Summary of Reported Atlantic Salmon (*Salmo salar*) Catches and Sightings in British Columbia and Adjacent Waters in 1997

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SUMMARY OF REPORTED ATLANTIC SALMON (*Salmo salar*) CATCHES AND SIGHTINGS IN BRITISH COLUMBIA AND ADJACENT WATERS IN 1997

by

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ABSTRACT

Thomson, A. J. and J. R. Candy. 1998. Summary of reported Atlantic salmon (*Salmo salar*) catches and sightings in British Columbia and adjacent waters in 1997. Can. Manuscr. Rep. Fish. Aquat. Sci. 2467: 39 p.

A program to monitor the abundance and distribution of Atlantic salmon (*Salmo salar*) in British Columbia was conducted jointly by the Fisheries and Oceans Canada (D.F.O.) and the British Columbia Ministry of Agriculture, Fisheries and Food in 1997, with the co-operation of the British Columbia Ministry of Environment, Lands and Parks. The study consisted of contacting individuals and agencies involved with salmonid fisheries, research and enhancement as well as all commercial fish buyers, advising them to return or report all Atlantic salmon to D.F.O.. Catches of Atlantic salmon in the Fisheries and Oceans Canada sales slip database were reviewed. 2655 Atlantic salmon were either returned or reported to D.F.O. from marine fisheries. One hundred and fifty-five Atlantic salmon were reported sighted or captured in freshwater. Two-hundred twenty-seven fish were returned to the Pacific Biological Station for analysis and species verification. 79 Atlantic salmon were reported caught in Alaskan commercial fisheries in 1997 and 2172 were reported caught in Washington State.

RÉSUMÉ

Thomson, A. J. and J. R. Candy. 1998. Summary of reported Atlantic salmon (*Salmo salar*) catches and sightings in British Columbia and adjacent waters in 1997. Can. Manuscr. Rep. Fish. Aquat. Sci. 2467: 39 p.

Un programme de surveillance de l'abondance et de la distribution du saumon atlantique (*Salmo salar*) en Colombie-Britannique a été mis en oeuvre en 1997 conjointement par Pęches et Océans Canada (MPO) et le ministčre de l'Agriculture, des Pęches et de l'Alimentation de la Colombie-Britannique, avec la collaboration du ministčre de l'Environnement, des Terres et des Parcs de cette męme province. Pour réaliser cette étude, on a contacté les intervenants - personnes et organismes - des secteurs des pęches et de la mise en valeur des salmonidés et de la recherche sur ces poissons, de męme que les acheteurs commerciaux de poisson, en leur demandant de faire parvenir au MPO tous les saumons atlantiques capturés ou de signaler tout saumon atlantique au MPO. On a examiné les prises de saumon atlantique figurant dans la base de données sur les ventes de Pęches et Océans Canada. On a acheminé ou signalé au MPO 2 655 saumons atlantiques provenant des pęches maritimes. Par ailleurs, on a signalé au MPO 155 saumons atlantiques qui ont été vus ou capturés en eau douce. On a acheminé 227 poissons ŕ la Station biologique du Pacifique, où ils ont été analysés et où l'on en a vérifié l'identification. Les pęcheurs commerciaux de l'Alaska ont signalé dans leurs prises 79 saumons atlantiques en 1997, et on a signalé 2 172 captures dans l'État de Washington.

INTRODUCTION

In 1991, a joint federal / provincial program was initiated by the British Columbia Ministry of Agriculture, Fisheries and Food (MAFF) and Fisheries and Oceans Canada (F.O.C.) to monitor the presence of Atlantic salmon (*Salmo salar*) in British Columbia (B.C.) coastal streams. Since 1991, the Atlantic Salmon Watch program has been expanded and now monitors commercial and sport catches and observations of Atlantic salmon throughout British Columbia, Alaska and Washington with the co-operation of the B.C Ministry of Environment, Lands and Parks (MELP), the Alaska Department of Fish and Game and the Washington Department of Fish and Wildlife. (Thomson and McKinnell, 1993, 1994, 1995, 1996, 1997). In 1998 some departments and personnel from the B.C. MELP and the B.C. MAFF were merged into a new B.C. Ministry of Fisheries (MFISH). The program relies on fishers, fish processors, government field staff and hatchery workers to report Atlantic salmon.

The monitoring program's main objectives are: increasing the general awareness of the presence of Atlantic salmon in B.C. waters, expanding the reporting of Atlantic salmon, maintaining a database of the number of Atlantic salmon reported and/or observed in B.C., obtaining biological information from returned Atlantic salmon and preparing annual reports of catches or sightings of Atlantic salmon.

METHODS

The program consisted of four main efforts: 1) contacting a large number of individuals working in fisheries related activities to alert them to the monitoring program, 2) collecting and analyzing as many of the captured Atlantic salmon as possible, 3) retrieving catch data from several sources to provide information about the number of Atlantic salmon observed in B.C. in 1997, and 4) maintaining a public access information line for the reporting of Atlantic salmon.

Fisheries and Oceans Canada field offices, hatcheries, and Public Involvement Program Hatcheries, Ministry of Environment, Lands and Parks coastal offices, commercial salmon processors, small craft harbours and Washington Department of Fish and Wildlife hatcheries were contacted in previous years. They were alerted to the presence of Atlantic salmon and provided with a full colour poster to assist in identifying Atlantic salmon and advertise the 1-800 toll free reporting line.

Since 1995 Fisheries and Oceans Canada has conducted regular swim surveys to assess Chinook salmon populations in the streams of the west coast of Vancouver Island. Included in their mandate is to record and report Atlantic salmon. In 1997, 75 different river streams or portions thereof were surveyed, covering a total of 160km. In addition the B.C. Ministry of Environment, Lands and Parks (M.E.L.P.) conducted surveys of 34 rivers on Vancouver Island and the islands of the Broughton Archipelago for adult and juvenile Atlantic salmon.

Atlantic salmon sent to the Pacific Biological Station (PBS) were examined to verify species and origin. Sex, fork length, body weight, gonad weight, stomach contents, and a

Fat content of each fish was assessed visually on a qualitative scale from 0 to 4. Zero indicated a dressed or greatly decomposed fish where no fat could be found, 1 indicated trace amounts of fat present, 2 indicated larger amounts of fat on major organs, 3 indicated extensive fat throughout the pyloric caeca, and 4 indicated organs completely encased in fat.

Atlantic salmon catch statistics data for B.C. were obtained from Fisheries and Oceans Canada sales slip database, westcoast troll test fishery and the sports creel survey data. Catch data for Washington State were obtained from the Washington State Department of Fisheries. Alaskan catch data is supplied by the Alaskan Department of Fish and Game.

RESULTS AND DISCUSSION

ESCAPES OF ATLANTIC SALMON

Salmon farmers are required to report escapes of Atlantic salmon to Fisheries and Oceans Canada. From 1991 to 1996, 154,981 Atlantic salmon escaped from B.C. marine aquaculture facilities in 25 reported incidents. In 1997, 7472 Atlantic salmon were reported escaped in British Columbia in three incidents at marine net-pen sites, all situated on the north-east coast of Vancouver Island. The actual number of fish that escape is unknown. Escapes of fish from farm sites may go unnoticed or unreported by the farm management.

On July 19, 1997, 369,661 Atlantic salmon escaped from a farm site located in Rich Passage, Washington. The escape was the result of an unsuccessful attempt to avoid a plankton bloom by moving the farm. The fish were comprised of five size classes ranging from 0.1kg to 6.6kg.

In addition to these marine escapes, 10,464 fry were accidentally spilled on Jan 28, 1997 during transfer into lake net-pens in Lois Lake.

MARINE RECOVERIES AND SIGHTINGS

Within B.C. waters, Atlantic salmon were reported from as far north as Area 1, and as far south as Area 20 (Figures 1 and 2). The number of documented recoveries of Atlantic salmon caught in marine fisheries in 1997 was 2655. This total was obtained by summing the reported catches of Atlantic salmon in the F.O.C. sales slip database, the F.O.C. creel survey database, F.O.C. catch estimates for areas 11, 12 and 13 and those received by the Atlantic Salmon Watch program (A.S.W.P.). The true number of Atlantic salmon caught exceeds this by some unknown factor. The 1997 catch was the largest reported since 1993, when 4,543 Atlantic salmon were captured (Thomson and McKinnell, 1994).

Fisheries and Oceans Canada sales slip database for commercial fishing vessels lists 618 Atlantic salmon sold. Anecdotal information indicates that the Atlantic salmon catches reported in the D.F.O. sales slip database underestimate the true catch.

In Washington State the commercial catch of Atlantic salmon is monitored through the buyer reporting program administered by the Washington State Department of Fisheries. In 1997, the combined recorded catch of Atlantic salmon in Washington State commercial, tribal, and test fisheries was 2172 fish (Figure 3). This is by far the highest recorded catch, more than doubling any previous year. The larger than normal catch was likely due to the previously mentioned large escape. The majority of the catch occurred in lower Puget Sound with 46 fish reported from north of Puget Sound.

The Alaska Department of Fish and Game records the catches of Atlantic salmon in Alaskan waters through a mark recovery program. In 1997, 79 fish were reported. The majority of which were captured in the commercial net fisheries of south-east Alaska. One catch of note occurred on Sept 11, 1997 in the Bering Sea, south of the Pribilof Islands. An immature male Atlantic salmon was caught in a bottom trawl survey conducted by the U.S. National Marine Fisheries Service (Brodeur and Busby, 1998). There are no Atlantic salmon aquaculture facilities in Alaska.

FRESHWATER RECOVERIES AND SIGHTINGS

In 1997, 155 Atlantic salmon were reported caught or sighted in freshwater through the A.S.W.P. (Figure 5). This total exceeds the total of all previous years with the exception on 1996. Swim surveys provided the majority of the data, and probable recounts of the same fish are not included in this total. Therefore the total should be considered a minimum estimate of the actual number of Atlantic salmon in the rivers and streams of B.C.. Observations and estimates of abundance of Atlantic salmon in freshwater are only recorded when reported by trained snorkel survey personnel. All freshwater catch reports are recorded.

DFO swim surveys counted 95 Atlantic salmon in 13 stream or river systems, of which a minimum of 60 were not replicated counts of the same fish. The greatest number of Atlantic salmon counted in one river on one day was 25 in the Zeballos River on Aug 12, 1997. They accounted for 2.5% of all salmonids counted in the river that day. The M.E.L.P. conducted swim surveys in search of Atlantic salmon and observed a total of 27 Atlantic salmon (John Volpe pers. com.). Their observations were included in the A.S.W.P. data.

One juvenile Atlantic salmon was captured at the downstream smolt trap of a counting fence on Carnation Creek operated by the BC Ministry of Forests. The fish was examined and compared to samples obtained from a nearby aquaculture facility. Scale analysis indicated that the individual was an escapee from a farm site and not feral. Another juvenile Atlantic salmon was captured by MELP personnel in Pye Creek. Pye Creek is downstream of a commercial Atlantic salmon hatchery and it is assumed that the fish was an escapee from that facility.

Twenty-one juvenile Atlantic salmon were captured from Georgie Lake through the use of gillnets, floating net-traps and a downstream trap at the fence on the outlet of the lake. In addition, three Atlantic salmon parr were electro-fished from the Lake of the Mountains Cr., which feeds Georgie Lake. Georgie Lake is the site of a commercial Atlantic salmon lake-pen rearing facility.

In Washington State, upstream counting fences operated by the Washington Department of Fish and Wildlife counted a total of 53 fish in 7 rivers (Figure 7).

BIOLOGICAL SAMPLING

Marine Recoveries from B.C.

One hundred and thirty-four marine recoveries of Atlantic salmon from B.C. fisheries were returned to the Pacific Biological Station for biological sampling (Figure 8). The results of the biological sampling of these Atlantic salmon are summarized in Figures 9 and 10. The detailed data are reported in Table 1. Fork lengths ranged from 470mm to 795mm with a mean of 646.3mm. Round body weights ranged from 1.418kg to 6.016kg with a mean of 3.343kg.

Murza and Khristoforov (Murza and Khristoforov, 1991) developed a scale of maturity for Atlantic salmon based on weights and external appearance of gonads. Stages I - III are maturing fish, stage IV is a fully mature fish, and stages V and VI are post reproductive stages. Of 64 males measured the median gonad weight was 5.2 grams. Twenty males were at stage III or higher maturity level. The median gonad weight for 67 females was 10.8 grams, 37 at maturity level of III(late) or greater (Figure 11).

The median fat content for the B.C. Marine caught fish was 3 (n=126), whereas the median fat content for the Alaskan caught fish was 2 (n=73). A study of B.C. farm-fish at time of harvest confirmed that fat level 4 is the normal level for Atlantic salmon while in net-pens.

Of 133 fish analyzed for stomach contents, 2 fish had herring or other fish remains in their stomachs, and 3 contained commercial fish food pellets. The remaining 128 fish had no identifiable food matter in their stomachs.

Freshwater Recoveries from B.C.

Nineteen adult Atlantic salmon from streams or rivers were returned to the Pacific Biological Station for analysis (Figure 12 and 13). The results of the biological sampling of these fish are presented in Table 2. None of the 19 that were analysed at P.B.S. contained prey items in their stomachs.

Twenty-four Atlantic salmon captured from Georgie Lake in 1997 were sampled. The fork lengths ranged from 58mm to 207mmwith a mean of 145.1mm. Body weights ranged from

1.9g to 92.3g with a mean of 38.5g. Stomach content analysis revealed that of the twenty-four fish, 22 contained some type of prey item, either insect larvae or invertebrates. (Thomson 1997).

Marine Recoveries from Alaska

Seventy-three Atlantic salmon were caught in Alaska and shipped to P.B.S. for analysis. Fork lengths of the Alaskan recoveries ranged from 352 to 820 mm with a mean of 584.3 mm. Round body weights ranged from 0.48 to 6.54 kg with a mean of 2.47 kg. Of 28 males recovered from marine landings the median gonad weight was 1.9 grams, none were classed as Stage III or higher in maturity. Thirty-five females were caught with a median gonad wt of 5.5 g in Alaska. seven were classed as Stage III(late) or higher in maturity (Figure 9). Of 73 fish stomachs examined, 7 contained herring, sandlance, other fish remains, 2 contained zooplankton, and the remaining 64 were empty. The results of the biological sampling of these fish are summarized in Table 3.

Freshwater Recoveries from Washington

Twenty Atlantic salmon were sampled by the Diagnostic Laboratory of the Washington Department of Fish and Wildlife. Seven exhibited external characteristics of sexual maturation, all twenty were found to have empty stomachs (D. Seiler, pers. com.).

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Table 1. Biological data of the sampled B.C. marine caught Atlantic salmon.

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Fat Content
97001	female	755	5.372	Round	203.9	E	1
97002	male	689	3.386	Round	2	E	3
97003	male	581	2.199	Round	2.8	E	3
97004	female	557	1.949	Round	6.3	E	3
97005	female	591	2.061	Round	5	E	2
97006	female	706	4.578	Round	24	E	4
97007	male	572	2.499	Round	10.7	E	3
97008	male	591	2.402	Round	3.1	E	3
97009	male	595	2.133	Round	2	E	2
97010	female	654	3.288	Round	10.8	E	4
97011	female	574	3.31	Round	5.8	E	3
97012	male	660	3.167	Round	4	E	3
97013	male	579	1.937	Round	2.1	E	3
97014	female	570	2.161	Round	7	E	3
97015	male	648	1.729	Round	1	E	2
97016	male	514	1.827	Round	0.8	E	3
97017	female	557	2.26	Round	5.3	E	3
97018	male	598	2.352	Round	2	E	2
97019	male	508	1.883	Round	17.8	E	3
97020	male	605	3.101	Round	17.2	E	4
97021	male	472	1.757	Round	6.3	E	3
97022	male	741	5.91	Round	144	E	3
97096	female	704	5.099	Dressed	47	E	4
97097	female	655	3.546	Dressed	10.4	E	0
97098	N/A	657	2.708	Dressed		N/A	2
97099	male	652	3.281	Round	214.9	E	0
97100	female	632	2.788	Dressed	7.7	E	2
97101	female	588	2.428	Dressed	264.6	E	2
97102	female	625	3.535	Dressed	458.6	E	3
97103	female	715	4.61	Round	9.8	E	0
97104	male	668	3.123	Dressed		E	0
97105	male	677	2.538	Dressed		E	3
97106	female	656	3.682	Round	152.9	E	3
97107	male	645	3.388	Round	9.6	E	3
97108	female	613	2.882	Round	6.4	E	3
97109	female	679	4.309	Round	395.5	E	3
97110	female	609	2.792	Round	280.3		2
97118	male	795	6.016	Round	5.4	E	3
97119	female	710	4.233	Round	12.4	E	3
97120	female	651	3.056	Round	7.7	FR	3
97121	male	697	3.877	Round	9.2	E	4
97122	female	672	3.963	Round	9.9	E	3
97123	male	601	2.279	Round	2.2	E	4
97124	male	746	4.632	Round	5.6	E	3
97125	female	668	3.466	Round	9.1	E	3
97126	female	582	2.677	Round	193.9	E	3
97127	male	740	4.627	Round	178	HERRING & FR	3
97128	male	584	2.534	Round	0.6	FF	2

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Fat Content
97129	male	635	2.861	Round	0.8	E	2
97130	male	609	2.165	Round	1	E	4
97131	female	718	4.483	Round	14.7	E	3
97132	male	795	5.591	Round	5	E	4
97133	male	664	3.728	Round	125.4	E	3
97134	female	706	4.31	Round	15.4	E	3
97135	female	685	4.174	Round	9.6	E	3
97136	female	639	3.07	Round	8	E	3
97137	female	564	1.931	Round	6.6	E	2
97138	female	590	2.505	Round	7.3	E	2
97139	male	693	3.498	Round	2.6	E	2
97140	male	688	4.028	Round	55.2	E	3
97141	male	757	5.489	Round	4.8	E	3
97142	female	602	2.774	Round	233.8	E	3
97143	female	680	3.612	Round	17	E	3
97144	male	545	2.105	Round	0.8	E	2
97145	female	732	4.432	Round	9.9	E	2
97146	female	665	3.246	Round	6.8	FF	2
97147	female	606	2.691	Round	12.2	E	3
97148	female	755	5.708	Round	2.6	E	3
97149	female	620	2.643	Round	5.1	E	3
97150	male	716	3.946	Round	3.1	E	3
97151	male	719	3.012	Round	33.2	E	4
97152	female	601	2.876	Round	7.7	E	2
97153	male	652	3.053	Round	1.5	E	4
97154	male	663	3.574	Round	78.4	E	3
97155	male	661	3.744	Round	3	E	3
97156	male	692	4.201	Round	52.5	E	3
97157	male	660	3.606	Round	2.5	E	3
97158	male	669	3.766	Round	192.7	E	3
97159	male	747	5.532	Round	6.6	E	3
97160	male	732	4.874	Round	5.4	E	3
97161	male	666	2.446	Round	43.2	E	3
97162	male	594	2.74	Round	140.9	E	3
97163	female	565	2.441	Round	253.6	E	3
97164	male	641	3.102	Round	2.7	E	3
97165	female	626	2.698	Round	10.1	E	4
97166	male	596	2.637	Round	18.2	E	3
97167	male	602	2.666	Round	170.2	E	3
97168	female	617	2.803	Round	9	E	2
97169	female	590	2.497	Round	280.7	E	3
97170	male	713	4.498	Round	3.6	E	3
97171	female	642	3.098	Round	6.8	E	3
97172	male	736	4.786	Round	228.5	E	3
97173	female	564	2.201	Round	9.4	E	2
97174	male	667	3.263	Round	109.3	E	4
97175	male	646	3.238	Round	1.3	E	3
97176	female	721	3.878	Round	10.4	E	3
97177	male	682	4.051	Round	208.4	E	3
97178	male	628	3.162	Round	1.7	E	3
97179	male	620	3.201	Round	29.9	E	2

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Fat Content
97180	male	470	1.418	Round	91.4	E	2
97181	female	661	3.545	Round	75.7	E	4
97182	female	694	3.994	Round	8.7	E	3
97183	female	661	3.587	Round	8.5	E	3
97184	female	593	2.469	Round	127.6	E	3
97185	male	652	3.365	Round	3.4	E	3
97186	female	634	2.846	Round	9.1	E	3
97187	female	654	3.478	Round	122	E	3
97188	male	545	2.006	Round	1.9	E	2
97189	male	645	3.085	Round	1.1	FF	4
97190	female	536	2.051	Round	7	E	4
97191	male	662	3.426	Round	3	E	4
97192	female	619	3.076	Round	262.1	E	2
97193	female	775	5.354	Round	16.1	E	3
97194	male	711	3.827	Round	2.3	E	3
97195	male	702	4.283	Round	3.8	E	4
97196	female	631	2.959	Round	310	E	2
97197	female	656	3.927	Round	535.9	E	1
97198	female	645	2.737	Round	5.9	E	2
97199	male	731	4.983	Round	13.7	E	3
97200	female	640	3.379	Round	334.3	E	2
97201	female	668	3.834	Round	302	E	3
97202	female	684	3.837	Round	522.8	E	2
97203	male	695	4.195	Round	153.1	E	4
97204	female	586	2.371	Round	246	E	2
97205	male	662	3.155	Round	155.4	E	2
97206	female	698	4.06	Round	11.3	E	3
97207	female	695	4.596	Round	672.4	E	2
97208	female	644	3.498	Round	506.2	E	2
97209	female	702	4.878	Round	15.9	E	3
97210	male	612	3.125	Round	115.6	E	1
97215	female	515	1.524	Round	2.6	E	3
97216	male	586	2.393	Round	1.5	E	3
97217	female	562	1.985	Round	4.4	E	2
97226	female	665	3.801	Round	10.8	E	3

LEGEND
Stomach Contents
E = Empty
FF = Commercial Fish Food Pellets
FR = Indistinguishable Fish Remains

Table 2. Biological data of the sampled B.C. freshwater caught adult Atlantic salmon.

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Location	Fat Content
97111	female	690	3.8	Round	398.3	MISC	Capilano River	2
97112	female	403	0.873	Round	96.9	E	Kokish River	3
97113	female	631	2.654	Round	9.0	E	Kokish River	3
97114	male	779	4.755	Round	477.8	E	Kokish River	2
97115	female	696	5.247	Round	646.1	E	Quatse River	2
97116	male	704	3.67	Round	2.3	E	Quatse River	4
97211	male	645	2.964	Round	87.7	E	Nahwitti River	1
97212	female	581	2.527	Round	331.7	E	Glen Lyon Creek	1
97213	female	582	2.518	Round	536.8	E	Glen Lyon Creek	1
97214	male	645	2.968	Round	85.7	E	Glen Lyon Creek	1
97218	female	625	2.828	Dressed	220.2	E	Capilano River	3
97219	female	701	5.01	Round	19.3	E	Nanaimo River	3
97220	male	575	1.973	Round	64.2	E	Cluxewe River	2
97221	female	728	4.419	Round	652	E	Quatse River	1
97222	female	642	2.809	Round	11.3	E	Quaal River	2
97223	male	589	2.043	Round	77.9	E	Scott Cove Creek	1
97224	male	641	2.696	Round	82.6	E	Scott Cove Creek	2
97225	male	632	3.702	Dressed	110	E	Scott Cove Creek	2
97227	female	704	3.773	Round	10.5	E	Bella Coola River	2

LEGEND
Stomach Contents
E = Empty
MISC. = Miscellaneous non-prey items

Table 3. Biological data of the sampled Alaskan marine caught Atlantic salmon.

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Fat Content
97023	male	666	3.611	Round	3.2	E	3
97024	male	714	4.445	Round	4.6	E	2
97025	male	665	3.52	Round	1.4	E	3
97026	male	678	4.269	Round	2	E	3
97027	male	352	0.491	Round	1	HERRING	2
97028	female	352	2.413	Round	7.2	E	3
97029	male	580	2.089	Round	1.8	E	2
97030	female	680	3.699	Round	10.4	E	3
97031	male	582	2.336	Round	1.5	E	2
97032	female	627	2.536	Round	4.3	E	3
97033	male	593	1.863	Round	1.5	E	2
97034	male	702	3.906	Round	2.6	E	3
97035	male	628	2.876	Round	2.2	E	3
97036	female	615	2.737	Round	4	E	2
97037	N/A	770	4.213	Dressed		E	0
97038	male	684	3.76	Round	8.5	E	2
97039	female	600	3.662	Round	7	E	3
97040	male	520	1.631	Round	1.2	E	2
97041	female	599	2.16	Round	5.9	E	3
97042	female	542	1.619	Round	3.9	E	2
97043	male	700	4.189	Round	0.8	E	2
97044	male	450	0.887	Round	0.4	E	1
97045	female	450	0.808	Round	1.6	EU & FR	1
97046	female	485	1.013	Round	2	E	2
97047	female	603	2.646	Round	6.2	E	3
97048	female	385	0.586	Round	0.7	E	2
97049	male	820	6.54	Round	16.6	E	3
97050	male	445	0.924	Round	1.5	CRAB LARVAE	1
97051	female	702	4.022	Round	12.8	E	3
97052	male	749	4.981	Round	3.9	E	3
97053	male	444	1.005	Round	0.8	E	2
97054	female	479	1.029	Round		E	2
97055	female	566	2.072	Round	2.6	E	2
97056	male	418	0.742	Round		E	1
97057	male	674	3.646	Round	1.6	E	3
97058	female	675	3.235	Round	9.5	E	3
97059	male	398	0.607	Round		E	2
97060	female	455	0.918	Round	1.4	E	1
97061	female	605	2.398	Round	5.6	E	2
97062	female	568	2.607	Round	4.5	E	4
97063	female	596	2.977	Round	5.5	E	3
97064	male	660	3.025	Round	4.8	E	2
97065	male	650	3.321	Round	2.7	E	3
97066	female	625	2.278	Round	6.1	E	2
97067	female	623	2.798	Round	8.6	E	3
97068	male	680	3.786	Round	5.6	E	3
97069	female	677	3.033	Round	11.8	E	2
97070	female	480	1.098	Round	2.4	E	2

Fish Number	Sex	Fork Length (mm)	Body Weight (kg)	Body State	Gonad Weight (g)	Stomach Contents	Fat Content
97071	female	607	2.558	Round	5	E	3
97072	male	381	0.518	Round		HERRING	2
97073	female	581	2.391	Round	4.5	E	3
97074	N/A		3.625	Round		E	0
97075	female	547	1.803	Round	14.8	HERRING	2
97076	female	399	0.683	Round	1	SANDLANCE	2
97077	male	678	3.68	Round	4.8	E	2
97078	male	453	0.863	Round	0.6	E	1
97079	male	660	2.968	Round	2.7	E	3
97080	male	370	0.483	Round	0.8	HERRING	1
97081	female	530	1.337	Round	3	HERRING	2
97082	female	690	3.517	Round	12.2	E	2
97083	male	609	2.184	Round	1.4	E	2
97084	female	462	0.828	Round	2.1	FR	1
97085	male	746	3.834	Round	4	E	2
97086	N/A	686	3.636	Dressed		E	0
97087	female	675	3.836	Round	8.7	E	3
97088	N/A	644	2.444	Dressed		N/A	0
97089	female	662	3.666	Round	14.5	E	3
97090	female		2.809	Round		N/A	0
97091	female	692	3.881	Round	11.4	E	3
97092	female	472	1.023	Round	4.4	E	2
97093	female	545	1.634	Round	5.5	E	1
97094	female	523	1.409	Round	2.7	E	0
97095	N/A	662	2.606	Dressed		N/A	4

LEGEND
Stomach Contents
E = Empty
MISC. = Miscellaneous non-prey items
FR = Indistinguishable Fish Remains

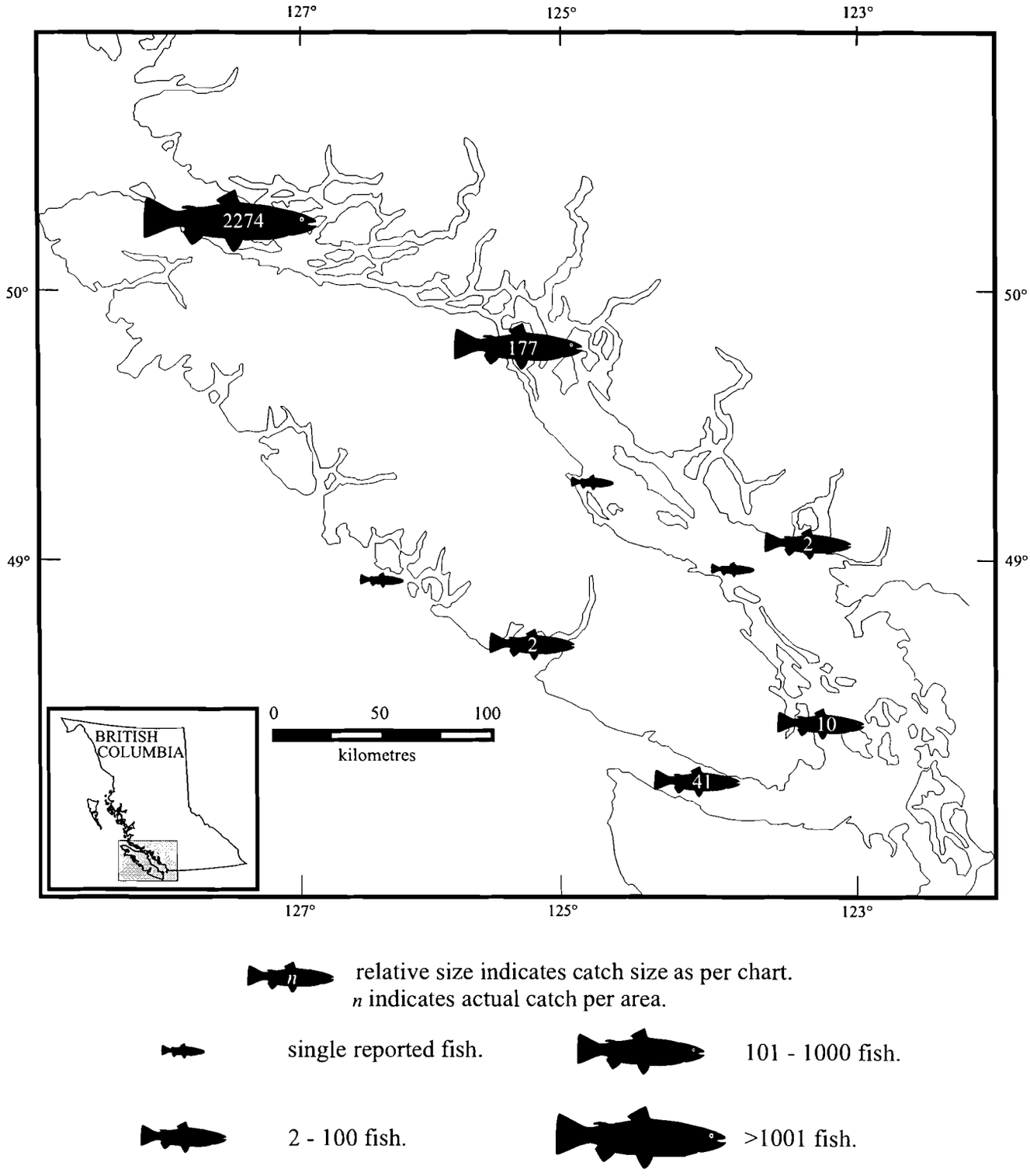


Figure 1. Atlantic salmon reported from marine waters in Southern British Columbia in 1997 by D.F.O. statistical area. Data compiled by the Atlantic Salmon Watch program.

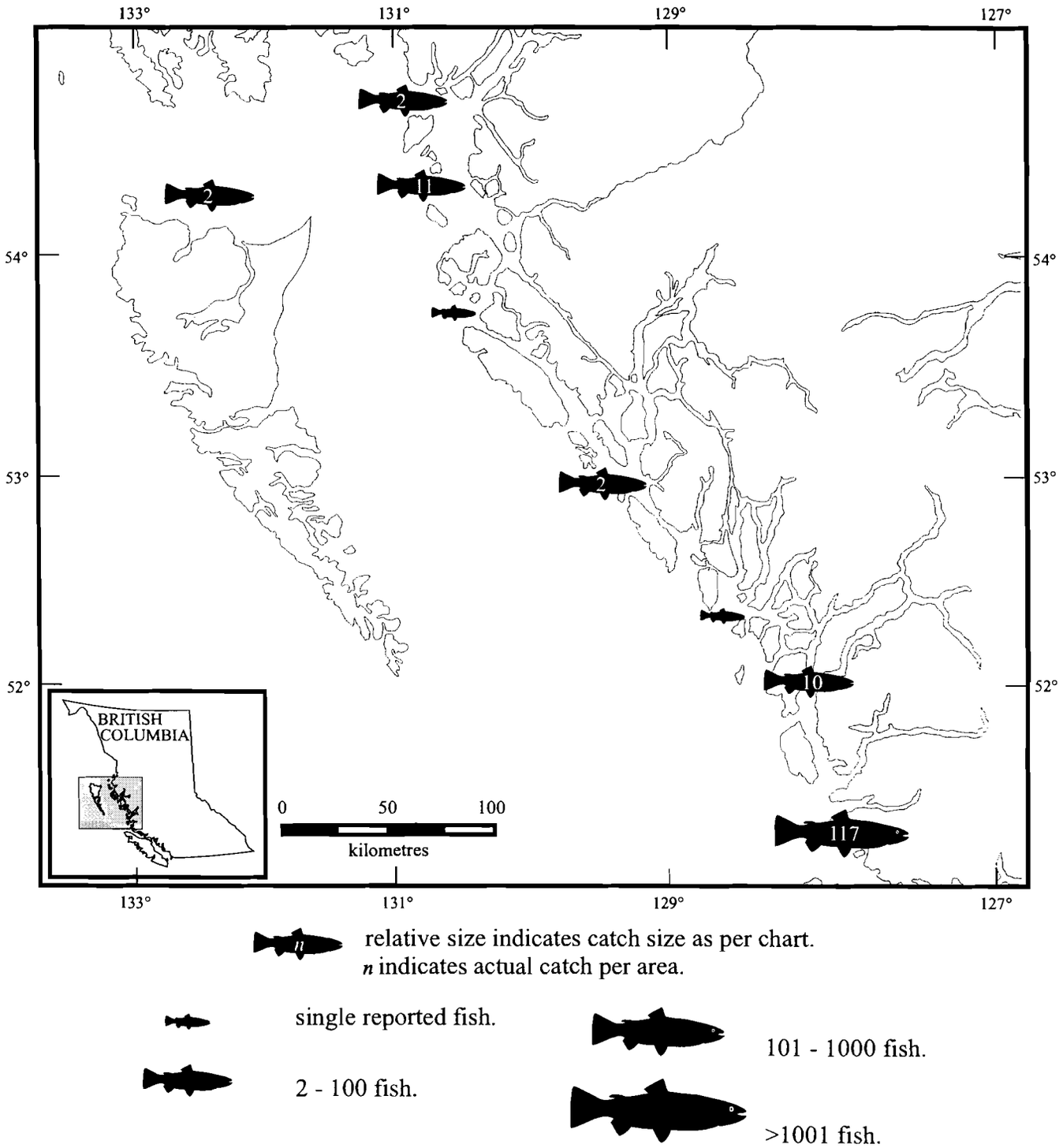


Figure 2. Atlantic salmon reported from marine waters in Northern British Columbia in 1997 by D.F.O. statistical area. Data compiled by the Atlantic Salmon Watch program.

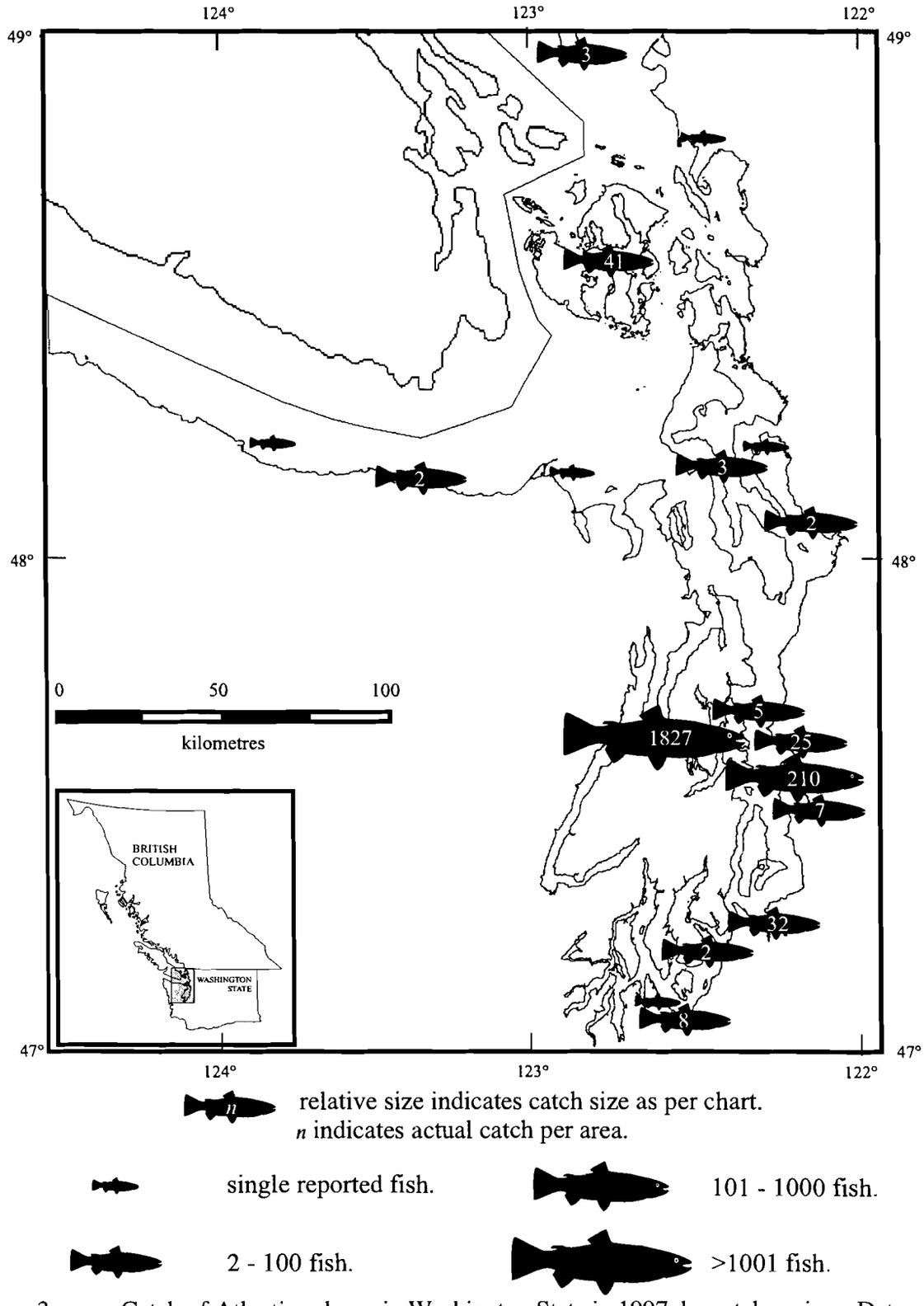


Figure 3: Catch of Atlantic salmon in Washington State in 1997, by catch region. Data supplied by Washington Department of Fish and Wildlife.

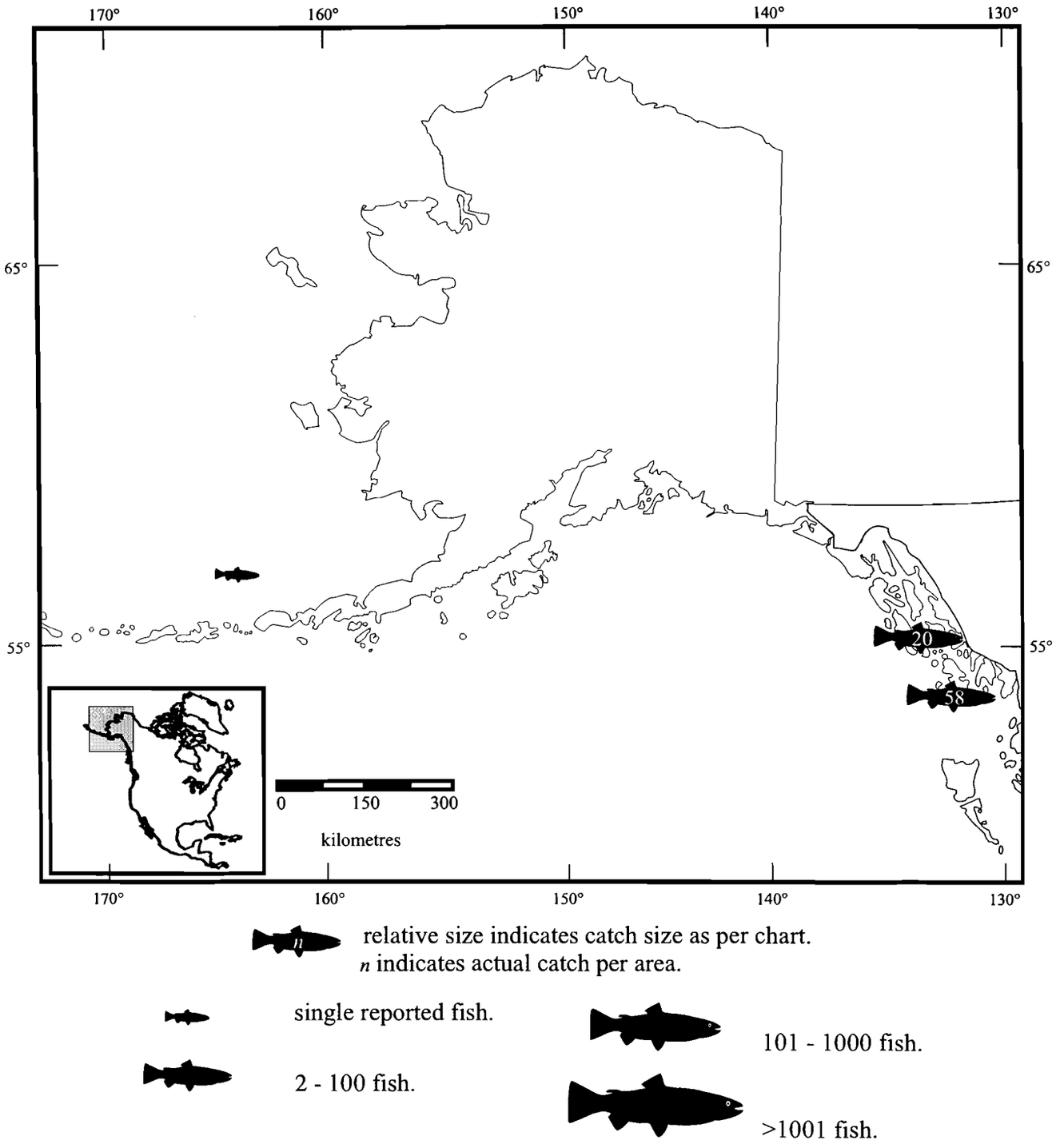
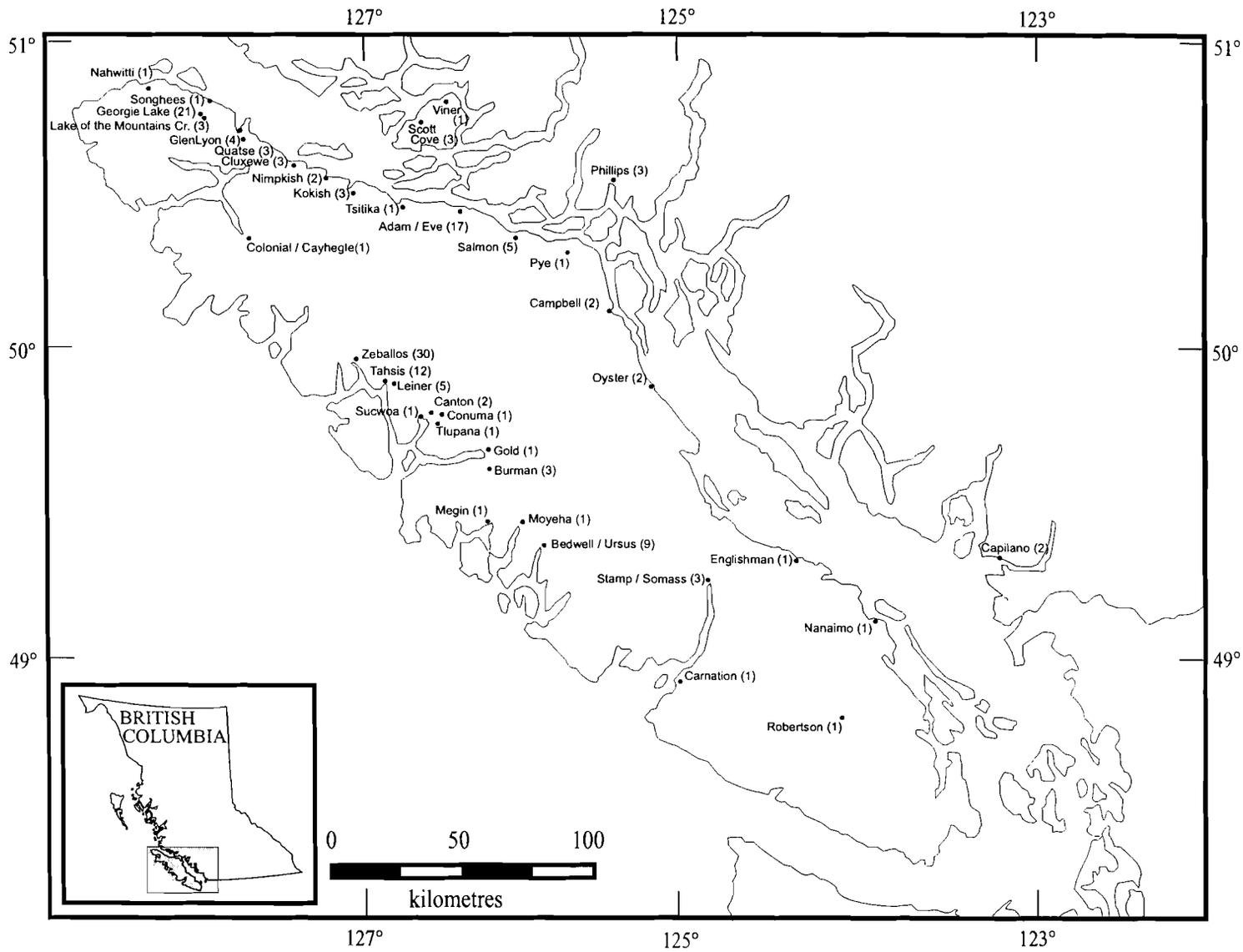


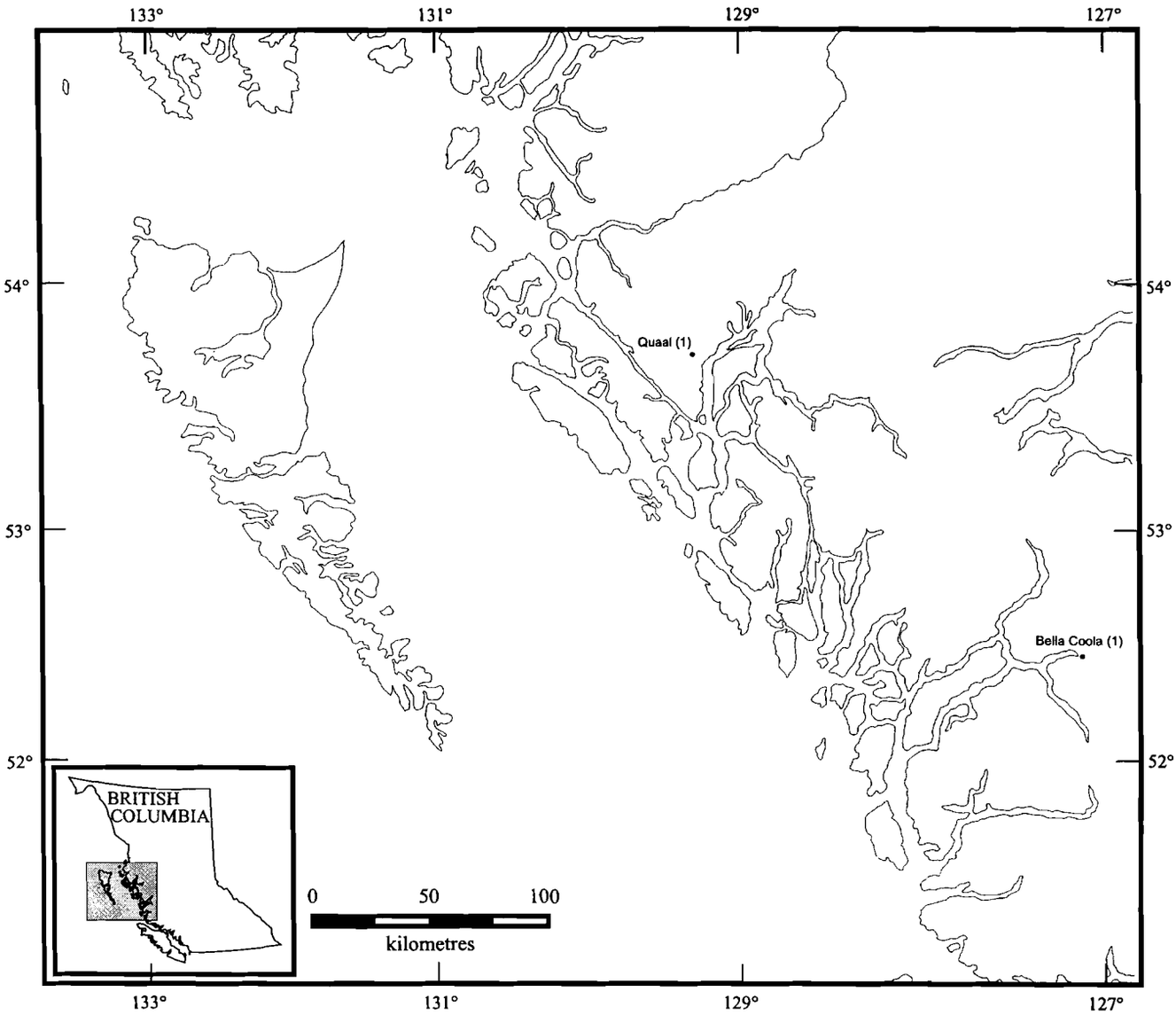
Figure 4. Atlantic salmon catch in Alaskan waters in 1997. Data supplied by Alaska Department of Fish and Game.



System (*n*)

n = estimated total number of fish sited or captured in 1997.

Figure 5. Atlantic salmon reported from Southern freshwater sites in British Columbia in 1997. Includes fish recovered and shown in Figure 12.



River System (*n*)

n = estimated total number of fish sited or captured in 1997.

Figure 6. Atlantic salmon reported from Northern freshwater sites in British Columbia in 1997. Includes fish recovered and shown in Figure 13.

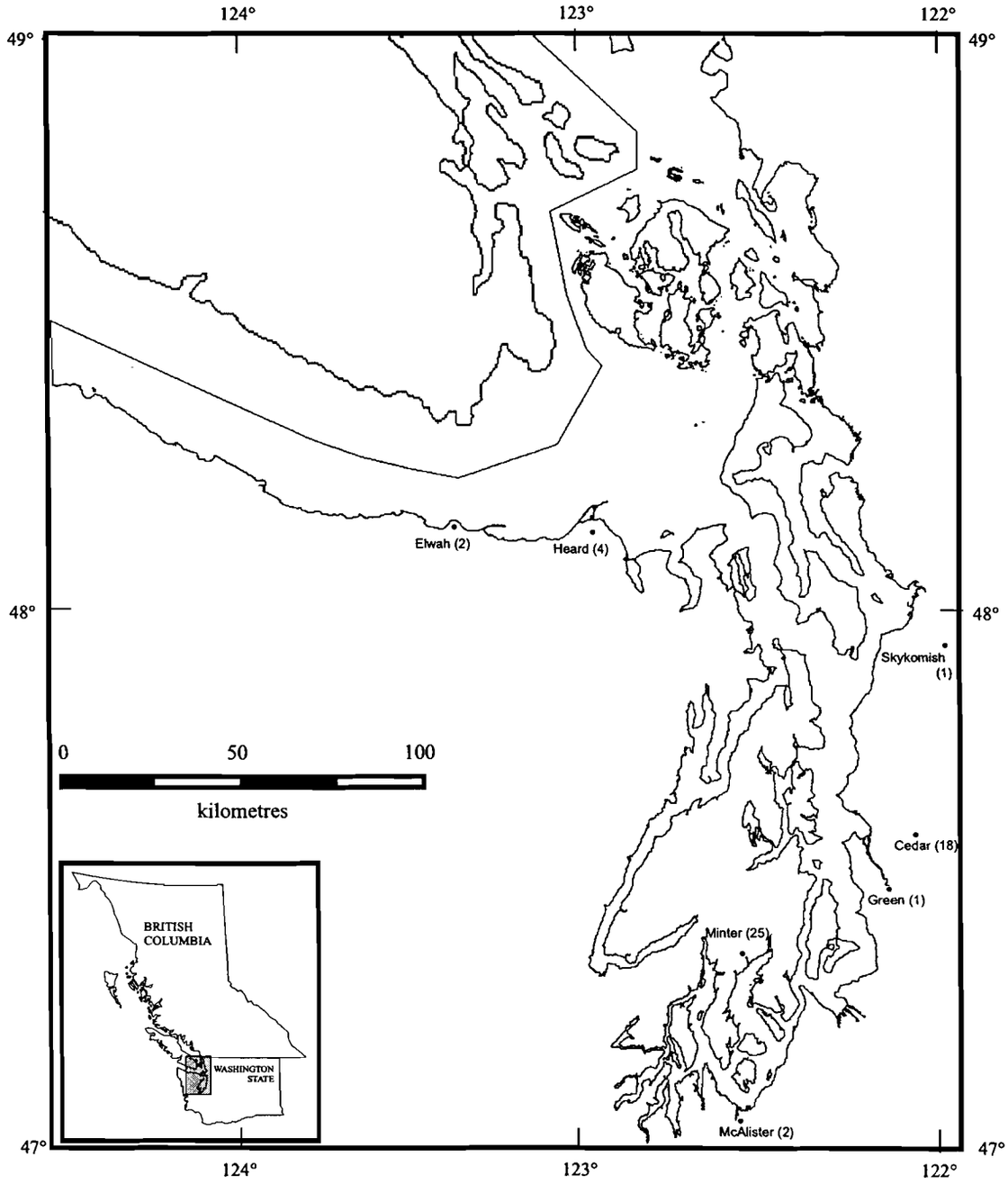


Figure 7. Atlantic salmon recovered from Washington State freshwater locations. Data supplied by Washington Department of Fish and Game

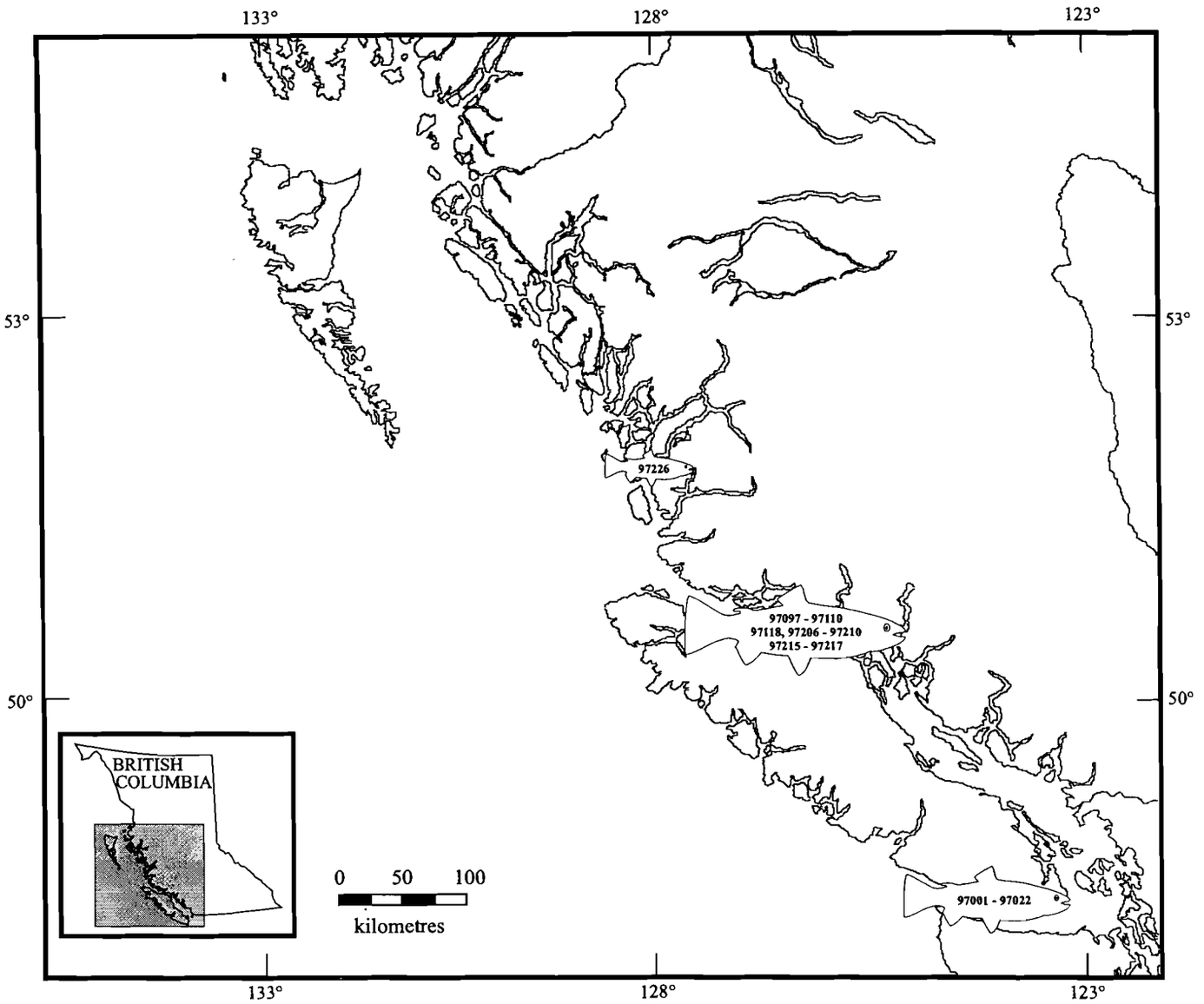


Figure 8. Atlantic salmon recovered from marine sites in British Columbia in 1997. Identified by Fish Number as listed in Table 1. Locations are by statistical area and not meant to be precise catch locations.

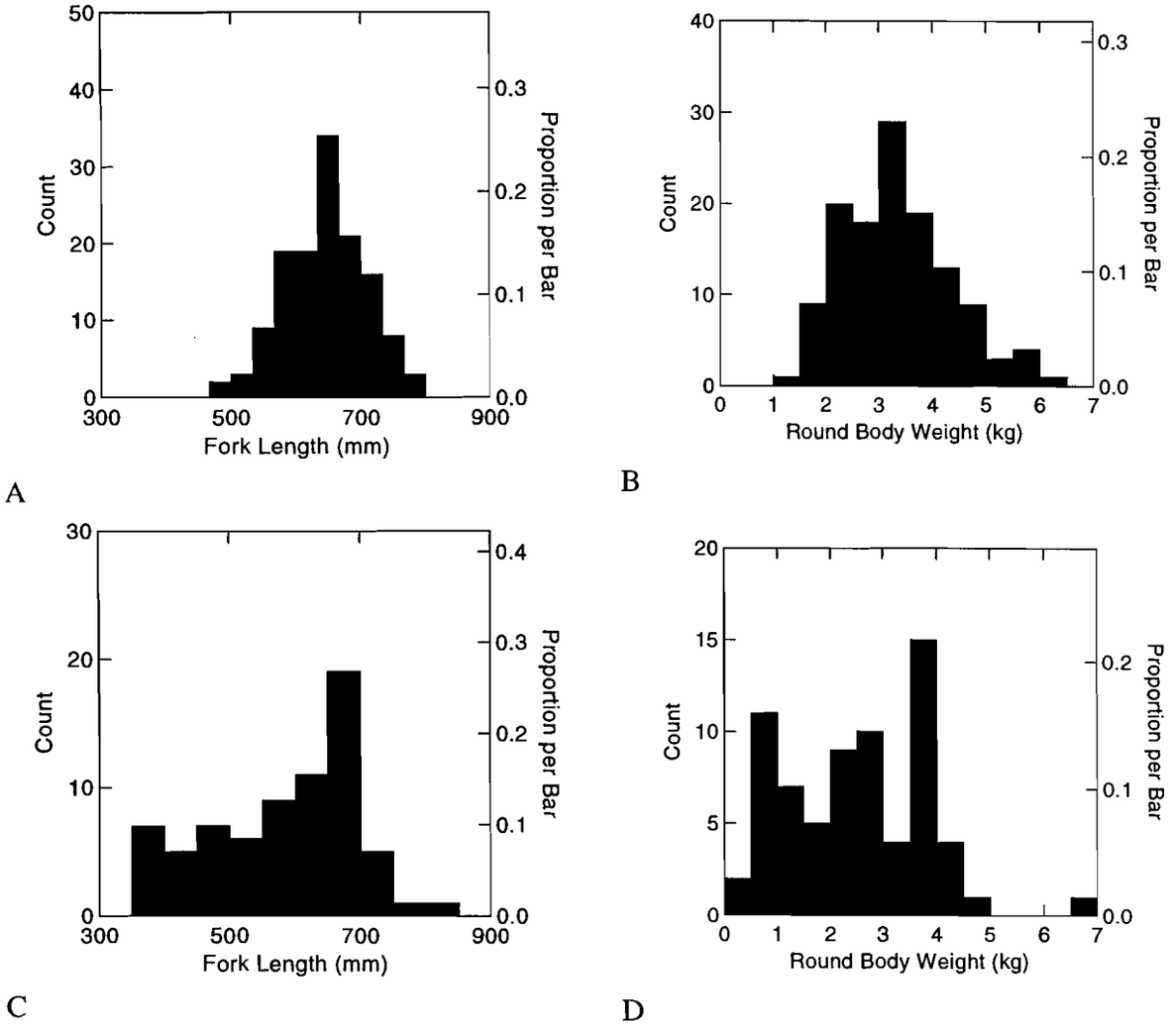


Figure 9. Biological data obtained from returned marine caught Atlantic salmon; (A) fork lengths for B.C. caught fish (n=134)), (B) body weights for B.C. caught fish (n=126) (C) fork lengths for Alaskan caught fish (n=71), (D) body weights for Alaskan caught fish (n=69).

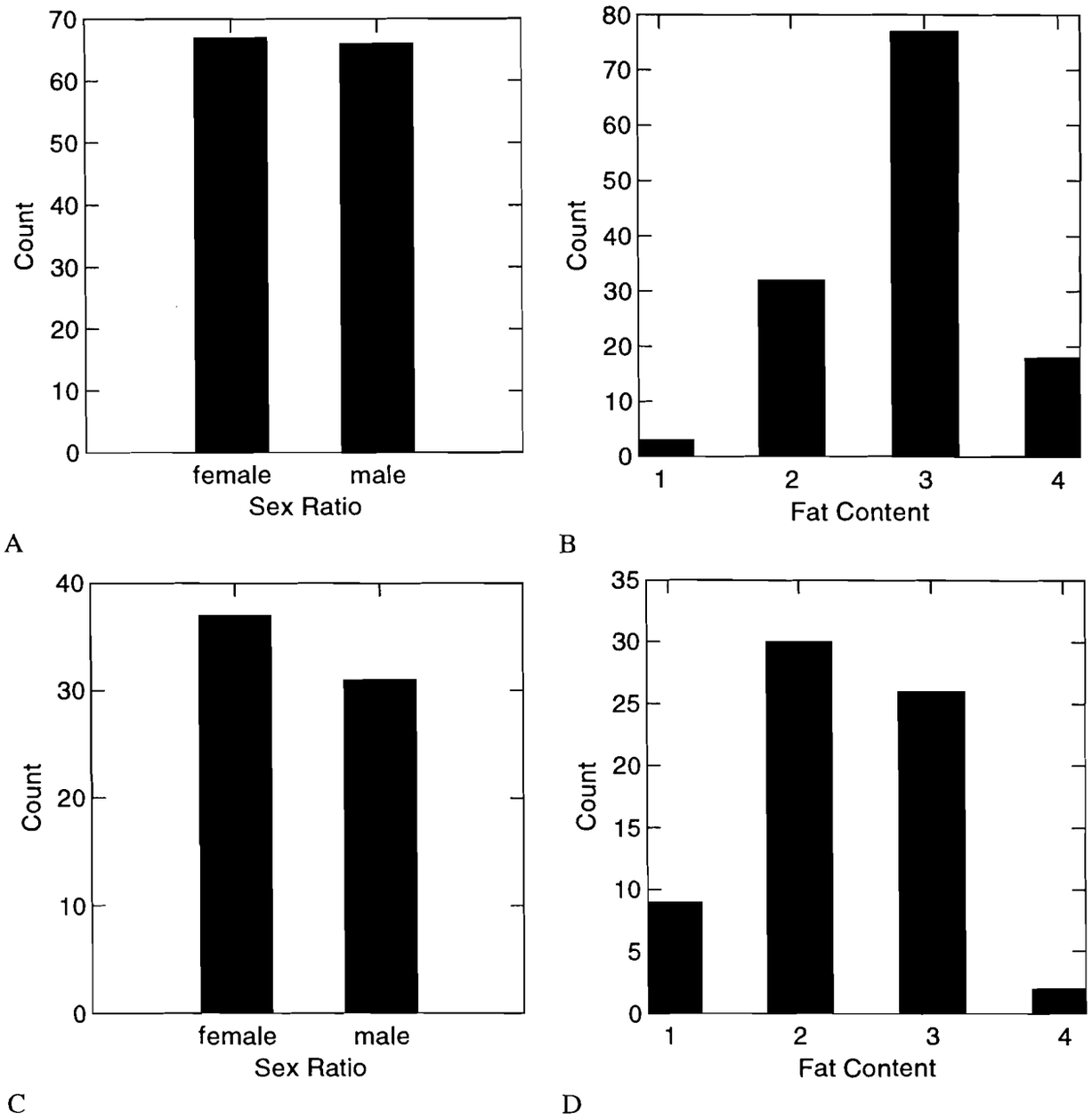


Figure 10. Biological data obtained from returned marine caught Atlantic salmon; (A) Sex Ratio for B.C caught fish., (B) Fat Content for B.C. caught fish (C) Sex Ratio for Alaskan caught fish, (D) Fat Content for Alaskan caught fish.

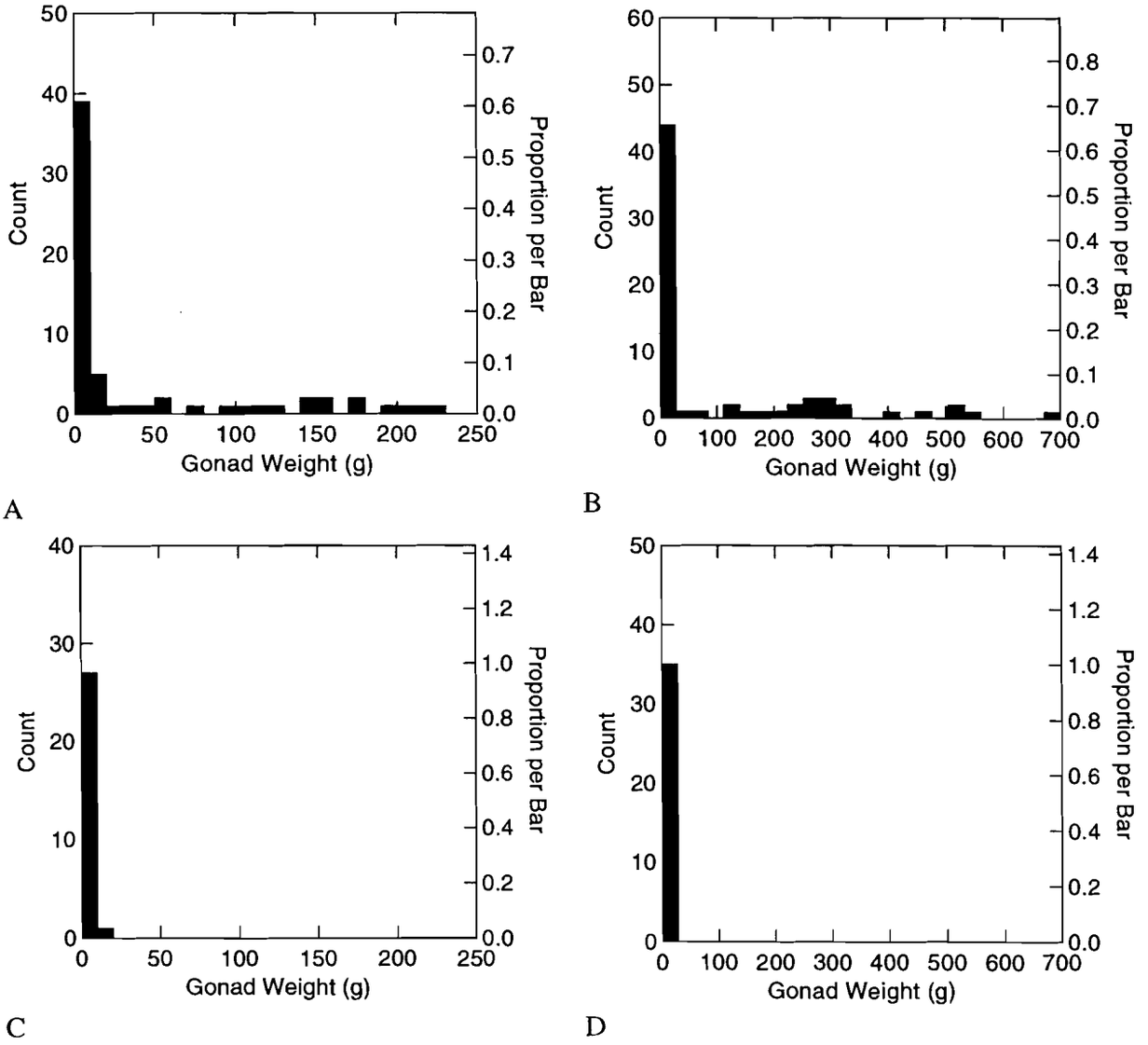


Figure 11. Biological data obtained from returned marine caught Atlantic salmon; (A) B.C. male gonad weights (n=64). (B) B.C. female gonad weights (n=67). (C) Alaskan male gonad weights (n=28), (D) Alaskan female gonad weights (n=35).

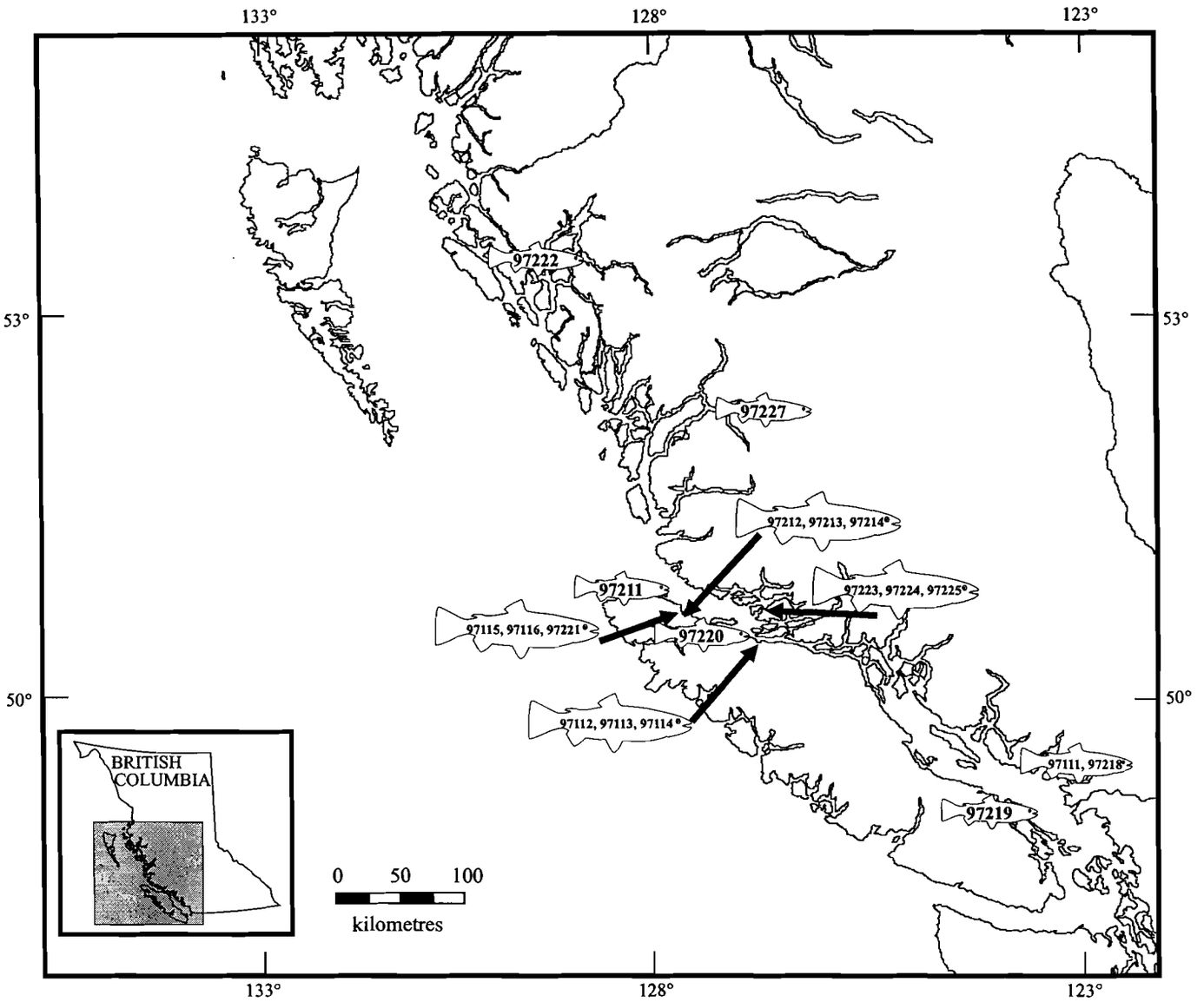


Figure 12. Atlantic salmon recovered from freshwater sites in British Columbia in 1997. Recovered fish identified by Fish Number as listed in Table 2.