
Iroquois river							135,000
Little river					110,000		
Dead brook					25,000		
Michaud rocks						25,000	
Mud lake					65,000		
Perkin brook					15,000		
Power creek-Nine Mile brook							14,616
Private pond, Power creek, Mr. Zeno Martin				5,000			
Quisibis river							30,000
Trout brook							120,000
Unique lake							30,000
	1,405,000	650,000	419,000	10,000	445,000	125,000	688,616

Total distribution 3,742,616

MIRAMICHI HATCHERY

—	Atlantic Salmon				Speckled Trout	
	Eyed eggs	Advanced fry	Fingerlings		Fingerlings No. 2	Yearlings
			No. 1	No. 2		
Biological Board, Toronto	1,000					
Buckley lake					945	
Little Southwest Miramichi river			647,200	251,570		
Middle river				38,400		
Northwest Miramichi river		413,000	728,400	16,000		
Millstream brook		112,000	30,000			
Sevogle river				248,000		
Stewart brook			35,200			
Trout brook		38,500				
Southwest Miramichi river			90,800	87,200		
Barnaby river		112,000		19,200		
Cain river		112,000	161,200			
Renous river		112,000	144,000			
Dungarvon river		112,000	35,200			
Taxis river			96,000			
Tabusintac river		56,000	35,200	35,200		
Tetagouche river				56,000		
Votoure lake					800	98
	1,000	1,067,500	2,003,200	751,570	1,745	98

Total distribution 3,825,113

RESTIGOUCHE HATCHERY

—	Atlantic Salmon			Speckled Trout	
	Fry	Fingerlings		Advanced fry	Fingerlings No. 1
		No. 1	No. 2		
Benjamin river					4,063
Black river					25,000
Charlo river					25,000
Lily lake				5,000	
Shipyard lake					25,000
Christopher river					10,000
Jacquet river		50,000			
Middle river	50,000				
Nipisiguit river	393,453				
Restigouche river		505,000	213,673		
Little Main river		91,547			
Matapedia river		735,000			
Upsalquitch river		594,159			
Walker brook					10,000
	443,453	1,975,706	213,673	5,000	99,063

Total distribution 2,736,895

No.	——	Atlantic Salmon					Brown Trout Hybrids			Landlocked Salmon	
		Green eggs	Fry	Advanced fry	Fingerlings No. 1	Two years	Fingerlings No. 4	Yearlings	Two years	Yearlings	Two years
1	Dr. A. G. Huntsman, University of Toronto, Ontario	3,000									
2	Atlantic Biological station, Saint Andrews, New Brunswick					50					
3	Sandwich State Hatchery, Massachusetts	3,000									
	Albert Co.—										
4	Little river										
5	McFadden lake										
6	Point Wolfe river										
7	Pollett river										
8	Stannard lake										
9	Turtle creek-Petitcodiac river										
10	West river										
	Charlotte Co.—										
11	Big Eel lake										
12	Little Eel lake										
13	Burns brook-Digdeguash river										
14	Chamcook lake									2,000	784
15	Clarence stream-Magaguadavic river										
16	Craig brook-Digdeguash river										
17	Digdeguash river										
18	Disappointment lake										
19	Doak brook-Saint Croix river										
20	Green Brown brook-Kanus river										
21	Hitching brook-Digdeguash river										
22	Hopper pond-Deer Island										
23	Kerr lake										
24	Lake Utopia										
25	Lepreau river										
26	Limeburner lake										
27	Linton stream-Magaguadavic river			150,000							
28	Magaguadavic river				220,000						
29	McClary brook-Saint Croix river										
30	McDougall lake										
31	Murchie brook-Saint Croix river										
32	New river										
33	Pocologan river			100,000							
34	Red Rock lake										
35	Roix lake										
36	Saint Andrews rearing pond										
37	Saint Patrick lake										
38	Seal Cove brook										
39	Seven Mile lake										
40	Stein lake										
	Kent Co.—										
41	Buctouche river										
42	Cocagne river										
43	McKee Mills										
44	Molus river										
45	Richibucto river, Coal branch										
46	Saint Nicholas river, south branch										
47	Salmon river										
	Kings Co.—										
48	Belleisle river				65,000						
49	Dibble brook-Belleisle river				10,000						
50	Elliott brook-Belleisle river				10,000						
51	Elm brook-Belleisle river				12,574						
52	Hammond river										
53	Jolifee brook-Belleisle river				10,000						
54	Kennebecasis river		100,000			773					
55	Kennebecasis river, headwaters										
56	Kennebecasis river, south branch										
57	Mill stream-Kennebecasis river										

HATCHERY

Loch Leven Trout			Speckled Trout											
Fingerlings No. 4	Yearlings	Two years	Advanced fry	Fingerlings No. 1	Fingerlings No. 2	Fingerlings No. 3	Fingerlings No. 4	Yearlings	Two years	Three years	Four years	Five years	Wild fish	No.
														1
				2,700		56								2
														3
				5,000										4
			20,000											5
				5,000										6
				5,000										7
				8,000										8
				5,000										9
				5,000										10
						400								11
						400								12
				10,000										13
														14
				15,000										15
				10,000										16
				20,000										17
			10,000											18
				5,000										19
				5,000										20
				10,000										21
					4,000									22
				10,000										23
			25,000											24
				25,000										25
				10,000										26
														27
				10,000										28
				5,000										29
				25,000										30
				5,000										31
				10,000										32
														33
					10,000									34
			20,000		4,000									35
				1,000										36
				10,000										37
						400								38
				10,000										39
				10,000										40
				5,000										41
				5,000										42
				5,000										43
			10,000											44
				5,000										45
				5,000										46
				5,000										47
														48
														49
														50
														51
				10,000										52
														53
														54
				15,000										55
				5,000										56
					2,000									57

No.	——	Atlantic Salmon					Brown Trout Hybrids			Landlocked Salmon	
		Green eggs	Fry	Advanced fry	Fingerlings No. 1	Two years	Fingerlings No. 4	Yearlings	Two years	Yearlings	Two years
58	Moss Glen lake										
59	Price brook-Canaan river										
60	Puddington lake										
61	School brook-Kennebecasis river										
62	Smith creek-Kennebecasis river										
63	Trout creek-Kennebecasis river			100,000							
64	Wetmore dam-Kennebecasis river										
65	Wolf lake										
	Queens Co.—										
66	Canaan river										
67	Canaan river, forks										
68	Deer lake										
69	Lake stream-Salmon river										
70	Salmon river			75,000	75,000						
71	Tilly lake										
	St. John Co.—										
72	Beaver lake										
73	Black river			150,000							
74	Boaz lake										
75	Burley lake										
76	Cook lake										
77	Donaldson lake										
78	Douglas lake										
79	Germain brook-Hammond river										
80	Glendarag lake										
81	Grassy lake										
82	Hanford brook										
83	Henry lake										
84	Lily lake-Rockwood park										
85	Little river						1,021	3,764	3,261		
86	Loch Alva-Saint John and Kings Cos										
87	Loch Lomond										
88	Stephenson's brook pond-Loch Lomond*										
89	McDonald lake										
90	Menzie lake										
91	Milligan lake										
92	Mispek river										
93	Ping Pong lake										
94	Southern lake										
95	Taylor lake										
96	Tyne Mouth creek			100,000							
97	Wilmot brook-Loch Lomond										
	Sunbury Co.—										
98	Oromocto river			100,000	100,000						
99	Otter brook										
100	Peltoma lake										
101	Shin creek										
102	Three Tree creek										
	Westmorland Co.—										
103	Anagance river										
104	Bennett brook-Petitcodiac river										
105	Petitcodiac river			200,000							
106	Shediac river										
	York Co.—										
107	Baker brook pond										
108	Big Oromocto lake										
109	Clear lake										
110	Cranberry brook										
111	Grant lake										
112	Harvey lake										
113	Jamieson lake										
114	Lake George										
115	Lyon stream, west branch										
116	Magundy stream										
117	Little McAdam stream										
118	Mink lake										
119	Musquash brook-Spendic lake										
120	Risteen lake										
121	Stony brook										
122	Tom Davis lake										
123	Trout brook, upper										
124	Trout brook, lower										
		6,000	100,000	975,000	502,574	823	1,021	3,764	3,261	2,000	784

Total distribution

*Operated by Saint John branch of the New Brunswick Fish and Game Protective Association in conjunction with

HATCHERY—*Concluded*

Loch Leven Trout			Speckled Trout										No.
Fingerlings No. 4	Yearlings	Two years	Advanced fry	Fingerlings No. 1	Fingerlings No. 2	Fingerlings No. 3	Fingerlings No. 4	Yearlings	Two years	Three years	Four years	Five years	Wild fish	
			15,000											58
				5,000										59
				2,500										60
				5,000										61
					2,000									62
														63
			5,000											64
				5,000										65
				5,000										66
					5,000									67
			5,000											68
					5,000									69
														70
					3,000									71
													364	72
														73
				2,000										74
				3,000										75
			3,000											76
			5,000											77
			5,000											78
				15,000										79
			500											80
				5,000										81
				15,000										82
				10,000										83
				5,000										84
158	657	62		5,000				760			2			85
					2,000									86
								1,116	36	45		13		87
				5,000										88
			10,000											89
					3,000									90
				10,000										91
				15,000										92
													300	93
				5,000										94
				10,000										95
														96
					10,000		1,500							97
														98
				10,000										99
				5,000										100
				10,000										101
				10,000										102
				5,000										103
				10,000										104
														105
			30,000											106
				5,000										107
					5,000									108
				5,000										109
				5,000										110
				5,000										111
				25,000										112
				5,000										113
					5,000									114
					5,000									115
					5,000									116
				5,000										117
				5,000										118
				5,000										119
				5,000										120
				5,000										121
				5,000										122
				5,000										123
				5,000										124
158	657	62	163,500	569,200	70,000	1,256	1,500	1,876	36	45	2	13	664	

2,404,196

the Loch Lomond Protective Association.

PRINCE EDWARD ISLAND

KELLY'S POND HATCHERY

—	Atlantic Salmon			Speckled Trout Fingerlings	
	Fry	Advanced fry	Fingerlings No. 1	No. 1	No. 2
Kings Co.—					
Black pond				3,000	
Cardigan river		40,000	20,085		
Coogan brook-Morell river	40,000		50,000		
Dingwell brook-Fortune river				6,000	
Fortune river			40,000		
Fisher brook-Morell river				6,000	
Goose river				5,000	
Hay river				5,000	
Leard's, below mill-Morell river			50,000		
McCaskil river			25,000		
McKinnon brook-Morell river			25,000		
East branch	40,000				
West branch	40,000				
McNeill brook-Morell river			25,000		
McRae's pond-Montague river				5,000	
Midgell river			50,000		
Montague pond				5,000	
Montague river		60,000	25,000		
Mooney stream-Morell river	40,000		30,000		
Morell river		224,000	45,000		
Naufrage river		48,000	45,000		
North lake			25,000		
Pool's pond-Brudenell river					3,000
Quigley's stream, below mill-St. Peters bay			50,000		
Quigley's pond					7,200
Head of St. Peters bay			50,000		
Schooner pond		48,000			
South lake				3,000	
Sturgeon river			25,000		
Warren's, below mill-Head of East river			50,000		
Whelan brook-Souris river				5,000	
Prince Co.—					
Conroy's pond					6,500
Leard's pond-Trout river tributary to Lot 10 river				5,000	
Little Pierre Jacques river				5,000	
McArthur's pond-Foxley river				14,400	
McKay's pond					3,720
Myrick's pond-Tignish river				5,000	
Rix stream-Huntley river				5,000	
Round pond				5,000	
Sheep river					4,340
Tignish river				5,000	
Tyne Valley stream-Trout river					3,000
Tuplin's pond-Indian river					3,000
Queens Co.—					
Bell river				5,000	
Campbell's pond-New Glasgow					3,000
Coles pond-North river					2,748
Crooked creek				5,000	
Gurney's stream					5,500
Hope river				5,000	
McPherson's pond-Flat river				5,000	
McPherson's pond-Pinette river				5,000	
Pleasant Grove-Winter river				5,000	
Rackham's pond-Wheatley river				4,000	
Sherry brook-East river					3,000
Webster's pond-Black river					28,000
Winter river	20,000				
Wisner's pond-Fanning brook				8,000	
	180,000	420,000	630,085	129,400	73,008

Total distribution 1,432,493

ALBERTA

BANFF HATCHERY

—	Brown Trout		Cutthroat Trout			Kamloops Trout	Rainbow Trout			Salmon Trout		Speckled Trout	
	Advanced fry	Fingerlings No. 1	Eyed eggs	Fingerlings		Eyed eggs	Advanced fry	Fingerlings		Advanced fry	Fingerlings No. 4	Eyed eggs	Advanced fry
				No. 1	No. 2			No. 1	No. 2				
University of Manitoba, Winnipeg												500	
Altrude lake				10,000									
Baptiste river—													
Brule creek	10,000												
Chambers creek	15,000												
Lawrence creek	10,000												
Betty lake, T. 28 R. 16					5,000								
Boom lake					20,000								
Bow lake				40,000									
Bow river—													
Anthracite creek				10,000									
Baker creek				20,000									
Bighill creek				20,000									
Bowfort creek				10,000									
Cascade creek					10,000								
Cold creek				25,000									
Corral creek				10,000									
Lower Fortymile creek					5,000								
Upper Fortymile creek					20,000								
Gap creek				10,000									
Healy creek					20,000								
Jumpingpound creek								10,000	15,000				
Bear creek								10,000					
Coxcomb creek				10,000									
Moose creek				10,000									
Muskeg creek				10,000									
Sibbald creek								20,000					
Spring creek									4,325				
Massive creek				25,000									
Mosquito creek				5,000									
Pipestone creek				10,000									
Policeman creek				15,000									
Redearth creek				10,645									
Sevenmile creek				5,000									
Spencer creek				15,000									
Sundance creek					10,000								
Twenty-threemile creek					2,500								
Twenty-ninemile creek					2,500								
Clearwater river—													
Alford creek		5,000											
Clear creek		5,000											
Muskeg creek		5,000											
North Prairie creek		25,000											
South Prairie creek		10,000											
Moose creek		5,000											
Consolation lake				10,000									

ALBERTA

BANFF HATCHERY

—	Brown Trout		Cutthroat Trout			Kamloops Trout Eyed eggs	Rainbow Trout			Salmon Trout		Speckled Trout	
	Advanced fry	Fingerlings No. 1	Eyed eggs	Fingerlings			Advanced fry	Fingerlings		Advanced fry	Fingerlings No. 4	Eyed eggs	Advanced fry
				No. 1	No. 2			No. 1	No. 2				
Elbow river—													
Bragg creek								12,000					
Crawford creek								6,000					
Glenmore dam								88,000					
Harris creek								24,000					
Hidden creek								18,000					
Lotts creek								24,000					
May's creek								48,000					
Mickle creek								10,000					
Pirmez creek								40,000					
Rennick creek								10,000					
Stringer creek								15,000					
Thomas creek								6,000					
Young creek No. 1								5,000					
Whitney spring								6,000					
Emerald lake								25,000					
Giddie creek								5,000					
Exshaw lakes					32,055								
Ghost lake				100,000					40,000				
Ghost river—													
Eau Clair creek					20,000								
Lake creek					20,000								
Hector lake				40,000									
Herbert lake				10,000									
Hidden lake					5,000								
Highwood river—													
Cataract creek									20,000				
Etherington creek									20,000				
Flat creek				30,000									
Head creek				10,000									
Zephyr creek									10,000				
Sheep creek—													
Sandstone creek								18,000					
Spring creek								18,000					
North Sheep creek—													
Ware creek								12,000					
South Sheep creek									20,000				
Gorge creek									10,000				
Junction creek									20,000				
James river—													
Galtney spring		10,000											
Spring creek No. 1		2,500											
Spring creek No. 2		2,500											
Spring creek No. 3		2,500											
Spring creek No. 4		2,500											
Spring creek No. 5		2,500											
Spring creek No. 6		2,500											

East Stoney creek		20,000											
Tepee-pole creek		10,000											
Kananaskis lake			108,400										
Boulton creek			31,200										
Upper Kananaskis lake						95,590							
Kananaskis river—													
Pocaterra creek			10,400										
Lake Minnewanka										96,180	362		205,435
Lake O'Hara								20,000					
Lost lake				10,000									
Mistaya lake				40,000									
Moraine lake				10,000									
Mud lake				10,000									
North Saskatchewan river—													
Fish lake	25,000												
Goldeye lake	15,000												
Haven creek	10,000												
Shunda creek	10,000												
Snow creek	5,000												
Tepee creek	5,000												
Peyto lake				20,000									
Raven river—													
Beaver creek		20,000											
Crooked creek		10,000											
South Raven creek		40,000											
Stauffer creek		10,000											
Red Deer river—													
Beaver dam T. 31 R. 9		5,000											
Castle creek		5,000											
Dennison creek		7,500											
Dogpound creek		20,000											
Fallentimber creek		24,340											
Gibson creek	5,000												
Grant creek		15,000											
Griswald creek		5,000											
Little Red Deer river		7,170											
Logan creek		5,000											
Ross creek		2,500											
Spring creek	15,000	5,000											
Stever creek	10,000												
Twin spring creek	3,000												
Waltermeyer creek	2,000												
Williams creek		20,000											
Yara creek		5,000											
Shadow lake					19,355								
Spray river					20,000								
Goat creek					10,000								
Two Jacks lake				10,265									
Vermilion lake				10,000									50,695
Vermilion river				30,000									
Wapta lake							20,000	11,405					
Cataract creek								10,000					
Lower Waterfowl lake				20,000									
Upper Waterfowl lake				20,000									
	140,000	316,510	150,000	650,910	221,410	95,590	20,000	471,405	159,325	96,180	362	500	256,130

Total distribution..... 2,578,322

JASPER PARK SUB-HATCHERY

	Rainbow trout advanced fry
Adolphus lake	2,000
Beaverdam creek-McLeod river	10,000
Brazeau lake	20,000
Bryan creek-Embarras river	5,000
Center creek-Pembina river	10,000
Crooked creek-Pembina river	5,000
Dummy creek-Embarras river	5,000
Edson river, north fork	20,000
Erith river	10,000
Fryatt lake	4,318
Geraldine lake	4,000
Gregg river	5,000
Hornbeck creek-Sundance river	7,385
Horseshoe lake, upper	1,500
Lake Annette	65,000
Lake Edith	65,000
Leach lake	6,000
Little Pembina river	5,000
Little Trefoil lake	2,000
Mary Gregg lake	10,000
McKenzie creek-McLeod river	10,000
Mercoal creek-McLeod river	5,000
Mina lake	4,000
One Mile creek-McLeod river	5,000
Patricia lake	110,000
Prairie creek-Athabasca river	4,000
Press creek-Embarras river	5,000
Prospect creek-White Horse creek	10,000
Pyramid lake	140,000
Sucker creek-McLeod river	4,000
Sulphur creek-McLeod river	5,000
Thornton creek-McLeod river	5,000
Trout creek and tributaries	20,000
Lake Palisade	1,500
Valley of the Five lakes—	
Lake No. 1	1,000
Lake No. 3	500
Lake No. 4	500
Lake No. 5	1,000
White Horse creek-McLeod river	10,000
	603,703

Total distribution.. 603,703

—	Cutthroat Trout					Rainbow Trout			
	Eyed eggs	Advanced fry	Fingerlings No. 1	Fingerlings No. 5	Five years	Advanced fry	Fingerlings No. 1	Three years	Five years
Belly river		30,000							
Barns creek—									
Beaver dams (7-1-28, W. 4)		10,000							
Indian creek		5,000							
North fork		5,000							
Castle river							22,575		
Beaver Mines creek						30,000			
Carbondale river						25,000			
Gardener creek						6,000			
Gladstone creek						15,000			
Gravenstafle creek						10,000			
Link or Lynx creek						6,950			
Lost creek							3,000		
Mill creek						25,000			
Spruce creek						5,000			
Webb creek						10,000			
West branch						20,000			
Beaver dams (10, 17-5-3, W. 5)						30,000			
Crowsnest lake						40,000			
Crowsnest river—									
Allison creek						25,000			
Blairmore creek						25,000			
Byron creek						10,000			
Gold creek							35,000		
Rock creek						10,000			
Star creek						10,000			
Livingstone river		35,000							
Coat creek		5,000							
Twin creek		5,000							
Oldman river—									
Daisy creek		12,900							
Ernst creek		10,000							
Gap Beaver dams (32-10-3, W. 5)		50,000							
Pincher creek						40,000			
Racehorse creek		50,000							
Willow creek—									
Corral creek						5,000			
East Nelson creek						5,000			
Iron creek						5,000			
Johnston creek						5,000			

—	Cutthroat Trout					Rainbow Trout			
	Eyed eggs	Advanced fry	Fingerlings No. 1	Fingerlings No. 5	Five years	Advanced fry	Fingerlings No. 1	Three years	Five years
Lyndon creek						45,000			
Nelson creek						10,000			
North fork						20,000			
Riley creek						5,000			
Trout creek						10,700			
Westrip creek						15,000			
Waterton lake (lower)		10,000							
Waterton lake (upper)		90,000	25,000						
Waterton river—									
Alderson lake			3,000						
Bauerman brook			5,000						
Beaver dams (5-1-2, W. 5)			5,000						
Beaver dams (31-1-29, W. 4)			5,000						
Bertha lake			3,690						
Butcher creek						15,000			
Cameron creek		10,000							
Cameron lake		30,000	20,000						
Carpenter creek						15,000			
Carthew lake			6,000						
Cottonwood creek						20,000			
Crooked creek			5,810						
Beaver dams (23-1-29, W. 4)		10,000							
Crypt lake	3,600								
Drywood creek—									
Beaver dams (9-4-1, W. 5)							13,850		
Forum lake			6,000						
Hatchery or Spring creek				16,202	35	10,000		30	40
Lineham creek		10,000							
Linnet lake		4,000	1,000						
Lone lake			5,000						
Lost lake			6,000						
Mack lake	6,000								
Pass creek			39,000						
Pine creek						10,000			
Rowe creek		10,000							
Rowe lake	9,200								
Summit lake	3,000								
Yarrow creek—									
Beaver dams (33-3-29, W. 4)						30,000			
	21,800	391,900	135,500	16,202	35	568,650	74,425	30	40

Total distribution..... 1,208,582

BRITISH COLUMBIA

ANDERSON LAKE HATCHERY

	Sockeye salmon fry
Anderson lake—	
Adlem creek	576,000
Boulder creek	576,000
Cabin creek	576,000
Cedar creek	288,000
Clemens creek	960,000
Eight Mile beach	864,000
Falls creek	288,000
Granite creek	576,000
Refuge bay	288,000
Ternan creek	98,972
	5,090,972
Total distribution	5,090,972

ARGENTA SUB-HATCHERY

	Kamloops trout fry
Kootenay lake—	
Argenta slough	200,000
Big slough	50,000
East shore	37,260
Fry creek bay	50,000
Lardeau bay	50,000
Schroeder bay	50,000
	437,260
Total distribution	437,260

BABINE LAKE HATCHERY

	Sockeye salmon fry
Morrison creek	2,649,736
Morrison lake	3,500,000
	6,149,736
Total distribution	6,149,736

BEAVER LAKE EYEING STATION

—	Kamloops Trout	
	Eyed eggs	Fry
Alex. Mountain lake-Island lake	.....	2,500
Beaver lake	.....	18,060
Crooked creek	60,000	.....
Crooked lake	.....	90,000
Dee lake	100,470	.....
Deer lake	.....	75,000
Dorine lake-Dee lake	.....	10,000
Echo creek	132,968	.....
Echo lake	.....	2,000
Island lake	.....	84,500
Kelowna rearing ponds, Kelowna Rod and Gun Club	150,000	185,760
Lost lake-Deer lake	.....	2,500
Rod lake-Crooked lake	.....	3,500
Round lake	.....	1,000
Wilma lake-Dee lake	.....	2,500
	443,438	477,320
Total distribution	920,758	

CULTUS LAKE HATCHERY

—	Coho Salmon Fry	Cutthroat Trout Advanced Fry	Kamloops Trout Fry	Sockeye Salmon Fry	Steelhead Salmon	
					Eyed eggs	Fingerlings No. 1
Stanley Park hatchery	.....	.....	.....	.....	25,000	.....
Echo lake	.....	.....	20,000	.....	.....	.....
Elbo lake	.....	.....	5,000	.....	.....	.....
Marshall creek-Sumas river	.....	18,443	.....	.....	.....	.....
McConnel creek-Stave lake	.....	.....	24,460	.....	.....	.....
Sweltzer creek	393,600	.....	.....	42,435	.....	103,052
Wolf lake	.....	.....	20,000	.....	.....	.....
	393,600	18,443	69,460	42,435	25,000	103,052

Total distribution 651,990

KENNEDY LAKE HATCHERY

—	Sockeye Salmon		
	Eyed eggs	Advanced fry	Fingerlings No. 1
Kennedy lake—			
Clayoquot Arm—			
Elbow lake	44,730	.....	.....
Elbow bay-Deer bay	.....	250,000	.....
Fir creek-Silent bay	.....	200,000	.....
Irvin creek	89,465	.....	.....
Irvin creek-Rocky bay	.....	150,000	.....
Log bay-Silent bay	.....	.....	189,571
Log bay-Yew creek	.....	.....	124,480
Martin creek-Peter creek	.....	200,000	.....
Narrows vicinity	.....	200,000	.....
Pond beach	.....	150,000	468,312
Pond creek	.....	.....	75,000
Rocky bay-Cosy bay	.....	243,360	.....
Silent bay-Narrows	.....	463,565	.....
Silent bay vicinity	.....	194,600	.....
Alberni bay	.....	200,000	.....
Charlie creek-Swan bay	.....	200,000	.....
Charlie creek-Ucluelet bay	.....	443,470	.....
Draw creek	350,385	.....	.....
Grant creek and north	.....	200,000	.....
Grant creek and south	.....	.....	243,245
Halfway point-High point	.....	250,000	220,000
Narrows-Halfway point	.....	220,000	.....
Sand river vicinity	.....	.....	146,650
Shallow bay-Norger bay	.....	243,275	.....
Snag bay	.....	243,255	250,000
Trail beach-Snag bay	.....	.....	175,000
Ucluelet bay	.....	450,000	250,000
Kennedy river	.....	.....	71,854
Olsen slough	.....	.....	194,557
Sutton's slough	.....	200,000	.....
Swan bay	.....	250,000	.....
Muriel lake—			
David creek	969,145	.....	.....
	1,453,725	4,951,525	2,408,669

Total distribution 8,813,919

LLOYD'S CREEK SUB-HATCHERY

—	Kamloops Trout	
	Eyed eggs	Fry
Hope district—		
Coquihalla river	35,000	.....
Crown lake	20,000	.....
Kelly lake	30,000	.....
Pavilion lake	50,000	.....
Scham or Haig lake	5,000	.....
Silver lake	25,000	.....
Kamloops district—		
Pool, Indian Reserve at Kamloops	.....	1,640
Andy lake	.....	5,000
Beaver lake, near Black pool	15,000	.....
Beaver lake, near Devick's	.....	2,000
Bell lake	.....	5,000
Black Pines lake	.....	2,000
Bridge lake	.....	5,000
Brigade or Philip's lake, Kamloops, (Alex. Philip, Esq.)	.....	1,000
Devick lake	.....	3,000
Fish lake	.....	250,000
King lake	.....	5,000
Knouff lake	.....	150,000
Latremouille lake, near Mt. Olie	20,000	.....
McConnell lake	.....	5,000
Paul lake	.....	200,000
Peterhope lake	.....	10,095
Pillar lake	.....	20,000
Pinantan lake	.....	150,000
Red lake	.....	20,000
Rhoda lake	.....	5,000
Silent lake	.....	5,000
Link lake, near Ocean Falls	100,000	.....
Prudhomme lake, near Prince Rupert	100,000	.....
Prince George district—		
Cluculz lake	30,000	.....
Kathlyn lake	50,000	.....
Lascelle lake	10,000	.....
Moose lake	20,000	.....
Ness lake	10,000	.....
Small lake	10,000	.....
Yellowhead lake	20,000	.....
Qualicum ponds (Provincial)	194,000	.....
Revelstoke Rod and Gun Club, Biological Station, Taft, B.C.	120,000	.....
Shuswap district—		
Johnstor's pool, near Eagle bay, (A. T. Johnston, Esq.)	.....	1,000
Bear creek-Adams river	80,000	.....
Canoe creek-Shuswap lake	50,000	.....
Gardners lake, Salmon Arm (Gardners lake Fishing Club)	.....	2,000
Granite creek-Shuswap lake	50,000	.....
Loon lake	.....	5,000
McGuire lake	.....	2,000
Palmer creek-Salmon river	50,000	.....
Reneickers creek-Shuswap lake	50,000	.....
Salmon river	35,000	.....
Scotch creek-Shuswap lake	95,000	.....
Shuswap lake	.....	10,000
White lake	.....	25,000
Wright lake	.....	8,000
Vancouver district—		
Cannall lake	30,000	.....
Hayward lake	15,000	.....
Powell lake	150,000	.....
The Highlands	1,000	.....
Vancouver island—		
Cameron lake	70,000	.....
Lower Campbell lake	50,000	.....
Cowichan lake	60,000	.....
Great Central lake	90,000	.....
Shawnigan lake	50,000	.....
Sproat lake	81,000	.....
Veitch creek retaining ponds (Provincial)	58,000	.....
	1,929,000	897,735

Total distribution..... 2,826,735

MURTLE LAKE CAMP

	Kamloops trout eyed eggs
Blue river, above falls	25,721
Lake Eleanor	18,099
	43,820
Total distribution	43,820

NELSON HATCHERY

	Kamloops Trout		Kennerly's Salmon		Speckled Trout	
	Eyed eggs	Fry	Eyed eggs	Fry	Eyed eggs	Fry
Creston district—						
Corn creek					30,000	
Meadow creek-Goat river					30,000	
Grand Forks district—						
Christina lake	40,000					
Sander creek			150,000			
Smelter lake		35,000				
Greenwood district—						
Collier lake	15,000					
Conkle lake	25,000					
Jewel lake		20,000				
Kettle river	30,000					
State creek lake		5,000				
Wildgress or Loon lake		10,000				
West Kootenay—						
Arkansaw lake		12,000				
Arrow lake, lower (at Syringa)		30,000				
Arrow lake, lower (at Edgewood)	35,000					
Arrow lake, upper	40,000					
Barratt lake	10,000					
Bayonne lake	10,000					
Bear lake	13,000					
Beatrice lake	20,000					
Beaver creek						20,000
Big Sheep creek						30,000
Bonanza creek-Slocan lake			75,000			
Boundary lake						20,000
Box lake		15,000				
Cahill lake	35,000					
Crawford bay		12,000				
Crawford bay retaining pond (Capt. Hincks)		1,000				
Erie lake						20,000
Fletcher lake	15,000					
Hidden creek	20,000					
Inonoaklin river						30,000
Kaslo creek, south fork						20,000
Kemball lake	10,803					
Kokanee creek			150,000	235,000		
Kootenay lake, west arm		80,000				
Kootenay river		45,000				
Little Slocan lakes						24,876
Loon lake						20,000
Porto Rico lake	15,000					
Redfish creek				100,000		
Salmon river	25,000					
Sitkum creek				105,000		
Six Mile creek				121,501		
Six Mile lake		25,000				
Slocan lake		50,000				
Slocan pool		35,000				
Slocan river	20,000	13,749				
Summit lake		20,000				
Whatshan lakes	30,000					
Wilson lake	32,500					
New Westminster district—						
Jones lake, near Hope			50,000			
	441,303	408,749	425,000	561,501	60,000	184,876

Total distribution **2,081,429**

PEMBERTON HATCHERY

—	Kamloops Trout		Sockeye Salmon
	Eyed eggs	Fry	Fry
Alta lake	.....	67,170	.....
Birkenhead river	.....	.....	23,493,960
Evans lake	7,500	.....	.....
Forbes creek-Lac La Hache	30,000	.....	.....
Gates river	50,000	50,000	.....
Gates lake	25,000	25,000	.....
Horse lake-Quesnel district	15,000	.....	.....
McLeese lake-Quesnel district	30,000	.....	.....
Millburn lake-Quesnel district	40,000	.....	.....
Nita lake-Cheakamus river	.....	5,000	.....
	197,500	147,170	23,493,960

Total distribution 23,838,630

PENASK LAKE SUB-HATCHERY

—	Kamloops Trout	
	Eyed eggs	Fry
Cranbrook hatchery	350,000	.....
Hatheume lake	.....	40,000
Mildred lake	10,000	.....
Minnie lake	15,000	10,000
Mystery lake	.....	5,000
Pothole lake	5,000	.....
Penask lake	.....	514,758
Mud lake	.....	20,000
Stanley Park hatchery	250,000	.....
	630,000	589,758

Total distribution 1,219,758

PITT LAKE HATCHERY

	Sockeye salmon fry
Four Mile creek-Pitt river	2,879,380
Total distribution	2,879,380

QUALICUM BEACH PONDS (PROVINCIAL)

—	Brown Trout		Kamloops Trout Fingerlings	
	Fingerlings No. 5	Yearlings	No. 4	No. 5
Biological Research	102	100	25	25
Little Qualicum river	.....	45,793	.....	.....
Little creek	.....	1,000	.....	.....
Whiskey creek	.....	2,000	.....	.....
Quamichan lake	.....	.....	.....	2,970
	102	48,893	25	2,995

Total distribution 52,015

RIVERS INLET HATCHERY

—	Sockeye Salmon	
	Eyed eggs	Fry
Owikeno lake—		
Asklum river	.....	980,895
Dallick river	.....	1,338,537
Genesi creek	5,588,782	.....
Indian river	.....	784,707
Markwell river	.....	915,502
Quap creek	.....	3,562,474
Shumahault river	1,870,748	654,500
Shumahault bay	.....	1,569,432
Wauquash river	.....	653,900
	7,459,530	10,459,947
Total distribution		17,919,477

SMITHS FALLS SUB-HATCHERY

—	Cutthroat Trout Fingerlings No. 5	Steelhead Salmon		
		Fingerlings		Yearlings
		No. 1	No. 5	
Sumas river	12,281	.....	.....	.....
Sweltzer creek	.....	232,580	35,107	23,042
Vedder river	52,000	.....	.....	.....
	64,281	232,580	35,107	23,042
Total distribution				355,010

SUMMERLAND SUB-HATCHERY

—	Kamloops trout eyed eggs	Kamloops trout fry
Okanagan district—		
Bomfield pond (Mr. Bomfield, Penticton)	.....	4,000
Brent lake	.....	4,000
Coldstream creek-Long lake	80,000	.....
Deep creek	130,000	40,000
Dog (Shaha) lake	35,000	.....
Gilles lake-Dog (Shaha) lake	.....	6,000
Glen lake	.....	10,000
Hidden lake	.....	5,000
Okanagan lake	.....	176,023
Osoyoos lake	40,000	.....
Oyama lake	20,000	.....
Penticton pond (Penticton Rod and Gun Club)	.....	16,000
Silver lake	.....	5,000
Shingle creek	100,000	.....
Snow lake	10,000	.....
Trepannier river	.....	60,000
Vasseaux lake	20,000	.....
Vernon ponds (Vernon Fish and Game Association)	.....	50,000
Woods lake	.....	20,000
Shuswap district—		
Echo lake	.....	10,000
Mabel lake	120,000	.....
Sugar lake	60,000	.....
Similkameen river—		
Blue lake	.....	5,000
Burgesson lake	.....	10,000
Clearwater lake	10,000	.....
Davis lake	.....	15,000
McKenzie lake	.....	10,000
Missezula lake	60,000	.....
Murphy lake	.....	4,000
Otter lake	40,000	.....
Osprey lake	.....	10,000
Princeton rearing ponds, (Princeton Rod and Gun Club)	.....	100,000
Taylor lake	.....	5,000
	725,000	565,023
Total distribution		1,290,023