Electrofishing surveys for Atlantic salmon (*Salmo salar* L.) from the Margaree River, Nova Scotia, 1988 to 2000

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2003

Canadian Data Report of Fisheries and Aquatic Sciences 1128

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Cat. No. Fs 97-13/1128E ISSN 0706-6465

Correct citation for this publication:

LeBlanc, P.H., and G.J. Chaput. 2003. Electrofishing surveys for Atlantic salmon (*Salmo salar* L.) from the Margaree River, Nova Scotia, 1988 to 2000. Can. Data Rep. Fish. Aquat. Sci. No. 1128. vi + 39 p.

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LeBlanc, P.H., and G.J. Chaput. 2003. Electrofishing surveys for Atlantic salmon (*Salmo salar* L.) from the Margaree River, Nova Scotia, 1988 to 2000. Can. Data Rep. Fish. Aquat. Sci. No. 1128. vi + 39 p.

This report summarizes the biological characteristics and abundance estimates of wild Atlantic Salmon (*Salmo salar* L.) juveniles from the Margaree River watershed between 1988 and 2000. Electrofishing surveys were established primarily to determine abundance of juvenile Atlantic salmon. Summaries of mean length and weight at age, length frequencies and densities of fry and parr are presented by site and sampling date. Incidental catches of other species by site and date are also presented. These data are from an ongoing juvenile salmon assessment program.

RÉSUMÉ

LeBlanc, P.H., and G.J. Chaput. 2003. Electrofishing surveys for Atlantic salmon (*Salmo salar* L.) from the Margaree River, Nova Scotia, 1988 to 2000. Can. Data Rep. Fish. Aquat. Sci. No. 1128. vi + 39 p.

Ce document résume les caractéristiques biologiques et estimés d'abondances des juvéniles du saumon atlantique (*Salmo salar* L.) du bassin de la rivière Margaree entre1988 et 2000. Des relevés de pêche électrique furent établis principalement pour déterminer l'abondance des juvéniles du saumon atlantique. La croissance en longueur et en poids, les fréquences de longueur et les estimés de densité par stade de développement sont présentés par site et date d'échantillonnage. On y retrouve aussi un sommaire des prises accessoires des autres espèces de poissons. Ces données proviennent d'un programme d'évaluation continue sur les saumons juvéniles.

INTRODUCTION

This report summarizes data collected by the Department of Fisheries and Oceans during electrofishing surveys of Atlantic salmon (*Salmo salar* L.) populations in the Margaree River watershed between 1988 and 2000. It follows on the report by Chaput and Claytor (1989). Electrofishing surveys were conducted throughout the freshwater reaches of the system to determine abundance of wild juvenile Atlantic salmon. No surveys were conducted during 1989 and 1990. Only data collected by the Department of Fisheries and Oceans are presented. Summaries of densities had previously been reported in DFO research documents (Chaput et al. 1992, Chaput et al. 1993, Chaput et al. 1994, Claytor et al. 1995, Marshall et al. 1996, Marshall et al. 1997, Marshall et al. 1998, Marshall et al. 1999, Marshall et al. 2000) and stock status report (DFO 2001). It should be noted that if discrepancies are noted between those reports and this one, this report is considered to be the updated version.

MATERIALS AND METHODS

The sampling methodology used during 1988 to 2000 is consistent with the sampling conducted during 1957 to 1987 (Chaput and Claytor 1989). Where possible, sites surveyed during 1988 to 2000 were repeat sites of those surveyed during 1957 to 1987. When new sites were surveyed, they were selected on the basis of quality of fry and parr habitat, accessibility and geographical location within the water shed. Site dimensions were recorded at each site to obtain the sampling area. Widths at the upper and lower barrier net as well as the length along both the left and right bank were recorded. If the site was irregular shaped, extra narrow or extra wide, additional measurements were recorded to get a more precise estimate of the area sampled. Left bank was identified by looking downstream. Site area was calculated using wetted mean length and wetted mean width.

Sites were electrofished using variable voltage, pulsating DC Smith-Root electroshockers (model 11A or 12B). Voltage settings ranged from 300-500 volts with frequencies of 50 Hz to 60Hz.

All fish were anaesthetized with bicarbonate salts (“Eno”) before they were sampled. All salmon were identified to origin and enumerated into fry (age 0+) and parr (age 1+ and older) categories for each sweep. Salmon which had an adipose fin clip, external coloration or worn fins consistent with that of hatchery reared fish were categorized as hatchery origin. Scale samples were collected from these fish to confirm origin. Typically the first 50 fry and all parr captured were measured for fork length (0.1mm). In addition to length, wet weight was obtained from a subsample of the catch in some years. All other species captured during the surveys were enumerated, if time permitted, lengths and weights were also recorded. In most cases fry were readily distinguishable from parr on the basis of fork length. Parr were divided into age categories based on length frequency distributions as well as aging of scales collected during the surveys. Scale samples were collected from two to three fish per centimeter

length class for all parr, some scale samples were collected from fry for verification of age. Scales were taken from the left side of the fish when possible, above the lateral line, at a point along the line drawn from the dorsal fin to the anterior edge of the anal fin.

The data summaries herein are presented separately for wild and hatchery origin Atlantic salmon. Hatchery origin fish were not included in any of the summaries presented for wild salmon. At sites where hatchery released parr were captured the characteristics of these fish are presented separately.

Barrier Sites

Barrier sites are those which are enclosed by barrier nets to prevent both immigration and emigration of fish from the area being sampled. For all purposes these sites are considered to be "closed" sites and have been referred to as "Index" sites. Index sites are those which have been surveyed consistently over the years using the same geographical location, sampling area, and methodology. Numbers of fry and parr have been tabled for each "Index" site allowing for a comparison of juvenile abundance or density between years. Barrier nets were constructed of either Ace or Delta knotless nylon netting, with a mesh size of 3/16". A burlap or filter fabric strip was sewn along the bottom of each barrier net on which rocks were placed to prevent fish from migrating in or out of the sampling area. The top of each barrier net was raised above the water surface by notched poles (Fig. 2).

Electrofishing was carried out starting at the upper barrier net and working downstream to the lower barrier net. Crews usually consisted of three people. Typically the electrofisher operator would hold the anode pole in one hand and a dip net in the other, the other crew members would each hold one side of the apron seine (4 ½ feet wide by 2 ft high) and have either a dip net in the other hand or a bucket in which to place captured fish. Apron seines were used to help capture fish which were missed by the dip netters. In some years a single person apron seine (3 ft wide by 2 ft high) was used. Apron seines were constructed of 3/16" Ace or Delta netting which were attached to broom like handles. The crew would move across the stream perpendicular to the water current as the operator moved the anode parallel with the water current in an upstream to downstream motion directing fish towards the apron seine. One sweep was complete once the entire area was covered. Shocking time was recorded after each sweep. All captured fish would be enumerated and held in holding boxes outside the sampling area. The site would be rested for at-least ten minutes before beginning the next sweep of the area. The survey was considered complete after three or four sweeps were complete. All captured fish were placed back into the sampling area after site measurements were recorded and barrier nets were removed.

Population size (N) was estimated separately for fry and parr as per the Zippin method described in Chaput and Claytor (1989). Density (fish per 100 m^2) of salmon was then estimated by dividing (N) by the site area multiplied by 100.

Barrier Sites-CPUE

In some sites a catch-per-unit-effort (CPUE) sweep was initially done within the barrier sites, prior to the regular depletion sampling. Essentially the same methods described above were used with the exception of conducting the first sweep starting at the lower barrier and working in an upstream direction. Fish captured in the CPUE sweep were enumerated separately. Population size (N) was estimated as per the Zippin method using the catches in the subsequent depletion sweeps, as described in Chaput and Claytor (1989). Density (fish per 100 m^2) of salmon was then estimated by adding the catch from the CPUE sweep to the population estimates from the depletion sweeps (N) and then dividing by the site area multiplied by 100.

Spot Checks

Between 1988 and 2000 some sites were electrofished without barrier nets. They were considered spot checks or open sites. These sites consisted of a single sweep working in an upstream direction. Electrofishing was conducted until a preferred habitat area was covered or until at-least 300 seconds shocking time was recorded on the electrofishing unit. Total catch divided by the shocking time produced a CPUE.

DATA SUMMARY

A summary of the sampling locations, site #, and years sampled is presented in Table 1 and Figure 1. Forest Glen sites 45, 45A, 45B and 45-2 are all within 150 meters of each other. Site 45 is considered the index site as it has the longest data set in the time series and the location sampled has remained essentially the same.

The catches, estimated populations and estimated densities of Atlantic salmon are presented by size category, site #, and date. (Table 2, 3 ; Figs. 3 to 5). Total catch equals the actual number of fish captured and enumerated. "N" is the population estimate for the site, "P" is the probability of capture during the sampling interval, and "G" is used to interpret the assumption of constant catchability "P" over all sampling intervals. The null hypothesis of constant capture probability is rejected ($P<0.05$) when the calculated G value exceeds the chi-square value with k-2 d.f., where k= number of sweeps (for k=3, chi-square = 3.84; for k=4, chi-square = 5.99); these are marked by an asterisk. In those cases, the estimated population and confidence intervals are considered unreliable.

The abundance is expressed as a density (fish per 100m^2) and is calculated by dividing the population estimate, N, by the wetted area (m^2) of habitat sampled multiplied by 100.

Total catch, shocking time and CPUE for spot check sites is summarized in Table 4.

Mean length and mean weight at age are summarized for index sites sampled between 1988 to 2000 (Tables 5 to 10). Length frequency distributions of fry and parr captured at index sites between 1988 to 2000 are also presented (Figs. 6 to 11). Mean lengths and weights at age for wild Atlantic salmon sampled at other sites between 1988 and 2000 are summarized in Table 11. Regression parameters and the range of lengths encompassing the length-weight regression calculation are summarized for fry and parr in Tables 12 and 13.

Catches of hatchery released parr and length range sampled are presented by site in Table 14.

Other species captured from the Margaree River watershed during electrofishing surveys include brook trout (*Salvelinus fontinalis* M.), American eel (*Anguilla rostrata* L.), threespine stickleback (*Gasterosteus aculeatus* L.), and white sucker (*Catostomus commersoni* L.). Total and individual sweep catch for these species between 1988 and 2000 are presented in Tables 15 and 16.

ACKNOWLEDGEMENTS

The authors gratefully acknowledges the work of various individuals who helped with the collection of the data. Various university students, students from abroad and Wagmatcook First Nations have participated in the electrofishing surveys. Special thanks to Ross Jones who supervised the electrofishing crews from 1987 to 1994 and Doug Shaw who participated in the electrofishing surveys during 1996 to 2000. The authors also thank Ross Jones and Dave Moore for helpful comments on earlier versions of this report.

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Table 1. Electrofishing stations (site #) from the Margaree River, 1988 to 2000.

Location	Site #	Branch	Years Sampled	Site Location		
				Mapsheet / Grid reference	Latitude	Longitude
Barrier Sites						
Big Brook	15	NE Margaree	1988, 1991-2000	11K/6 516-282 NAD83	46.2906	61.0315
Lake O'Law	22	NE Margaree	1988	11K/7 570-279 NAD83	46.28662	60.96087
Forest Glen	40	NE Margaree	1992-1995	11K/7 590-495 NAD83	46.48054	60.92815
Forest Glen	45	NE Margaree	1991-2000	11K/7 598-482 NAD83	46.4684	60.9189
Forest Glen	45A	NE Margaree	1988	11K/7 598-481 NAD83	46.4683	60.9189
Forest Glen	45B	NE Margaree	1988	11K/7 598-481 NAD83	46.4682	60.9189
Forest Glen	45-2	NE Margaree	1991	11K/7 599-482 NAD83	46.4684	60.9188
Old Bridge	51	NE Margaree	1995-2000	11K/7 576-429 NAD83	46.4271	60.944
MacFarlanes Brook	96	SW Margaree	1991-2000	11K/3 431-184 NAD83	46.2047	61.1448
Trout Brook	98	SW Margaree	1991-1992,1994-2000	11K/3 443-065 NAD83	46.0953	61.1265
Open Sites (CPUE)						
Lake O'Law	92A	NE Margaree	1992	NA		
Lake O'Law	92B	NE Margaree	1992	NA		
Watson's Brook	92C	NE Margaree	1992	NA		
Forest Glen	92D	NE Margaree	1992	11K/7 597-483 NAD83	46.468928	60.919239
Big Intervale	92E	NE Margaree	1992	11K/7 592-462 NAD83	46.44976	60.927
MacFarlanes Brook	92F	SW Margaree	1992	11K/3 431-186 NAD83	46.20689	61.14597
Trout Brook	98B	SW Margaree	1992	11K/3 443-065 NAD83	46.0953	61.1266
Scotsville	107	SW Margaree	1993	11K/3 421-167 NAD83	46.18893	61.15839
Trout Brook	108	SW Margaree	1993	11K/3 442-065 NAD83	46.09726	61.13489

Table 2. Catch, population, and density estimates of wild Atlantic salmon captured during electrofishing surveys at barrier (index) sites 15, 40, 45, 51, 96, and 98 between 1988 and 2000. Site # refers to those in Table 1 and Figure 1. Area is expressed as square meters, average site length and width (m) are indicated in brackets. Density is expressed as number of fish per 100 m^2. Fry refers to (age 0+) and parr have been grouped into one category, (age 1+ and older). Population statistics are described in the text. In the "# of sweeps" column, numbers with an asterisk indicate that a CPUE sweep was done within the barrier site. In "Number of fish caught per sweep" column the catch in the initial CPUE pass is indicated first in brackets. Total catch excludes the CPUE catch. Conf. Int. showing * indicates that the variance is unreliable.

Site	Year	Date	Area (m^2)	# of Sweeps	Size Group	Number of fish caught per sweep	Total Catch	Estimated Population N	Estimated Population Var	Conf. Int. Lower	Conf. Int. Upper	P	G	Estimated Density
15	1988	26-Jul	409.3	3	Fry	103,41,15	159	168.8	27.49	158.3	179.3	0.61	0.04	41.2
			(19.4, 21.1)		Parr	22,12,10	44	61.3	327.36	25.2	97.5	0.34	0.38	15.0
	1991	1-Aug	223.5	4	Fry	218,51,18,5	292	293.6	2.74	290.3	296.9	0.73	1.39	131.4
			(28.5, 7.8)		Parr	37,15,2,6	60	62.2	6.41	57.1	67.2	0.57	7.13	27.8
	1992	25-Jul	209.4	4*	Fry	(2), 29,10,11,13	63	89.2	436.48	47.4	131.0	0.26	6.33	43.5
			(30.8, 6.8)		Parr	(6), 25,14,14,2	55	62.1	35.91	50.1	74.1	0.42	5.20	32.5
	1993	20-Jul	216.0	4*	Fry	(29), 31,16,13,7	67	78.7	71.60	61.8	95.7	0.38	0.60	49.9
			(27.0, 8.0)		Parr	(16), 15,10,6,4	35	42.1	62.12	*	*	0.36	0.02	26.9
	1994	27-Jul	148.7	4	Fry	66,44,26,19	155	188.5	219.59	158.9	218.2	0.35	0.20	126.8
			(28.6, 5.2)		Parr	22,15,3,5	45	49.1	18.46	*	*	0.46	3.59	33.0
	1995	7-Aug	145.9	4	Fry	186,40,30,12	268	273.0	8.87	267.1	279.0	0.63	13.97	187.1
			(30.4, 4.8)		Parr	32,16,5,2	55	56.6	4.95	52.2	61.1	0.59	0.54	38.8
	1996	2-Aug	216.0	4	Fry	259,49,9,3	320	320.5	0.77	318.7	322.2	0.80	0.63	148.4
			(28.8, 7.5)		Parr	62,19,7,6	94	96.2	5.17	91.7	100.8	0.61	2.83	44.5
	1997	11-Aug	171.7	4	Fry	254,47,12,3	316	316.6	1.06	314.5	318.6	0.79	0.91	184.4
			(31.8, 5.4)		Parr	52,24,14,3	93	97.2	11.00	90.5	103.8	0.54	1.72	56.6
	1998	8-Aug	241.9	3	Fry	113,38,20	171	182.2	32.39	170.9	193.6	0.60	1.24	75.3
			(33.6, 7.2)		Parr	106,31,10	147	151.1	9.17	145.1	157.2	0.70	0.04	62.5

Table 2 (con't).

Site	Year	Date	Area (m^2)	# of Sweeps	Size Group	Number of fish caught per sweep	Total Catch	Estimated Population N	Estimated Population Var	Conf. Int. Lower	Conf. Int. Upper	P	G	Estimated Density
15	1999	12-Aug	215.4	4	Fry	244,78,36,19	377	386.2	16.44	378.1	394.3	0.61	4.12	179.3
			(36.5, 5.9)		Parr	113,38,22,7	180	185.0	10.25	178.6	191.4	0.59	1.92	85.9
	2000	11-Aug	200.0	4*	Fry	(82),221,72,20,11	324	328.0	6.53	322.9	333.1	0.67	1.77	205.0
			(33.9, 5.9)		Parr	(39),85,27,20,10	142	149.3	18.64	140.7	158.0	0.53	4.22	94.2
40	1992	29-Jul	128.0	4*	Fry	(33),50,40,18,8	116	130.2	59.33	114.8	145.6	0.42	3.14	127.5
			(19.4, 6.6)		Parr	(14),27,11,12,6	56	66.1	66.18	49.8	82.4	0.37	2.16	62.5
	1993	27-Jul	133.3	4*	Fry	(58), 43,44,30,9	126	160.7	300.11	126.0	195.3	0.32	8.91	164.1
			(19.9, 6.7)		Parr	(32), 37,15,10,7	69	75.7	26.53	65.4	86.0	0.45	1.34	80.8
	1994	29-Jul	116.5	3	Fry	70,36,5	111	116.4	14.64	108.7	124.0	0.64	5.84	99.9
			(18.2, 6.4)		Parr	50,20,18	88	107.1	142.54	83.2	131.0	0.44	2.52	91.9
	1995	8-Aug	132.2	4	Fry	82,45,31,20	178	208.9	162.29	183.4	234.4	0.38	0.53	158.0
			(22.4, 5.9)		Parr	81,22,21,11	135	143.4	23.03	133.8	153.0	0.51	8.27	108.4
45	1991	29-Jul	236.1	4	Fry	199,70,21,13	303	308.3	9.19	302.3	314.4	0.64	2.28	130.6
			(38.7, 6.1)		Parr	112,30,16,9	167	170.7	7.28	165.3	176.1	0.62	4.73	72.3
	1992	27-Jul	170.5	4*	Fry	(63),126,144,96,43	409	587.6	2564.52	486.3	688.9	0.26	20.97	381.6
			(31.0, 5.5)		Parr	(15),50,22,7,4	83	85.4	6.05	80.5	90.3	0.59	0.44	58.9
	1993	21-Jul	227.5	4*	Fry	(51), 134,93,72,34	333	416.0	599.74	367.0	465.0	0.33	3.11	205.3
			(35.0, 6.5)		Parr	(31), 95,53,16,11	175	183.6	20.92	174.5	192.8	0.53	2.76	94.3
	1994	28-Jul	193.3	4	Fry	68,34,40,19	161	210.2	468.52	166.9	253.5	0.30	5.68	108.7
			(35.8, 5.4)		Parr	83,43,26,15	167	185.4	68.07	168.9	201.9	0.44	0.22	95.9
	1995	9-Aug	173.9	4	Fry	243,70,73,28	414	440.4	66.95	424.1	456.8	0.51	24.35	253.3
			(37.0, 4.7)		Parr	112,46,25,15	198	209.9	30.73	198.8	221.0	0.51	1.50	120.7

Table 2 (con't).

Site	Year	Date	Area (m^2)	# of Sweeps	Size Group	Number of fish caught per sweep	Total Catch	Estimated Population N	Estimated Population Var	Conf. Int. Lower	Conf. Int. Upper	P	G	Estimated Density
45	1996	6-Aug	250.2	4	Fry	144,40,21,9	214	218.0	7.47	212.6	223.5	0.63	3.60	87.1
			(36.8, 6.8)		Parr	185,59,22,3	274	277.8	6.45	272.7	282.9	0.66	0.31	111.0
	1997	5-Aug	237.0	4	Fry	181,61,37,18	297	309.0	25.46	298.9	319.1	0.56	4.60	130.4
			(39.5, 6.0)		Parr	117,45,21,13	196	204.2	18.38	195.6	212.8	0.55	1.64	86.2
	1998	22-Aug	206.6	3	Fry	316,115,48	479	507.2	71.09	490.3	524.0	0.62	0.32	245.5
			(36.9, 5.6)		Parr	117,39,11	167	172.5	12.27	165.5	179.5	0.68	0.14	83.5
	1999	12-Aug	248.3	3	Fry	304,79,39	422	436.7	30.01	425.7	447.6	0.68	5.25	175.9
			(38.2, 6.5)		Parr	137,55,15	207	216.7	23.73	207.0	226.5	0.64	1.03	87.3
	2000	10-Aug	226.9	4*	Fry	(59), 196,63,42,15	316	326.9	21.76	317.5	336.2	0.57	5.98	170.1
			(37.2, 6.1)		Parr	(51), 133,48,15,10	206	210.3	8.08	204.6	216.0	0.62	1.94	115.2
51	1995	21-Aug	443.5	3	Fry	288,140,68	496	560.3	264.17	527.8	592.8	0.51	0.00	126.3
			(26.4, 16.8)		Parr	126,51,37	214	247.2	164.01	221.6	272.8	0.49	3.10	55.7
	1996	13-Aug	477.6	3	Fry	431,117,28	576	586.6	17.82	578.1	595.0	0.74	0.22	122.8
			(29.3, 16.3)		Parr	199,93,59	351	411.7	320.96	375.9	447.5	0.47	1.46	86.2
	1997	6-Aug	421.0	3	Fry	504,176,70	750	788.3	88.89	769.4	807.1	0.64	0.43	187.2
			(27.7, 15.2)		Parr	151,62,33	246	271.1	90.15	252.2	290.1	0.55	0.67	64.4
	1998	28-Aug	507.8	3	Fry	610,167,47	824	841.7	30.27	830.7	852.7	0.72	0.02	165.8
			(27.9, 18.2)		Parr	218,91,35	344	368.6	69.83	351.9	385.3	0.59	0.09	72.6
	1999	11-Aug	542.9	3	Fry	646,172,58	876	897.0	36.94	884.9	909.2	0.71	1.32	165.2
			(30.5, 17.8)		Parr	395,122,59	576	576.0	65.56	588.2	620.6	0.64	3.89	111.3
	2000	9-Aug	360.4	4*	Fry	(40),199,82,35,12	328	337.2	17.40	328.9	345.6	0.59	0.28	104.7
			(23.1, 15.6)		Parr	(39),153,76,32,23	284	303.2	51.06	288.9	317.5	0.50	1.79	94.9

Table 2 (con't).

Site	Year	Date	Area (m^2)	# of Sweeps	Size Group	Number of fish caught per sweep	Total Catch	Estimated Population N	Estimated Population Var	Conf. Int. Lower	Conf. Int. Upper	P	G	Estimated Density
96	1991	31-Jul	248.2	4	Fry	51,25,7,2	85	86.8	4.47	82.6	91.1	0.62	1.52	35.0
			(23.2, 10.7)		Parr	114,42,7,6	169	170.9	3.71	167.1	174.8	0.67	4.05	68.9
	1992	26-Jul	135.7	4*	Fry	(5),28,11,4,1	44	44.8	2.61	*	*	0.64	0.17	36.7
			(13.3, 10.2)		Parr	(13),39,9,5,10	63	68.2	19.46	59.4	77.0	0.47	12.41	59.8
	1993	22-Jul	185.0	4*	Fry	(26),70,61,21,10	162	178.4	57.90	163.2	193.7	0.45	8.50	110.5
			(18.5, 10.0)		Parr	(52),96,43,15,5	159	163.0	8.11	157.3	168.7	0.60	0.69	116.2
	1994	31-Jul	160.1	4	Fry	94,39,27,11	171	182.6	32.34	171.2	194.0	0.50	1.83	114.1
			(17.4, 9.2)		Parr	65,26,14,10	115	122.6	21.95	113.2	131.9	0.50	1.73	76.6
	1995	17-Aug	289.4	4	Fry	152,71,51,29	303	339.5	138.34	316.0	363.1	0.43	2.52	117.3
			(27.3, 10.6)		Parr	107,39,24,16	186	198.0	32.16	186.6	209.3	0.50	4.01	68.4
	1996	3-Aug	315.7	4	Fry	260,50,8,10	328	329.0	1.81	326.3	331.7	0.77	13.63	104.2
			(29.5, 10.7)		Parr	186,60,18,10	274	277.7	6.28	272.7	282.7	0.66	1.60	88.0
	1997	7-Aug	267.7	4	Fry	165,75,37,12	289	300.9	25.52	290.8	311.0	0.55	1.01	112.4
			(26.5, 10.1)		Parr	112,34,19,10	175	180.2	10.83	173.6	186.8	0.59	3.52	67.3
	1998	10-Aug	258.0	3	Fry	312,88,44	444	462.7	41.05	449.9	475.6	0.66	4.66	179.4
			(21.5, 12.0)		Parr	93,37,17	147	158.7	37.74	146.4	171.0	0.58	0.12	61.5
	1999	9-Aug	246.6	3	Fry	64,31,3	98	101.6	9.23	95.5	107.6	0.67	6.54	41.2
			(20.9, 11.8)		Parr	145,59,20	224	237.3	35.47	225.4	249.2	0.62	0.27	96.2
	2000	8-Aug	248.4	4*	Fry	(21),99,43,19,8	169	175.3	13.85	167.8	182.7	0.57	0.01	79.0
			(20.7, 12.0)		Parr	(28),86,18,12,11	127	131.0	8.84	125.0	136.9	0.58	12.62	64.0

Table 2 (con't).

Site	Year	Date	Area (m^2)	# of Sweeps	Size Group	Number of fish caught per sweep	Total Catch	Estimated Population N	Estimated Population Var	Conf. Int. Lower	Conf. Int. Upper	P	G	Estimated Density
98	1991	30-Jul	251.3	4	Fry	53,15,15,12	95	106.2	46.58	92.5	119.8	0.43	7.96	42.2
			(20.6, 12.2)		Parr	20,12,3,8	43	51.9	72.56	34.8	68.9	0.36	5.42	20.6
	1992	28-Jul	191.5	3*	Fry	(3),20,7,5	32	35.5	22.51	*	*	0.54	0.64	20.1
			(17.1, 11.2)		Parr	(0),9,2,1	12	12.3	0.39	*	*	0.71	0.22	6.4
	1994	30-Jul	173.8	4	Fry	19,17,9,5	50	61.5	98.56	41.6	81.3	0.34	1.05	35.4
			(15.8, 11.0)		Parr	45,23,11,8	87	94.7	27.64	84.2	105.3	0.47	0.47	54.5
	1995	23-Aug	180.2	4	Fry	59,23,9,10	101	106.8	16.25	98.7	114.9	0.52	4.03	59.3
			(17.0, 10.6)		Parr	43,20,14,4	81	86.6	17.92	78.1	95.1	0.50	1.38	48.1
	1996	4-Aug	211.2	3	Fry	47,10,2	59	59.5	1.43	57.2	61.9	0.79	0.00	28.2
			(17.9, 11.8)		Parr	47,11,6	64	66.0	5.99	61.1	70.9	0.69	1.33	31.3
	1997	8-Aug	206.3	4	Fry	196,69,33,21	319	330.8	24.18	321.0	340.6	0.57	4.40	160.3
			(18.1, 11.4)		Parr	53,23,10,1	87	88.9	4.51	84.6	93.1	0.62	2.60	43.1
	1998	29-Aug	196.0	4	Fry	39,8,2,2	51	51.3	0.25	50.3	52.3	0.73	2.22	26.2
			(17.5, 11.2)		Parr	56,18,13,4	91	94.3	8.22	88.5	100.0	0.57	2.19	48.1
	1999	13-Aug	220.0	3	Fry	104,39,10	153	158.9	14.11	151.4	166.5	0.67	0.69	72.2
			(19.3, 11.4)		Parr	37,11,7	55	58.6	13.42	51.3	65.9	0.61	1.12	26.6
	2000	4-Aug	209.3	4*	Fry	(49),144,65,57,49	315	399.8	668.37	348.1	451.5	0.32	9.90	214.4
			(18.2, 11.5)		Parr	(13),45,14,7,3	69	70.6	4.17	66.5	74.6	0.61	0.68	39.9

Table 3. Catch, population, and density estimates of wild Atlantic salmon captured during electrofishing surveys at other barrier sites (non-index) during 1988 to 1991. Site # refers to those in Table 1 and Figure 1. Area is expressed as square meters, average site length and width (m) are indicated in brackets. Density is expressed as number of fish per 100 m^2. Fry refers to (age 0+) and parr have been grouped into one category, (age 1+ and older). Population statistics are described in the text. Conf. Int. showing * indicates that the variance is unreliable.

Site	Year	Date	Area (m^2)	# of	Size	Number of fish	Total	Estimated Population		Conf. Int.				Estimated
				Sweeps	Group	caught per sweep	Catch	N	Var	Lower	Upper	P	G	Density
22	1988	26-Jul	NA	3	Fry	0,0,0	0	*	*	*	*	*	*	*
					Parr	21,6,2	29	*	*	*	*	*	*	*
45A	1988	27-Jul	169.9	3	Fry	82,51,14	147	163.8	68.22	147.3	180.3	0.53	4.17	96.4
			(14.4, 11.8)		Parr	54,50,16	120	155.2	349.98	117.8	192.7	0.39	7.00	91.4
45B	1988	27-Jul	153.8	3	Fry	58,15,15	88	96.5	33.30	84.9	108.0	0.56	5.75	62.7
			(12.5, 12.3)		Parr	85,58,25	168	206.0	272.18	173.0	239.0	0.43	1.73	133.9
45-2	1991	29-Jul	387.3	4	Fry	90,41,35,20	186	215.6	144.08	191.6	239.6	0.39	3.09	55.7
			(NA)		Parr	127,28,20,11	186	190.4	8.53	184.5	196.2	0.61	11.01	49.2

Table 4. Shocking time, catch and CPUE of wild Atlantic salmon captured during electrofishing surveys at spot check sites during 1992 and 1993. Site # refers to those in Table 1. Fry refers to (age 0+) and parr have been grouped into one category (age 1+ and older).

Location	Site #	Year	Date	# of Sweeps	Shocking Time (seconds)	Size Group	Total Catch	CPUE Fish/100 sec.
Lake O'Law Brook	92A	1992	19-Sep	1	470	Fry	13	2.8
						Parr	28	6.0
Lake O'Law Brook	92B	1992	20-Sep	1	320	Fry	66	20.6
						Parr	57	17.8
Watson's Brook	92C	1992	20-Sep	1	443	Fry	11	2.5
						Parr	12	2.7
Forest Glen Brook	92D	1992	22-Sep	1	408	Fry	53	13.0
						Parr	25	6.1
North East Margaree	92E	1992	22-Sep	1	502	Fry	35	7.0
						Parr	31	6.2
MacFarlanes Brook	92F	1992	23-Sep	1	360	Fry	13	3.6
						Parr	32	8.9
Trout Brook	98B	1992	28-Jul	1	322	Fry	23	7.1
						Parr	11	3.4
South West Margaree	107	1993	28-Jul	1	311	Fry	45	14.5
						Parr	13	4.2
Trout Brook	108	1993	28-Jul	1	326	Fry	115	35.3
						Parr	14	4.3

Table 5. Length and weight at age of wild Atlantic salmon sampled from Big Brook (site 15) between the years 1988 and 2000. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions with the exception of 1991 to 1993 where ages were determined from length frequency distributions only.

			1988 26-Jul	1991 1-Aug	1992 25-Jul	1993 20-Jul	1994 27-Jul	1995 7-Aug	1996 2-Aug	1997 11-Aug	1998 8-Aug	1999 12-Aug	2000 11-Aug
fry	Length	Mean	4.3	5.0	4.1	3.9	4.9	5.0	4.6	4.7	4.9	5.3	4.7
		Std. Dev.	0.4	0.3	0.2	0.2	0.4	0.4	0.3	0.4	0.3	0.4	0.4
		Max	4.9	5.4	4.8	4.2	5.5	5.7	5.3	5.7	5.6	6.0	5.4
		Min	3.4	4.4	3.5	3.6	3.3	4.1	4.0	3.9	4.1	4.3	3.8
		N	33	50	31	60	50	63	63	80	50	50	50
	Weight	Mean	0.87	.	0.77	0.64	1.35	.	.	.	.	.	.
		Std. Dev.	0.2	.	0.1	0.1	0.3						
		Max	1.35	.	1.05	0.95	2	.	.	.	.	.	.
		Min	0.45	.	0.45	0.45	0.5	.	.	.	.	.	.
		N	33	.	31	60	50	.	.	.	.	.	.
1+ parr	Length	Mean	8.8	9.4	8.6	8.7	9.1	9.3	8.6	8.6	8.2	8.1	8.5
		Std. Dev.	0.8	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.7
		Max	10.0	10.0	9.2	9.5	10.2	10.6	10.3	9.7	9.4	9.4	9.9
		Min	7.2	8.4	6.7	7.4	8.0	7.9	7.2	7.5	6.5	7.0	7.0
		N	41	30	33	34	39	44	84	73	126	125	143
		# scales read	8	0	0	0	6	11	7	10	16	11	11
	Weight	Mean	8.34	.	8.42	7.85	8.94	.	.	.	.	.	.
		Std. Dev.	2.4		1.6	1.6	1.6						
		Max	12.20	.	11.30	10.30	12.05	.	.	.	.	.	.
		Min	4.00	.	3.65	4.85	5.55	.	.	.	.	.	.
		N	41	.	33	34	38	.	.	.	.	.	.
2+ parr	Length	Mean	11.3	11.1	10.1	10.7	11.5	11.7	11.2	10.7	10.4	10.3	10.8
		Std. Dev.	0.3	0.7	0.8	0.9	0.4	0.5	0.3	0.5	0.7	0.7	0.7
		Max	11.6	12.7	12.2	12.0	12.1	12.3	11.7	11.9	11.8	12.3	12.5
		Min	11.1	10.2	9.5	9.7	11.0	11.0	10.7	9.9	9.4	9.5	10.0
		N	3	29	25	17	6	11	9	19	20	53	38
		# scales read	0	0	0	0	4	4	5	11	11	12	12
	Weight	Mean	20.1	.	13.21	15.13	18.01	.	.	.	.	.	.
		Std. Dev.	1.82	.	3.9	4.91	2.09	.	.	.	.	.	.
		Max	22.2	.	23.85	23.4	21.55	.	.	.	.	.	.
		Min	19	.	10.25	10.05	15.2	.	.	.	.	.	.
		N	3	.	25	17	6	.	.	.	.	.	.
3+ parr	Length	Mean	.	13.6	13.9	.	.	.	.	12.1	12.5	12.7	.
		Std. Dev.		.	.	.	.	.	.	.	.	0.3	.
		Max	.	.	.	.	.	.	.	.	.	12.9	.
		Min	.	.	.	.	.	.	.	.	.	12.5	.
		N	.	1	1	.	.	.	.	1	1	2	.
		# scales read		0	0	.	.	.	.	1	1	2	.
	Weight	Mean	.	.	30.8	.	.	.	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	1	.	.	.	.	.	.	.	.

Table 6. Length and weight at age of wild Atlantic salmon sampled from Forest Glen Brook (site 40) between the years 1992 and 1995. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions.

			1988	1991	1992 29-Jul	1993 27-Jul	1994 29-Jul	1995 8-Aug	1996	1997	1998	1999	2000
fry	Length	Mean	.	.	3.8	3.6	4.0	4.4	.	.	.	.	.
		Std. Dev.	.	.	0.2	0.3	0.4	0.3	.	.	.	.	.
		Max	.	.	4.1	4.1	4.6	5.0	.	.	.	.	.
		Min	.	.	3.0	2.8	3.1	3.2	.	.	.	.	.
		N	.	.	33	27	53	62	.	.	.	.	.
	Weight	Mean	.	.	0.54	0.48	0.70	.	.	.	.	.	.
		Std. Dev.	.	.	0.1	0.1	0.2	.	.	.	.	.	.
		Max	.	.	0.90	0.90	1.10	.	.	.	.	.	.
		Min	.	.	0.20	0.30	0.25	.	.	.	.	.	.
		N	.	.	33	27	53	.	.	.	.	.	.
1+ parr	Length	Mean	.	.	7.6	7.1	7.4	7.7	.	.	.	.	.
		Std. Dev.	.	.	0.5	0.6	0.7	0.6	.	.	.	.	.
		Max	.	.	8.7	8.7	9.0	8.9	.	.	.	.	.
		Min	.	.	6.6	6.0	6.2	6.1	.	.	.	.	.
		N	.	.	49	80	72	83	.	.	.	.	.
		# scales read	.	.	0	0	0	2	.	.	.	.	.
	Weight	Mean	.	.	5.18	4.17	4.68	.	.	.	.	.	.
		Std. Dev.	.	.	1.88	1.11	1.45	.	.	.	.	.	.
		Max	.	.	12.95	7.05	9.40	.	.	.	.	.	.
		Min	.	.	3.30	2.40	2.70	.	.	.	.	.	.
		N	.	.	49	80	72	.	.	.	.	.	.
2+ parr	Length	Mean	.	.	10.1	9.8	9.6	10.0	.	.	.	.	.
		Std. Dev.	.	.	0.6	0.4	0.3	0.8	.	.	.	.	.
		Max	.	.	11.3	10.5	10.0	11.8	.	.	.	.	.
		Min	.	.	9.0	9.0	9.2	9.0	.	.	.	.	.
		N	.	.	17	19	12	48	.	.	.	.	.
		# scales read	.	.	0	0	0	3	.	.	.	.	.
	Weight	Mean	.	.	11.48	10.79	10.31	.	.	.	.	.	.
		Std. Dev.	.	.	2.35	1.44	0.72	.	.	.	.	.	.
		Max	.	.	16.70	12.65	11.65	.	.	.	.	.	.
		Min	.	.	7.60	8.10	9.00	.	.	.	.	.	.
		N	.	.	17	19	12	.	.	.	.	.	.
3+ parr	Length	Mean	.	.	11.8	11.7	10.6	12.0	.	.	.	.	.
		Std. Dev.	.	.	0.1	0.5	0.0	0.0	.	.	.	.	.
		Max	.	.	11.9	12.0	10.8	12.1	.	.	.	.	.
		Min	.	.	11.7	11.3	10.5	12.0	.	.	.	.	.
		N	.	.	4	2	4	4	.	.	.	.	.
		# scales read	.	.	0	0	0	1	.	.	.	.	.
	Weight	Mean	.	.	19.55	18.23	12.90	.	.	.	.	.	.
		Std. Dev.	.	.	1.53	3.85	0.37	.	.	.	.	.	.
		Max	.	.	21.60	20.95	13.35	.	.	.	.	.	.
		Min	.	.	18.35	15.50	12.45	.	.	.	.	.	.
		N	.	.	4	2	4	.	.	.	.	.	.

Table 7. Length and weight at age of wild Atlantic salmon sampled from Forest Glen Brook (site 45) between the years 1991 and 2000. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions.

			1988	1991 29-Jul	1992 27-Jul	1993 21-Jul	1994 28-Jul	1995 9-Aug	1996 6-Aug	1997 5-Aug	1998 22-Aug	1999 12-Aug	2000 10-Aug
fry	Length	Mean	.	4.1	3.6	3.5	4.2	4.2	4.2	4.1	4.5	4.6	4.3
		Std. Dev.	.	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.4	0.4	0.3
		Max	.	4.6	4.2	4.1	4.8	4.8	4.8	4.8	5.4	5.3	5.0
		Min	.	3.4	3.1	2.6	3.1	3.5	3.9	3.4	3.8	3.9	3.7
		N	.	65	29	42	51	55	52	76	50	50	50
	Weight	Mean	.	.	0.51	0.46	0.79	.	.	.	.	.	.
		Std. Dev.	.	.	0.1	0.2	0.2	.	.	.	.	.	.
		Max	.	.	0.80	0.75	1.15	.	.	.	.	.	.
		Min	.	.	0.30	0.20	0.25	.	.	.	.	.	.
		N	.	.	29	42	51	.	.	.	.	.	.
1+ parr	Length	Mean	.	7.5	7.7	6.8	7.2	7.4	7.6	7.4	7.4	7.6	7.9
		Std. Dev.	.	0.6	0.5	0.5	0.7	0.6	0.9	0.5	0.5	0.6	0.6
		Max	.	8.9	8.8	8.0	9.0	8.9	9.8	8.4	8.9	8.8	9.3
		Min	.	6.1	6.5	5.7	5.7	6.2	5.9	6.0	6.0	6.5	6.6
		N	.	123	73	174	148	138	243	127	126	164	191
		# scales read	.	0	0	0	6	2	6	7	13	12	12
	Weight	Mean	.	.	5.12	3.60	4.01	.	.	.	.	.	.
		Std. Dev.	.	.	1.1	0.9	1.3	.	.	.	.	.	.
		Max	.	.	7.85	8.85	8.25	.	.	.	.	.	.
		Min	.	.	2.80	1.95	2.00	.	.	.	.	.	.
		N	.	.	73	174	148	.	.	.	.	.	.
2+ parr	Length	Mean	.	9.5	10.1	9.4	9.6	9.8	10.4	9.5	10.0	10.0	10.3
		Std. Dev.	.	0.4	0.7	0.6	0.4	0.5	0.5	0.7	0.7	0.6	0.6
		Max	.	10.4	11.6	10.7	10.3	11.0	11.8	10.8	11.6	11.7	11.8
		Min	.	9.0	9.1	8.4	9.1	9.0	9.9	8.5	9.0	9.2	9.4
		N	.	32	24	29	14	55	31	66	40	41	62
		# scales read	.	0	0	0	4	4	7	10	14	12	10
	Weight	Mean	.	.	11.77	9.54	9.59	.	.	.	.	.	.
		Std. Dev.	.	.	3.0	1.8	1.2	.	.	.	.	.	.
		Max	.	.	21.00	13.40	11.80	.	.	.	.	.	.
		Min	.	.	8.55	6.60	8.00	.	.	.	.	.	.
		N	.	.	24	29	14	.	.	.	.	.	.
3+ parr	Length	Mean	.	11.3	12.1	11.4	10.6	11.4	.	11.2	12.2	11.9	12.4
		Std. Dev.	.	0.7	.	0.7	0.3	0.4	.	0.5	.	0.0	0.4
		Max	.	12.4	.	12.2	11.2	12.0	.	11.7	.	11.9	12.9
		Min	.	10.5	.	11.0	10.4	11.1	.	10.9	.	11.9	12.0
		N	.	12	1	3	5	5	.	3	1	2	4
		# scales read	.	0	0	0	1	3	.	2	1	1	2
	Weight	Mean	.	.	24.85	16.87	13.31	.	.	.	.	.	.
		Std. Dev.	.	.	.	3.3	1.5	.	.	.	.	.	.
		Max	.	.	.	20.70	15.15	.	.	.	.	.	.
		Min	.	.	.	14.85	11.45	.	.	.	.	.	.
		N	.	.	1	3	5	.	.	.	.	.	.

Table 8. Length and weight at age of wild Atlantic salmon sampled from Old Bridge (site 51) between the years 1995 and 2000. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions.

			1988	1991	1992	1993	1994	1995 21-Aug	1996 13-Aug	1997 6-Aug	1998 11-Aug	1999 11-Aug	2000 9-Aug
fry	Length	Mean	.	.	.	.	.	5.4	4.8	4.3	4.5	4.9	5.0
		Std. Dev.	.	.	.	.	.	0.3	0.4	0.3	0.3	0.3	0.3
		Max	.	.	.	.	.	6.5	5.9	4.9	5.1	5.7	5.6
		Min	.	.	.	.	.	4.2	3.8	3.5	3.9	3.9	4.0
		N	.	.	.	.	.	110	68	54	50	50	61
	Weight	Mean	.	.	.	.	.	.	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	.	.	.	.	.	.	.	.	.
1+ parr	Length	Mean	.	.	.	.	.	9.2	8.6	8.6	7.9	8.2	8.6
		Std. Dev.	.	.	.	.	.	0.7	0.7	0.7	0.6	0.7	0.7
		Max	.	.	.	.	.	10.7	10.2	10.2	9.3	9.9	10.1
		Min	.	.	.	.	.	7.2	6.7	7.2	6.2	6.4	7.0
		N	.	.	.	.	.	150	316	198	394	471	222
		# scales read	.	.	.	.	.	4	6	13	17	17	12
	Weight	Mean	.	.	.	.	.	.	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	.	.	.	.	.	.	.	.	.
2+ parr	Length	Mean	.	.	.	.	.	11.7	11.5	11.3	10.6	11.0	11.1
		Std. Dev.	.	.	.	.	.	0.6	0.5	0.6	0.6	0.6	0.7
		Max	.	.	.	.	.	13.0	12.3	12.7	12.1	12.8	13.3
		Min	.	.	.	.	.	10.8	10.8	10.3	9.4	10.0	10.2
		N	.	.	.	.	.	62	33	45	71	101	101
		# scales read	.	.	.	.	.	4	7	11	15	12	12
	Weight	Mean	.	.	.	.	.	.	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	.	.	.	.	.	.	.	.	.
3+ parr	Length	Mean	.	.	.	.	.	13.3	12.9	13.0	.	13.0	.
		Std. Dev.	.	.	.	.	.	0.0	0.0	0.1	.	1.0	.
		Max	.	.	.	.	.	13.3	12.9	13.1	.	13.7	.
		Min	.	.	.	.	.	13.3	12.9	13.0	.	12.3	.
		N	.	.	.	.	.	2	2	3	.	2	.
		# scales read	.	.	.	.	.	2	2	3	.	2	.
	Weight	Mean	.	.	.	.	.	.	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	.	.	.	.	.	.	.	.	.

Table 9. Length and weight at age of wild Atlantic salmon sampled from MacFarlanes Brook (site 96) between the years 1991 and 2000. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions.

			1988	1991 31-Jul	1992 26-Jul	1993 22-Jul	1994 31-Jul	1995 17-Aug	1996 3-Aug	1997 7-Aug	1998 10-Aug	1999 9-Aug	2000 8-Aug
fry	Length	Mean	.	4.7	4.3	3.8	5.0	5.5	4.6	4.8	4.9	5.6	5.0
		Std. Dev.	.	0.3	0.2	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.3
		Max	.	5.4	4.8	4.3	5.5	6.6	5.2	5.8	5.6	6.5	5.7
		Min	.	3.6	3.8	2.9	4.1	4.6	3.6	3.5	3.4	4.2	4.4
		N	.	51	33	85	79	80	63	52	50	58	50
	Weight	Mean	.	.	0.85	0.62	1.43	.	.	.	.	.	.
		Std. Dev.	.	.	0.17	0.13	0.27	.	.	.	.	.	.
		Max	.	.	1.30	0.90	2.15	.	.	.	.	.	.
		Min	.	.	0.50	0.30	0.80	.	.	.	.	.	.
		N	.	.	33	85	79	.	.	.	.	.	.
1+ parr	Length	Mean	.	9.3	9.3	8.1	8.6	9.4	8.5	8.5	8.3	8.2	9.0
		Std. Dev.	.	0.6	0.8	0.8	0.7	0.5	0.8	0.7	0.7	0.7	0.6
		Max	.	10.2	10.6	9.9	10.1	10.4	10.7	10.5	10.1	10.0	9.9
		Min	.	7.5	6.4	6.5	7.2	8.3	6.2	7.0	7.1	7.0	7.2
		N	.	99	56	188	90	119	243	153	120	199	82
		# scales read	.	0	0	0	7	3	4	10	14	14	13
	Weight	Mean	.	.	9.75	6.47	7.88	.	.	.	.	.	.
		Std. Dev.	.	.	2.54	1.97	2.52	.	.	.	.	.	.
		Max	.	.	15.40	11.70	18.35	.	.	.	.	.	.
		Min	.	.	3.10	2.80	1.60	.	.	.	.	.	.
		N	.	.	56	188	90	.	.	.	.	.	.
2+ parr	Length	Mean	.	11.2	11.5	11.5	10.8	11.3	11.3	11.1	11.1	11.0	11.0
		Std. Dev.	.	0.7	0.5	0.7	0.5	0.6	0.5	0.5	0.6	0.4	0.7
		Max	.	12.8	12.5	12.7	12.1	12.5	13.1	12.4	12.6	11.7	12.7
		Min	.	10.3	10.9	10.2	10.2	10.5	10.8	10.6	10.3	10.2	10.0
		N	.	67	18	22	24	65	29	21	27	22	72
		# scales read	.	0	0	0	2	4	6	8	10	9	13
	Weight	Mean	.	.	19.53	18.93	14.50	.	.	.	.	.	.
		Std. Dev.	.	.	3.11	3.80	3.50	.	.	.	.	.	.
		Max	.	.	24.80	25.30	22.60	.	.	.	.	.	.
		Min	.	.	14.15	12.70	6.45	.	.	.	.	.	.
		N	.	.	18	22	24	.	.	.	.	.	.
3+ parr	Length	Mean	.	13.9	13.1	13.5	13.7	13.5	13.6	13.1	.	12.6	13.3
		Std. Dev.	.	0.3	0.1	.	.	1.0	0.4	.	.	0.1	.
		Max	.	14.1	13.2	.	.	14.2	13.8	.	.	12.7	.
		Min	.	13.6	13.0	.	.	12.8	13.3	.	.	12.5	.
		N	.	3	2	1	1	2	2	1	.	3	1
		# scales read	.	0	0	0	0	1	2	1	.	2	1
	Weight	Mean	.	.	28.43	30.00	30.95	.	.	.	.	.	.
		Std. Dev.		.	0.95	.	.	.	.	.	.	.	.
		Max	.	.	29.10	.	.	.	.	.	.	.	.
		Min	.	.	27.75	.	.	.	.	.	.	.	.
		N	.	.	2	1	1	.	.	.	.	.	.

Table 10. Length and weight at age of wild Atlantic salmon sampled from Trout Brook (site 98) between the years 1991 and 2000. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions. Site 98 was not sampled during 1993, data provided comes from spot check site 108.

			1988	1991 30-Jul	1992 28-Jul	1993 28-Jul	1994 30-Jul	1995 23-Aug	1996 4-Aug	1997 8-Aug	1998 29-Aug	1999 13-Aug	2000 4-Aug
fry	Length	Mean	.	3.9	3.6	3.3	4.4	5.0	4.4	4.3	5.2	5.1	4.2
		Std. Dev.	.	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.3
		Max	.	4.5	4.5	3.9	5.2	6.0	5.1	5.0	5.8	6.0	4.8
		Min	.	2.9	3.0	3.0	3.6	3.9	3.3	3.3	4.3	4.0	3.6
		N	.	53	27	27	50	101	59	50	51	48	50
	Weight	Mean	.	.	0.48	0.42	0.92	1.40	.	.	.	.	.
		Std. Dev.	.	.	0.2	0.1	0.2	0.3	.	.	.	.	.
		Max	.	.	0.75	0.65	1.40	2.30	.	.	.	.	.
		Min	.	.	0.30	0.25	0.50	0.55	.	.	.	.	.
		N	.	.	27	27	50	84	.	.	.	.	.
1+ parr	Length	Mean	.	7.5	7.5	7.4	6.9	8.0	7.7	7.7	7.3	7.5	8.2
		Std. Dev.	.	0.8	0.9	1.0	0.6	0.9	0.7	0.5	0.6	0.6	0.7
		Max	.	9.0	8.7	9.9	8.3	9.7	9.2	8.6	8.8	8.8	9.6
		Min	.	5.6	6.5	6.3	5.7	6.4	6.1	6.5	6.2	6.4	6.4
		N	.	23	7	21	75	71	50	62	80	37	62
		# scales read	.	0	0	0	6	3	5	9	16	7	14
	Weight	Mean	.	.	4.74	5.20	3.70	6.19	.	.	.	.	.
		Std. Dev.	.	.	1.6	2.6	0.9	2.2	.	.	.	.	.
		Max	.	.	7.10	12.45	6.80	12.70	.	.	.	.	.
		Min	.	.	3.00	2.75	2.00	2.85	.	.	.	.	.
		N	.	.	7	21	75	62	.	.	.	.	.
2+ parr	Length	Mean	.	10.0	10.5	11.5	9.4	10.8	10.0	10.1	10.1	9.6	10.5
		Std. Dev.	.	0.6	0.2	0.8	0.4	1.1	0.4	0.6	0.8	0.6	0.7
		Max	.	11.1	10.7	12.5	10.4	12.7	10.4	11.8	11.8	10.8	12.0
		Min	.	9.2	10.3	10.3	8.8	9.9	9.4	9.2	9.3	8.9	9.7
		N	.	19	3	5	12	9	12	24	11	18	19
		# scales read	.	0	0	0	3	2	3	9	10	9	11
	Weight	Mean	.	.	12.50	18.21	8.58	14.51	.	.	.	.	.
		Std. Dev.	.	.	2.2	4.1	2.0	5.5	.	.	.	.	.
		Max	.	.	14.85	24.05	10.80	24.60	.	.	.	.	.
		Min	.	.	10.55	13.60	3.20	10.70	.	.	.	.	.
		N	.	.	3	5	12	7	.	.	.	.	.
3+ parr	Length	Mean	.	14.3	.	.	.	11.5	10.9	11.7	.	.	13.0
		Std. Dev.	.	.	.	.	.	.	0.1	.	.	.	.
		Max	.	.	.	.	.	.	11.0	.	.	.	.
		Min	.	.	.	.	.	.	10.8	.	.	.	.
		N	.	1	.	.	.	1	3	1	.	.	1
		# scales read	.	0	.	.	.	1	1	1	.	.	1
	Weight	Mean	.	.	.	.	.	18.00	.	.	.	.	.
		Std. Dev.	.	.	.	.	.	.	.	.	.	.	.
		Max	.	.	.	.	.	.	.	.	.	.	.
		Min	.	.	.	.	.	.	.	.	.	.	.
		N	.	.	.	.	.	1	.	.	.	.	.

Table 11. Length and weight at age of wild Atlantic salmon sampled from other locations on the Margaree River between the years 1988 and 1993. Length is in (cm) and weight is in (grams). Ages were determined from scale samples and length frequency distributions.

			Forest Glen Brook				Lake O'Law			Watson B.
			45A	45B	45-2	92D	22	92A	92B	92C
			1988	1988	1991	1992	1988	1992	1992	1992
			27-Jul	27-Jul	29-Jul	22-Sep	26-Jul	19-Sep	20-Sep	20-Sep
fry	Length	Mean	3.2	3.3	4.1	5.0	.	5.3	5.0	5.7
		Std. Dev.	0.3	0.2	0.4	0.4	.	0.4	0.6	0.7
		Max	3.9	3.9	5.5	5.5	.	6.1	5.9	6.9
		Min	2.8	2.9	3.3	4.3	.	4.5	3.8	4.4
		N	33	33	51	21	.	13	35	11
	Weight	Mean	0.33	0.37	.	1.42	.	1.56	1.39	1.99
		Std. Dev.	0.1	0.1	.	0.3	.	0.4	0.4	0.8
		Max	0.55	0.60	.	2.05	.	2.25	2.35	3.35
		Min	0.20	0.20	.	0.85	.	1.03	0.60	0.80
		N	33	33	.	21	.	13	35	11
1+ parr	Length	Mean	6.9	7.1	7.5	8.4	6.2	7.4	7.9	9.5
		Std. Dev.	0.9	1.1	0.7	0.5	1.5	0.5	0.6	0.8
		Max	9.5	10.2	9.1	9.1	7.9	8.4	9.0	10.0
		Min	5.4	5.1	6.0	7.4	5.2	6.7	6.7	8.2
		N	108	159	148	15	3	25	40	5
		# scales read	21	29	0	0	1	0	0	0
	Weight	Mean	3.94	5.09	.	6.56	3.17	4.53	5.72	8.72
		Std. Dev.	1.8	2.9	.	1.2	2.5	1.1	1.3	1.8
		Max	9.45	12.75	.	8.30	6.05	6.75	7.85	10.35
		Min	1.60	1.75	.	4.45	1.65	3.10	2.85	5.90
		N	108	159	.	15	3	25	40	5
2+ parr	Length	Mean	10.3	10.9	9.6	10.7	12.0	10.9	10.8	11.4
		Std. Dev.	0.6	0.4	0.3	0.7	0.7	0.1	0.9	0.5
		Max	11.6	11.5	10.2	11.6	13.3	10.9	12.9	12.0
		Min	9.6	10.4	9.2	9.5	10.7	10.8	9.5	10.9
		N	12	8	19	8	26	3	17	6
		# scales read	10	3	0	0	10	0	0	0
	Weight	Mean	12.80	13.56	.	13.25	21.58	12.53	14.53	15.61
		Std. Dev.	2.8	2.3	.	2.2	4.4	0.2	4.5	3.1
		Max	19.90	16.55	.	17.25	29.20	12.80	25.20	20.70
		Min	8.95	10.30	.	10.55	13.25	12.40	8.85	12.60
		N	12	8	.	8	26	3	17	6
3+ parr	Length	Mean	.	12.6	11.0	12.2	.	.	.	15.2
		Std. Dev.	.	.	0.4	0.1	.	.	.	.
		Max	.	.	12.1	12.3	.	.	.	.
		Min	.	.	10.5	12.1	.	.	.	.
		N	.	1	19	2	.	.	.	1
		# scales read	.	1	0	0	.	.	.	0
	Weight	Mean	.	.	.	18.18	.	.	.	33.40
		Std. Dev.	.	.	.	0.7	.	.	.	.
		Max	.	.	.	18.70	.	.	.	.
		Min	.	.	.	17.65	.	.	.	.
		N	.	.	.	2	.	.	.	1

Table 11 (con't).

			Big Intervale	MacFarlanes	Trout B.		Scotsville
			92E	92F	98B	108	107
			1992	1992	1992	1993	1993
			22-Sep	23-Sep	28-Jul	28-Jul	28-Jul
fry	Length	Mean	5.7	6.1	.	3.4	3.8
		Std. Dev.	0.4	0.5	.	0.2	0.3
		Max	6.6	6.7	.	3.7	4.2
		Min	5.0	5.2	.	3	2.9
		N	35	13	.	25	24
	Weight	Mean	2.10	2.75	.	0.41	0.63
		Std. Dev.	0.4	0.5	.	0.1	0.2
		Max	2.85	3.60	.	0.6	1.00
		Min	1.50	1.85	.	0.25	0.25
		N	35	13	.	25	24
1+ parr	Length	Mean	8.4	8.1	7.0	6.8	9.4
		Std. Dev.	0.6	1.3	1.2	0.4	0.6
		Max	9.3	10.0	8.7	7.2	10.3
		Min	7.0	6.8	5.1	6	8.4
		N	21	17	9	8	7
		# scales read	0	0	0	0	.
	Weight	Mean	6.62	6.56	.	3.54	10.24
		Std. Dev.	1.5	3.4	.	0.5	2.3
		Max	9.15	12.60	.	4.05	13.40
		Min	3.75	3.35	.	2.75	7.55
		N	21	17	.	8	7
2+ parr	Length	Mean	10.9	11.2	10.2	10.2	11.6
		Std. Dev.	1.1	0.8	1.1	1.2	0.7
		Max	12.4	12.7	10.9	11.7	12.7
		Min	9.6	10.3	9.4	8.9	10.7
		N	8	13	2	6	6
		# scales read	0	0	0	0	0
	Weight	Mean	13.97	17.37	.	12.75	19.20
		Std. Dev.	4.0	4.1	.	4.1	4.5
		Max	19.20	27.40	.	19.05	27.55
		Min	9.45	12.60	.	8.55	14.50
		N	8	13	.	6	6
3+ parr	Length	Mean	13.1	13.3	.	.	.
		Std. Dev.	0.1	0.1	.	.	.
		Max	13.2	13.3	.	.	.
		Min	13.0	13.2	.	.	.
		N	2	2	.	.	.
		# scales read	0	0	.	.	.
	Weight	Mean	23.83	27.50	.	.	.
		Std. Dev.	0.0	1.8	.	.	.
		Max	23.85	28.80	.	.	.
		Min	23.80	26.20	.	.	.
		N	2	2	.	.	.

Table 12. Length - weight regression parameters for wild fry sampled from Margaree River sites during 1988, 1992-1995. Regressions are calculated using log (10) of length (cm) and weight (g). Min and max length refer to the range of predictor variable. All regressions are significant ($p<0.05$).

			Length (cm)			Regression Parameters		
Year	Date	Site #	N	Min	Max	slope	intercept	R square
1988	26-Jul	15	33	3.4	4.9	3.058	1.376	0.797
1988	27-Jul	45A	33	2.8	3.9	2.360	2.457	0.645
1988	27-Jul	45B	32	2.9	3.7	1.932	2.538	0.666
1992	25-Jul	15	31	3.5	4.8	1.592	2.861	0.739
1992	22-Sep	92E	35	5.0	6.6	1.032	3.554	0.835
1992	29-Jul	40	33	3.0	4.1	1.595	2.909	0.744
1992	27-Jul	45	29	3.1	4.2	2.135	2.570	0.835
1992	22-Sep	92D	21	4.3	5.5	1.157	3.384	0.926
1992	19-Sep	92A	13	4.5	6.1	1.017	3.687	0.897
1992	28-Jul	92B	35	3.8	5.9	1.148	3.424	0.820
1992	26-Jul	96	32	3.8	4.8	1.201	3.265	0.704
1992	23-Sep	92F	13	5.2	6.7	0.869	3.729	0.719
1992	28-Jul	98	27	3.0	4.5	2.124	2.611	0.790
1992	20-Sep	92C	11	4.4	6.9	0.885	3.960	0.955
1993	20-Jul	15	60	3.6	4.2	1.176	3.151	0.583
1993	27-Jul	40	27	2.8	4.1	1.766	2.741	0.644
1993	21-Jul	45	42	2.6	4.1	2.366	2.390	0.912
1993	22-Jul	96	84	2.9	4.3	1.591	2.795	0.647
1993	28-Jul	107	24	2.9	4.2	1.554	2.785	0.793
1993	28-Jul	98	27	3.0	3.9	2.513	2.301	0.914
1993	28-Jul	108	25	3.0	3.7	1.985	2.550	0.779
1994	27-Jul	15	50	3.3	5.5	0.977	3.560	0.736
1994	29-Jul	40	53	3.1	4.6	1.576	2.881	0.818
1994	28-Jul	45	51	3.1	4.8	1.421	3.106	0.839
1994	31-Jul	96	79	4.1	5.5	0.980	3.561	0.718
1994	30-Jul	98	50	3.6	5.2	1.484	3.000	0.906
1995	23-Aug	98	84	3.9	6.0	1.076	3.468	0.688

Table 13. Length - weight regression parameters for wild parr sampled from Margaree River sites during 1988, 1992-1995. Regressions are calculated using log (10) of length (cm) and weight (g). Min and max length refer to the range of predictor variable. All regressions are significant ($p<0.05$).

			Length (cm)			Regression Parameters		
Year	Date	Site #	N	Min	Max	slope	interrupt	R square
1988	26-Jul	15	44	7.2	11.6	0.258	6.570	0.924
1988	26-Jul	22	29	5.2	13.3	0.260	6.302	0.881
1988	27-Jul	45A	72	5.4	11.6	0.369	5.538	0.894
1988	27-Jul	45B	78	5.1	11.5	0.415	5.355	0.948
1992	25-Jul	15	59	6.7	13.9	0.250	6.602	0.916
1992	22-Sep	92E	31	7.0	13.2	0.293	6.531	0.972
1992	29-Jul	40	70	6.6	11.9	0.298	6.221	0.866
1992	27-Jul	45	98	6.5	12.1	0.308	6.181	0.925
1992	22-Sep	92D	25	7.4	12.3	0.331	6.278	0.968
1992	19-Sep	92A	28	6.7	10.9	0.434	5.436	0.989
1992	28-Jul	92B	57	6.7	12.9	0.299	6.250	0.938
1992	26-Jul	96	76	6.4	13.2	0.230	7.040	0.938
1992	23-Sep	92F	32	6.8	13.3	0.266	6.438	0.938
1992	28-Jul	98	10	6.5	10.7	0.387	5.673	0.945
1992	20-Sep	92C	12	8.2	15.2	0.229	7.635	0.935
1993	20-Jul	15	51	7.4	12.0	0.245	6.842	0.930
1993	27-Jul	40	101	6.0	12.0	0.377	5.581	0.960
1993	21-Jul	45	206	5.7	12.2	0.408	5.355	0.920
1993	22-Jul	96	210	6.5	13.5	0.283	6.231	0.931
1993	28-Jul	107	13	8.4	12.7	0.209	7.398	0.908
1993	28-Jul	98	26	6.3	12.5	0.316	5.786	0.968
1993	28-Jul	108	14	6.0	11.7	0.316	5.786	0.968
1994	27-Jul	15	44	8.0	12.1	0.275	6.617	0.958
1994	29-Jul	40	88	6.2	10.8	0.410	5.474	0.978
1994	28-Jul	45	167	5.7	11.2	0.434	5.406	0.950
1994	31-Jul	96	115	7.2	13.7	0.243	6.829	0.778
1994	30-Jul	98	87	5.7	10.4	0.462	5.211	0.812
1995	23-Aug	98	70	6.4	12.7	0.324	6.014	0.930

Table 14. Catch, sampling location and size range of hatchery identified parr captured during electrofishing surveys at various locations on the Margaree River between 1988 - 2000. These have been excluded from biological characteristics summaries and population estimates. Site #'s refers to those listed in Table 1 and Figure 1.

Location	Site #	Year	Date	Number Caught	% of Parr Catch	Length range (cm)
Forest Glen	45	1991	29-Jul	2	1.2	8.6 - 8.8
Big Brook	15	1992	25-Jul	2	3.2	9.9 - 10.0
Main NE	92E	1992	22-Sep	2	6.0	10.5 - 10.6
Main NE	51	1995	21-Aug	50	19.0	8.1 - 12.2
Main NE	51	2000	9-Aug	4	1.2	8.8 - 11.0

Table 15. Catches of Brook Trout, American Eel and Sticklebacks during electrofishing surveys at index sites, 15, 40, 45, 51, 96 and 98 between 1988 and 2000. In the "# of sweeps column", numbers with an asterisk indicate that a CPUE sweep was done within the barrier site. In "Number of fish caught per sweep" column the catch in the initial CPUE pass is indicated first in brackets. Total catch excludes the CPUE catch.

					Brook Trout		Eel		Stickleback	
Location	Year	Date	Area (m^2)	# of Sweeps	Number caught per sweep	Total Catch	Number caught per sweep	Total Catch	Number caught per sweep	Total Catch
Big Brook (15)	1988	26-Jul	409.3	3	108,39,24	171	.	0	.	0
	1991	1-Aug	223.5	4	14,4,2,0	20	.	0	.	0
	1992	25-Jul	209.4	4*	(5),6,8,5,4	23	.	0	.	0
	1993	20-Jul	216.0	4*	(4),13,1,3,2	19	.	0	.	0
	1994	27-Jul	148.7	4	21,6,4,5	36	.	0	0,2,0,0	2
	1995	7-Aug	145.9	4	25,9,4,0	38	.	0	1,0,1,1	3
	1996	2-Aug	216.0	4	16,0,1,1	18	.	0	.	0
	1997	11-Aug	171.7	4	11,3,1,1	16	1,0,0,0	1	1,0,1,0	2
	1998	8-Aug	241.9	3	14,6,0,0	20	.	0	2,0,2	4
	1999	12-Aug	215.4	4	14,7,2,3	26	.	0	.	0
	2000	11-Aug	200.0	4*	(8),8,3,3,4	18	.	0	.	0
Forest Glen (40)	1992	29-Jul	128.0	4*	(2),4,2,1,6	13	.	0	.	0
	1993	27-Jul	133.3	4*	(3),5,1,1,0	7	.	0	.	0
	1994	29-Jul	116.5	3	6,1,1	8	.	0	.	0
	1995	8-Aug	132.2	4	7,5,3,1	16	.	0	.	0
Forest Glen (45)	1991	29-Jul	236.1	4	3,4,0,1	8	.	0	.	0
	1992	27-Jul	170.5	4*	(0),2,2,0,0	4	.	0	.	0
	1993	21-Jul	227.5	4*	(1),8,6,2,1	17	.	0	.	0
	1994	28-Jul	193.3	4	7,1,0,0	8	.	0	.	0
	1995	9-Aug	173.9	4	6,1,4,0	11	.	0	.	0
	1996	6-Aug	250.2	4	1,0,2,1	4	.	0	.	0
	1997	5-Aug	237.0	4	8,3,1,1	13	.	0	.	0

Table 15 (con't).

	Year	Date	Area (m^2)	# of Sweeps	Brook Trout		Eel		Stickleback	
					Number caught per sweep	Total Catch	Number caught per sweep	Total Catch	Number caught per sweep	Total Catch
Forest Glen (45)	1998	22-Aug	206.6	3	7,2,1	10	.	0	.	0
	1999	12-Aug	248.3	3	0,3,0	3	.	0	.	0
	2000	10-Aug	226.9	4*	(1),7,1,0,0	8	.	0	.	0
Old Bridge (51)	1995	21-Aug	443.5	3	12,4,0	16	.	0	1,0,0	1
	1996	13-Aug	477.6	3	16,2,1	19	.	0	3,1,0	4
	1997	6-Aug	421.0	3	15,7,4	26	.	0	1,1,1	3
	1998	28-Aug	507.8	3	36,8,4	48	.	0	.	.
	1999	11-Aug	542.9	3	25,12,3	40	.	0	5,0,0	5
	2000	9-Aug	360.4	4*	(6),24,8,0,2	34	.	0	(1),2,1,1,0	4
MacFarlanes Brook (96)	1991	31-Jul	248.2	4	20,5,3,1	29	.	0	.	0
	1992	26-Jul	135.7	4*	(4),23,8,8,4	43	.	0	.	0
	1993	22-Jul	185.0	4*	(7),11,9,5,1	26	.	0	.	0
	1994	31-Jul	160.1	4	7,1,2,0	10	1,0,0,0	1	.	0
	1995	17-Aug	289.4	4	19,7,4,2	32	1,0,0,0	1	.	0
	1996	3-Aug	315.7	4	26,8,2,4	40	.	0	.	0
	1997	7-Aug	267.7	4	28,16,7,1	52	.	0	.	0
	1998	10-Aug	258.0	3	8,3,2	13	.	0	.	0
	1999	9-Aug	246.6	3	18,10,1	29	.	0	.	0
	2000	8-Aug	248.4	4*	(1),7,3,1,3	14	.	0	.	0
Trout Brook (98)	1991	30-Jul	251.3	4	1,18,6,4	29	2,1,0,0	3	36,25,19,25	105
	1992	28-Jul	191.5	3*	(1),6,3,2	11	.	0	(12),189,138,136	463
	1993	28-Jul	.	0*	(4)	.	.	0	(16)	.
	1994	30-Jul	173.8	4	33,19,13,3	68	.	0	0,0,0,1	1
	1995	23-Aug	180.2	4	25,18,3,2	48	.	0	.	0
	1996	4-Aug	211.2	3	13,7,0	.	.	0	0,0,1	1
	1997	8-Aug	206.3	4	10,10,2,0	22	.	0	.	0
	1998	29-Aug	196.0	4	7,4,4,3	18	.	0	.	0
	1999	13-Aug	220.0	3	7,4,1	12	.	0	.	0
	2000	4-Aug	209.3	4*	(3),10,1,1,0	12	(0),2,0,0,0	2	.	0

Table 16. Catches of other species during electrofishing surveys at non-index site locations on the Margaree River between 1988 and 2000.

Location (site#)	Year	Date	Area (m^2)	# of Sweeps	Brook Trout		Eel		Stickleback		White Sucker	
					Number caught per sweep	Total Catch	Number caught per sweep	Total Catch	Number caught per sweep	Total Catch	Number caught per sweep	Total Catch
Lake O'Law 22	1988	26-Jul	NA	3	4,1,2	7	6,1,0	7	.	0	.	0
Forest Glen 45A	1988	27-Jul	169.9	3	3,7,1	11	1,0,0	1	.	0	.	0
Forest Glen 45B	1988	27-Jul	153.8	3	1,1,2	4	.	0	.	0	.	0
Forest Glen 45-2	1991	29-Jul	387.3	4	4,1,0,3	8	.	0	.	0	.	0
Lake O'Law 92A	1992	9-Sep	NA	1	10	10	1,1,4,0	6	.	0	.	0
Lake O'Law 92B	1992	20-Sep	NA	1	0	0	.	0	.	0	.	0
Watson's Brook 92C	1992	20-Sep	NA	1	2	2	.	0	.	0	.	0
Forest Glen 92D	1992	22-Sep	NA	1	1	1	.	0	.	0	.	0
NE Margaree 92E	1992	22-Sep	NA	1	3	3	.	0	.	0	.	0
MacFarlanes 92F	1992	23-Sep	NA	1	5	5	.	0	.	0	1	1
Trout Brook 98B	1992	28-Jul	NA	1	2	2	.	0	33	33	.	0
SW Margaree 107	1993	28-Jul	NA	1	19	19	.	0	.	0	.	0
Trout Brook 108	1993	28-Jul	NA	1	2	2	.	0	5	5	.	0

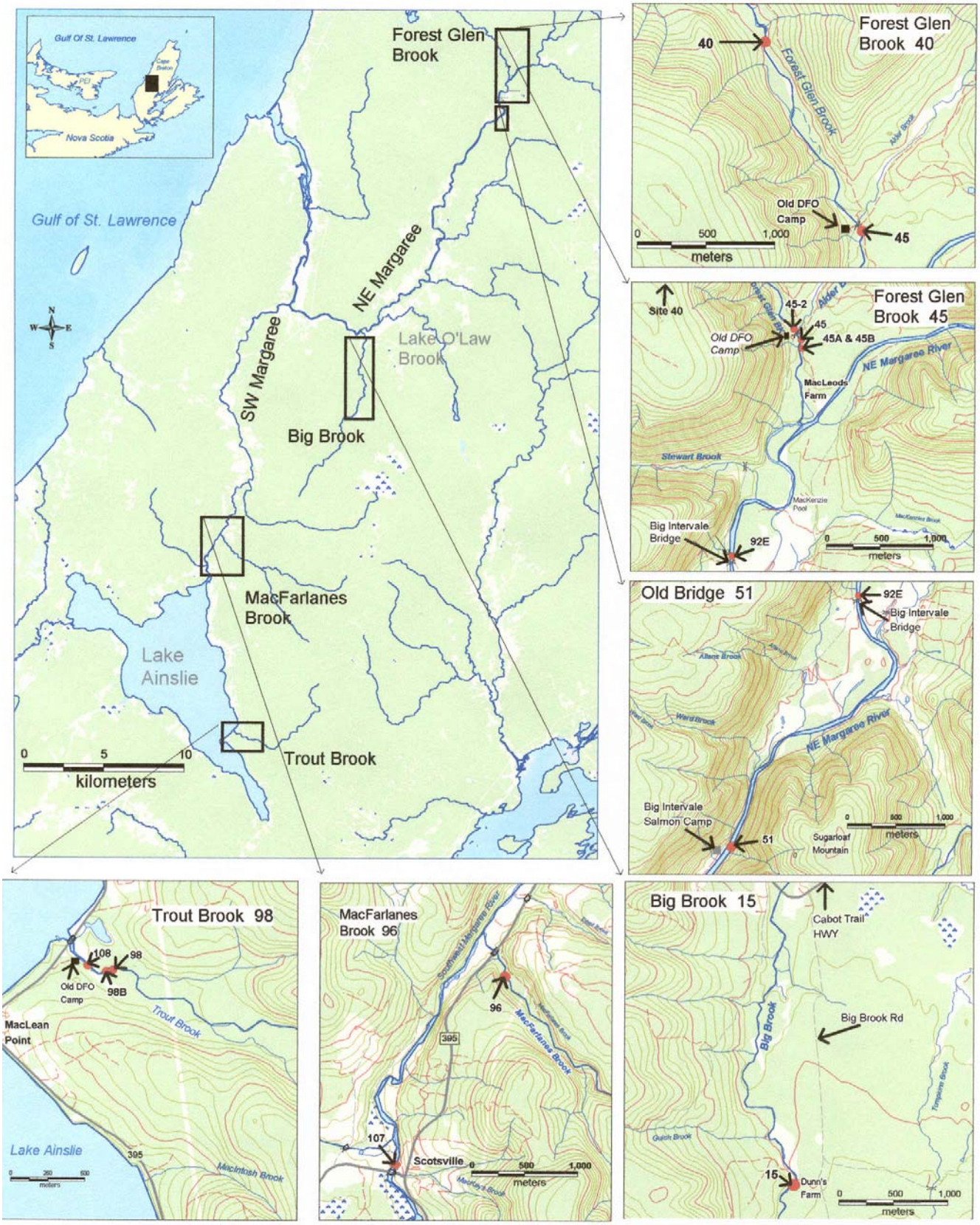

Figure 1. Margaree River watershed and electrofishing sampling stations.

Figure 2. Index barrier sites Big Brook (above) and Old Bridge (below).

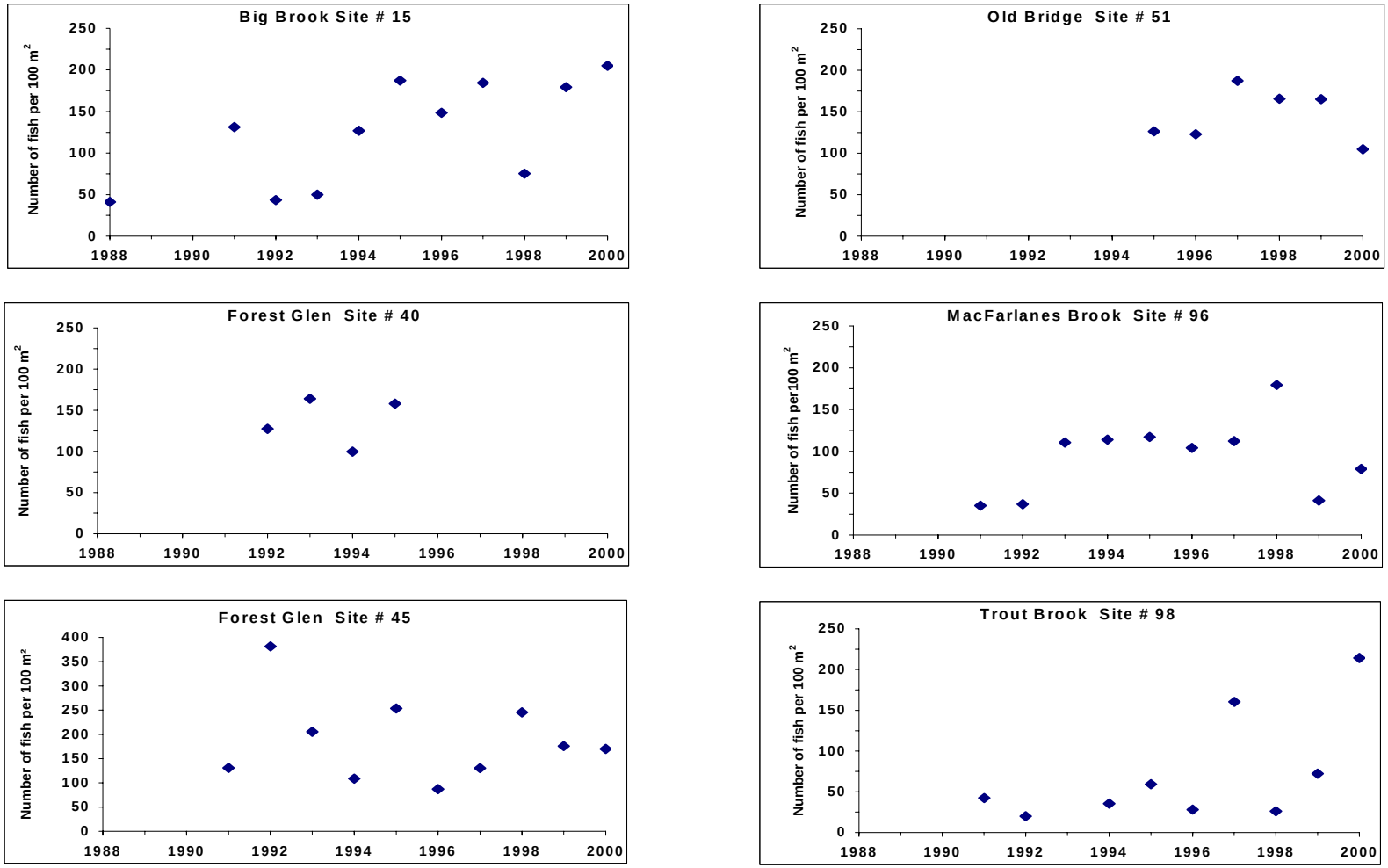

Figure 3. Estimated densities of wild Atlantic salmon fry sampled at index sites between 1988 and 2000.

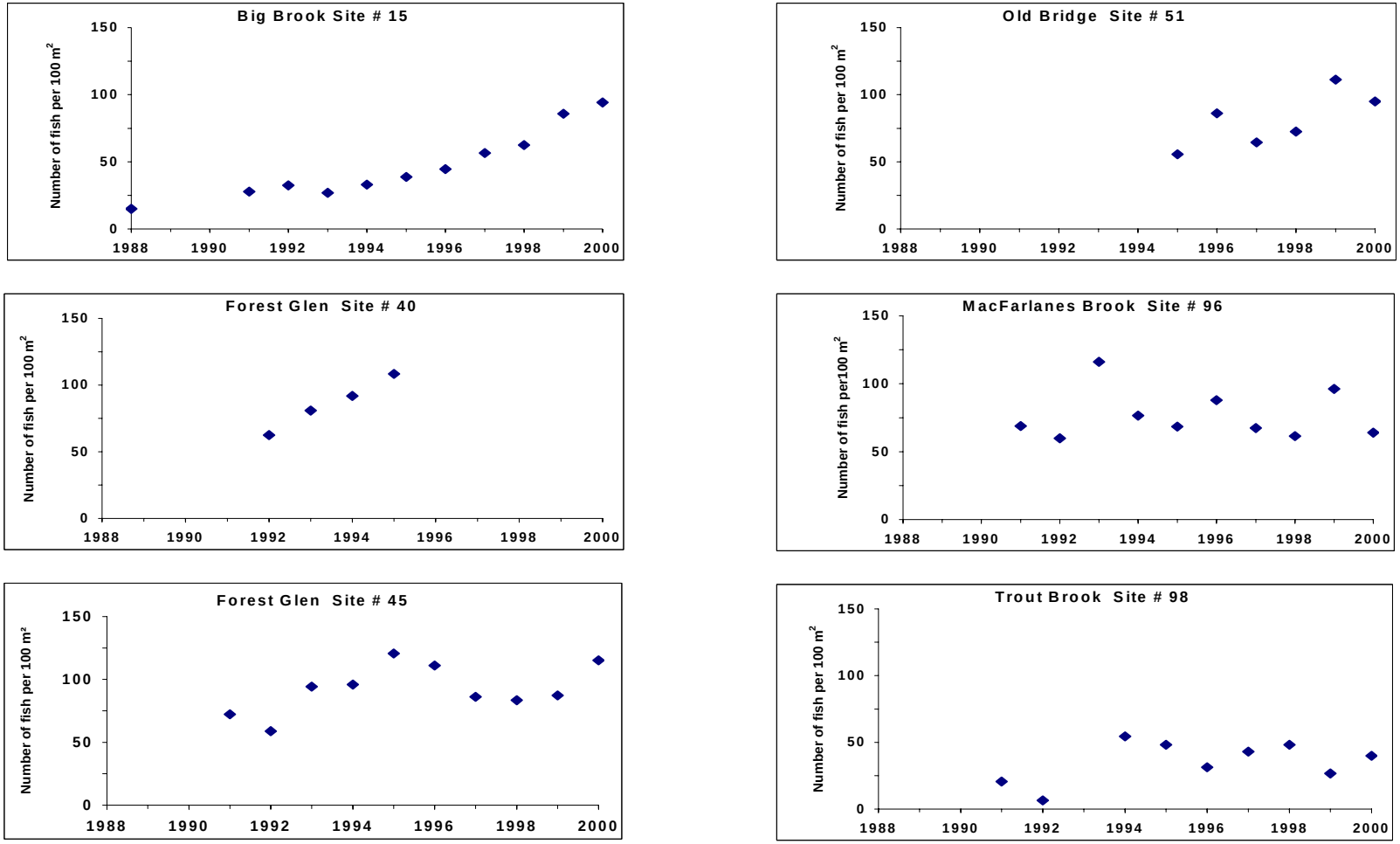

Figure 4. Estimated densities of wild Atlantic salmon parr sampled at index sites between 1988 and 2000.

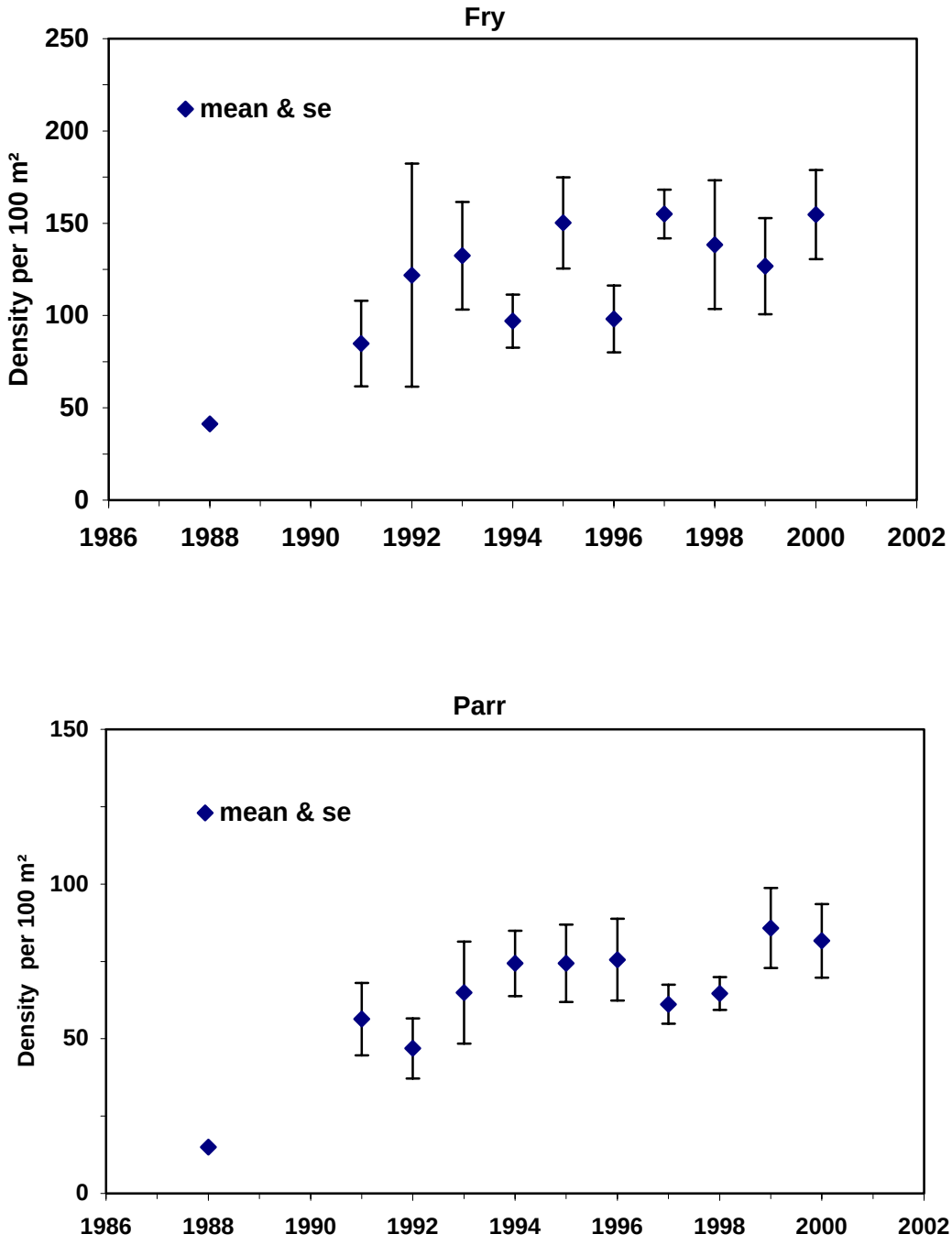

Figure 5. Mean densities (± 1 standard error) of wild Atlantic salmon fry and parr from index sites between 1988 and 2000.

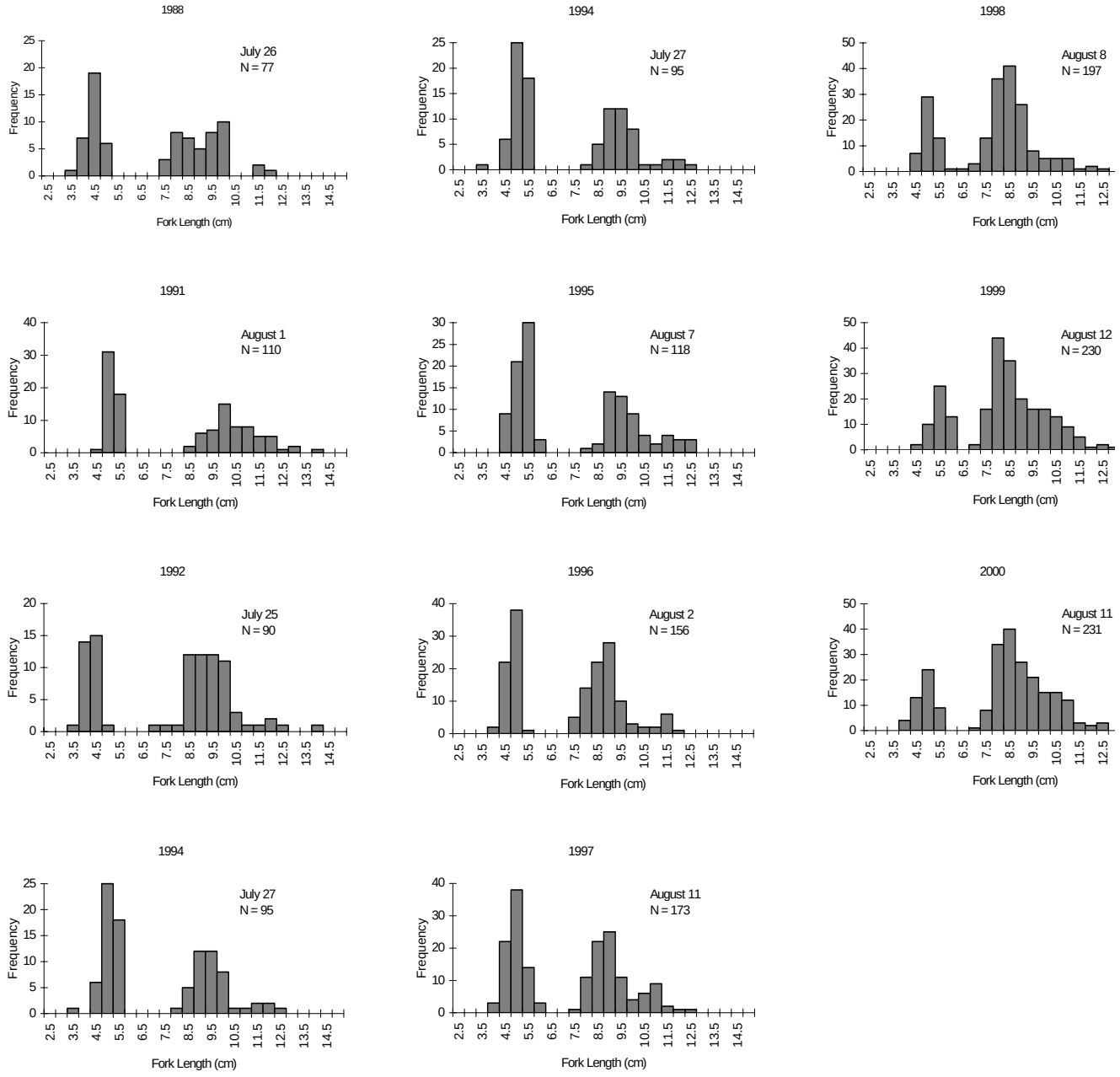

Figure 6. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at Big Brook (site# 15) between 1988 and 2000. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).

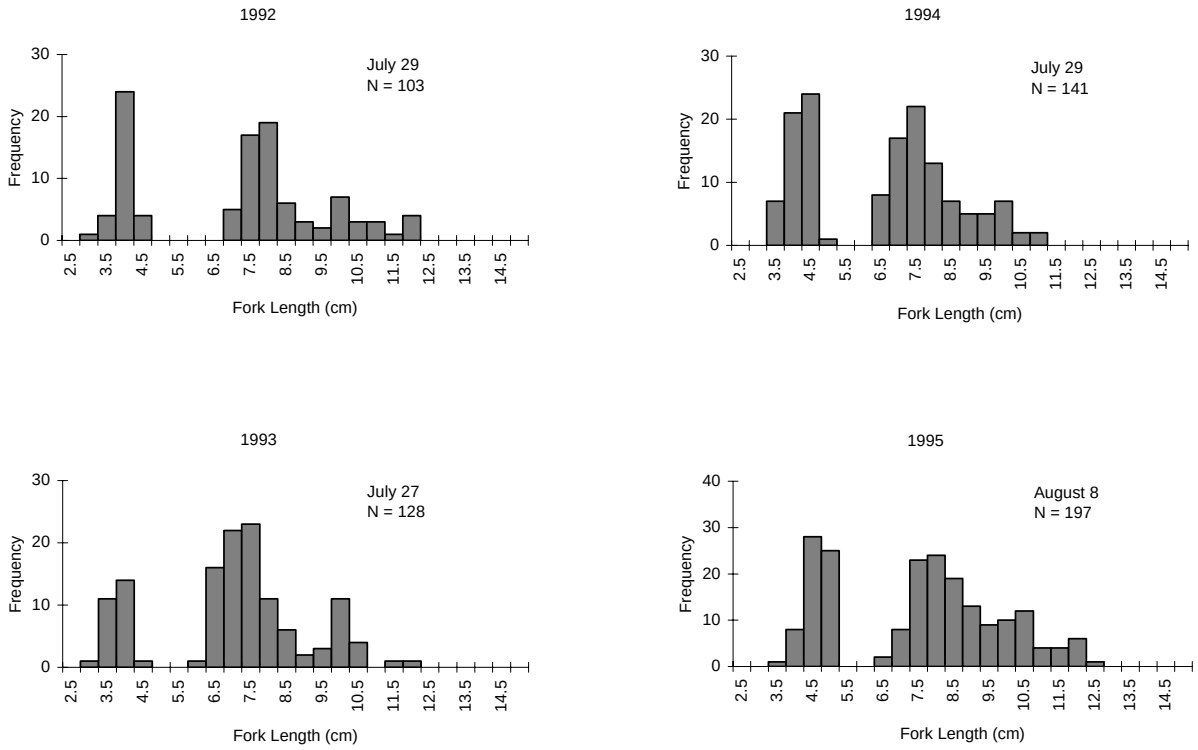

Figure 7. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at Forest Glen Brook (site# 40) between 1992 and 1995. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).

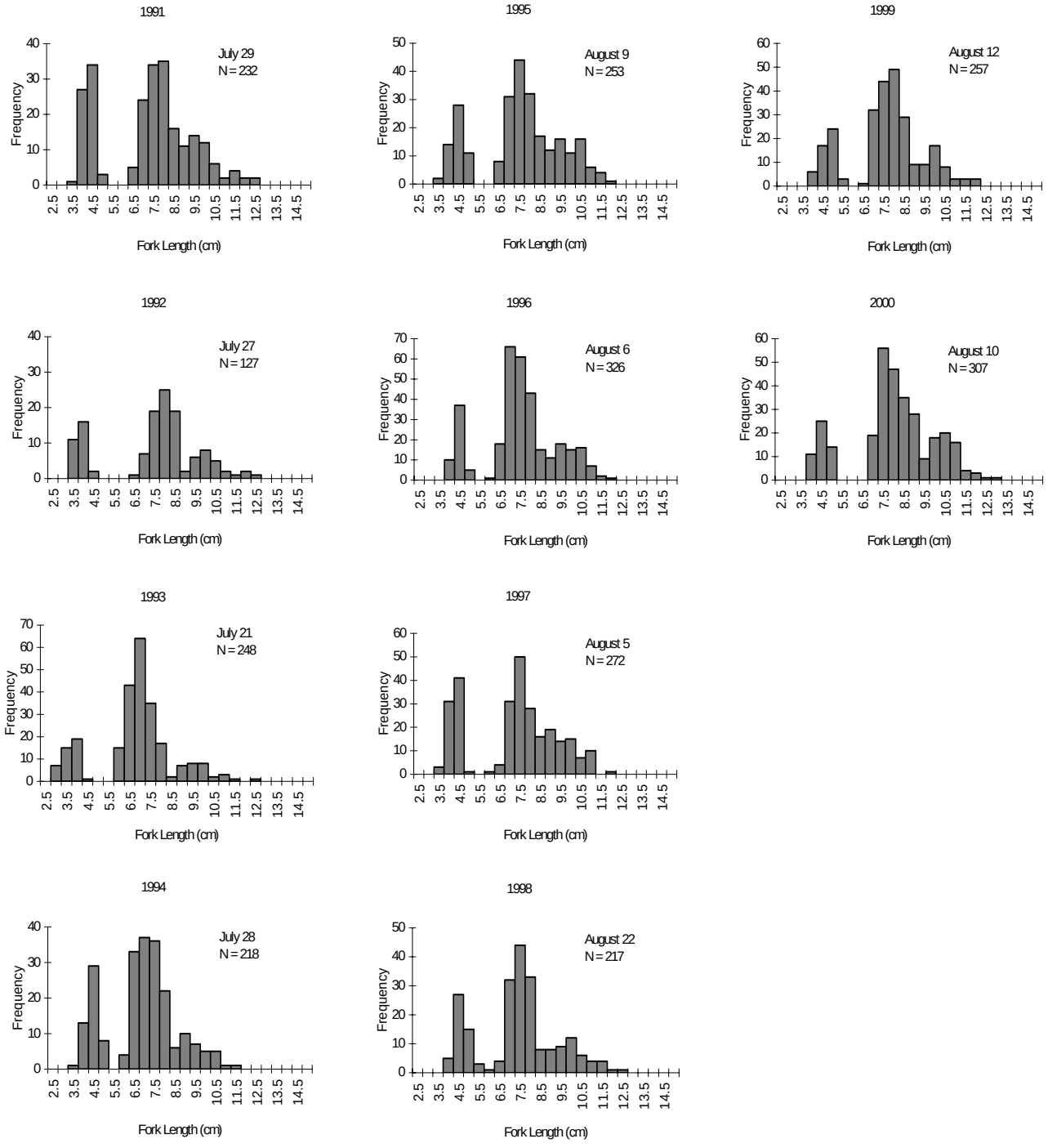

Figure 8. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at Forest Glen Brook (site# 45) between 1991 and 2000. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).

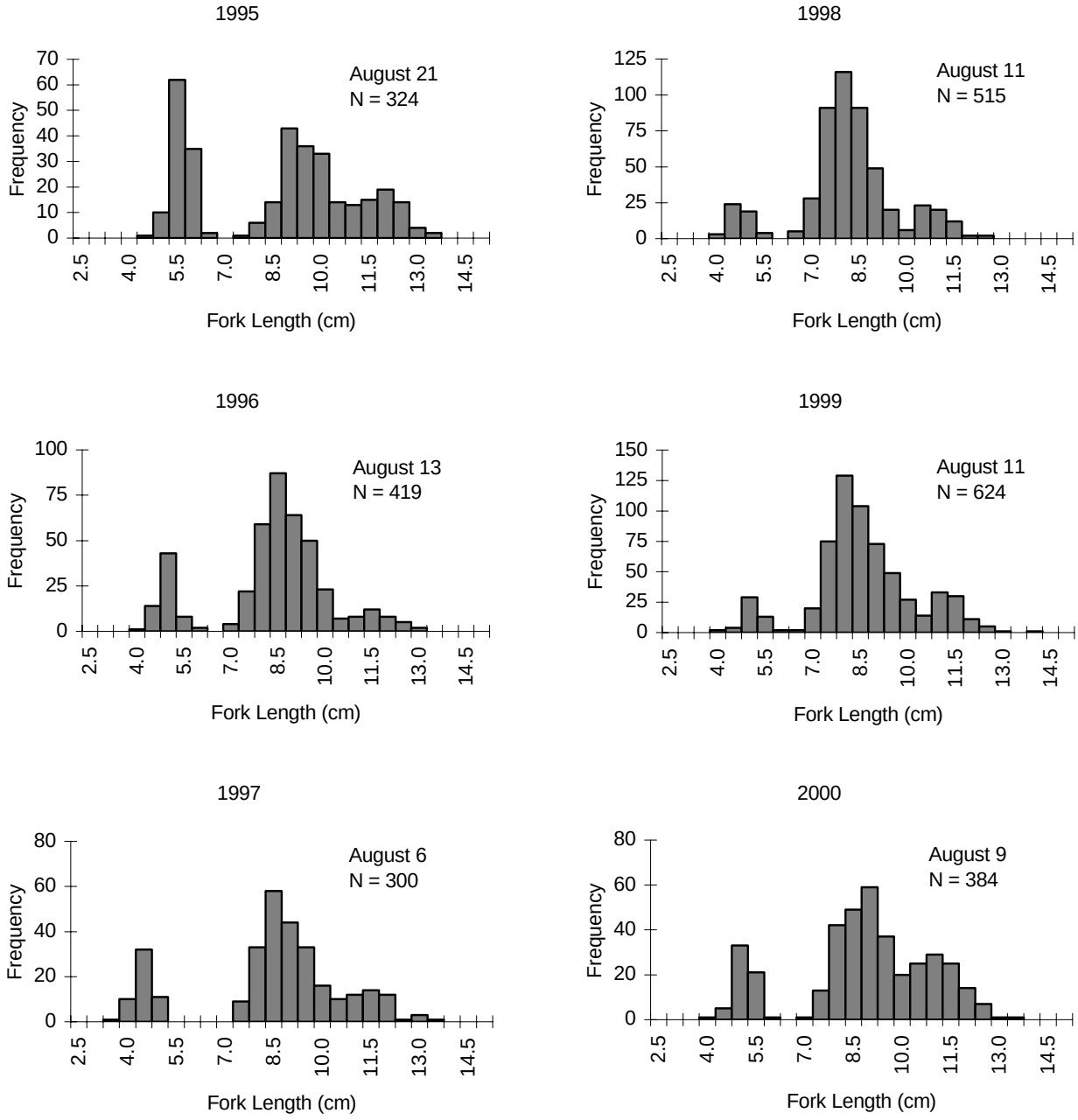

Figure 9. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at Old Bridge (site# 51) between 1995 and 2000. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).

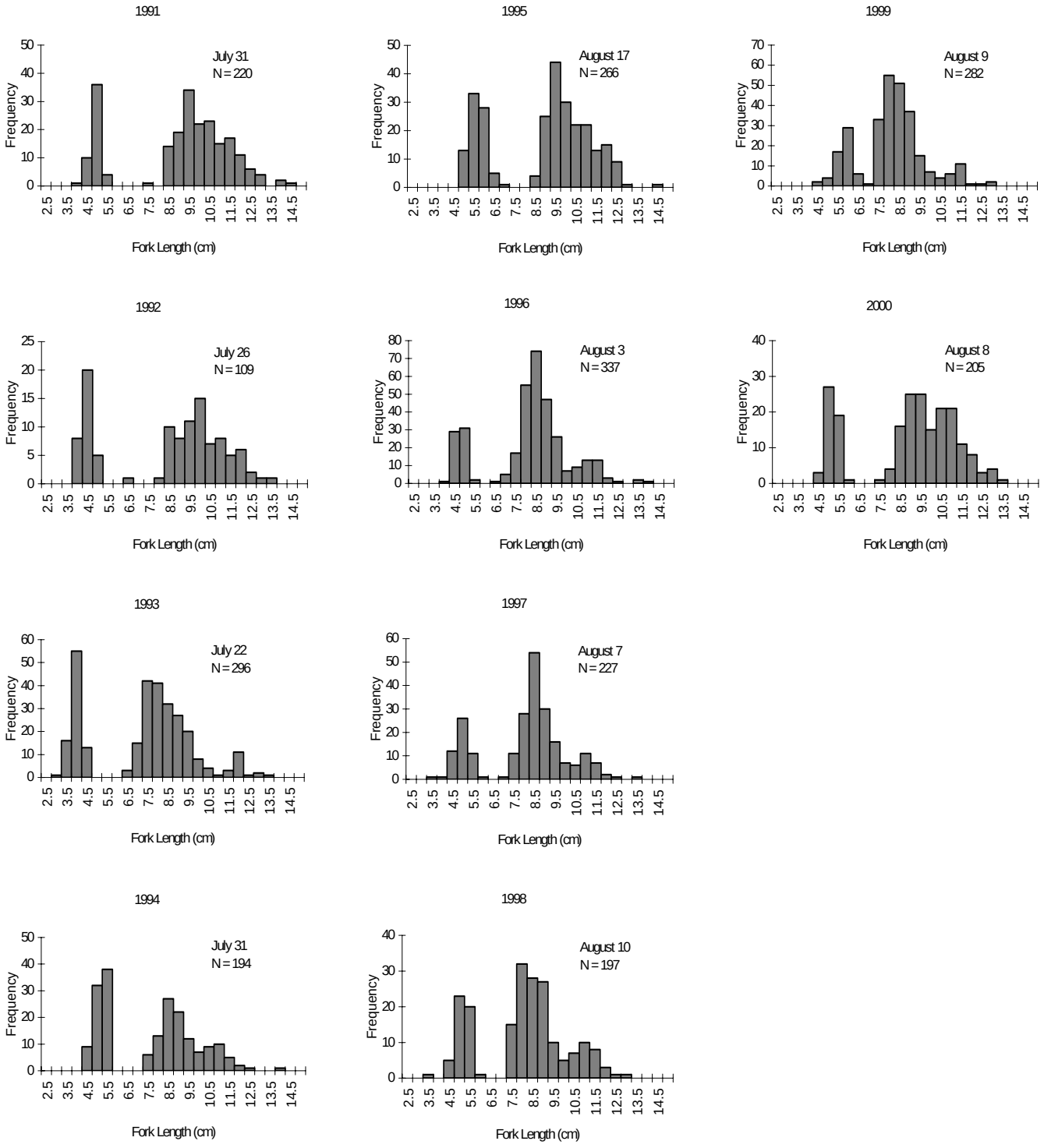

Figure 10. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at MacFarlanes Brook (site# 96) between 1991 and 2000. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).

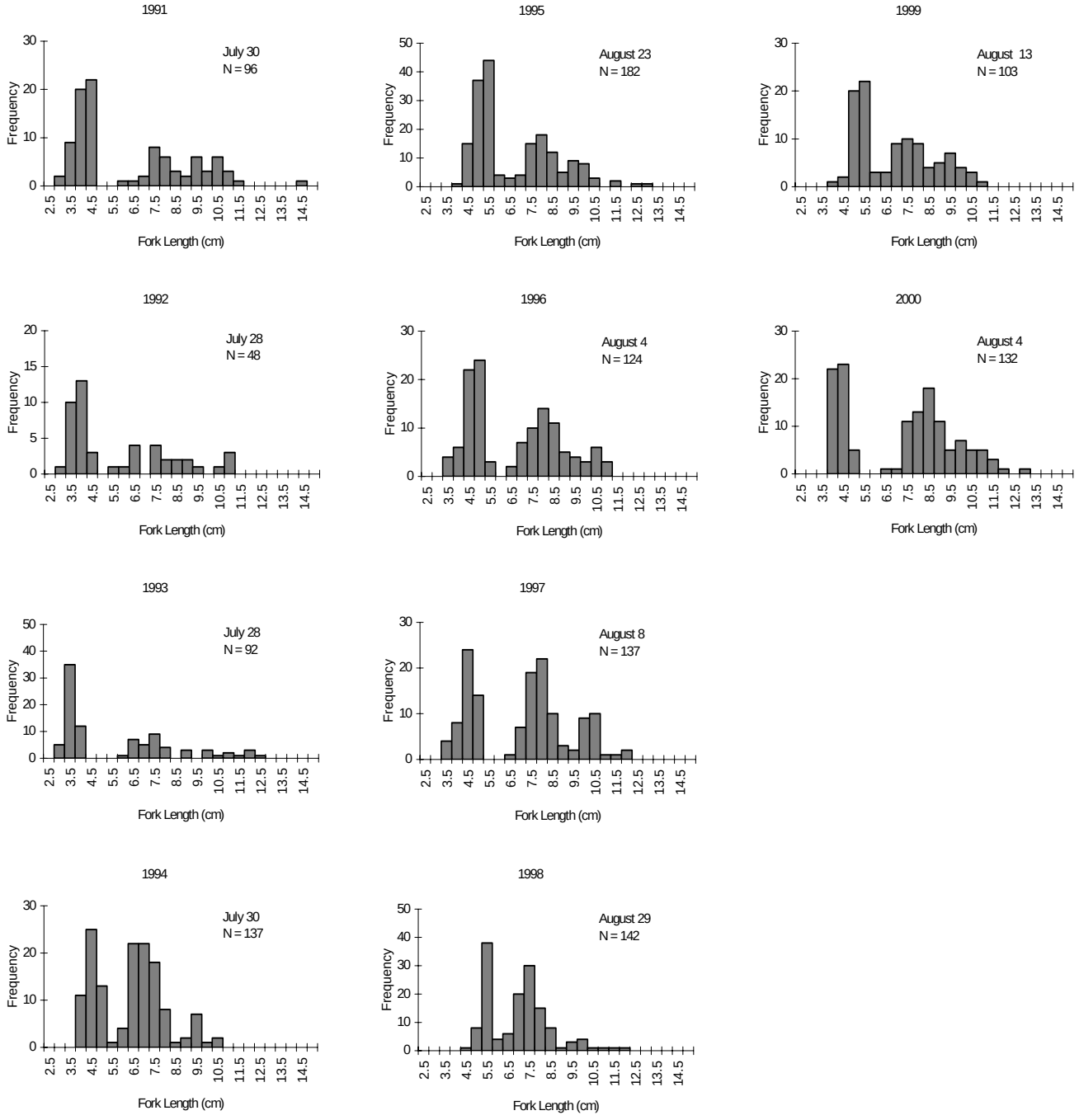

Figure 11. Length frequency distribution of wild Atlantic salmon captured during electrofishing surveys conducted at Trout Brook (site# 98) between 1991 and 2000. Site 98 was not sampled during 1993, included data for 1993 is from site 108. Lengths are grouped in 0.5 cm categories (e.g. 4.1 to 4.4 = 4.5).