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Status of Atlantic Salmon (*Salmo salar* L.) Stocks of the Newfoundland Region, 1996

by

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Abstract

The moratorium on the commercial Atlantic salmon fishery in insular Newfoundland entered its fifth year in 1996. There were further reductions in commercial quotas in Labrador in 1996 and the season opened on June 20 compared to June 5 in 1995. The moratorium placed on the Northern Cod Fishery in 1992, which should have eliminated by-catch of Atlantic salmon in cod fishing gear in SFAs 1-9, continued in 1996. The moratorium on cod fishing introduced in SFAs 10-14A in August 1993 also continued in 1996. Of the three SFAs in Labrador, the commercial fishery quota was caught only in SFA 2 in 1996. Labrador stocks, particularly the large salmon component, continued to be low compared to the 1970s. Management measures in recent years however appear to have dramatically improved spawning escapements, with the potential for increased returns in subsequent years. Seventy-two rivers throughout insular Newfoundland were closed to angling in mid- to late-August in 1996 due to low water levels and high water temeratures. These closures are not expected to have had a significant impact on catches since they occurred at a time of year when normally most angling activity is drawing to a close. Specific management measures were in effect for several rivers which should have restricted catch and effort. Total recreational catch (retained plus released fish) and effort in 1996 in insular Newfoundland were the highest recorded since 1974. Catch per unit of effort in 1996 increased over 1995 and the 1984-89, 1986-91, and 1992-95 means. Counts of small and large salmon and proportions of large salmon at counting facilities on the western side of the Northern Peninsula and along the northeast and east coasts during the moratorium years 1992-96 increased significantly over pre-moratorium years 1984-91. However, several rivers along the south coast and in Bay St. George did not show an overall improvement over pre-moratorium years. An analysis of trends in estimated total population sizes of small salmon for Gander River (SFA 4), Middle Brook (SFA 5), Biscay Bay River (SFA 9), Humber River (SFA 13), and Western Arm Brook (SFA 14A) for the period 1974-96, suggest overall total population sizes for insular Newfoundland in 1992-96 were low relative to pre-moratorium years. Adults returning in 1997 with a three-year-old smolt age will be the progeny of spawners in 1992, the first year of the moratorium. For northern and eastern rivers where greatly increased spawning escapements were recorded in 1992, there should be increases in total returns in 1997, exceeding levels for 1992-96. The magnitude of the increases will depend on the proportion of three-year-old smolts (many northern and eastern rivers are characterized by four-year-old smolts) and natural survival. For southern and southwestern rivers (Bay St. George in particular) where 1992 spawning escapements did not increase over pre-moratorium levels, it is not anticipated that adult returns in 1997 will increase, should survival not improve. These rivers typically have three-year-old smolts.

Résumé

Le moratoire de la pêche commerciale du saumon de l'Atlantique à l'île de Terre-Neuve en était à sa cinquième année en 1996. Il y a eu d'autres réductions des quotas commerciaux au Labrador en 1996 et la saison a débuté le 20 juin, comparativement au 5 juin en 1995. Le moratoire imposé à la pêche de la morue du Nord en 1992, qui devrait avoir éliminé les prises accessoires de saumons de l'Atlantique par les engins de pêche de la morue dans les ZPS 1 à 9, a été maintenu en 1996. Le moratoire de la pêche de la morue imposé en août 1993 dans les ZPS 10 à 14A a aussi été maintenu en 1996. Dans les trois ZPS du Labrador, le quota commercial n'a été atteint que dans la ZPS 2 en 1996. Les stocks du Labrador, notamment ceux de la composante des gros saumons, ont continué d'être faibles comparativement aux valeurs des années 1970. Les mesures de gestion des dernières années semblent cependant avoir permis d'accroître de façon extrêmement importante les échappées de géniteurs et donc la probabilité d'accroître les remontées des années ultérieures. Un total de 72 rivières de l'île de Terre-Neuve ont été interdites à la pêche récréative de la mi à la fin d'août 1996 à cause du bas niveau et de la température élevée des eaux. Ces fermetures ne devraient pas avoir eu un effet appréciable sur les captures car elles sont survenues à un moment de l'année où la pêche récréative tire généralement à sa fin. Des mesures de gestion particulières ont été appliquées dans plusieurs rivières et elles devraient avoir réduit les captures et l'effort. Les captures totales (poissons conservés ou remis à l'eau) et l'effort de pêche des pêcheurs récréatifs ont été les plus élevés notés depuis 1974. Les captures par effort unitaire de 1996 étaient plus importantes que celles de 1995 et que les moyennes des périodes 1984-1989, 1986-1991 et 1992-1995. Le nombre de petits et de gros saumons et la proportion de gros saumons aux installations de dénombrement de la côte ouest de la péninsule nord et le long des côtes nord-est et est pendant les années du moratoire de 1992-1996 sont de beaucoup supérieurs à ceux de la période d'avant le moratoire de 1984-1991. Mais une telle amélioration générale n'a cependant pas été notée pour plusieurs rivières de la côte sud et de la baie St.George. Une analyse des tendances de l'effectif estimé de la population totale de petits saumons des rivières Gander (ZPS 4), Middle Brook (ZPS 5), Biscay Bay (ZPS 9), Humber (ZPS 13) et Western Arm Brook (ZPS 14A) pendant la période 1974-1996 porte à croire que l'effectif total des populations de l'île de Terre-Neuve de 1992 à 1996 était faible comparativement à la période d'avant le moratoire. Les adultes revenant en 1997 après être devenus saumoneaux à trois ans seront la progéniture des géniteurs de 1992, la première année du moratoire. Dans les rivières du nord et de l'est où des échappées de géniteurs fortement accrues ont été notées en 1992, les remontées totales de 1997 devraient être accrues et supérieures aux valeurs de 1992-1996. L'importance de l'augmentation dépendra de la proportion de saumoneaux de trois ans (plusieurs rivières du nord et de l'est se caractérisent par des saumoneaux de quatre ans) et du taux de survie naturel. Dans le cas des rivières du sud et du sud-ouest (notamment de la baie St.George), où l'échappée de géniteurs de 1992 n'a pas été supérieure à celle des années antérieures au moratoire, les remontées d'adultes ne devraient pas être supérieures en 1997 à moins qu'il n'y ait amélioration du taux de survie. Ces rivières abritent généralement des saumoneaux de trois ans.

Introduction

This paper presents the general status of Atlantic salmon stocks of the Newfoundland Region (Fig. 1) in 1996. Catch and effort data for the commercial (Labrador only) and recreational fisheries and counts of Atlantic salmon at fishways and counting fences are examined in relation to historic data and management measures in effect in 1996. Assessments for Salmon Fishing Areas (SFAs) 12-14 in 1983-93 were presented in separate documents.

MANAGEMENT MEASURES

A five-year moratorium was placed on the commercial Atlantic salmon fishery in insular Newfoundland in 1992, while in Labrador fishing continued under quota or allowance catch. In addition, a commercial license retirement program went into effect in both insular Newfoundland and Labrador. The implementation of the moratorium on commercial fishing in 1992 followed a major management plan introduced in 1984 (O'Connell *et al.* 1992a; May 1993; Mullins and Caines MS 1994), elements of which were continued into the quota years of 1990 and 1991 and the 1992-96 moratorium years. These regulations continue a long standing history of implementation of management programs to prevent stock declines and allow populations to rebuild (May 1993).

Commercial fishery

Quotas (t) for SFAs 1, 2, and 14B in Labrador in 1996 and since they were first introduced in 1990 were as follows:

Year	SFA		
	1*	2	14B
1990	80	200	50+10**
1991	80	200	15
1992	80	180	13
1993	80	90	8
1994	24	60	8
1995	19	48	6.5
1996	14.5	35.5	5

*Allowance catch up to 1993.

**The 1990 quota of 50 t was for all of SFA 14; there was also a supplementary quota of 10 t for SFA 14B.

The commercial fishery in Labrador in 1996 opened on June 20 which was a change from 1995 when the opening was delayed from June 5 to July 3; the closure date of October 15 remained. As in previous years, it was illegal to retain Atlantic salmon caught as by-catch and the mandatory carcass tagging program remained in effect.

The numbers of commercial fishers for each SFA in Labrador and for SFAs combined for the period 1974-96 are shown in Table 1. Each fisher was licensed to fish 366 m of gear.

In addition to the closure of the commercial Atlantic salmon fishery in 1992, a moratorium on the Northern Cod Fishery was implemented in early July which should have resulted in the elimination of by-catch in cod fishing gear in SFAs 1-9. The cod moratorium continued in 1996. In August 1993, a moratorium was placed on cod fishing in SFAs 10-14A which remained in effect in 1996.

Recreational fishery

The number of fish that could be retained in each SFA in 1992 and 1993 was limited by quota. The quota was assigned for each SFA as a whole and not administered on an individual river basis. Only hook-and-release fishing was permitted after the quota was caught in each SFA. Quotas were eliminated in 1994. The seasonal bag limit for the retention of small salmon in insular Newfoundland decreased from eight to six in 1994, three to be caught prior to July 31 and three after that date. Hook-and-release fishing only was permitted after the bag limit of three was reached in each time period. These measures remained in effect in 1995 and 1996. As in previous years, the retention of large salmon was not permitted in insular Newfoundland. There was no division of the bag limit before and after July 31 in Labrador in 1994 and 1995, but in 1996 it applied to SFA 14B. The season bag limit for large salmon, reduced from two to one in 1995, remained the same for 1996. There was a daily bag limit of two fish in both insular Newfoundland and Labrador. The daily maximum number of fish that could be hooked and released was four. Angling ceased for the day when both the retention and hook-and-release limits were reached and ended for the season when six fish were retained.

On a river-specific basis, rivers in SFAs 9 and 10 were opened for hook-and-release fishing two weeks earlier than usual in 1996 after which time retention of catch was permitted until the end of the season. Main River (Sop's Arm) in SFA 3 was managed by a quota and Northwest Branch was open to hook-and-release fishing only; also certain areas were closed to all angling. Other rivers managed under quota in 1996 included Serpentine River, Fox Island River, and Adies Lake (upper Humber River) in SFA 13 and Lomond River, Watson's Brook, and Pincent's Brook in SFA 14A. The quota was removed from Exploits River (SFA 4) in 1996. Retention of catch was permitted during July 10-September 2 below Grand Falls and outside these dates only hook-and-release fishing was permitted. The main stem between Grand Falls and Red Indian Lake and all tributaries flowing into Red Indian Lake were open to hook-and-release fishing for the entire season. Retention and hook-and-release dates for tributaties between Grand Falls and Red Indian Lake were the same as for below Grand Falls. Northwest River (Terra Nova National Park) and two nearby rivers,

Southwest River and Salmon River, in SFA 5, were closed to all angling in 1996 on the basis of pre-season analyses which projected that less than 50% of conservation egg requirement would be achieved. After an in-season review projected that each river would attain in excess of 50% of conservation requirement, hook-and-release fishing was permitted after August 10. However, the portion of Northwest River inside Terra Nova National Park remained closed for the remainder of the season due to low water levels and high water temperatures. Southeast River, Placentia (SFA 10) was closed for retention of catch for a few days (July 31-August 2). Colinet and Rocky rivers in SFA 9 remained closed to angling in 1996 as did Conne River (SFA 11). There was no First People's food fishery in Conne River in 1996. Highlands River, Flat Bay Brook, and Harry's River above Home Pool in SFA 13 were closed to angling for the entire season. Harry's River and tributaries below Home Pool were open for hook and release on June 15 and for retention on on June 29. Hook-and-release fishing only was permitted for Robinsons River, Crabbes Brook, and Barachois Brook, for the entire season. There were fall hook-and-release fisheries (September 3-29) in Gander River (SFA 4) and in Humber River (SFA 13)

Seventy-two rivers throughout insular Newfoundland were closed to angling in 1996, mainly in mid- to late-August, due to high water temperatures and low water levels (Table 2).

ENVIRONMENTAL CONDITIONS IN 1996

Freshwater environment

Water conditions in Newfoundland and Labrador during June, July, and August in 1996 were measured at Department of Environment climatological stations at Eagle River (SFA2), Gander River (SFA 4), Rocky River (SFA 9), Isle aux Morts River (SFA 12), and Humber River (SFA 13). The following interpretations are based on monthly averages. Streamflows were below normal in June in both insular Newfoundland (39-89% of median flows) and southern Labrador (71% of median flows). In July, streamflows in insular Newfoundland were well above normal (218%-338% of median flows) and to a lesser extent this also applied southern Labrador (140% of median flows). Streamflows in insular Newfoundland in August were well below normal but normal in southern Labrador.

Marine environment

Above normal air temperatures during the winter resulted in light ice conditions on the Newfoundland shelf during winter and spring of 1996. Ice retreated earlier than normal along the southern Labrador coast which was clear of ice by the end of May. Severe ice conditions existed in northern Labrador and continued into August. Inshore water temperatures during 1996 were normal to above normal throughout the year. In general, the cold trends established in the late 1980s that bottomed in 1991, have moderated during the last couple of years.

Methods

Catch and effort information and counts at counting facilities in 1996 were compared to two pre-salmon moratorium means (1984-89 and and 1986-91) and to the 1992-95 mean during the moratorium. The 1984-89 mean corresponds to years under major management changes in the commercial fishery in the Newfoundland Region (O'Connell *et al.* 1992a). The commercial fishery in both insular Newfoundland and Labrador in 1990 and 1991 was controlled by a quota in each SFA (O'Connell *et al.* MS 1992b). The mix of management measures in effect during 1984-89 on the one hand and the imposition of commercial quotas in 1990 and 1991 on the other, should be kept in mind when making evaluations based on the 1986-91 mean.

Commercial and recreational fishery catch and effort data and fishway and counting fence data were added to that presented in O'Connell *et al.* (MS 1996a). For the Labrador commercial fishery, data were compiled by the Statistics and Informatics Branch of the Department of Fisheries and Oceans (DFO) in the manner described by Ash and O'Connell (1987a,b).

The monitoring of Labrador commercial fishery quotas in 1996 was similar to 1991-95. Landings were deducted from the quota of the SFA containing the fishers home port. However, for comparison with previous years when there were no quotas, landings in quota years were compiled by place landed. Commercial catches in the communities of Carrol's Cove, Camp Islands, and Cape Charles were deducted from the quota for northern Labrador (SFA 2, north of Cape Charles) in 1992-95. However, these catches were included as part of the SFA 14B catch statistics, as in previous years.

Recreational fishery data were compiled as described by Ash and O'Connell (1987a,b) and Mullins and Claytor (1989). Catch statistics for both retained and released small salmon were used in 1992-96. Catch information for released large salmon has been available since 1985 for SFAs 12-14. Recreational fishing effort was presented as rod days, defined as any day or part of a day on which an angler fishes.

Camps in SFAs 12-14 were supplied with Salmon Angling Logbooks in 1995 and 1996 for recording of catch and effort data. These reports were picked up by River Guardians and information incorporated into their weekly summaries. River Guardians were instructed to separate camp guests from other anglers on the river in order to avoid double counting. This is consistent with the process for the other SFAs in the Newfoundland Region. In previous years, all angling data were recorded by DFO River Guardians (including camp statistics) in SFAs 12-14.

Means and 95% confidence intervals for ratios were calculated according to Cochran (1977).

IMPACTS OF MANAGEMENT MEASURES, INSULAR NEWFOUNDLAND

Counts of small and large salmon and proportion of large salmon were examined in 13 rivers throughout the island. Counts for the moratorium period 1992-96 were compared to those of the the

pre-moratorium period 1984-91 using the Wilcoxon two-sample test (Z) in the NPAR1WAY Procedure of SAS (SAS Institute 1985). The same non-parametric test procedure was used to compare sea survival (adults in year i + 1 / smolts in year i) prior to and during the moratorium for four rivers.

For a number of rivers, partial counts of small and large salmon for certain years were adjusted to total counts. The rivers involved were Gander River and Salmon Brook (O'Connell *et al.* MS 1995a), Biscay Bay River (O'Connell *et al.* MS 1995b), and Sand Hill River (Reddin *et al.* MS 1995, 1996, 1997).

IMPACTS OF MANAGEMENT MEASURES, LABRADOR

The effects of management measures taken in the coastal waters of Labrador was evaluated by:

- comparing weekly distribution of catches in the former fishing season and the new reduced season
- exploitation rates from tagging studies for Sandhill River, 1969-73 and reductions in the number of licenced salmon fishers

Reduction in commercial salmon fishing season in 1996

The commercial fishing season opened on June 20 in 1996 instead of the first week of July as was the case in 1995. The impact of the earlier season and reductions due to quotas being attained in SFA 2 on numbers of Atlantic salmon landed in 1996, was examined using weekly landings from 1980-81 in SFAs 1, 2, and SFA 14B. Landings for 1980-81 were used as a basis due to the lack of ice and the earlier run timing experienced in those years, similar to conditions and run timing in 1996. The percentage of landings that would have occurred in the shorter season was calculated as the quotient of summed landings during the weeks of the 1996 season and landings actually made for that year in a full fishing season.

Effort reductions

Losses in landings due to effort reductions since 1991 were evaluated using the method of Anon. (MS 1995). Assumed base exploitation rates (F) in the commercial fishery (0.7-0.9 for large salmon; 0.3-0.5 for small salmon) (Anon. MS 1995) were adjusted using changes in licensed effort since 1991 and the following equation:

$$U = 1\text{-}e^{-aF} \qquad (1)$$

where U = adjusted exploitation rate, a = the fraction of the 1991 licensed effort remaining in 1992-95, and F = fishing mortality. It should be pointed out that it is not known what proportion of licensed effort was actually fished each year by each fisher and hence effort values used are regarded as potential effort.

TOTAL POPULATION, LABRADOR STOCKS

The total population sizes of small and large salmon prior to the commercial fishery in SFAs 1, 2, and 14B of Labrador were estimated by the technique of Rago *et al.* (MS 1993a,b), updated to include 1994, 1995, and 1996 values.

RECRUITMENT OVERFISHING, LABRADOR STOCKS

One definition of recruitment overfishing is a level of fishing mortality that reduces the ability of a population to persist, more specifically, the failure of a cohort of spawners to replace itself at the same time as fishing occurs. If returning spawners are not replacing the spawners that produced them, and if this situation continues over a series of years, then the total population will decline. One way to evaluate salmon stocks for recruitment overfishing is through the examination of spawner-to-spawner relationships. Estimated numbers of spawners obtained from parental cohorts of large (2SW) salmon were traced backward, beginning with the estimate of the number of spawners for the current year. Data sets of the relevant information were examined to see if numbers of spawners, which were made up of a range of chronological ages, were sufficient to replace the weighted sum of spawning parents of the same sea age. The appropriate weighting for historical spawners was determined from the average smolt-age distribution.

The relative importance of the cohorts that produced the returns in any given year can be expressed as a weighted average of the appropriately lagged spawners. For example, let β_{ijk} equal the expected frequency of size class i, river age j smolts for stock (or region) k, where i=1, 2 size classes, j=1,2,....,6 smolt ages and k=1,2,...,5 stocks (or regions). The number of spawners (SP) in year t can be written as:

$$SP_{i,k}(t) = \alpha_{t,k} \sum_{j=i+2}^{i+7} \beta_{j-i-1,k} \; SP_{i,k}(t-j) \qquad (2)$$

where $\alpha_k = 1$ is the stock at replacement level, $\alpha_k > 1$ implies population growth, and $\alpha_k < 1$ implies that the population is shrinking. Thus α provides a measure of recruitment overfishing, i.e., recruitment falling below replacement. Because of the long life history of salmon in Newfoundland and Labrador, the lags can be difficult to determine. For example, when 6-year-old smolts contribute to the 2SW spawners, the analysis is restricted to the return year period 1978-1996. Also note that this treats the large salmon category as if they were all 2SW spawners (either virgin or repeat spawners). The commercial fishing moratorium in Newfoundland is allowing a much higher number

of repeat spawners to return to freshwater for some stocks and if this persists then it will eventually become necessary to alter Equation 2 to account for repeat spawners.

A second definition of recruitment overfishing is defined with reference to the target spawners for a given river system. Since the target spawners can be expressed for each river system as a product of the biological reference level and available rearing habitat for pond and riverine habitats, the percent of conservation spawning requirement achieved provides a useful measure of recruitment overfishing. Recruitment overfishing would occur if the percent of conservation requirement achieved is less than 100%. More problematic still would be the situation where both definitions of recruitment overfishing occur simultaneously. The methodology used to derive the conservation spawning requirements for Labrador is described in O'Connell *et al.* (MS 1997a).

Results and Discussion

THE LABRADOR COMMERCIAL FISHERY

The commercial catch of small salmon (3213 kg) in SFA 1 in 1996 (Table 3 and Fig. 2a) decreased from 1995 (52%) and the 1984-89 (89%), 1986-91 (87%), and 1992-95 (67%) means. The catch of large salmon in 1996 (5554 kg) also decreased from 1995 and the means (46, 92, 91, and 76%, respectively) (Table 3 and Fig. 2b). The 1996 catch of small salmon in SFA 2 (10286) (Table 4 and Fig. 2a) was slightly above that of 1995 (2%) but below the means (87, 87, and 39%, respectively). The catch of large salmon (25148 kg) was below 1995 and the means (22, 83, 81, and 56%, respectively) (Table 4 and Fig. 2b). The catch of small salmon in SFA 14B (1642 kg) in 1996 (Table 5 and Fig. 2a) increased over that of 1995 (244%); the catch however decreased from the 1984-89 (89%), 1986-91 (88%), and 1992-95 (9%) means. The catch of large salmon (1888 kg) in 1996 was above that of 1995 (58%) but remained below the means (94, 93, and 80%, respectively) (Table 5 and Fig. 2b). For all SFAs in Labrador combined (Table 6 and Fig. 2a), the catch of small salmon (15141 kg) in 1996 decreased from 1995 (12%) and the means (88, 87, and 47%, respectively). The catch of large salmon (32590 kg) in 1996 declined from 1995 and the means (26, 87, 85, and 63%, respectively) (Table 6 and Fig. 2b).

Total commercial catch (8767 kg) in SFA 1 in 1996 (Table 3 and Fig. 2c) decreased from 1995 (49%) and the 1984-89 (91%), 1986-91 (90%), and 1992-95 (73%) means. Likewise, for SFA 2 (Table 4 and Fig. 2c), the catch in 1996 (35434 kg) decreased from 1995 and the means (16, 84,83, and 52%, respectively). Total catch in SFA 14B (3530 kg) in 1996 increased over that of 1995 (111%) but was below the means (92, 92, and 68%, respectively) (Table 5 and Fig. 2c). For all of Labrador (Table 6 and Fig. 2c), total catch (47731 kg) in 1996 decreased from 1995 by 22% and from the means by 87% (1984-89), 86% (1986-91), and 59% (1992-95). Except for SFA 14B, total catches Labrador in 1996 were the lowest recorded.

The percentages of quota caught and quotas (in t in parentheses) in 1990-96 were as follows:

Year	SFA 1	SFA 2	SFA 14B	SFAS 1, 2, & 14B
1990	65 (80)	64 (200)	38 (60)	59 (340)
1991	13 (80)	38 (200)	227 (15)	41 (295)
1992	83 (80)	67 (180)	131 (13)	75 (273)
1993	31 (80)	76 (90)	238 (8)	63 (178)
1994	96 (24)	107 (60)	75 (8)	101 (92)
1995	79 (19)	79 (48)	31 (6.5)	76 (73.5)
1996	62 (14.5)	99 (35.5)	80 (5)	87 (55)

The quota was essentially caught in 1996 in SFA 2 but not in SFAs 1 and 14B. It should be noted that quotas in 1993 (except for SFA 1), 1994, 1995, and 1996 (the lowest yet) were substantially lower than in years prior to 1993.

IMPACTS OF MANAGEMENT MEASURES, LABRADOR

Losses in landings due to reduced season

Several authors have noted the relationship between sea temperature and salmon migration timing (Reddin and Shearer 1987; Reddin and Friedland 1993; Narayanan *et al.* 1995). Thus, the presence or absence of ice on the Labrador coast is an important influence on sea temperature and since ice can hinder the setting of salmon gear, its presence or absence delays or extends the actual fishing season from year to year considerably (Reddin and Day 1980). A portion of the variability in reductions in landings from year to year can be ascribed to ice conditions. Fishermen reported that 1996 was a very early year in terms of ice conditions and run timing with salmon available for capture in SFAs 2 and 14B immediately on the opening of the season on June 20. Ice conditions in 1996, were similar to those of 1980-81 which were years of little ice and much earlier run timing. Thus, the percentage of landings in 1996 may have been similar to those of 1980-81.

The results show varying percentages of reductions in landings among SFAs, size classes, and years (Fig. 3). Average small salmon landings in the 1996 season (using years 1980-81) would have been 100.0% of the landings in SFA 1, 32.1% in SFA 2, and 98.0% in SFA 14B. Thus, small salmon landings in 1996 may have been reduced due to the shortened season by 0 kg in SFA 1, 21792 kg in SFA 2, and 34 kg in SFA 14B, based on the average reduction in landings from 1978 to 1981. Average large salmon landings in the reduced season would have been 100.0% of the actual landings

in SFA 1, 52.7% in SFA 2, and 80.8% in SFA 14B. Thus, large salmon landings in 1996 may have been reduced by 0 kg in SFA 1, 22535 kg in SFA 2, and 448 kg in SFA 14B, based on the average reduction in landings from previous years. Therefore, total Atlantic salmon landings in 1996 may have been reduced by 0 kg in SFA 1, 42548 kg in SFA 2, and 482 kg in SFA 14B, based on the sum of average reductions in small and large landings of previous years. In general, small salmon landings were reduced more than those of large salmon and reduction in landings in the shorter season were higher in SFA 2 than in SFAs 1 and 14B. The shorter 1996 commercial salmon fishing season in Labrador may have resulted in a loss in landings of 43 t.

Losses in landings due to effort reductions

Licensed effort in 1994-96 for all of Labrador was 63% of the 1991 level, which should have reduced commercial exploitation on Labrador stocks from what it would have been at the 1991 level. Estimates of active licenses based on fish plant sales slips suggested that 151 and 125 of the 213 licenses extant in 1995 and 1996 were active. The adjusted estimates for exploitation rates in the commercial fishery in 1996 were 3-5% for small salmon and 11-20% for large salmon in SFAs 1, 2, and 14B. Thus, reductions in commercial licensed effort may have doubled the returns of large salmon to rivers in the three SFAs over that which would have occurred if licensed effort had remained at 1991 levels. A similar effect would be expected for small salmon. The combined effects of the reduction in licensed effort in Labrador, the commercial fishery moratorium in insular Newfoundland, and the 1996 quotas which considerably shortened the fishing season, may have resulted in a tripling of returns to freshwater.

TOTAL POPULATION, LABRADOR STOCKS

Estimated numbers of small and large salmon recruits (total population in Labrador, Greenland, and Newfoundland before commercial fisheries) and spawners (after the angling fishery and including a mortality rate of 0.1 for hook-and-release fish) for Labrador during the period 1974-96 are shown in Fig. 4 a. The total population of small salmon increased substantially in 1996 over 1995 and numbers were similar to those observed in the past. The total population of large salmon decreased slightly from that of 1995; however, it remained substantially lower than in most years during the period 1974-89. The number of small salmon spawners in 1996 was above the conservation requirement of 48200. Numbers of large salmon spawners observed since 1993 were comparable to or higher than those of previous years. While the number of spawners for 1996 exceeded the record high observed in 1995, this level is still below the conservation requirement (42800).

RECRUITMENT OVERFISHING, LABRADOR STOCKS

In 1996, the number of small salmon spawners was considerably above conservation requirement and the spawning population replaced itself (Fig. 4b). For 2SW salmon on the other hand, the number of spawners in 1996 declined slightly from that of 1995, which was the highest on record, but still somewhat below the conservation requirement (Fig. 4b). The spawning population

has replaced itself in 1992-96. The achievement of conservation requirement levels in 1995 and 1996 and replacement of the spawning population was partly due to increased population sizes in those years. However, the causitive factor for the increased spawner levels has been the management plans which have reduced commercial exploitation. While numbrs of small salmon increased considerably in 1996, the low overall number of 2SW and large salmon is still of serious concern.

SMOLT-TO-ADULT SURVIVAL

The smolt-to-adult survival of 9.2% for 1996 (adult year) for Northeast Brook (Trepassey) (SFA 9) was the highest recorded (Table 7). The same was true for Rocky River (SFA 9) with a survival of 4.6%. Conne River (SFA 11) showed a marked increase in survival (7.2%) in 1996, the highest level achieved since 1989. Smolt-to-adult survival for Campbellton River (SFA 4) in 1996 was 8.1%, an increase over 1995 but lower than for 1994. Survival for Western Arm Brook (SFA 14A) in 1996 (8.1%) was the second highest since 1983 (the value for 1995 was higher at 8.9%). Survival in all cases above was based on unadjusted counts, i.e., repeat spawners were not removed. Smolt- to-adult survival during the moratorium years (1992-96) was significantly higher than in pre-moratorium years for Western Arm Brook ($Z = 2.65$; $P = 0.0080$) while for Northeast Brook, Trepassey ($Z = 1.39$; $P = 0.1658$), Rocky River ($Z = -1.41$; $P = 0.1588$), and Conne River ($Z = -0.98$; $P = 0.3252$) there was no significant difference between the two periods.

RECREATIONAL FISHERY AND COUNTS AT COUNTING FACILITIES

Recreational catches of small and large salmon, effort, and catch per unit of effort (CPUE) for Labrador (SFAs 1, 2, and 14B combined), insular Newfoundland (SFAs 3-14A combined), and insular Newfoundland and Labrador combined, 1974-96, are presented in Appendix 1a-c. Data for insular Newfoundland were also rolled into four subdivisions, Northern Peninsula East and Eastern (SFAs 3-8), South (SFAs 9-11), Southwest (SFAs 12-13), and Northern Peninsula West (SFA 14A) and are shown in Appendix 1d-g. Data for each individual SFA are shown in Appendix 1h-v. Catches for all years prior to 1992 represent retained fish for the entire angling season. Total catches (sum of retained and released fish), effort, and catch per unit of effort (CPUE) for individual SFAs and the various combinations of SFAs for 1996 and the 1984-89, 1986-91 and 1992-95 means, are presented in Table 8. For insular Newfoundland, except for Southwest (SFAs 12-13), numbers of large salmon released were not included in CPUE for years prior to 1992. There was no estimate of released fish and associated effort during the period of retention of catch in 1992, which could impact on comparisons. Table 9 shows catch (retained plus released fish), effort, and CPUE for 1996 expressed as percentage change in relation to 1995 and the means. For insular Newfoundland, Northern Peninsula East and Eastern, South, and individual SFAs 3-11, 1987 was not included in the means because in that year drought conditions resulted in the closure of most rivers to angling for the greater part of the season.

Retained catches for 1996 and the 1984-89, 1986-91, and 1992-95 means for each SFA and combinations of SFAs are shown in Table 10. Percentage change in retained catch in 1996 in relation

to 1995 and the means, is presented in Table 11. As above, data for 1987 were not included in the means for the areas indicated.

Labrador (SFAs 1, 2, and 14B combined)

It is not possible to meaningfully compare catches, effort, and CPUE in 1996 to 1995 and the means for all of Labrador because no data were available in 1996 for SFA 14B. Information presented in Tables 8-11 and Figs. 5-6 therefore is incomplete. In spite of the data deficiencies, CPUE in 1996 (Table 8 and Fig. 5) was the highest since 1981.

SFA 1: Total catches of small and large salmon (retained plus released fish) in 1996 decreased markedly from 1995 and the means. Effort was the same as in 1995, decreased from the 1984-89 and 1986-91 means, but increased over the 1992-95 mean. CPUE decreased from 1995 and the means.

The numbers of small and large salmon retained in 1996 decreased substantially from 1995 and the means.

SFA 2: Total catches of small and large salmon in 1996 increased substantially over 1995 and the means. Effort also increased over 1995 and the means while CPUE showed an overall decrease.

The number of small salmon retained in 1996 increased over 1995 and the 1992-95 mean and was similar to the 1984-89 and 1986-91 means. The retained catch of large salmon increased over 1995 (slightly) and the means.

A counting fence was operated in Sand Hill River from 1994 to 1996, the only years since 1973. The count of small salmon in 1996 (Table 12) was the highest since 1994 but lower than the mean for 1970-73. In contrast, the count of large salmon in 1996 (Table 13) was the lowest since 1994 but still higher than the mean for 1970-73. The proportion of large salmon was also the lowest since 1994 but remained higher than the mean for 1970-73 (Table 14).

SFA 14B: Counting fences were operated in Forteau River and L'Anse-au-Loup River from 1994-96. Counts of small and large salmon are provided in Tables 12 and 13 and proportions of large salmon are shown in Table 14. The counts for Forteau River in 1996 are partial due to a washout of the counting fence on July 8; the fence was not reinstalled. The count of small salmon in L'Anse au Loup River in 1996 decreased from 1995 but increased over that of 1994. The count of large salmon was the lowset since 1994 as was the proportion of large salmon.

Insular Newfoundland (SFAs 3-14A combined)

It is not meaningful to compare catches, effort, and CPUE in 1996 to 1995 and the means for all of insular Newfoundland because data were largely incomplete for many rivers in SFAs 12 and 13 in 1996. This is reflected in the catch and effort information presented in the tables and figures.

Even with incomplete data from SFAs 12 and 13 and curtailment of catch as a result of specific management measures for other rivers, the catch of small salmon (retained plus released fish), effort, and CPUE in 1996 (Table 8 and Fig. 7) increased over 1995 and the means (Tables 9). Effort and the total catch of small salmon in 1996 were the highest on record.

The retained catch of small salmon (Table 10 and Fig. 7) also increased over 1995 and the means (Table 11).

Northern Peninsula East and Eastern (SFAs 3-8 combined)

The total catch of small salmon in 1996 (Table 8 and Fig. 9) was the highest on record. Effort and CPUE in 1996 increased over 1995 and the means (Table 9).

The 1996 retained catch of small salmon (Table 10 and Fig. 9) also increased over 1995 and the means (Table 11 and Fig. 10).

SFA 3: The total catch of small salmon in 1996 increased over 1995 and the 1984-89 and 1986-91 means and was similar to that of the 1992-95 mean. Effort increased over 1995 and the means. CPUE was increased over 1995 and the 1986-91 mean (slightly), was similar to the 1984-89 mean, and decreased from the 1992-95 mean.

The number of small salmon retained in 1996 increased over 1995 and the means with the increase over the 1992-96 mean being the less pronounced. The quota for retained small salmon for Main River (Sop's Arm) in 1995 was 500, of which 239 were caught.

A counting fence was operated for the first time in 1996 in Northwest Branch tributary of Main River (Sop's Arm); 579 small and 49 large salmon were counted.

SFA 4: The total catch of small salmon, effort, and CPUE in 1996 increased over 1995 and the means.

The number of small salmon retained in 1996 also increased over 1995 and the means.

Counts of small (Table 12) and large (Table 13) salmon are available for fishways located in the Exploits River (Bishop's Falls and Great Rattling Brook) and Salmon Brook (Gander River) and counting fences in Gander River and Campbellton River. Data are available for Campbellton River for 1993-96. The count of small salmon for Campbellton River in 1996 increased slightly over 1995 and was similar to the mean for 1993-95 while the count of large salmon increased substantially over 1995 and the mean. For the Exploits River, counts of small and large salmon at Bishop's Falls and Great Ratting Brook (see also Figs. 11 and 12) in 1996 increased markedly over 1995 and the means. Counts of small and large salmon for Great Rattling Brook in 1993-96 were partial, resulting from fish bypassing the fishway during periods of high water. The count of small salmon at the Gander River counting fence (Fig. 11) in 1996 increased over 1995 and the means with the increase over the

1986-91 mean being greatest. The count of large salmon (Fig. 12) increased over 1995 and the 1986-91 mean but decreased from the 1992-95 mean. The count of small salmon at Salmon Brook (Fig. 11) in 1996 decreased from 1995 and the 1984-89 and 1992-95 means but increased over the 1986-91 mean. The count of large salmon (Fig. 12) decreased from 1995 but increased over the means, with the increase over the 1992-95 mean being the less pronounced by far. The proportion of large salmon for Campbellton River in 1996 (0.15) was the highest recorded (values for 1993-95 were 0.03, 0.06, and 0.07, respectively). The proportion of large salmon for Bishop's Falls in 1996 increased over 1995 and the means and was the highest since 1992 (Table 14 and Fig. 13). The proportion for Great Rattling Brook in 1996 decreased from the high in 1995 but increased over the means. The proportion for Salmon Brook in 1996 increased over 1995 and the means and was the highest since 1992. At the Gander River counting fence, the proportion of large salmon in 1996 increased over 1995 but decreased from the means.

SFA 5: The total catch of small salmon in 1996 increased over 1995 and the means. Effort in 1996 was similar to 1995 and increased over the means. CPUE in 1996 increased over 1995 and the 1992-95 mean, decreased from the 1986-91 mean, and was similar to the 1984-89 mean.

The number of small salmon retained in 1996 increased over 1995 and the means.

Counts of small (Table 12 and Fig. 14) and large (Table 13 and Fig. 15) salmon are available from fishways in Middle Brook and Terra Nova River (upper and lower). The count of small salmon at Middle Brook in 1996 increased over 1995 and the means. The count of large salmon in 1996 was similar to 1995 but increased substantially over the means. At the lower Terra Nova River fishway, the count of small salmon in 1996 decreased from 1995, increased over the 1984-89 and 1986-91 means, and was similar to the 1992-95 mean. The count of large salmon in 1996 showed a similar pattern except it was lower than the 1992-95 mean. The counts of small and large salmon for the lower Terra Nova River in 1993 were incomplete due to fish bypassing the fishway. This was due to the washout of the diversion dam above the fishway and unusually high water levels. However, since counts in 1993 were the highest ever recorded for small salmon (and highest up to that year for large salmon), the counts were included in the 1992-95 means. At the upper Terra Nova River fishway, the count of small salmon in 1996 was similar to 1995 and increased over the means. The count of large salmon decreased from 1995 and the 1992-95 mean but increased over the 1984-89 and 1986-91 means. The proportions of large salmon for Middle Brook and lower Terra Nova River in 1996 decreased from 1995 (when the highest proportions since 1992 were recorded) but increased over the means (Table 14 and Fig. 16). The proportion of large for upper Terra Nova in 1996 decreased from 1995 and the 1992-96 mean and increased over the 1984-89 and 1986-91 means.

SFA 6: The total catch of small salmon in 1996 decreased slightly from 1995, was similar to the 1984-89 mean, and increased over the 1986-91 and 1992-95 means. Effort in 1996 decreased from 1995 and the means while the reverse was true for CPUE.

The number of small salmon retained in 1996 was similar to 1995 and the 1986-91 mean, decreased from the 1984-89 mean, but increased over the 1992-95 mean.

SFA 7: Total catch of small salmon and CPUE in 1996 decreased from 1995 but increased over the means. Effort increased over 1995 and the means.

The number of small salmon retained in 1996 decreased from 1995 but increased over the means.

SFA 8: The total catch of small salmon and CPUE in 1996 decreased from 1995 and the means while the reverse was true for effort.

The number of small salmon retained in 1996 decreased from 1995 amd the means.

South (SFAs 9-11 combined)

The total catch of small salmon and effort (the highest on record) in 1996 (Table 8 and Fig. 17) increased over 1995 and the means (Table 9). CPUE increased over 1995 and the 1992-95 mean but decreased from the 1984-89 and 1986-91 means.

The retained catch of small salmon in 1996 (Table 10 and Fig. 17) increased over 1995 and the 1986-91 and 1992-95 means and decreased from the 1984-89 mean (Table 11 and Fig. 10).

SFA 9: The total catch of small salmon in 1996 decreased from 1995 and the 1984-89 mean and increased over the 1986-91 and 1992-95 means. Effort in 1996 was similar to that of 1995 but increased over the means. CPUE in 1996 decreased from 1995 and the 1984-89 and 1986-91 means and was similar to the 1992-95 mean.

The number of small salmon retained in 1996 decreased from 1995 and the 1984-89 and 1986-91 means but increased over the 1992-95 mean. The retention period for small salmon in this SFA in 1993 lasted the entire season (i.e., the quota was not caught)

Counts of small salmon (Table 12 and Fig. 18) and large (Table 13 and Fig. 19) salmon were provided by counting fences (Biscay Bay River and Northeast Brook, Trepassey) and a fishway (Rocky River). The count of small salmon for Biscay Bay River in 1996 increased over 1995 but decreased from the means. The count of large salmon increased over 1995 and the means. The number of small salmon entering Northeast Brook, Trepassey in 1996 decreased from 1995 and the means; the count of large salmon increased over 1995 and the 1992-95 mean but decreased from the 1984-89 and 1986-91 means. The count of small salmon for Rocky River in 1996 decreased from 1995 but increased over the means; the count of large salmon increased over 1995 and the 1984-89 and 1986-91 means and was similar to the 1992-95 mean. The proportion of large salmon for Biscay Bay River in 1996 (Table 14 and Fig. 20) was the highest recorded since 1992. The proportion for Northeast Brook, Trepassey in 1996 increased over 1995, decreased from the 1984-89 mean, was similar to the 1986-91 mean, and increased over the 1992-95 mean. The proportion for Rocky River increased over 1995 and the 1984-89 and 1986-91 means but decreased from the 1992-95 mean.

SFA 10: The total catch of small salmon and effort in 1996 increased over 1995 and the means. CPUE in 1996 was similar to 1995 and the 1992-95 mean but decreased from the 1984-89 and 1986-91 means.

The number of small salmon retained in 1996 increased over 1995 and the means.

The counts of small (Table 12 and Fig. 21) and large (Table 13 and Fig. 22) salmon at the fishway in Northeast River, Placentia in 1996 were the highest on record. The proportion of large salmon (Table 14 and Fig. 23) in 1996 decreased from the high (since 1992) of 1995 but increased over the means.

SFA 11: Total catch of small salmon and effort in 1996 increased over 1995 and the means. CPUE increased over 1995 and the 1986-91 and 1992-95 means and was similar to the 1984-89 mean.

The number of small salmon retained in 1996 increased over 1995 and the 1992-95 mean, was lower than the 1984-89 mean, and similar to the 1986-91 mean.

Counts of small (Table 12) and large (Table 13) salmon were obtained from the Grand Bank fishway in 1996, the first since 1993. The count of small salmon in 1996 was the highest recorded, surpassing the means. The count of large salmon was the second highest recorded and it too increased over the means.

Counts of small (Table 12 and Fig. 24) and large (Table 13 and Fig. 25) salmon at the Conne River counting fence in 1996 increased over 1995 and the 1992-95 mean but remained below the 1984-89 and 1986-91 means. The proportion of large salmon for Conne River in 1996 increased over 1995 but remained below the means (Table 14 and Fig. 26).

Southwest (SFAs 12-13 combined)

The catch and effort information presented in the tables and figures for this subdivision and individual SFAs is incomplete as pointed out above. It is interesting that CPUE for SFAs 12 and 13 separately and combined derived from the information at hand (Table 8 and Fig. 27) was the highest since 1984.

A counting fence was operated in Highlands River in 1993-96; prior to this, counts were available for 1980-82. The count of small salmon (Table 12 and Fig. 28) in 1996 was the highest recorded for both time periods. The count of large salmon (Table 13 and Fig. 29) increased over 1995 and was the second highest on record (the highest was in 1994). The proportion of large salmon for 1996 (Table 14 and Fig. 30) was the same as in 1995, the second highest on record in recent years, surpassing the average for the period 1980-82 (0.312). A counting fence was also operated in Flat Bay Brook during 1994-96. The count of small salmon in 1996 was the highest of

the three years while that of large salmon was the lowest. The proportion of large salmon (Table 14) in 1996 was the lowest of the three years.

Surveys or counts of small (Table 12 and Fig. 28) and large (Table 13 and Fig. 29) salmon were also available for Humber River and Pinchgut Brook. The estimated return of small salmon for Humber River in 1996, determined through a mark-recapture study (Mullins 1997a), was the highest on record. The estimated return of large salmon in 1996 was the second highest on record and increased over 1995, the 1992-95 mean, and the pre-moratorium years 1990 and 1991. The count of small salmon for Pinchgut Brook in 1996 decreased from that of 1995 (the highest recorded) but increased over the 1992-95 mean. The count of large salmon increased over 1995 and the 1992-95 mean. The proportion of large salmon for Humber River in 1996 increased over 1995 but remained below the 1992-95 mean (Table 14 and Fig. 30). The proportion for Pinchgut Brook in 1996 increased over 1995 and the 1992-95 mean and was the third highest recorded since 1992.

Northern Peninsula West (SFA 14A)

The total catch of small and large salmon, effort, and CPUE in 1996 (Table 8 and Fig. 31) all increased over 1995 and the means (Table 9). The number of large salmon released (Table 8 and Fig. 31) decreased slightly from 1995 but increased over the means (Table 9).

The number of small salmon retained in 1996 (Table 10 and Fig. 31) increased over 1995 and the means (Table 11 and Fig.10).

The quota for retained fish was met in Pincent's Brook in 1996 and nearly met in Lomond River. Quotas and catches for each river were as folows:

River	Quota	1996	1995	1994	1993	1992	1991	1990
Lomond R.	375	371	343	325	281	357*	328	386*
Watson's Bk.	50	42	53*	30	20	49*	6	36
Pincent's Bk.	10	15*	9	2	2	0	3	10*

*Quota reached.

Adult salmon counting facilities are located in Lomond River, Torrent River, and Western Arm Brook. The count of small salmon at the Lomond River fishway in 1996 decreased from 1995 and the 1992-95 mean but increased over the 1984-89 and 1986-91 means (Table 12 and Fig. 32); the count of large salmon was similar to 1995 but increased over the means (Table 13 and Fig. 33). The count of small salmon for the Torrent River fishway in 1996 increased over 1995 and the means; the count of large salmon decreased from 1995 but increased over the means. For the Western Arm Brook counting fence, counts of small and large salmon in 1996 increased over 1995 and the means. The proportion of large salmon for Lomond River and Western Arm Brook in 1996 increased over

1995 and the means; for Torrent River, it increased over the 1984-89 and 1986-91 means but decreased from 1995 and the 1992-95 mean (Table 14 and Fig. 34).

COUNTS AT COUNTING FACILITIES - AN OVERALL SUMMARY

The results of comparisons of mean counts of small and large salmon for the pre-moratorium period 1984-91 and the moratorium period 1992-96 are shown in Table 15. For rivers in SFAs 4, 5, and 14A (northern and eastern rivers), significant ($\alpha = 0.05$) increases in counts of both small and large salmon occurred during the moratorium. For the south coast (SFAs 9-11), counts of small salmon during the moratorium decreased (not significantly) from pre-moratorium counts in Biscay Bay River and Northeast Brook, Trepassey, while in Conne River the decrease was nearly significant ($P = 0.0552$). Counts of large salmon decreased in Northeast Brook, Trepassey and Conne River, but increased in Biscay Bay River (not significantly for either river). The count of small salmon increased (not significantly) over pre-moratorium years for Rocky River; there was a significant increase for large salmon. For Northeast River, Placentia, there were significant increases over pre-moratorium years for small and large salmon. In SFA 13, counts of small and large salmon during the moratorium for Humber River increased significantly over pre-moratorium years.

For the northern and eastern portion of the island, the proportion of large salmon increased significnantly in all rivers except Gander River. Along the south coast, significant increases were noted for Rocky River and Northeast River, Placentia; a decrease (not significant) occurred for Northeast Brook, Trepassey and Conne River while an increase (not significant) was noted for Biscay Bay River. An increase was observed for Humber River (not significant).

COMMENTS AND CONCLUSIONS

Recent management changes in the recreational fishery, specifically the implementation and changing of quotas in SFAs along with mandatory hook-and-release fishing, and changing daily and seasonal bag limits, has seriously compromised the usefulness of angling data in terms of comparability with the past, especially when used as indices of abundance. Adding hook-and-release fish to retained fish, and comparing this total to retained fish for years prior to 1992, assumes the amount of effort expended applies equally to hook-and-release and retained fish. Reports from user groups suggest less effort was directed towards hook-and-release fishing. In the interpretation of trends and drawing of conclusions with respect to abundance, more weight is placed on information obtained from counting facilities than on recreational fishery data. In Labrador, recreational catches have historically constituted only a small proportion of the total catches (recreational plus commercial) and therefore a cautious approach must be taken in the interpretation of trends as representative of abundance.

As in 1994 and 1995, an attempt was made in 1996 to quantify the incidence of net-marked fish in Gander, Campbellton, and Conne rivers. The results for small and large salmon combined for 1996 are compared to those for 1994 and 1995 below:

River	Year	% Marked	References
Gander River	1994	15.9	O'Connell *et al.* (MS 1995a)
	1995	8.9	O'Connell *et al.* (MS 1996b)
	1996	12.2	O'Connell *et al.* (MS 1997b)
Campbellton River	1994	6.2	O'Connell *et al.* (MS 1995b)
	1995	5.0	O'Connell *et al.* (MS 1996c)
	1996	4.3	Reddin and Downton (MS 1997)
Conne River	1994	18.6	Dempson *et al.* (MS 1995)
	1995	7.1	Dempson and Furey (MS 1996)
	1996	6.2	Dempson and Furey (MS 1997)

The incidence of net marks for Gander River in 1996 was the second highest while for the other rivers it was the lowest of the three years. Exploits River fish were examined quantitatively for marks for the first time in 1996 (16.2% were marked).

Labrador

The commercial fishery quota for all of Labrador in 1996 was the lowest since the inception of quotas in 1990. The commercial fishery opened approximately two weeks earlier in 1996 than in 1995 when the season was delayed by approximately one month from the usual opening date. The delayed opening in both 1995 and 1996 was designed to allow a greater escapement of large salmon into freshwater. The quota for 1995 was not caught in either of the SFAs and in 1996 was reached only in SFA 2.

Catches of small and large salmon in the recreational fishery in SFA 2 in 1996 improved substantially over 1995 and the means while the reverse was true for rivers in SFA 1. The increased catches in SFA 2 could be attributed to the substantial increase in effort (Table 8). The low catches in SFA 1 might have been due to the presence of ice along this part of the Labrador coast until August, which delayed the entry of salmon into freshwater. Catches were lower in Labrador in 1991 also, when severe ice conditions persisted throughout most of the summer. Some of the fish destined for rivers in SFA 1 in 1996 might have been diverted farther south by ice conditions and caught in the commercial fishery in SFA 2.

The low total population size of the large salmon component compared to earlier years is still a serious concern. Overall conclusions, based on the results of the exploitation model are: while stocks continue to be low relative to the 1970s, they have increased in recent years; management

measures in recent years, have dramatically improved spawning ecapements, with the potential for increased returns in subsequent years.

Insular Newfoundland

Many rivers throughout insular Newfoundland were closed in 1994 and 1995 due to low water levels and high water temperatures, and for conservation purposes (O'Connell *et al.* MS 1995c; O'Connell *et al.* MS 1996a). Many rivers were also closed to angling in 1996, but the closures occurred mainly in mid- to late-August, a time when angling activity is usually drawing to a close for the season. Added to these inconsistencies is the fact that angling information for a significant portion insular Newfoundland was not available in 1996. Therefore, caution has to be exercised when comparing 1996 with past years for individual SFAs and the various combinations of SFAs. Also there were differing river-specific management regimes in place and in-season adjustments during the past three years that confound the situation even further. In spite of this, effort expenditure in 1996 for insular Newfoundland as a whole was the highest recorded, continuing an increasing trend in recent years. The total catch of small salmon (retained plus released fish) in 1996 was the highest on record and CPUE the second highest. By inference, it can be assumed that catches would have been higher in recent years had water temperature and water level conditions been normal and angling data been complete.

For the Northern Peninsula East and Eastern (SFAs 3-8) subdivision, counts of small salmon in the moratorium years 1992-96 were significantly higher than for the pre-moratrium years 1984-91 at all counting facilities; however, counts similar to or greater than those of 1992-96 have occurred in certain pre-salmon moratorium years for Gander River (as evidenced by Salmon Brook), Middle Brook, and with the exception of 1996, Exploits River (Bishop's Falls). In Northern Peninsula West (SFA 14A), counts of small salmon during the moratorium years overall have been higher than any during pre-moratorium years for Lomond and Torrent rivers. It should be pointed out however that both these rivers have been undergoing Atlantic salmon enhancement for several decades. For Western Arm Brook, although returns of small salmon in 1992-96 were significantly higher than in 1984-91, there were pre-moratorium years when returns were higher. There were mixed indications of sea survival for northern Newfoundland in 1996; survival for Western Arm Brook declined while that of Campbellton River improved. The total catch of small salmon (retained plus released fish) was the highest on record and effort the second highest; CPUE was the highest since 1993. All indicators demonstrate that the Northern Peninsula East and Eastern and Northern Peninsula West subdivisions have derived substantial benefits from the closure of the commercial fishery.

Except for Northeast River, Placentia, returns of small salmon to counting facilities for the South (SFAs 9-11) subdivision in 1992-96 were lower than or comparable to pre-salmon moratorium years. Smolt-to-adult survival back to the river for Northeast Brook, Trepassey and Rocky River (both in SFA 9) in 1996 was the highest recorded while Conne River (SFA 11) had the highest survival since 1989. Overall, this suggests there was an improvement in natural sea survival for small salmon in 1996 for these rivers and possibly other south coast rivers. Despite the apparent increase

in natural survival for some rivers in 1996, estimates of sea survival still remain less than 10%, even though directed marine fisheries for Atlantic salmon have been closed since 1992.

For Northeast Brook, 1996 was the first year there was a noticeable improvement in sea survival over pre-salmon moratorium levels. Levels of sea survival comparable to that of 1996 were observed for Conne River when there was a commercial fishery. Smolt production for Conne River has been relatively stable since 1987. In contrast to the other rivers under consideration, Conne River is characterized by early runs of small salmon (since 1986, 70-80% of the run has been complete by early July). The implementation of the 1984 management plan, which delayed the opening of the commercial fishery from mid-May to June 5, should have had a more noticeable impact on Conne River returns than the moratorium. Effort expenditure for South subdivision in 1996 was the highest on record and while the total catch of small salmon was the highest since the moratorium, there were many pre-moratorium years when it was higher; CPUE during the moratorium was at the lower end of the scale. Indicators for South subdivision suggest that the commercial fishery moratorium benefited some areas by maintaining escapements at or near pre-moratorium levels.

Unlike some subdivisions, there were only a few counting facilities operating in Southwest (SFAs 12-13) and they had short time series with few data points during pre-moratorium years. Therefore in assessing the impacts of the moratorium, a lot of emphasis was placed on angling data. Up to 1995, recreational catches of small salmon during moratorium years were well below those recorded for most pre-moratorium years (O'Connell *et al.* MS 1996a). Whether or not this applied to 1996 is unknown. Returns of small salmon in 1996 increased over 1995 at Highlands River, Flat Bay Brook, and Humber River (the highest recorded for these rivers) but not at Pinchgut Brook. This could be indicative of an overall increase in returns to Bay St. George and Bay of Islands and is consistent with the high CPUE observed from partial data. Stocks in SFAs 12 and 13 were not expected to benefit as much from the moratorium as other areas of insular Newfoundland because these stocks were subjected to a shorter commercial fishery season in 1978, which should have resulted in lower exploitation. Typically, Atlantic salmon returns to rivers in SFAs 12 and 13 begin in late May and early June. The change in the commercial fishing season opening date from May 18 to June 5 in 1984 in other areas of insular Newfoundland should have reduced the interception of fish destined for SFAs 12 and 13. Also, the closure of the SFA 12 commercial fishery in 1984 should have further reduced exploitation on these stocks. Consequently, the number of fish available for release into freshwater during the moratorium years would be lower than for some other areas.

An analysis of trends in estimated total population sizes of small salmon for Gander River (O'Connell *et al.* MS 1997b), Middle Brook and Biscay Bay River (O'Connell and Reddin MS 1997), Humber River (Mullins MS 1997a) and Western Arm Brook (Mullins MS 1997b) for the period 1974-96, suggest the overall total population size for insular Newfoundland in 1992-96 was low relative to pre-salmon moratorium years. Adults returning in 1997 with a smolt age of 3+ years will be the progeny of spawners in 1992, the first year of the commercial fishery moratorium. For northern and eastern rivers where greatly increased spawning escapements were recorded in 1992, there should be an increase in total returns in 1997, exceeding levels for 1992-96. The increase

would be dependent in part on the proportion of 3+ smolts in the population (modal smolt age for many northern and eastern rivers is 4+ years) and natural survival. For southern rivers and southwestern rivers (particularly in Bay St. George), where 1992 spawning escapements did not increase over pre-moratorium levels, it is not anticipated that adult returns in 1997 will increase, should survival remain the same. These rivers typically have a modal smolt age of 3+ years.

The objective of implementing SFA quotas on the retention of small salmon in the recreational fishery was to constrain catches to levels observed just prior to the moratorium, with the intent of not reallocating catch from the commercial fishery to the recreational fishery. This was also the objective of the split seasonal retention bag limit (three fish prior to and after July 31) since historically the major proportion of total seasonal catch has been taken prior to July 31. SFA quotas in 1992 and 1993 were effective in limiting retained catches to pre-moratorium levels but the split season was not as successful as anticipated. The total number of small salmon retained for all of insular Newfoundland in 1994 was 28959 and in 1995 it was similar at 29040, which compares to 23127 in 1992 and 24693 in 1993. The total retained in 1996 was 35789, the highest since 1988. The 1994-1996 catches, however, could have been higher for the reasons cited above. It appears that the 1994-1996 management measures did not achieve its objective of limiting exploitation to 1992 and 1993 levels and spawning escapements decreased accordingly. However, had the split season not been in place, catches would have been much higher.

Returns of large salmon showed an overall improvement in 1992-96 compared to the 1984-91 mean. For several Northern Peninsula and east coast counting facilities (in SFAs 3-5 and 14A), the numbers of large salmon returning in 1996 were either the highest or among the highest on record. For several rivers there were moratorium years prior to 1995 and 1996 when numbers of large salmon returning were comparable to or less than in certain pre-moratorium years. Rocky River was the only south coast river to show a consistent increase in returns of large salmon over pre-moratorium levels. The return of large salmon for Northeast River, Placentia in 1996 was the highest on record but prior to 1995 returns during the moratorium remained comparable to some pre-moratorium years. Except for Biscay Bay in 1996, returns for the remaining south coast rivers did not improve during the moratorium. Based on information up to 1995, numbers of large salmon released in SFAs 12 and 13 during the moratorium years showed a marked increase over the means overall but there were comparable catches in the late 1970s and early 1980s. Proportions of large salmon during the moratorium for all northern and eastern counting facilities were higher than in 1984-91 and significantly so in most cases; also the number of large salmon released in SFA 14A in 1996 was the second highest on record. Along the south coast, the proportion of large salmon increased to any noticeable degree only at Rocky River and Northeast River, Placentia.

Detailed stock assessments were carried out in 1996 for 25 rivers (tributaries) with counting facilities spread throughout insular Newfoundland. Conservation egg requirement was met in half of these rivers or tributaries (Table 16).

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Table 1. The number of licensed commercial Atlantic salmon fishers for SFAs 1, 2 , 14B and Labrador total, 1974-96.

Year	Salmon Fishing Area 1	2	14B	Labrador Total
1974	108	323	137	568
1975	187	421	121	729
1976	179	464	119	762
1977	196	432	122	750
1978	290	403	125	818
1979	272	410	128	810
1980	271	352	116	739
1981	266	350	115	731
1982	262	339	115	716
1983	273	417	111	801
1984	248	378	101	727
1985	234	351	89	674
1986	212	356	61	629
1987	213	362	61	636
1988	182	361	61	604
1989	196	353	61	610
1990	150	361	59	570
1991	157	355	58	570
1992	147	294	54	495
1993	112	159	17	288
1994	43	158	13	214
1995	43	158	13	214
1996*	43	155	13	211

* Preliminary

Table 2. Opening and closure dates of the Atlantic salmon recreational fishery for each SFA, and variations by river, 1996.

SFA 1 June 22 - Sept 15

SFA 2 June 22 - Sept 15

SFA 3 June 22 - Sept 2
Main River (Sops Arm) June 22 - July 5 catch-and-release only
July 6 - September 2 a quota of 500 fish. (Main Stem)
Northwest branch catch-and-release all season.

River	Close dates	Reason for closure
Easter Brook	Aug 16-Aug 25	Low water levels - High temperatures
Main River (Sop's Arm)	Aug 16-Sept 2	"
Wild Cove Brook	"	"
Western Brook	"	"
Southern Arm Brook	"	"
Baie Verte River	"	"
Woodstock Brook	"	"

SFA 4 June 22 - Sept 2
Exploits River:
below Grand Falls: June 22-July 9 H & R only. July 10 - Sept 2 catch and retain.
above Grand Falls catch-and-release fishing only all season.
Tribs from Grand Falls to Red Indian Lake June 22-July 9 H&R. July 10 - Sept 2 retain.

Burlington River	Aug 16-Sept 2	Low water levels - High temperatures
West River (Barneys Tributary)	"	"
South Brook	"	"
Tommy's Arm River	Aug 19-Sept 2	"

SFA 5 June 22 - Sept 2

Northwest Brook (Indian Bay)	Aug 26-Sept 2	Low water levels - High temperatures
Indian Bay River	"	"
Northwest Brook (BB)	"	"
Traverse Brook	"	"
Middle Brook	"	"
Gambo River	"	"
Northwest Brook (Alexander Bay)	"	"
Terra Nova River	"	"
Northwest River (Aug 10 - H&R)	Aug 26-29	"
Salmon River (Aug 10 - H&R)	"	"
Southwest River (Aug 10 - H&R)	"	"

SFA 6 June 22 - Sept 2

Salmon Cove River (TB)	Aug 26-29	Low water levels - High temperatures
Trouty River	"	"
Pope's Harbour River	Aug 26-30	"
Shoal Harbour River	"	"
Deer Harbour River	"	"

SFA 7 June 22 - Sept 2

Salmon Cove River (CB)	Aug 28-29	Low water levels - High temperatures
North River	"	"
South River	"	"

SFA 8 June 24 - Sept 4

Renews River	August 9-29	Low water levels - High temperatures

Table 2. Cont'd.

SFA 9 June 8 - June 21 H&R; June 22 - Aug 25 retain.		
Biscay Bay River	August 9 - 25	Low water levels - High temperatures
Northwest Brook (Trepassey)	"	"
North Harbour River	August 8 - 15	"
SFA 10 June 8 - June 21 H&R; June 22 - Aug 25 retain.		
Southeast River (Placentia)	July 31 - Aug 2 H&R	in-season review
Come By Chance River	August 16 - 25	Low water levels - High temperatures
North Harbour River (PB)	"	"
Watsons Brook	"	"
Black River	"	"
Pipers Hole River	August 1 - 25	"
Nonsuch Brook	August 16 - 25	"
Baie De Leau River	"	"
SFA 11 June 15- Sept 2		
Garnish Rvier	Aug 16-25	Low water levels - High temperatures
Allans Cove Brook	Aug 16-Sept 2	"
Bottom Brook	"	"
Hare Bay Rivers	"	"
Devils Brook	Aug 19 - Sept 2	"
Simmons	"	"
Southwest Brook	"	"
Old Bay Brook	Aug 16-Sept 2	"
Taylors Bay Brook	"	"
Grey River	"	"
White Bear River	"	"
Bay de Loup River	"	"
King's Harbour River	"	"
Grandy Brook	"	"
Cinq Cerf River	"	"
SFA 12 June 15 - Sept 2		
Burnt Island River	Aug 23-Sept 2	Low water levels - High temperatures
Isle Aux Morts River	"	"
SFA 13 June 1 - 21 H&R; June 22 - Sept 2 retain.		
Little Codroy closed for season August 16		
Grand Codroy closed for season August 16		
Bear Cove River	Aug 23-Sept 2	Low water levels - High temperatures
Crabbes River H&R only	Aug 21-Sept 2	"
Barachois River H&R only	"	"
Robinsons River H&R only	"	"
Fishells Brook	"	"
Little Barachois Brook	"	"
Southwest & Bottom Brook	"	"
Harry's River June 15 H&R only	"	"
Fox Island River June 1 retain. (50 fish)	July 17	Quota taken: H&R only
	Aug 23-Sept 2	Low water levels - High temperatures
Serpentine River June 1 retain. (150 fish)	July 13	Quota taken: H&R only
	Aug 16 - Sept 2	Low water levels - High temperatures
SFA 14A June 22 - Sept 2		
Torrent River Hook & release only until 750 fish passed through the fishway		
St. Genevieve River June 1 - Sept 2		
Parker River July 20 - Sept 2		
Lomond River (375 fish retained)	August 14	Quota taken: H&R only
	Aug 23-Sept 2	Low water levels - High temperatures
Torrent River	June 22-July 19	H&R only
Pinsents Brook (10 fish retained)	August 8	Quota taken : H&R only
SFA 14B June 22 - Sept 15		

Table 3. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 1, 1974-96. Weight in kilograms. Also shown is percentage change for 1996 in relation to 1995 and the 1984-89, 1986-91 and 1992-95 means.

SALMON FISHING AREA 1

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	19694	9848	67944	13866	87637	23714	
1975	66384	34937	123025	28601	189409	63538	
1976	36944	17589	173514	38555	210458	56144	
1977	35564	17796	137989	28158	173553	45954	
1978	32481	17095	144887	30824	177369	47919	
1979	20413	9712	93700	21291	114113	31003	
1980	49516	22501	143557	28750	193073	51251	
1981	45428	21596	182169	36147	227597	57743	
1982	36805	18478	112969	24192	149775	42670	
1983	30676	15964	85699	19403	116375	35367	
1984	24073	11474	54949	11726	79022	23200	
1985	29138	15400	59705	13252	88843	28652	
1986	35527	17779	97649	19152	133176	36931	
1987	27431	13714	86882	18257	114313	31971	
1988	37331	19641	59391	12621	96721	32262	
1989	26458	13233	69194	16261	99651	29494	
1990	17370	8736	35498	7313	52868	16049	80,000**
1991	2843	1410	6520	1369	9362	2779	80,000**
1992	18431	9588	47416	9981	65847	19569	80,000**
1993	7266	3893	17287	3825	24553	7718	80,000**
1994	6948	3303	16100	3464	23048	6767	24,000
1995	6715	3202	10317	2150	17031	5352	19,000
1996*	3213	1676	5554	1370	8767	3046	14,500
$\bar{X}$ 84-89	29993.0	15207	71295.0	15212	101954.3	30418	
S.D.	5278.4	3045	17234.4	3118	19277.0	4567	
95% LCL	24452.7	12010	53205.6	11939	81721.0	25624	
95% UCL	35533.3	18403	89384.4	18484	122187.6	35212	
$\bar{X}$ 86-91	24493.3	12419	59189.0	12496	84348.5	24914	
S.D.	12794.7	6603	33709.1	6962	45350.3	12944	
95% LCL	11064.0	5488	23807.8	5188	36748.6	11328	
95% UCL	37922.7	19349	94570.2	19803	131948.4	38500	
$\bar{X}$ 92-95	9840.0	4997	22780.0	4855	32619.8	9852	
S.D.	5731.8	3076	16703.8	3492	22388.6	6551	
95% LCL	720.7	102	-3795.8	-701	-3000.5	-571	
95% UCL	18959.3	9891	49355.8	10411	68240.0	20274	
%Change, 1996 vs:							
1995	-52	-48	-46	-36	-49	-43	
$\bar{X}$ 84-89	-89	-89	-92	-91	-91	-90	
$\bar{X}$ 86-91	-87	-87	-91	-89	-90	-88	
$\bar{X}$ 92-95	-67	-66	-76	-72	-73	-69	

* Preliminary data.
**Allowance catch

Table 4. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 2, 1974-96. Weight in kilograms. Also shown is percentage change for 1996 in relation to 1995 and the 1984-89, 1986-91 and 1992-95 means.

SALMON FISHING AREA 2

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	74254	37145	455894	93036	530148	130181	
1975	109380	57560	306030	71168	415410	128728	
1976	99694	47468	350068	77796	449761	125264	
1977	81072	40539	343871	70158	424941	110697	
1978	23832	12535	230028	48934	253860	61469	
1979	60516	28808	119179	27073	179695	55881	
1980	159171	72485	435314	87067	594483	159552	
1981	179274	86426	355534	68581	534808	155007	
1982	107042	53592	249103	53085	356145	106677	
1983	59603	30185	153694	33320	213295	63505	
1984	23347	11695	114883	25258	138228	36953	
1985	46656	24499	76967	16789	122622	41288	
1986	90207	45321	174123	34071	264329	79392	
1987	127564	64351	239726	49799	367289	114150	
1988	107447	56381	152282	32386	259726	88767	
1989	68520	34200	124885	26836	189404	61036	
1990	41562	20699	86296	17316	127856	38015	200,000
1991	39760	20055	36267	7679	76027	27734	200,000
1992	25412	13336	96023	19608	121434	32944	180,000
1993	22852	12037	45572	9651	68423	21688	90,000
1994	9548	4535	54672	11056	64220	15591	60,000
1995	10043	4561	32239	8714	42282	13275	48,000
1996*	10286	5308	25148	5479	35434	10787	35,500
$\bar{X}$ 84-89	77290.2	39408	147144.3	30857	223599.7	70264	
S.D.	38804.6	19812	56190.3	11108	91939.9	29618	
95% LCL	36560.7	18613	88166.7	19198	127098.9	39177	
95% UCL	118019.7	60203	206122.0	42515	320100.4	101351	
$\bar{X}$ 86-91	79176.7	40168	135596.5	28015	214105.2	68182	
S.D.	35621.1	18403	70735.1	14558	105055.8	32433	
95% LCL	41788.5	20852	61352.5	12734	103837.9	34140	
95% UCL	116564.8	59484	209840.5	43295	324372.4	102225	
$\bar{X}$ 92-95	16963.8	8617	57126.5	12257	74089.8	20875	
S.D.	8345.3	4729	27518.8	4994	33579.4	8794	
95% LCL	3686.3	1094	13344.1	4312	20664.9	6883	
95% UCL	30241.2	16140	100908.9	20203	127514.6	34866	
%Change, 1996 vs:							
1995	2	16	-22	-37	-16	-19	
$\bar{X}$ 84-89	-87	-87	-83	-82	-84	-85	
$\bar{X}$ 86-91	-87	-87	-81	-80	-83	-84	
$\bar{X}$ 92-95	-39	-38	-56	-55	-52	-48	

* Preliminary data.

Table 5. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 14B, 1974-96. Weight in kilograms. Also shown is percentage change for 1996 in relation to 1995 and the 1984-89, 1986-91 and 1992-95 means.

SALMON FISHING AREA 14B

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	18655	9328	77743	15863	96398	25191	
1975	36670	19294	63414	14752	100084	34046	
1976	27635	13152	68416	15189	96051	28341	
1977	22521	11267	91433	18664	113954	29931	
1978	7649	4026	55071	11715	62720	15741	
1979	15096	7194	17032	3874	32128	11068	
1980	18877	8493	46168	9138	65045	17631	
1981	13681	6658	38485	7606	52166	14264	
1982	14535	7379	27195	5966	41730	13345	
1983	6580	3292	33265	7489	39845	10781	
1984	4841	2421	29844	6218	34685	8639	
1985	11099	7460	15916	3954	27015	11414	
1986	14602	8296	26203	5342	40805	13638	
1987	22987	11389	58170	11114	81157	22503	
1988	15155	7087	22615	4591	37770	11678	
1989	19291	9053	22036	4646	41327	13699	
1990	7735	3592	15335	2858	23070	6450	60,000
1991	11391	5303	22616	4417	34007	9720	15,000
1992	2819	1325	14401	2752	17221	4077	13,000
1993	2207	1144	17103	3620	19309	4764	8,000
1994	1692	802	4190	857	5882	1659	8,000
1995	478	217	1192	312	1670	529	6,500
1996*	1642	865	1888	418	3530	1283	5,000
$\bar{X}$ 84-89	14662.5	7618	29130.7	5978	43793.2	13595	
S.D.	6326.6	2968	14965.2	2632	19035.8	4740	
95% LCL	8022.1	4502	13423.2	3215	23813.1	8620	
95% UCL	21302.9	10733	44838.2	8740	63773.3	18571	
$\bar{X}$ 86-91	15193.5	7453	27829.2	5495	43022.7	12948	
S.D.	5440.0	2772	15279.0	2872	19844.4	5415	
95% LCL	9483.6	4544	11792.2	2480	22193.9	7265	
95% UCL	20903.4	10363	43866.1	8509	63851.5	18631	
$\bar{X}$ 92-95	1799.0	872	9221.5	1885	11020.5	2757	
S.D.	993.9	488	7718.7	1559	8582.6	1995	
95% LCL	217.7	96	-3058.9	-595	-2634.4	-417	
95% UCL	3380.3	1648	21501.9	4366	24675.4	5931	
%Change, 1996 vs:							
1995	244	299	58	34	111	143	
$\bar{X}$ 84-89	-89	-89	-94	-93	-92	-91	
$\bar{X}$ 86-91	-89	-88	-93	-92	-92	-90	
$\bar{X}$ 92-95	-9	-1	-80	-78	-68	-53	

* Preliminary data.

Table 6. Summary of Atlantic salmon commercial catch data for Labrador (Salmon Fishing Areas 1, 2, & 14B), 1974-96. Weight in kilograms. Also shown is percentage change for 1996 in relation to 1995 and the 1984-89, 1986-91 and 1992-95 means.

LABRADOR (SFAs 1, 2 & 14B)

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	112603	56321	601581	122765	714183	179086	
1975	212434	111791	492469	114521	704903	226312	
1976	164273	78209	591998	131540	756270	209749	
1977	139157	69602	573293	116980	712448	186582	
1978	63962	33656	429986	91473	493949	125129	
1979	96025	45714	229911	52238	325936	97952	
1980	227564	103479	625039	124955	852601	228434	
1981	238383	114680	576188	112334	814571	227014	
1982	158382	79449	389267	83243	547650	162692	
1983	96859	49441	272658	60212	369515	109653	
1984	52261	25590	199676	43202	251935	68792	
1985	86893	47359	152588	33995	238480	81354	
1986	140336	71396	297975	58565	438310	129961	
1987	177982	89454	384778	79170	562759	168624	
1988	159933	83109	234288	49598	394217	132707	
1989	114269	56486	216115	47743	330382	104229	
1990	66667	33027	137129	27487	203794	60514	260,000
1991	53994	26768	65403	13465	119396	40233	295,000
1992	46662	24249	157840	32341	204502	56590	273,000
1993	32325	17074	79962	17096	112285	34170	178,000
1994	18188	8640	74962	15377	93150	24017	92,000
1995	17236	7980	43748	11176	60983	19156	73,500
1996*	15141	7849	32590	7267	47731	15116	55,000
$\bar{X}$ 84-89	121945.7	62232	247570.0	52046	369347.2	114278	
S.D.	47042.3	23907	82277.5	15536	122648.0	36859	
95% LCL	72569.8	37139	161211.0	35739	240615.1	75590	
95% UCL	171321.6	87325	333929.0	68352	498079.3	152966	
$\bar{X}$ 86-91	118863.5	60040	222614.7	46005	341476.3	106045	
S.D.	50192.4	25983	113294.3	23132	160949.4	48180	
95% LCL	66181.2	32768	103700.3	21726	172542.8	55475	
95% UCL	171545.8	87312	341529.0	70284	510409.8	156615	
$\bar{X}$ 92-95	28602.8	14486	89128.0	18998	117730.0	33483	
S.D.	13876.4	7714	48529.6	9237	61599.3	16626	
95% LCL	6525.4	2213	11917.4	4302	19725.5	7031	
95% UCL	50680.1	26759	166338.6	33693	215734.5	59935	
%Change, 1996 vs:							
1995	-12	-2	-26	-35	-22	-21	
$\bar{X}$ 84-89	-88	-87	-87	-86	-87	-87	
$\bar{X}$ 86-91	-87	-87	-85	-84	-86	-86	
$\bar{X}$ 92-95	-47	-46	-63	-62	-59	-55	

* Preliminary data.

Table 7. Atlantic salmon smolt-to-adult survival (back to the river) for Campbellton River (SFA 4), Northeast Brook, Trepassey, and Rocky River (SFA 9), Conne River (SFA 11), and Western Arm Brook (SFA14A). Repeat spawners are included in counts.

	Campbellton River			Northeast Brook			Rocky River			Conne River[1]			Western Arm Brook		
Year (i)	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.
1971													5735	406	7.1
1972													11905	798	6.7
1973													8484	523	6.2
1974													11854	639	5.4
1975													9600	552	5.8
1976													6232	352	5.6
1977													9899	307	3.1
1978													13071	1578	12.1
1979													8349	460	5.5
1980													15665	488	3.1
1981													13981	460	3.3
1982													12477	1141	9.1
1983													10552	235	2.2
1984													20653	514	2.5
1985													13417	525	3.9
1986				1117	91	8.1							17719	437	2.5
1987				1404	97	6.9				74585	7627	10.2	17029	422	2.5
1988				1692	62	3.7				68692	4968	7.2	15321	455	3.0
1989				1708	71	4.2				73724	5383	7.3	11407	322	2.8
1990				1902	99	5.2	8287	211	2.5	56943	2410	4.2	10563	233	2.2
1991				1911	49	2.6	7732	237	3.1	74645	2523	3.4	13453	480	3.6
1992				1674	79	4.7	7813	292	3.7	68208	2703	4.0	15405	947	6.1
1993	31577	2857	9.0	1849	99	5.4	5115	158	3.1	55765	1533	2.7	13435	954	7.1
1994	41633	3035	7.3	944	80	8.5	9781	385	3.9	60762	3498	5.8	9284	823	8.9
1995	39715	3208	8.1	792	73	9.2	7786	356	4.6	57733*	4154	7.2	15144	1230	8.1
1996	58369			1749			14261			94088			14500		

[1]Includes Native food fishery.

* 5016 removed to Roti Bay.

Table 8. Atlantic salmon recreational catch (retained + released), effort, and catch per unit of effort (CPUE) data for 1995 and 1996 for each SFA, Labrador (SFAs 1, 2 & 14B), Northern Peninsula East & Eastern (SFAs 3 - 8), South (SFAs 9 - 11), Southwest (SFAs 12 - 13), Northern Peninsula West (SFA 14A), and Insular Newfoundland (SFAs 3 - 14A). The 1984-89, 1986-91 and 1992-95 means are included; 95% Confidence Intervals are in parentheses.

	Effort (rod days)					Small salmon (< 63 cm.)					Large Salmon (>= 63 cm.)					CPUE**				
SFA	1996	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1996	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1996	1995	$\bar{X}$84-89*	$\bar{X}$86-91*	$\bar{X}$ 92-95	1996	1995	$\bar{X}$84-89*	$\bar{X}$86-91*	$\bar{X}$ 92-95
Labrador (1, 2 & 14B)	7150	9846	8222	8711	9451	4923	5405	4179	4112	4522	618	946	513	454	743	0.77	0.65	0.57	0.52	0.56
			(1490)	(1051)	(1337)			(1214)	(1341)	(1822)			(153)	(229)	(317)			(0.08)	(0.13)	(0.13)
1	879	880	1116	1163	809	322	1354	861	753	824	67	189	157	118	195	0.44	1.75	0.91	0.75	1.26
			(324)	(316)	(425)			(366)	(489)	(1004)			(37)	(60)	(188)			(0.12)	(0.36)	(0.85)
2	6271	3544	2456	2659	3327	4601	3007	2018	2036	2647	551	465	191	194	319	0.82	0.98	0.90	0.84	0.89
			(517)	(274)	(571)			(637)	(645)	(1031)			(104)	(105)	(252)			(0.15)	(0.23)	(0.28)
14B ***	.	5422	4650	4888	5314	.	1044	1300	1324	1051	.	292	165	142	229	.	0.25	0.32	0.30	0.24
			(770)	(582)	(839)			(375)	(355)	(468)			(78)	(91)	(129)			(0.07)	(0.07)	(0.12)
Northern Peninsula East & Eastern (3 - 8)	71615	63184	45518	39919	56223	25799	17561	13857	11264	18043	505	421			349	0.37	0.28	0.30	0.28	0.33
			(10759)	(9388)	(24908)			(5483)	(5262)	(7630)					(369)			(0.06)	(0.07)	(0.1)
3	6363	5438	2137	2547	5375	3240	2295	1115	1260	3300	143	186			187	0.53	0.46	0.52	0.49	0.65
			(756)	(1157)	(2672)			(527)	(611)	(2543)					(262)			(0.09)	(0.13)	(0.34)
4	44385	36717	28158	24472	32601	17334	11178	9005	6697	10755	232	151			98	0.40	0.31	0.32	0.27	0.33
			(7876)	(6573)	(16039)			(3876)	(3372)	(4345)					(114)			(0.06)	(0.08)	(0.1)
5	16415	16691	10528	8725	14218	4654	3446	3165	2820	3530	113	76			59	0.29	0.21	0.30	0.32	0.25
			(2841)	(2694)	(6291)			(1410)	(1528)	(1012)					(71)			(0.10)	(0.08)	(0.09)
6	2331	2513	2884	2731	2498	370	397	372	328	326	17	8			5	0.17	0.16	0.13	0.12	0.13
			(573)	(849)	(345)			(110)	(140)	(138)					(7)			(0.05)	(0.04)	(0.04)
7	1603	1425	1317	1008	1252	142	170	101	76	86	0	0			0	0.09	0.12	0.08	0.08	0.07
			(482)	(524)	(230)			(28)	(47)	(92)								(0.03)	(0.04)	(0.07)
8	518	400	494	435	374	59	75	100	83	63	0	0			0	0.11	0.19	0.20	0.19	0.17
			(197)	(197)	(246)			(30)	(57)	(27)								(0.05)	(0.09)	(0.13)
South (9 - 11)	41628	35146	28274	24702	26900	9923	7798	8348	6378	6108	139	47			50	0.24	0.22	0.30	0.26	0.23
			(3855)	(6192)	(11415)			(2619)	(3187)	(2229)					(51)			(0.06)	(0.07)	(0.04)
9	10365	10487	8228	7545	8541	1622	1901	1800	1482	1323	25	11			7	0.16	0.18	0.22	0.20	0.16
			(1318)	(1180)	(3504)			(583)	(810)	(797)					(11)			(0.05)	(0.08)	(0.04)
10	15128	10210	5908	4806	7079	2520	1704	1272	928	1233	88	23			19	0.17	0.17	0.22	0.19	0.18
			(1134)	(1529)	(4454)			(318)	(592)	(654)					(14)			(0.03)	(0.06)	(0.03)
11	16135	14449	14137	12351	11280	5781	4193	5276	3968	3552	26	13			24	0.36	0.29	0.37	0.32	0.32
			(1975)	(3784)	(3888)			(1845)	(1897)	(854)					(32)			(0.09)	(0.06)	(0.07)
Southwest (12 - 13)	17512	20786	25167	25003	23426	6093	5094	7432	6973	6074	521	989	383	370	936	0.38	0.29	0.31	0.29	0.30
			(3171)	(3164)	(3534)			(2382)	(2145)	(1626)			(193)	(202)	(196)			(0.07)	(0.06)	(0.04)
12 ****	1612	2679	3203	2955	2931	630	594	1127	874	832	27	41	32	23	47	0.41	0.24	0.36	0.30	0.30
			(649)	(543)	(473)			(505)	(314)	(351)			(20)	(10)	(37)			(0.13)	(0.08)	(0.12)
13 ****	15900	18107	21964	22049	20495	5463	4500	6305	6099	5242	494	948	351	347	889	0.37	0.30	0.30	0.29	0.30
			(2815)	(2715)	(3141)			(1979)	(1862)	(1301)			(188)	(194)	(167)			(0.06)	(0.06)	(0.03)
Northern Peninsula West (14A)	25876	24159	15920	15983	20045	9493	8177	4590	4620	6230	706	731	79	102	488	0.39	0.37	0.29	0.30	0.34
			(1944)	(1813)	(5138)			(1136)	(1163)	(2102)			(56)	(54)	(269)			(0.06)	(0.06)	(0.06)
Insular Newfoundland (3 -14A)	156631	143275	115464	106172	126594	51308	38630	34336	29259	36454	1871	2188	481	484	1823	0.34	0.28	0.30	0.28	0.30
			(16865)	(19588)	(34879)			(11141)	(11990)	(8531)			(299)	(294)	(572)			(0.06)	(0.07)	(0.05)

*1987 is not included in SFAs 3-11, Northern Peninsula East & Eastern, South, and Insular Newfoundland.
**CPUE for 1995, 1996 and 1992-95 mean is based on small + large (retained + released). The 1984-89 and 1986-91 means are based on total retained fish only for SFAs 3 - 11.
*** No data collected in 1996
**** 1996 data incomplete

Table 9. Atlantic salmon recreational catch (retained + released), effort, and catch per unit effort in 1996 for each SFA, Labrador (SFAs 1, 2 & 14B), Northern Peninsula East & Eastern (SFAs 3 - 8), South (SFAs 9-11), Southwest (SFAs 12-13) and Insular Nf. (SFAs 3-14A), expressed as percentage change in relation to 1995, 1984-89, 1986-91 and 1992-95 means.

	Effort (rod days)				Small salmon (<63 cm.)				Large salmon (>= 63 cm.)				CPUE			
SFA	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95
Labrador (1, 2 & 14B)	-27	-13	-18	-24	-9	18	20	9	-35	21	36	-17	20	36	48	39
1	-0	-21	-24	9	-76	-63	-57	-61	-65	-57	-43	-66	-75	-51	-41	-65
2	77	155	136	88	53	128	126	74	18	189	184	73	-16	-9	-2	-8
14B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Northern Peninsula East & Eastern (3 - 8)	13	57	79	27	47	86	129	43	20			45	29	21	30	12
3	17	198	150	18	41	190	157	-2	-23			-23	17	2	7	-18
4	21	58	81	36	55	93	159	61	54			136	28	24	45	19
5	-2	56	88	15	35	47	65	32	49			92	38	-3	-10	15
6	-7	-19	-15	-7	-7	-1	13	14	113			224	3	29	38	25
7	12	22	59	28	-16	41	86	66					-26	16	17	30
8	30	5	19	38	-21	-41	-29	-6					-39	-44	-40	-32
South (9 - 11)	18	47	69	55	27	19	56	62	196			178	8	-18	-6	6
9	-1	26	37	21	-15	-10	9	23	127			245	-13	-27	-19	2
10	48	156	215	114	48	98	172	104	283			363	2	-20	-11	-3
11	12	14	31	43	38	10	46	63	100			9	24	-4	12	14
Southwest (12 - 13)	-16	-30	-30	-25	20	-18	-13	0	-47	36	41	-44	29	22	29	26
12	-40	-50	-45	-45	6	-44	-28	-24	-34	-16	17	-43	72	13	34	36
13	-12	-28	-28	-22	21	-13	-10	4	-48	41	42	-44	25	24	28	25
Northern Peninsula West (14A)	7	63	62	29	16	107	105	52	-3	796	593	45	7	34	33	18
Insular Newfoundland (3-14A)	9	36	48	24	33	49	75	41	-14	289	287	3	19	13	21	12

*1987 is not included in SFAs 3-11, Northern Peninsula East & Eastern, South, and Insular Nf.

Table 10. Atlantic salmon recreational catch (retained only), 1995 and 1996 for each SFA, Labrador (SFAs 1, 2 & 14B), Northern Peninsula East & Eastern (SFAs 3-8), South (SFAs 9-11), Southwest (SFAs 12-13), Northern Peninsula West (SFA 14A), and Insular Newfoundland (SFAs 3-14A). The 1984-89, 1986-91 and 1992-95 means are included; 95% confidence intervals are in parentheses.

	Small salmon (< 63 cm.)					Large Salmon (>= 63 cm.)				
SFA	1996	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1996	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95
Labrador (1, 2 & 14B)	2251	2597	4179	4112	2625	305	546	513	454	545
			(1214)	(1341)	(154)			(153)	(229)	(273)
1	260	500	861	753	339	50	92	157	118	141
			(366)	(489)	(275)			(37)	(60)	(215)
2	1991	1280	2018	2036	1433	255	246	191	194	207
			(637)	(645)	(235)			(104)	(105)	(104)
14B **	.	817	1300	1324	853	.	208	165	142	197
			(375)	(355)	(233)			(78)	(91)	(105)
Northern Peninsula East & Eastern (3 - 8)	17555	12823	13857	11264	11966					
			(5483)	(5262)	(5238)					
3	2122	1405	1115	1260	1940					
			(527)	(611)	(1461)					
4	10960	7979	9005	6697	7086					
			(3876)	(3372)	(3048)					
5	3948	2860	3165	2820	2527					
			(1410)	(1528)	(972)					
6	327	336	372	328	283					
			(110)	(140)	(87)					
7	139	170	101	76	85					
			(28)	(47)	(93)					
8	59	73	100	83	61					
			(30)	(57)	(26)					
South (9 - 11)	7498	6299	8348	6378	4694					
			(2619)	(3187)	(2147)					
9	1371	1594	1800	1482	1136					
			(583)	(810)	(706)					
10	2092	1450	1272	928	835					
			(318)	(592)	(799)					
11	4035	3255	5276	3968	2723					
			(1845)	(1897)	(828)					
Southwest (12 - 13)	4221	3843	7432	6973	4995					
			(2382)	(2145)	(1789)					
12***	462	507	1127	874	621					
			(505)	(314)	(158)					
13***	3759	3336	6305	6099	4374					
			(1979)	(1862)	(1661)					
Northern Peninsula West (14A)	6485	6090	4590	4620	4801					
			(1136)	(1163)	(1482)					
Insular Newfoundland (3 - 14A)	35759	29055	34336	29259	26456					
			(11141)	(11990)	(4797)					

*1987 is not included in SFAs 3-11, Northern Peninsula East & Eastern, South, and Insular Nf.

** No data collected in 1996

*** 1996 data incomplete

Table 11. Atlantic salmon recreational catch (retained only) in 1996 for each SFA, Labrador (SFAs 1, 2 & 14B), Northern Peninsula East & Eastern (SFAs 3-8), South (SFAs 9-11), Southwest (SFAs 12-13), Northern Peninsula West (SFA14A), and Insular Nf. (SFAs 3 - 14A) expressed as percentage change in relation to 1995, the 1984-89, 1986-91, and 1992-95 means.

	Small salmon (< 63 cm.)				Large Salmon (>= 63 cm.)			
SFA	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95	1995	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-95
Labrador (1, 2 & 14B)	-13	-46	-45	-14	-44	-40	-33	-44
1	-48	-70	-65	-23	-46	-68	-58	-64
2	56	-1	-2	39	4	34	32	23
14B	.	.	.	.	.	.	.	.
Northern Peninsula East & Eastern (3 - 8)	37	27	56	47				
3	51	90	68	9				
4	37	22	64	55				
5	38	25	40	56				
6	-3	-12	-0	16				
7	-18	38	82	64				
8	-19	-41	-29	-3				
South (9 - 11)	19	-10	18	60				
9	-14	-24	-8	21				
10	44	65	125	150				
11	24	-24	2	48				
Southwest (12 - 13)	10	-43	-39	-15				
12	-9	-59	-47	-26				
13	13	-40	-38	-14				
Northern Peninsula West (14A)	6	41	40	35				
Insular Newfoundland (3 - 14A)	23	4	22	35				

*1987 is not included in SFAs 3-11, Northern Peninsula East & Eastern, South, and Insular Nf.

Table 12. Counts of small salmon from fishways and counting fences in Newfoundland and Labrador 1974-96 by Salmon Fishing Area (SFA). Also shown are means ($\bar{X}$), coefficients of variation (CV), 95% confidence limits (UCL and LCL) and percentage change for 1996 in relation to 1995, 84-89 mean, 86-91 mean, and the 92-95 mean. Partial counts are in parentheses and are not included in statistical calculations. Adjusted counts are bold and in italics.

	SFA 2	SFA 4					SFA 5			SFA 9			SFA 10	SFA 11		SFA 13				SFA 14A			SFA 14B	
Year	1	2(a)	2(b)	3	4(a)	4(b)	5	6(a)	6(b)	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1974		2538			857		(770)		162				223							41	38	399		
1975		9218	5531				(1119)		778				(186)							1	191	631		
1976		3991	2935						335				294							132	341	520		
1977		6148	4300						371											192	789	341		
1978		3790	2704		755		1403	810	436				390							117	971	285		
1979		6715	3925		(404)		(1350)	569	455				454							195	1984	1578		
1980			4597		997		1712	843	420				433			82				301	792	430		
1981		(8114)	4264		2459		2414	1115	619				334			127				110	2101	447		
1982		(7605)	2796		1425		1281	963	625				86			100				275	2112	387		
1983			(2952)		978		1195	1210	853	2330			233							220	2007	1141		
1984		17219	(6300)		1081		1379	1233	904	2430	89		419							440	1805	120		
1985		16652	5985		1663		904	1557	960	***1665***	124		384							190	1553	416		
1986		9697	3072		1064		1036	1051	726	2516	158		725	211	7515					354	2815	525		
1987		9014	2327		493		914	974	570	1302	91	80	325	(155)	9687					355	2505	378		
1988		8974	3433		1562		772	1737	795	1695	97	313	543	149	7118					437	2075	251		
1989		7192	1694		596	7743	496	1138	668	***912***	62	168	706	175	4469						1369	455		
1990		6629	1057		***345***	7520	745	1149	(410)	1657	71	401	551	208	4321				12216		2296	322		
1991		5245	1060		245	6445	562	873	(311)	394	99	211	353	(46)	2086				5724		1415	233		
1992		12538	3520		1168	***18179***	1182	1443	886	***1442***	49	237	921	101	1973			222	17571	435	2347	480		
1993		21319	(5615)	4001	1560	25905	1959	(2713)	962	***1107***	79	292	847	(182)	2355	137		576	18477	526	4009	947		
1994	***2006***	16168	(2488)	2857	968	18080	1513	1571	1179	1592	99	158	677		1533	145	423	562	7995	701	3592	954	228	14
1995	***2573***	15691	(2719)	3035	1600	22002	1139	2258	1298	1071	80	385	663		3498	171	562	753	27898	1003	5800	823	317	80
1996	***3092***	29726	(4502)	3208	946	23665	1751	2005	1285	1182	73	356	1225	221	4436	199	614	601	30445	602	6923	1230	(39)	37
$\bar{X}$ 84-89	3392 *	11458	3302		1077		917	1282	771	1753	104	187	517	178	7197					355	2020	358		
CV	33	38	50		45		32	24	19	36	32	63	33	17	30					29	28	41		
95% UCL	5158	16000	5343		1580		1223	1598	924	2411	138	479	695	256	10603					481	2606	513		
95% LCL	1626	6916	1262		573		610	965	617	1096	69	-105	339	101	3791					229	1434	202		
N	4	6	5		6		6	6	6	6	6	3	6	3	4					5	6	6		
$\bar{X}$ 86-91		7792	2107		718	7236	754	1154	690	1413	96	235	534	186	5866					382	2079	361		
CV		22	48		70	10	27	26	14	52	35	53	32	16	47					12	28	32		
95% UCL		9593	3168		1244	8960	969	1473	841	2178	132	390	711	233	8741					500	2694	481		
95% LCL		5991	1046		191	5512	540	835	538	647	61	79	356	139	2991					264	1464	240		
N		6	6		6	3	6	6	4	6	6	5	6	4	6					3	6	6		
$\bar{X}$ 92-95		16429		3298	1324	21042	1448	1996	1081	1303	77	268	777		2340	151		528	17985	666	3937	801		
CV		22		19	23	18	26	30	18	20	27	36	16		36	12		42	45	38	36	28		
95% UCL		22214		4827	1813	26962	2052	2946	1384	1709	110	420	980		3679	195		881	30926	1064	6210	1155		
95% LCL		10644		1768	835	15121	845	1046	778	897	44	116	574		1000	107		175	5044	268	1664	447		
N		4		3	4	4	4	4	4	4	4	4	4		4	3		4	4	4	4	4		
% change, 1996 vs:																								
1995	20	89	66	6	-41	8	54	-11	-1	10	-9	-8	85		27	16	9	-20	9	-40	19	49	-88	-54
$\bar{X}$ 84-89	-9	159	36		-12		91	56	67	-33	-29	90	137	24	-38					69	243	244		
$\bar{X}$ 86-91		282	114		32	227	132	74	86	-16	-24	52	129	19	-24					58	233	241		
$\bar{X}$ 92-95		81		-3	-29	12	21	0	19	-9	-5	33	58		90	32		14	69	-10	76	54		

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   (a) Bishop's Falls fishway
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19. Western Arm Brook counting fence
20. Forteau River counting fence
21. Lanse Au Loup River counting fence

* 1970-73 mean.

Table 13. Counts of large salmon from fishways and counting fences in Newfoundland and Labrador 1974-96 by Salmon Fishing Area (SFA). Also shown are means ($\bar{X}$), coefficients of variation (CV), 95% confidence limits (UCL and LCL) and percentage change for 1996 in relation to 1995, 84-89 mean, 86-91 mean, and 92-95 mean. Partial counts are in parentheses and are not included in statistical calculations. Adjusted counts are bold and in italics.

	SFA 2	SFA 4					SFA 5			SFA 9			SFA 10	SFA 11		SFA 13				SFA 14A			SFA 14B	
Year	1	2(a)	2(b)	3	4(a)	4(b)	5	6(a)	6(b)	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1974		411			9		(77)		121				9							33	3	4		
1975		1439	505				(9)		52				(36)							0	25	1		
1976		460	117						37				56							11	47	0		
1977		581	271						262											11	33	3		
1978		303	81		52		16	20	89				32							12	21	1		
1979		277	124		(6)		(54)	170	30				37							1	39	0		
1980			426		15		91	39	17				34			55				19	63	3		
1981		(1695)	514		33		39	90	28				62			29				50	97	1		
1982		(181)	122		18		20	19	8				36			56				16	523	3		
1983			(302)		12		75	57	76	88			22							7	442	4		
1984		529	(111)		38		57	107	98	83	33		44							47	288	0		
1985		183	38		26		27	112	60	***25***	41		0							14	30	2		
1986		355	174		12		15	140	58	101	30		39	4	397					32	92	0		
1987		310	41		9		19	56	38	106	30	1	16	(2)	498					11	68	1		
1988		147	10		24		14	206	45	61	19	6	11	2	418					21	44	1		
1989		89	14		24	473	19	142	51	***107***	18	9	15	7	319						60	0		
1990		122	15		***8***	508	13	144	(34)	71	9	17	25	15	361				855		82	0		
1991		99	40		2	670	14	114	(26)	35	13	16	8	(7)	87				401		73	1		
1992		314	242		101	***4162***	43	270	224	***51***	10	46	46	35	154			5	2945	80	169	8		
1993		627	(312)	145	87	1734	87	(470)	173	***120***	17	72	65	(6)	98	78		43	636	34	222	8		
1994	***715***	916	(333)	191	83	1072	90	242	172	68	15	19	70		100	148	67	47	1030	50	331	31	74	4
1995	***542***	941	(394)	218	125	1121	168	634	260	56	12	39	74		107	120	47	28	2064	95	611	33	136	11
1996	***412***	2053	(578)	560	112	1753	161	464	185	149	15	45	123	33	179	142	33	38	2679	93	507	50	(35)	3
$\bar{X}$ 84-89	266 *	269	55		22		25	127	58	81	29	5	21	4	408					25	97	1		
CV	60	60	122		47		65	39	36	40	31	76	82	58	18					59	99	122		
95% UCL	520	439	139		33		42	179	80	114	38	15	39	11	525					43	198	2		
95% LCL	12	99	-29		11		8	75	36	47	19	-5	3	-2	291					7	-4	-0		
N	4	6	5		6		6	6	6	6	6	3	6	3	4					5	6	6		
$\bar{X}$ 86-91		187	49		13	550	16	134	48	80	20	10	19	7	347					21	70	1		
CV		62	128		68	19	17	36	18	37	44	69	60	82	41					49	24	110		
95% UCL		308	115		23	811	18	185	62	111	29	18	31	16	494					47	88	1		
95% LCL		66	-17		4	289	13	83	34	49	11	1	7	-2	199					-5	52	-0		
N		6	6		6	3	6	6	4	6	6	5	6	4	6					3	6	6		
$\bar{X}$ 92-95		700		185	99	2022	97	404	207	74	14	44	64		115	115		31	1669	65	333	20		
CV		42		20	19	72	54	46	21	43	23	50	19		23	31		62	62	43	59	69		
95% UCL		1167		276	129	4342	180	697	275	124	18	79	83		157	203		61	3327	109	647	42		
95% LCL		232		93	69	-297	14	111	139	23	9	9	44		73	28		0	10	21	20	-2		
N		4		3	4	4	4	4	4	4	4	4	4		4	3		4	4	4	4	4		
% change, 1996 vs:																								
1995	-24	118	47	157	-10	56	-4	-27	-29	166	25	15	66		67	18	-30	36	30	-2	-17	52	84	175
$\bar{X}$ 84-89	55	664	943		405		540	265	217	85	-47	744	490	662	-56					272	423	7400		
$\bar{X}$ 86-91		998	1080		751	219	928	247	285	86	-24	359	547	371	-48					336	626	9900		
$\bar{X}$ 92-95		193		203	13	-13	66	15	-11	102	11	2	93		56	23		24	61	44	52	150		

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19. Western Arm Brook counting fence
20. Forteau River counting fence
21. Lanse Au Loup River counting fence

* 1970-73 mean.

Table 14. Proportion of large salmon at counting facilities in Newfoundland 1992- 96, the 1984-89 mean, the 1986-91 mean, and the 1992-95 mean.

	Proportion of large salmon							
Counting facility	1992	1993	1994	1995	1996	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-95
SFA 2								
Sand Hill River			0.263	0.174	0.118	0.073 *		
SFA 4								
Exploits River (Bishop's Falls)	0.024	0.029	0.054	0.057	0.065	0.023	0.023	0.041
Exploits River (Gt. Rattling Bk.)	0.064	0.053	0.118	0.127	0.114	0.016	0.023	
Gander River (Salmon Bk.)	0.080	0.053	0.079	0.072	0.106	0.020	0.018	0.070
Gander River (counting fence)	0.186	0.063	0.056	0.048	0.069		0.071	0.088
SFA 5								
Middle Brook	0.035	0.043	0.056	0.129	0.084	0.027	0.020	0.063
Terra Nova River (Lower)	0.158	0.148	0.133	0.219	0.188	0.090	0.104	0.168
Terra Nova River (Upper)	0.202	0.152	0.127	0.167	0.126	0.070	0.065	0.161
SFA 9								
Biscay Bay River	0.034	0.098	0.041	0.050	0.112	0.044	0.054	0.054
Northeast Brook (Trepassey)	0.169	0.177	0.132	0.130	0.170	0.216	0.171	0.150
Rocky River	0.163	0.198	0.107	0.092	0.112	0.028	0.040	0.141
SFA 10								
Northeast River (Placentia)	0.048	0.071	0.094	0.100	0.091	0.039	0.034	0.076
SFA 11								
Conne River	0.072	0.040	0.061	0.030	0.039	0.054	0.056	0.047
SFA 13								
Highlands River		0.363	0.505	0.412	0.416			0.433
Flat Bay Brook			0.137	0.077	0.051			
Pinchgut Brook	0.022	0.069	0.077	0.036	0.059			0.055
Humber River	0.144	0.033	0.114	0.069	0.081			0.085
SFA 14A								
Lomond River	0.155	0.061	0.067	0.087	0.134	0.066	0.053	0.089
Torrent River	0.067	0.052	0.084	0.095	0.068	0.046	0.032	0.078
Western Arm Brook	0.016	0.008	0.031	0.039	0.039	0.002	0.001	0.024
SFA 14B								
Forteau River			0.245	0.300	0.473			
Lanse Au Loup River			0.222	0.121	0.075			

*1970 - 73 mean.

Table 15. Comparison of counts of small and large salmon during moratorium years 1992-96 with counts for the pre-moratorium period 1984-91. The direction of change in the moratorium mean relative to the pre-moratorium mean is denoted by inc. = increase or dec. = decrease.

	Small			Large			Proportion large		
River	(inc./dec.)	Z	P	(inc./dec.)	Z	P	(inc./dec.)	Z	P
SFA 4									
Exploits River	inc.	1.98	0.0481	inc.	2.56	0.0104	inc.	1.98	0.0481
Gander River	inc.	-2.09	0.0369	inc.	-2.09	0.0369	inc.	0.30	0.7656
SFA 5									
Middle Brook	inc.	2.56	0.0104	inc.	2.92	0.0066	inc.	2.56	0.0104
Terra Nova River (Lower)	inc.	2.42	0.0157	inc.	2.85	0.0043	inc.	2.85	0.0043
SFA 9									
Biscay Bay River	dec.	-1.10	0.2723	inc.	0.37	0.7144	inc.	0.81	0.4208
Northeast Brook, Trepassey	dec.	-1.17	0.2409	dec.	-1.69	0.0914	dec.	-0.51	0.6084
Rocky River	inc.	-0.42	0.6761	inc.	-2.51	0.0122	inc.	-2.51	0.0122
SFA 10									
Northeast River, Placentia	inc.	2.27	0.0233	inc.	2.85	0.0043	inc.	2.12	0.0338
SFA 11									
Conne River	dec.	-1.92	0.0552	dec.	-1.73	0.0828	dec.	-1.00	0.3153
SFA 13									
Humber River	inc.	2.27	0.0233	inc.	1.98	0.0481	inc.	1.68	0.0923
SFA 14A									
Torrent River	inc.	2.56	0.0104	inc.	2.56	0.0104	inc.	2.12	0.0338
Western Arm Brook	inc.	2.71	0.0068	inc.	2.92	0.0036	inc.	2.89	0.0038

Table 16. Newfoundland Region summary of the conservation egg requirement attained for various rivers during the five-year period prior to the commercial salmon fishery moratorium (1987-91) and the five years during the moratorium (1992-96).

SFA	River	Year									
		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
4	Exploits River:										
	-Lower	65	61	48	47	31	69	117	105	126	216
	-Middle	9	12	14	12	15	17	15	18	19	42
	-Upper	97	125	119	88	0.3	2	7	8	16	26
	Gander River			44	38	36	118	128	91	95	124
	Campbellton River							311	239	279	304
5	Terra Nova River	14	28	19	19	15	28	53	26	45	36
	Middle Brook	90	55	49	74	51	148	238	174	114	250
	Northwest River									40	55
9	Biscay Bay River	119	117	87	122	38	141	97	143	77	117
	Rocky River	22	30	17	40	22	28	34	25	56	34
10	Northeast River	166	247	302	269	175	555	527	434	422	736
11	Conne River*	214	159	103	112	51	51	61	40	81	112
	Little River**	51	30	61	105	47	45	82	38	22	298
13	Harry's River						12	37	46	48	48
	Pinchgut (tributary of Harry's)						36	117	145	150	130
	Highlands River							47	86	68	78
	Humber River				60	27	117	96	40	129	186
	Flat Bay River								27	45	65
	Crabbes Brook										56
	Middle Barachois Brook										79
	Robinsons River										62
14 A	Lomond River	56	70	61	62	64	121	118	143	187	143
	Torrent River	201	266	225	221	176	314	538	530	1033	1279
	Western Arm Brook	103	67	142	114	68	151	288	292	285	430

*Conne River is evaluated against a Management Target which is higher than the corresponding conservation egg requirement.

**Colonization program at Little River. Eggs removed from most adult returns, incubated, and fry subsequently stocked into the system. Conservation requirement achieved includes natural egg deposition and fry stocking egg equivalents.

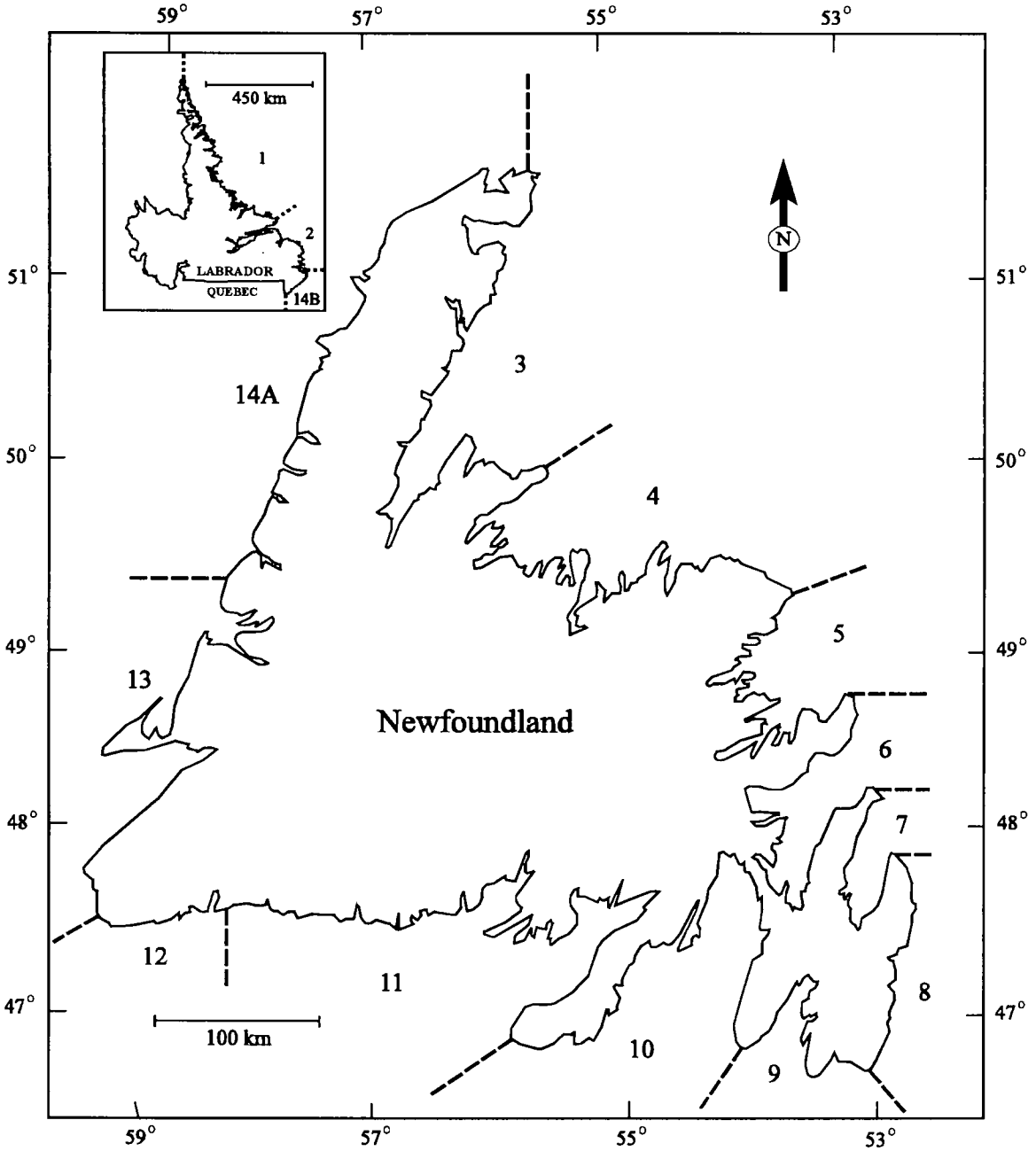


Fig. 1. Map showing the 14 Salmon Fishing Areas of the Newfoundland Region.

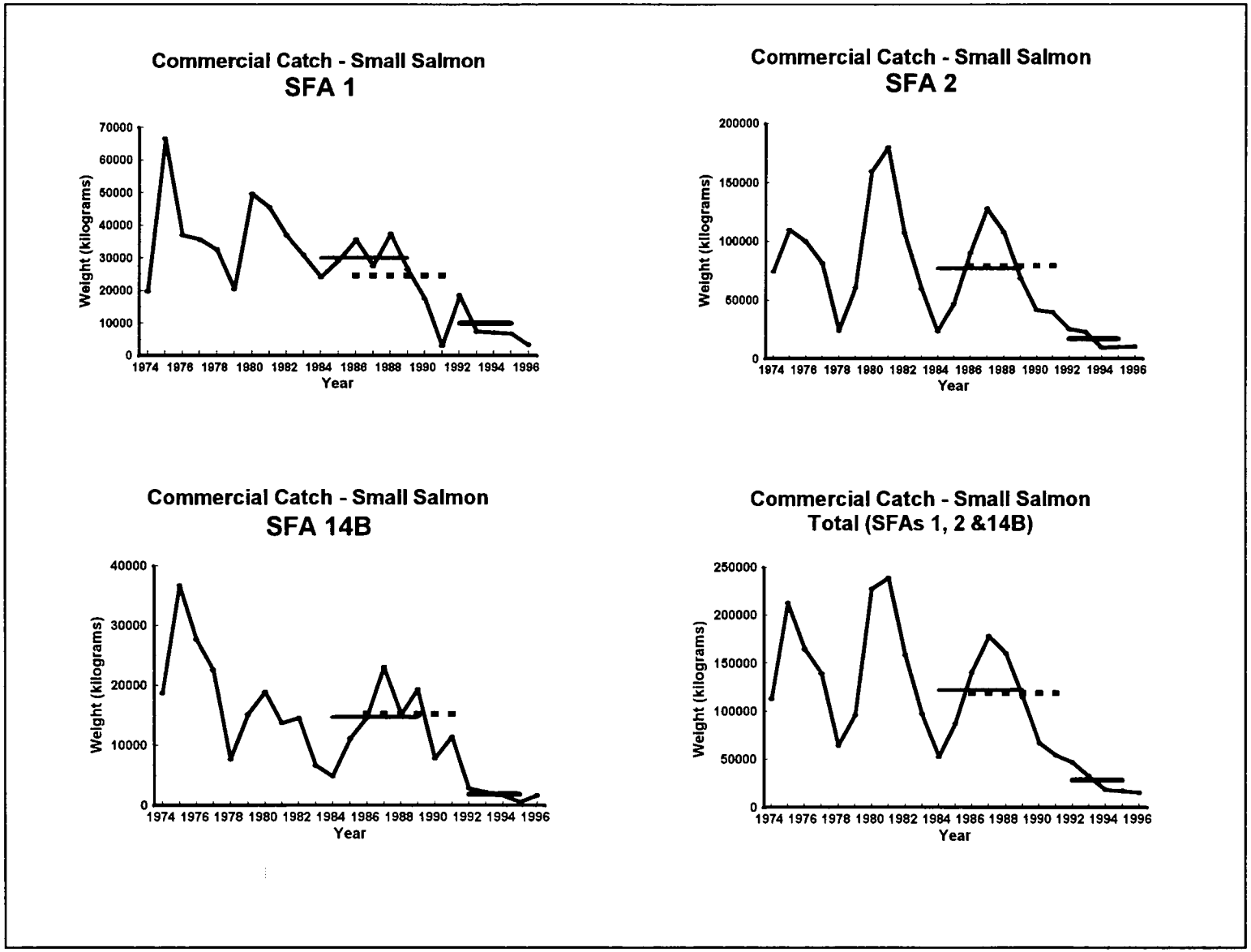


Fig. 2a. Commercial catch of small salmon (kilograms) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-96. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-95 mean.

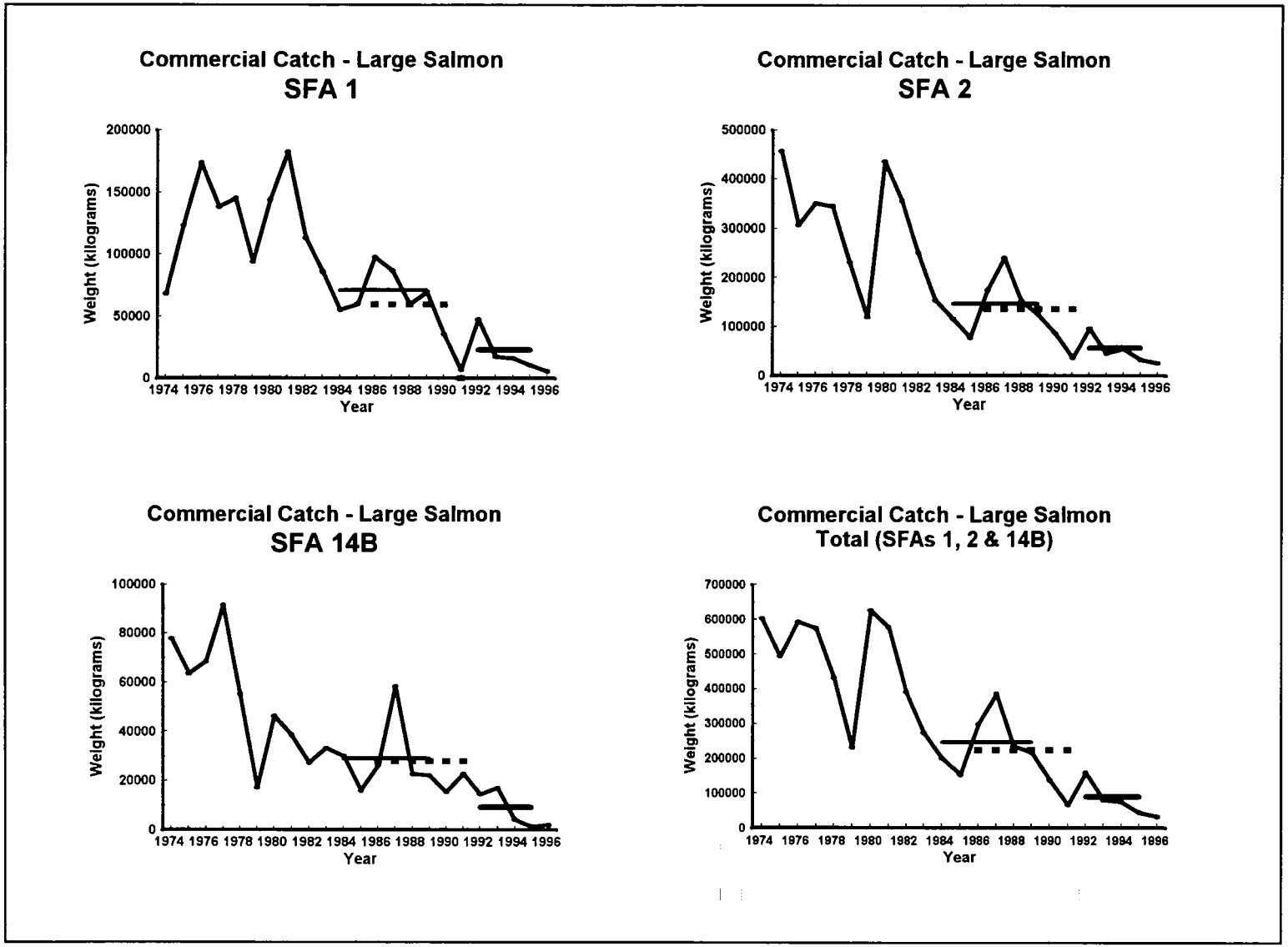


Fig. 2b. Commercial catch of large salmon (kilograms) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-96. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-95 mean.

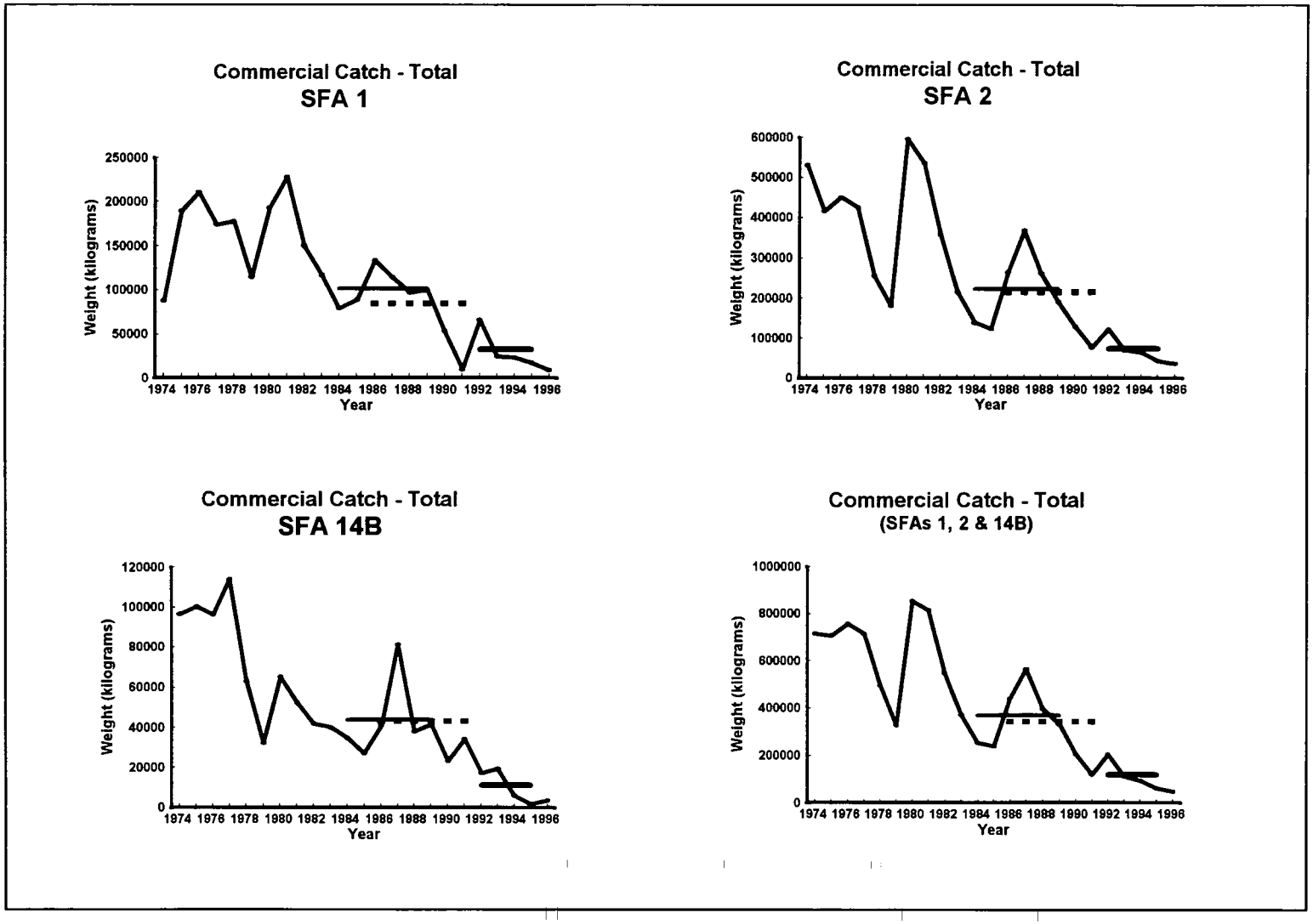
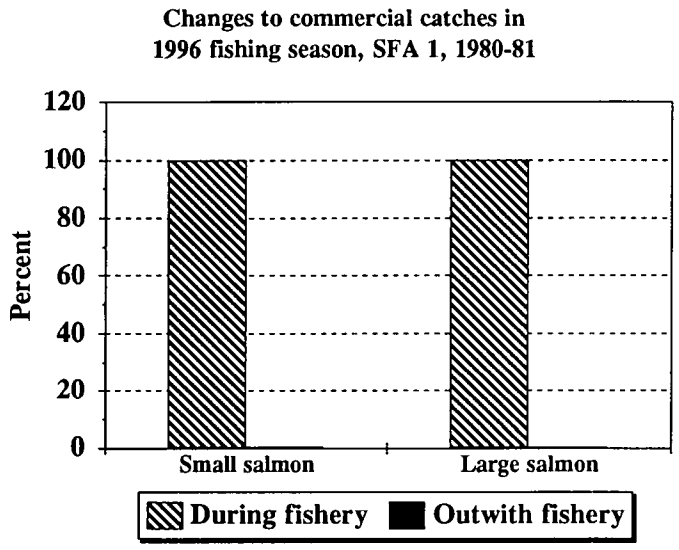
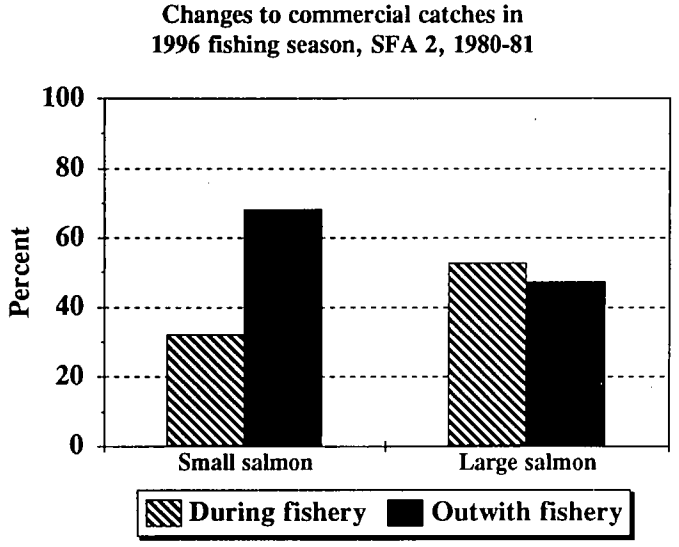


Fig. 2c. Total commercial catch (kilograms) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-96. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-95 mean.





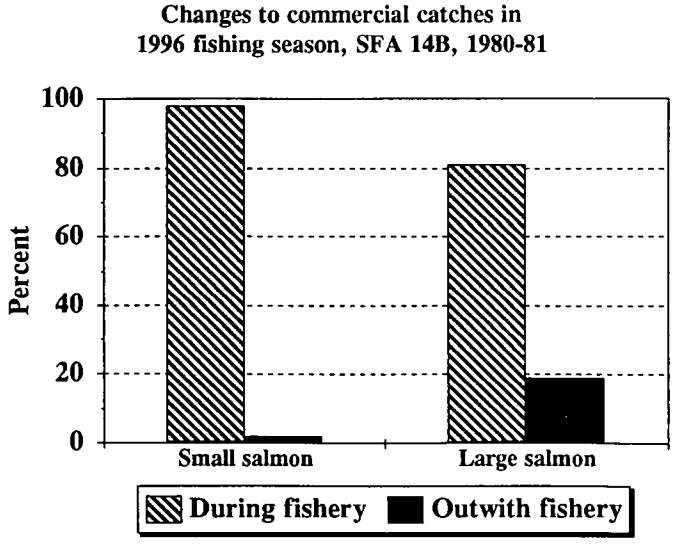
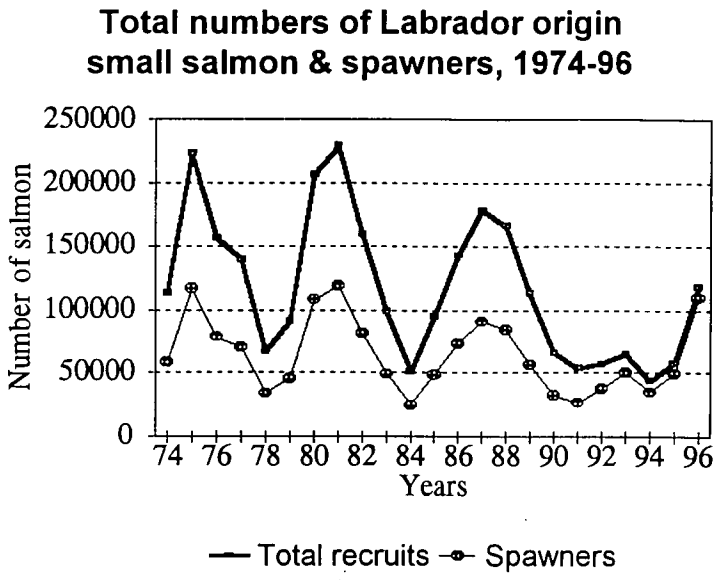


Fig. 3. Effects of the 1995 reduced fishing season on commercial landings in Labrador imputed by applying the June 20 opening date to landing in years 1980-81 for SFAs 1, 2, and 14B.



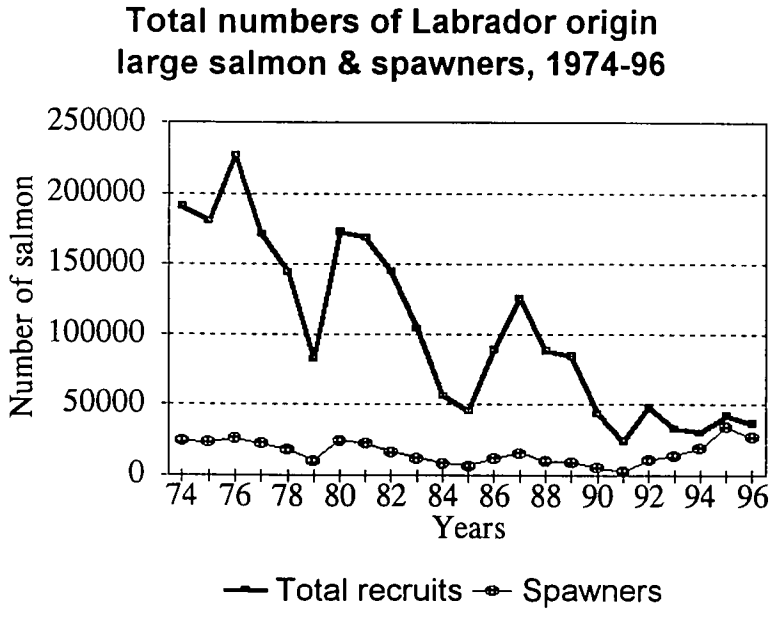
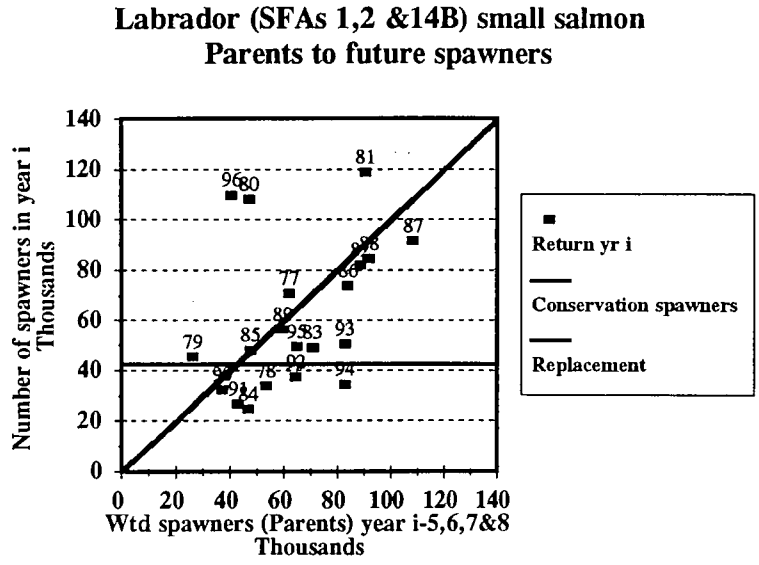


Fig. 4a. Estimated numbers of small and large salmon recruits (prior to commercial fishery), returns (after commercial fishery), and spawners (after angling fishery) for SFAs 1, 2, & 14B of Labrador combined, 1974-96.



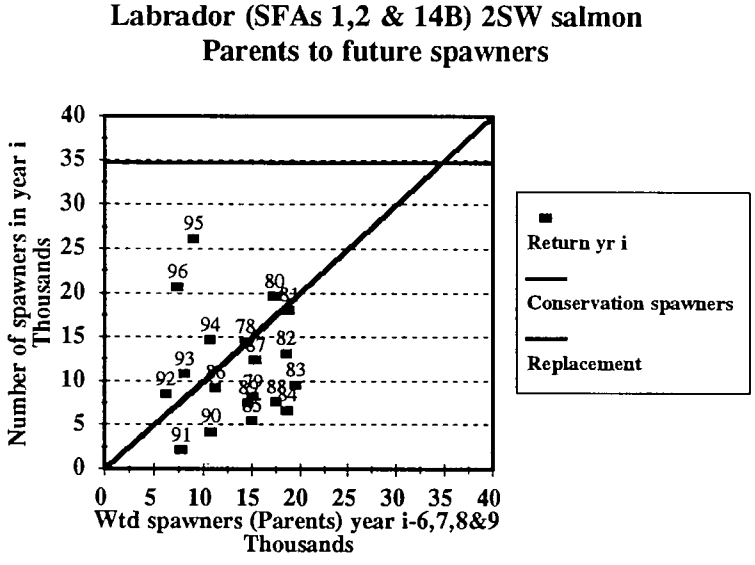


Fig. 4b. The relationship between small and 2SW salmon parents and spawners (after all exploitation), the replacement line (diagonal), and conservation spawning requirements (horizontal) line for SFAs 1, 2, & 14B of Labrador combined, 1983-96.

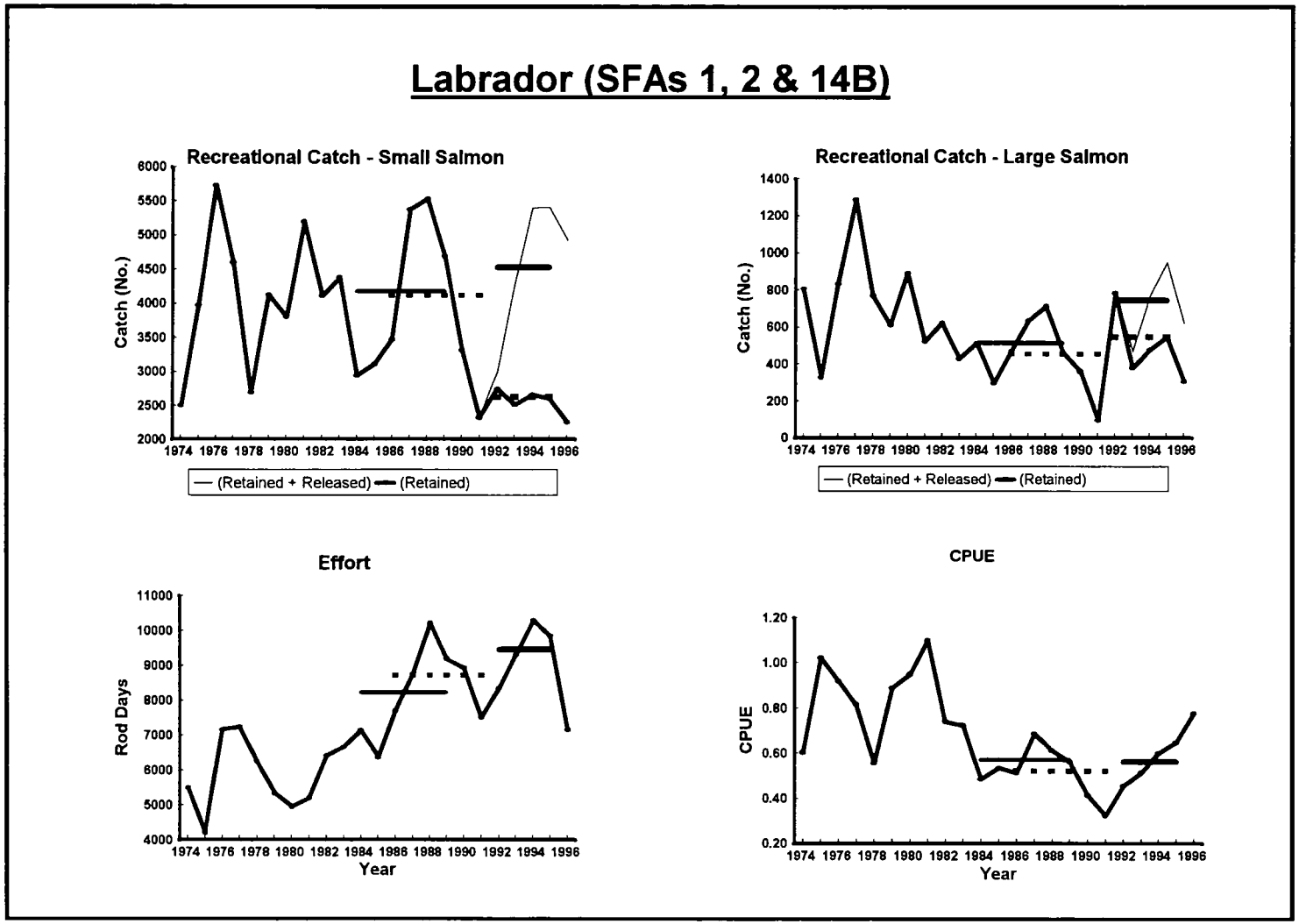


Fig. 5. Recreational catch of small and large salmon (retained, 1974-96; retained plus released, 1992-96), effort, and catch per unit of effort (CPUE), 1974-96 for Labrador (SFAs 1, 2 & 14B). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only). Catch and effort totals for 1996 are incomplete because data for SFA 14B were not available.

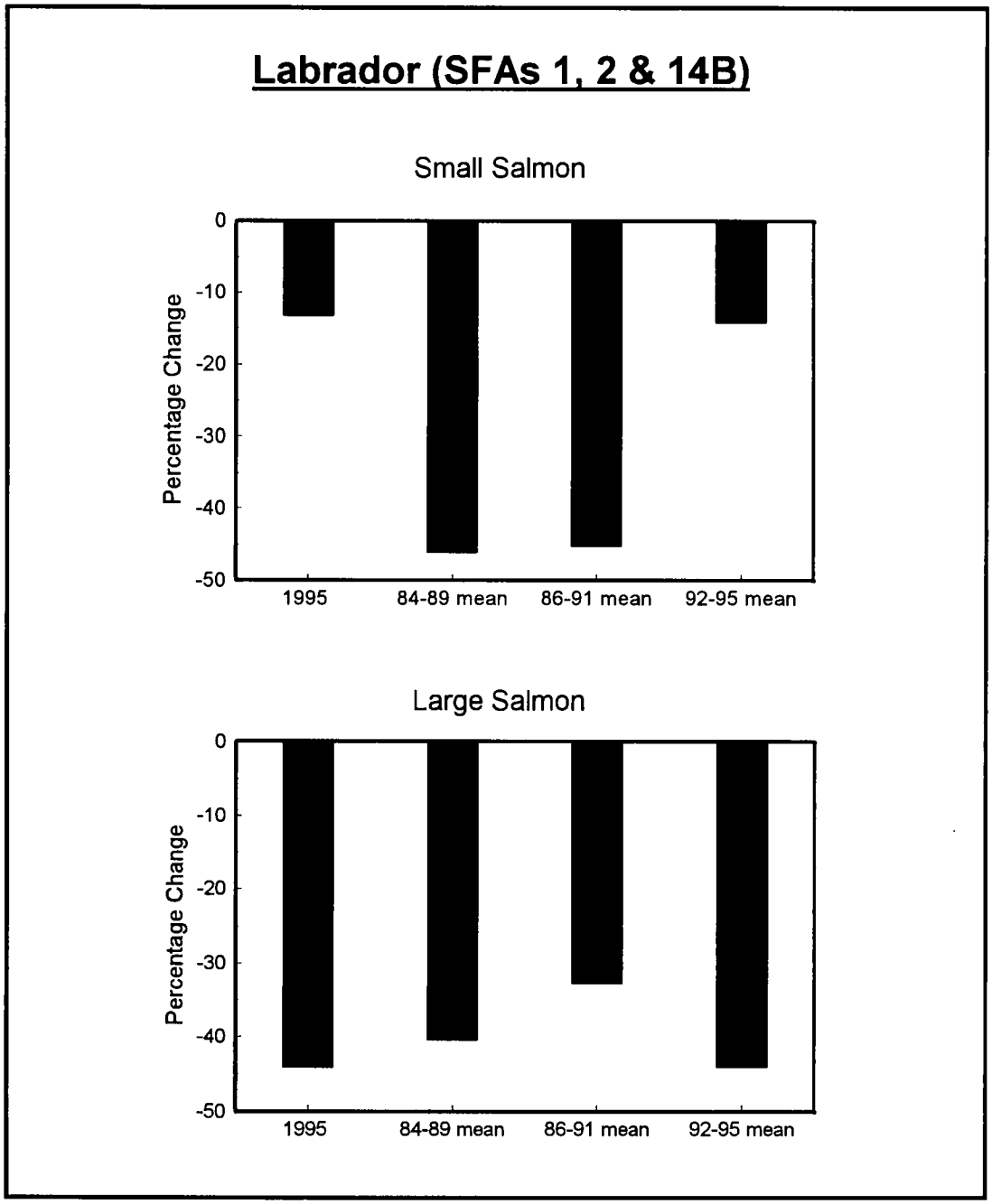


Fig. 6. Percentage change in recreational catch (retained) of small and large salmon in 1996 compared to 1995, the 1984-89 mean, the 1986-91, and the 1992-94 mean for Labrador (SFAs 1, 2 & 14B).

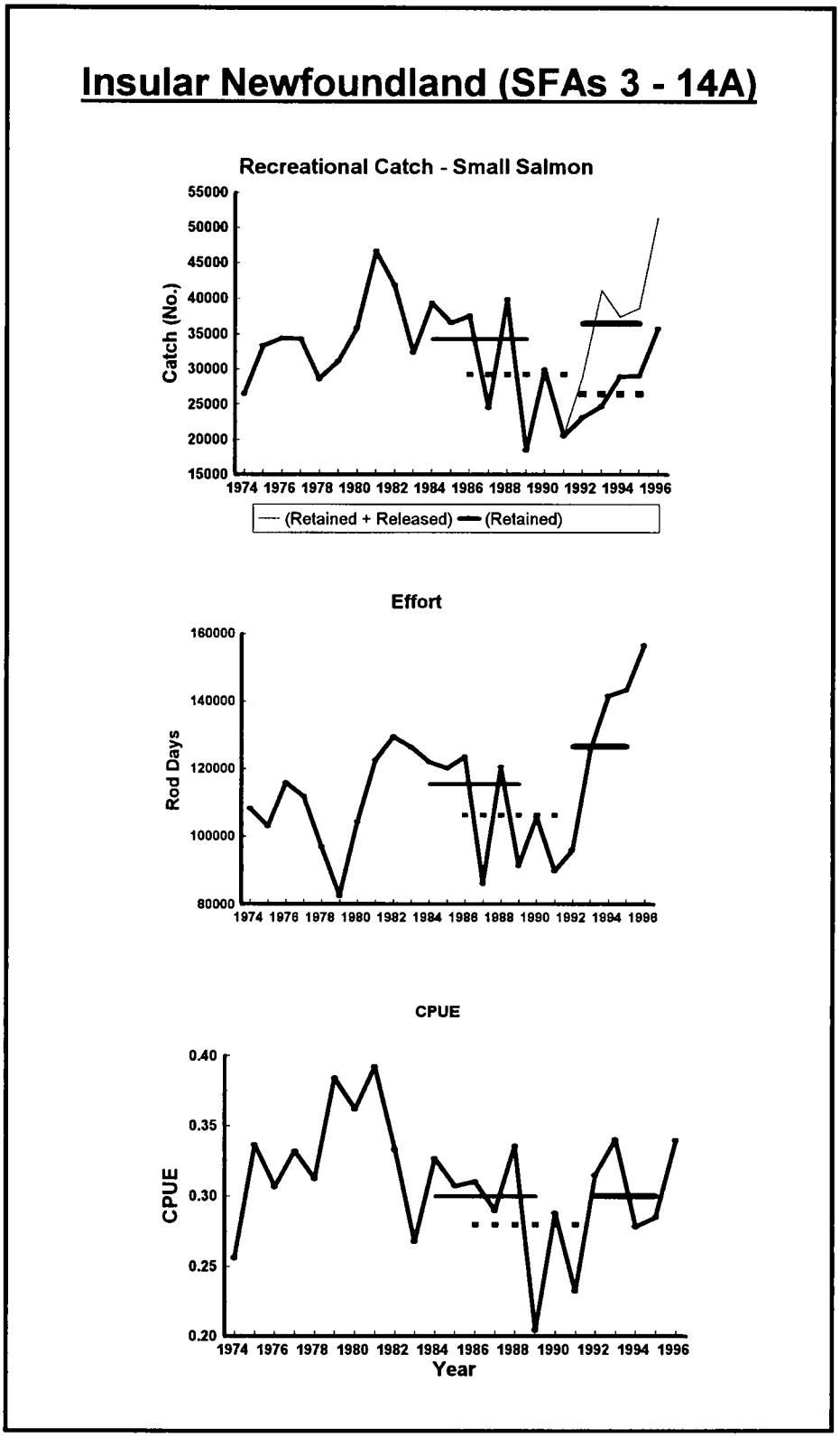


Fig. 7. Recreational catch of small salmon (retained, 1974-96; retained plus released, 1992-96), effort and catch per unit of effort (CPUE), 1974-96, for Insular Newfoundland (SFAs 3 - 14A). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986 -91 mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only). Catch and effort totals for 1996 are incomplete because data were unavailable for several rivers in SFAs 12 and 13.

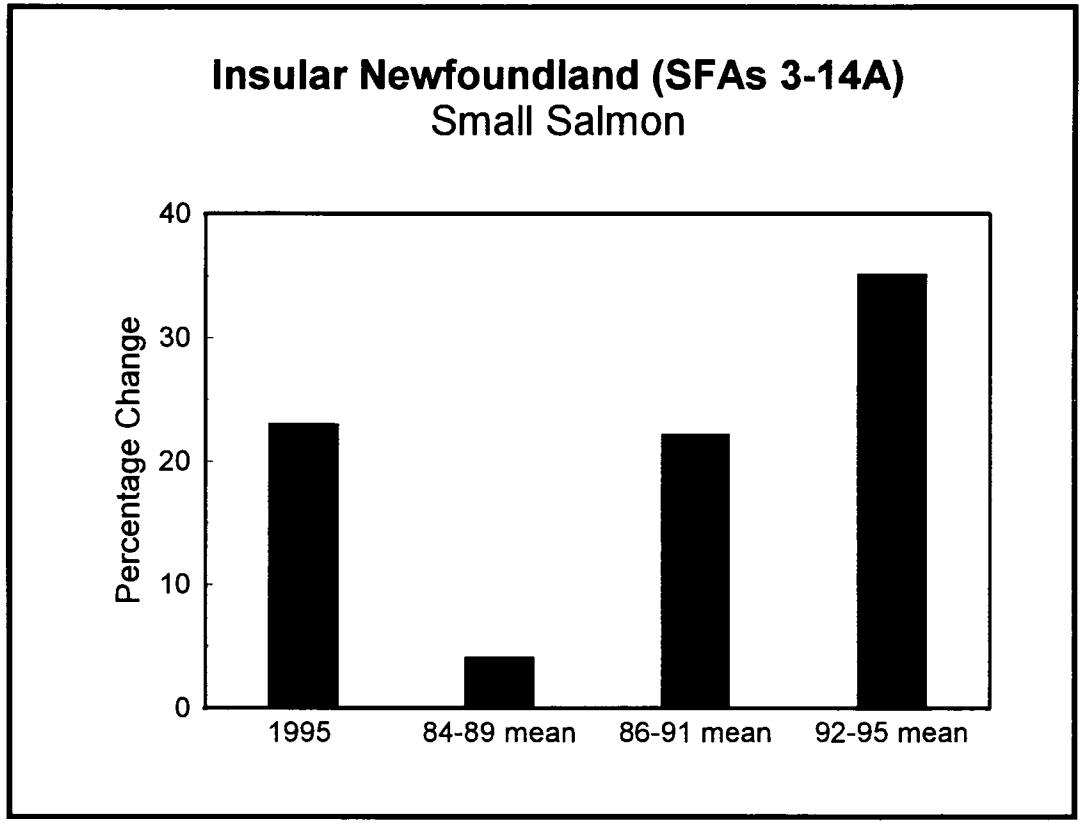


Fig. 8. Percentage change in recreational catch (retained) of small salmon in 1996 compared to 1995, the 1984-89 mean, the 1986-91, and the 1992-94 mean for Insular Newfoundland (SFAs 3 - 14A).

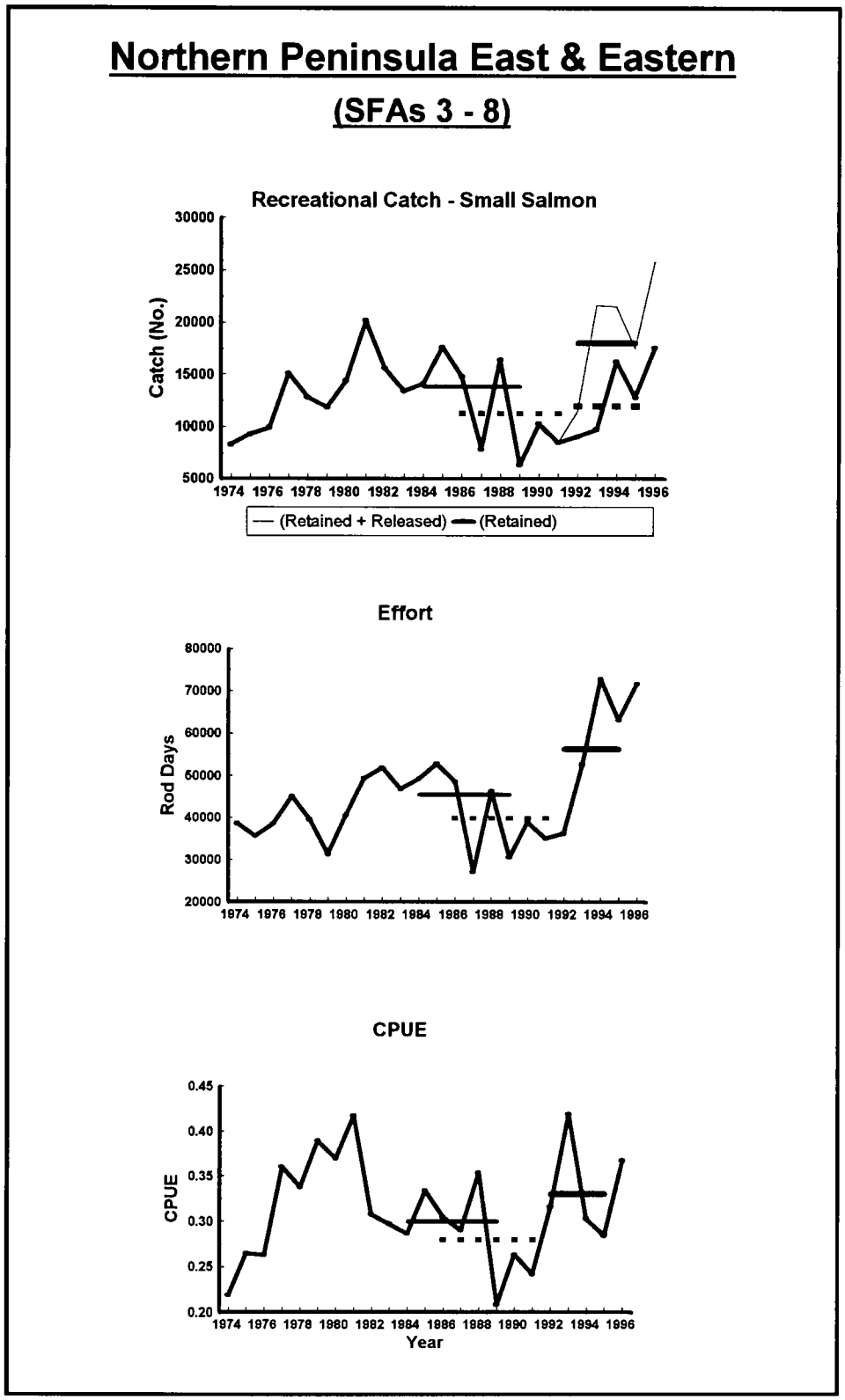


Fig. 9. Recreational catch of small salmon (retained, 1974-96; retained plus released, 1992-96), effort, and catch per unit of effort (CPUE), 1974-96, for Northern Peninsula East & Eastern (SFAs 3 - 8). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only).

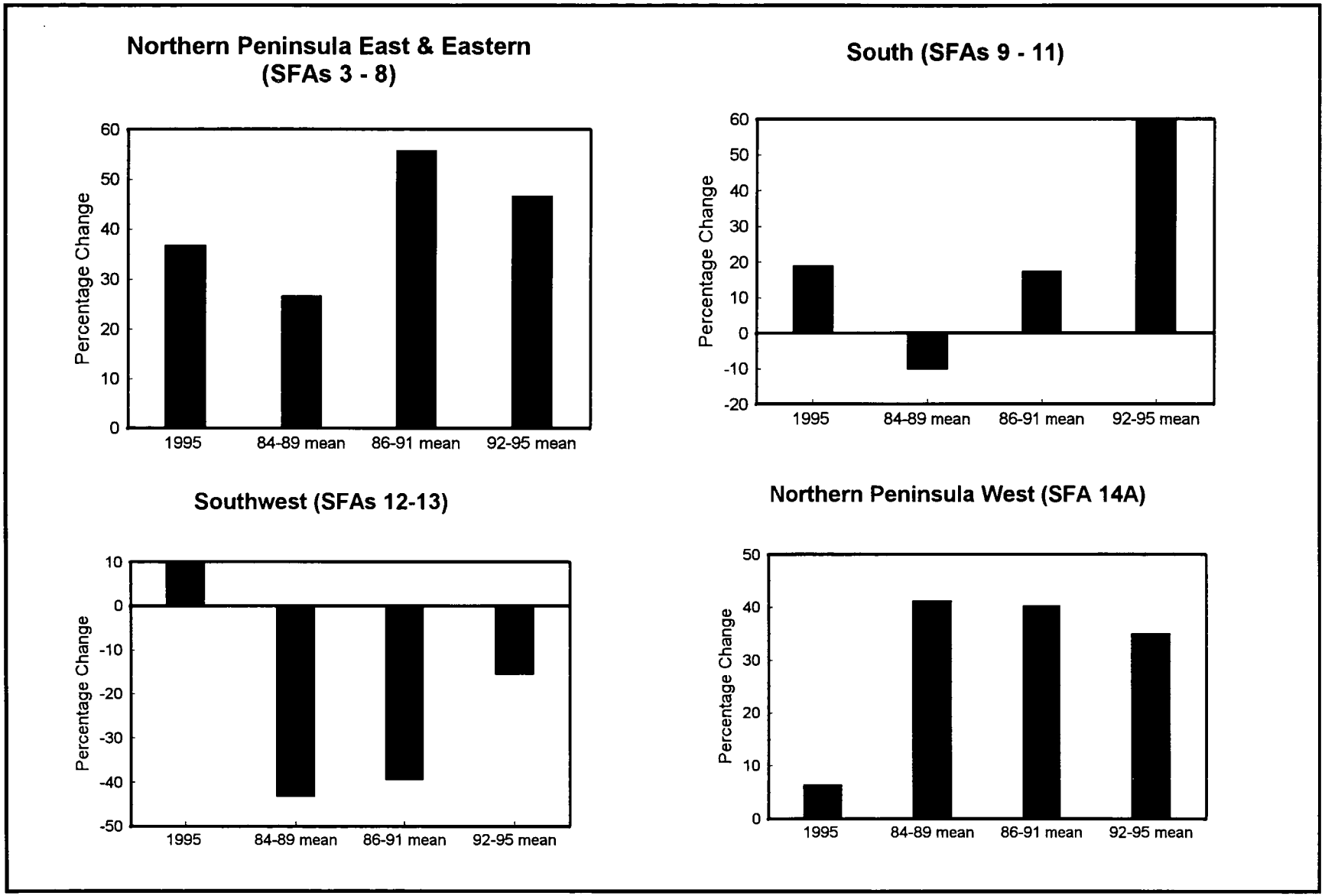


Fig. 10. Percentage change in recreational catch (retained) for small salmon in 1996 compared to 1995, the 1984-89 mean, the 1986-91 mean and the 1992-94 mean for Northern Peninsula East & Eastern (SFAs 3 - 8), South (SFAs 9 - 11), Southwest (SFAs 12 - 13), and Northern Peninsula West (SFA 14A).

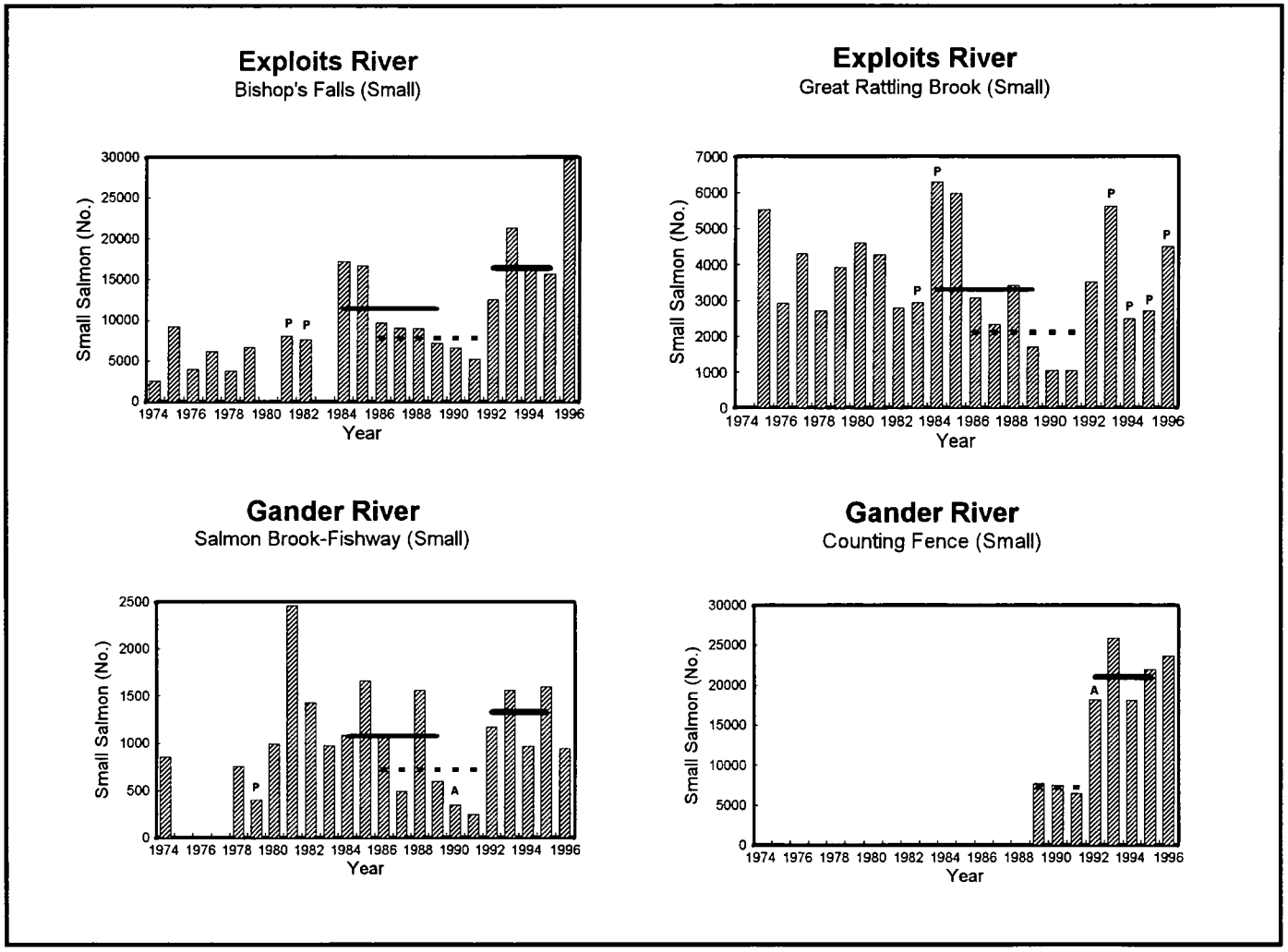


Fig. 11. Counts of small salmon at the Bishop's Falls fishway (main stem of the Exploits River) and the fishway in the Great Rattling Brook tributary, and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. A = adjusted count and P = partial count, not included in means.

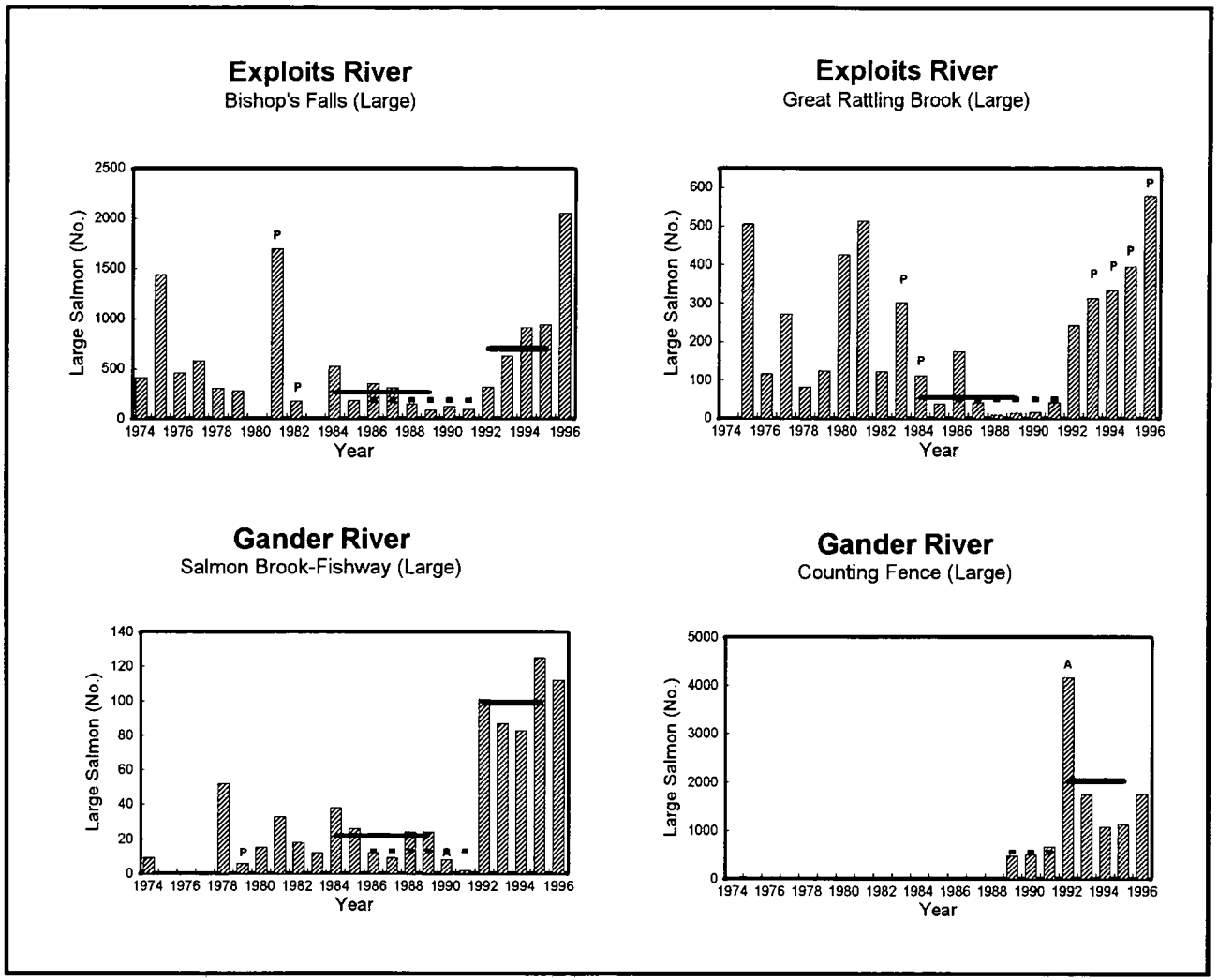


Fig. 12. Counts of large salmon at the Bishop's Falls fishway (main stem of the Exploits River) and the fishway in the Great Rattling Brook tributary, and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represent the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. A = adjusted count and P = partial count, not included in means.

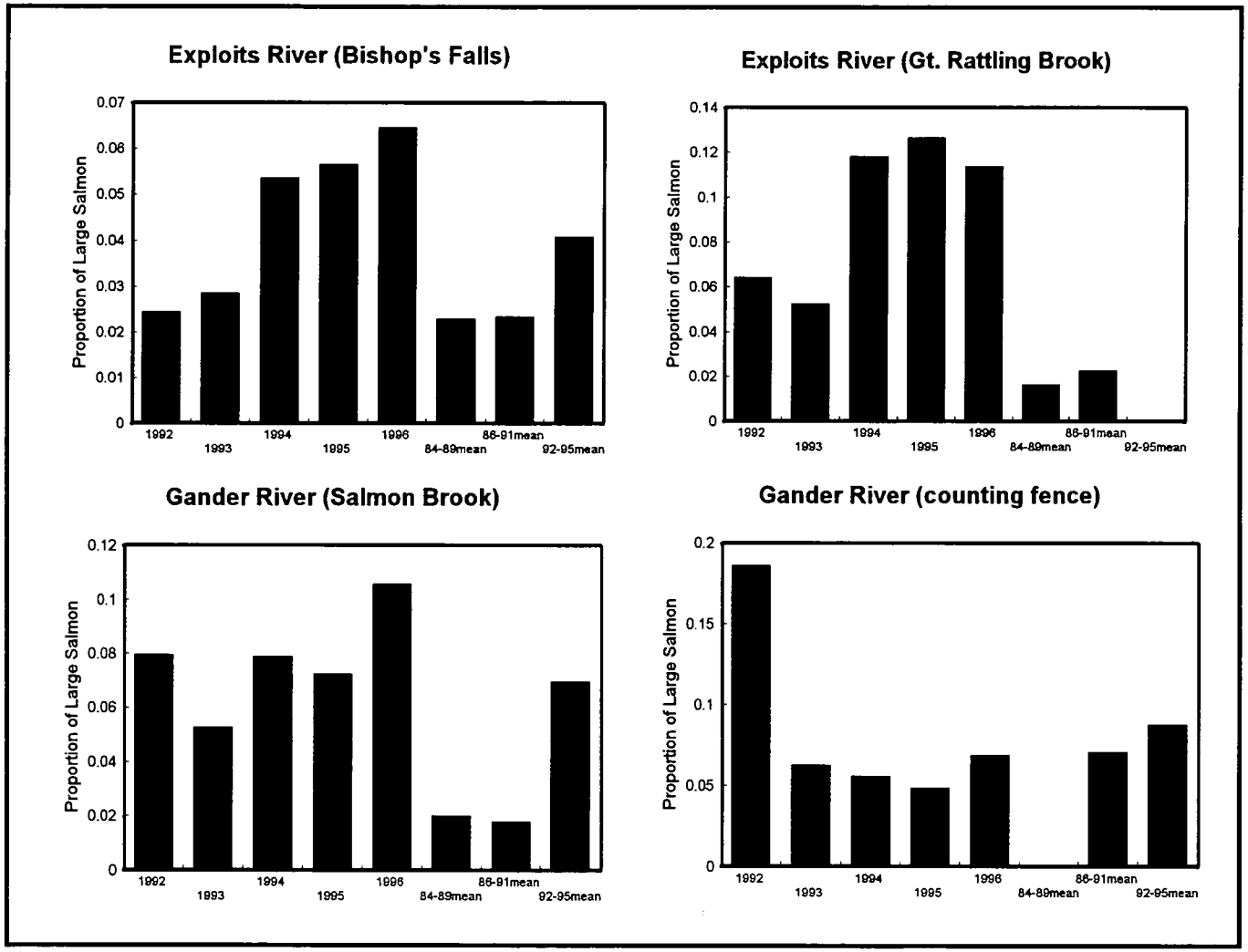


Fig. 13. Proportion of large salmon for Exploits River (Bishop's Falls), Great Rattling Brook tributary, Gander River counting fence and the Salmon Brook tributary, SFA 4, 1992-96, and the 84-89, 86-91, and 92-95 means.

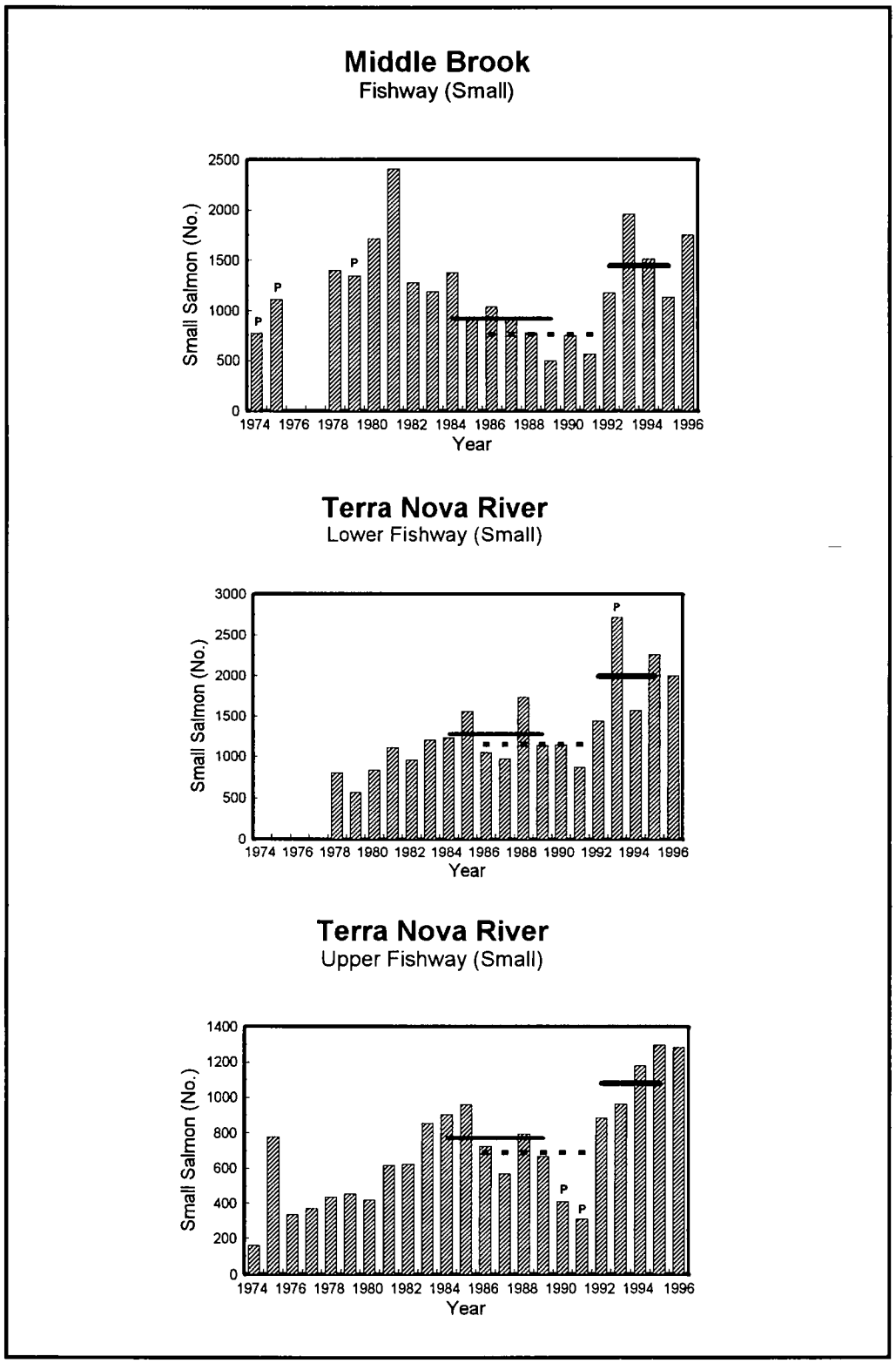


Fig. 14. Counts of small salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. P=partial count, not included in means.

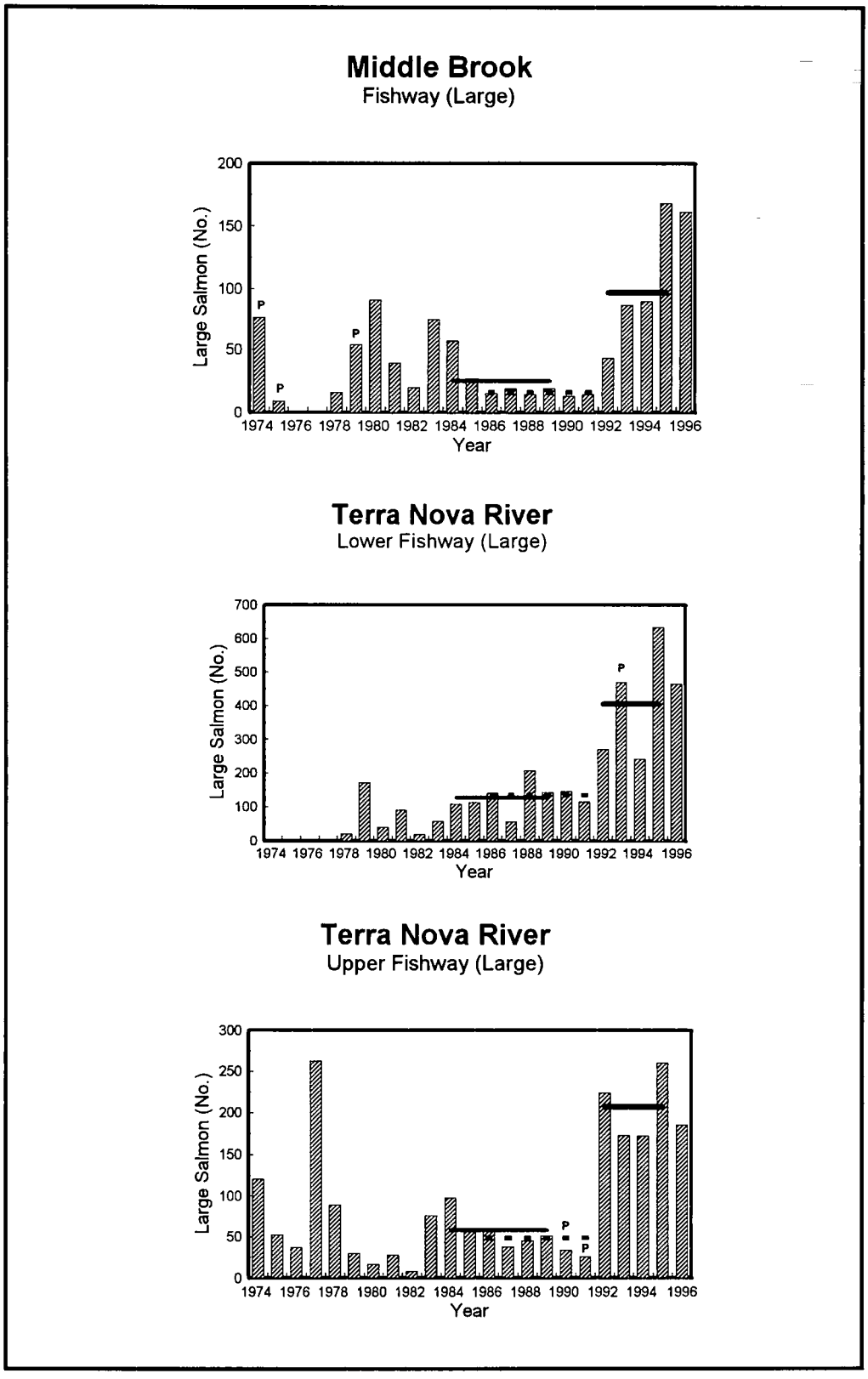


Fig. 15. Counts of large salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. P=partial count, not included in means.

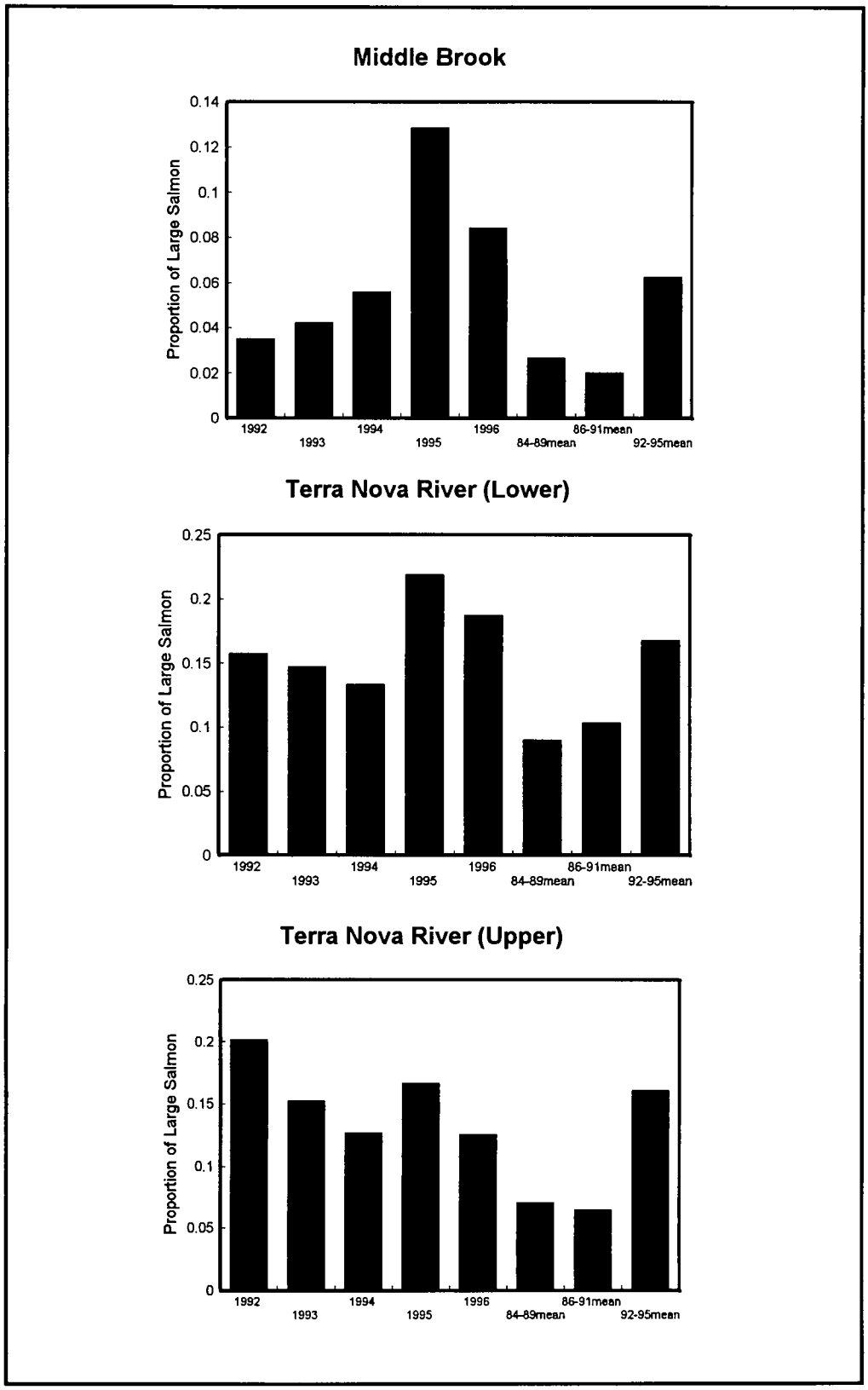


Fig. 16. Proportion of large salmon for Middle Brook and the lower and upper Terra Nova River, SFA 5, 1992-96, and the 84-89, 86-91, and 92-95 means.

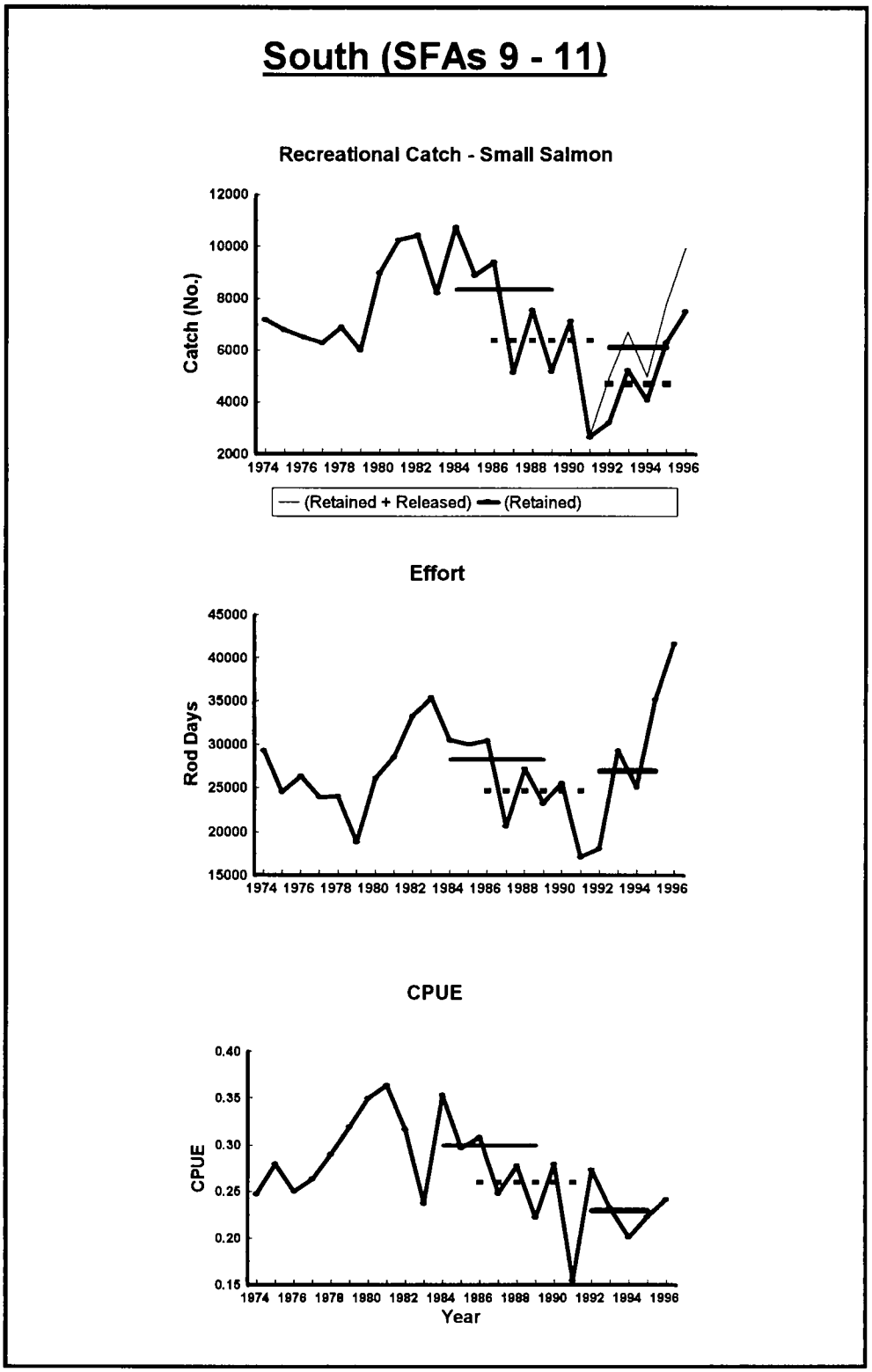


Fig. 17. Recreational catch of small salmon (retained, 1974-96; retained plus released, 1992-96), effort, and catch per unit of effort (CPUE), 1974-96, for South (SFAs 9 - 11). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only).

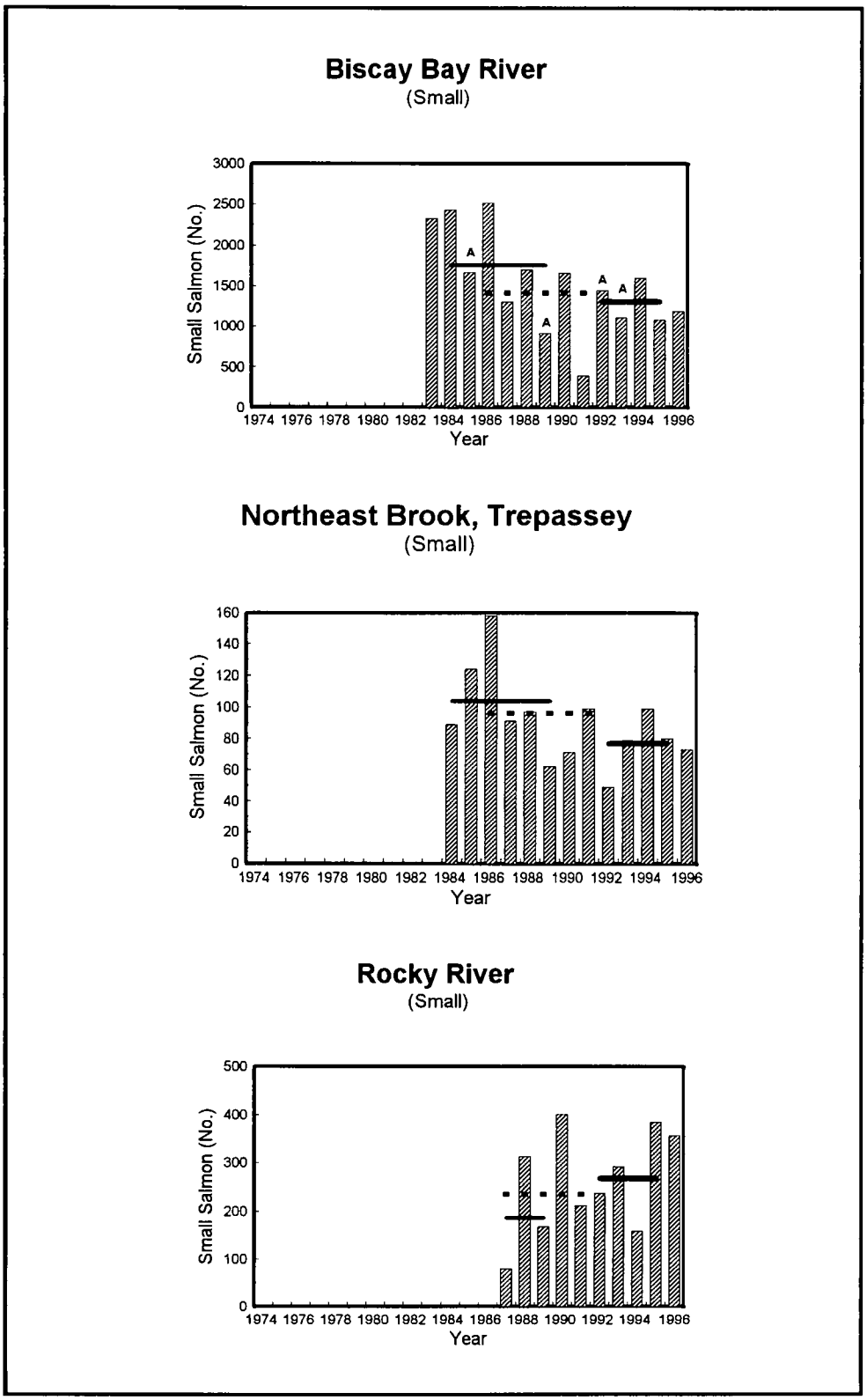


Fig. 18. Counts of small salmon at counting fences in Biscay Bay River and Northeast Brook (Trepassey) and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. A = adjusted count.

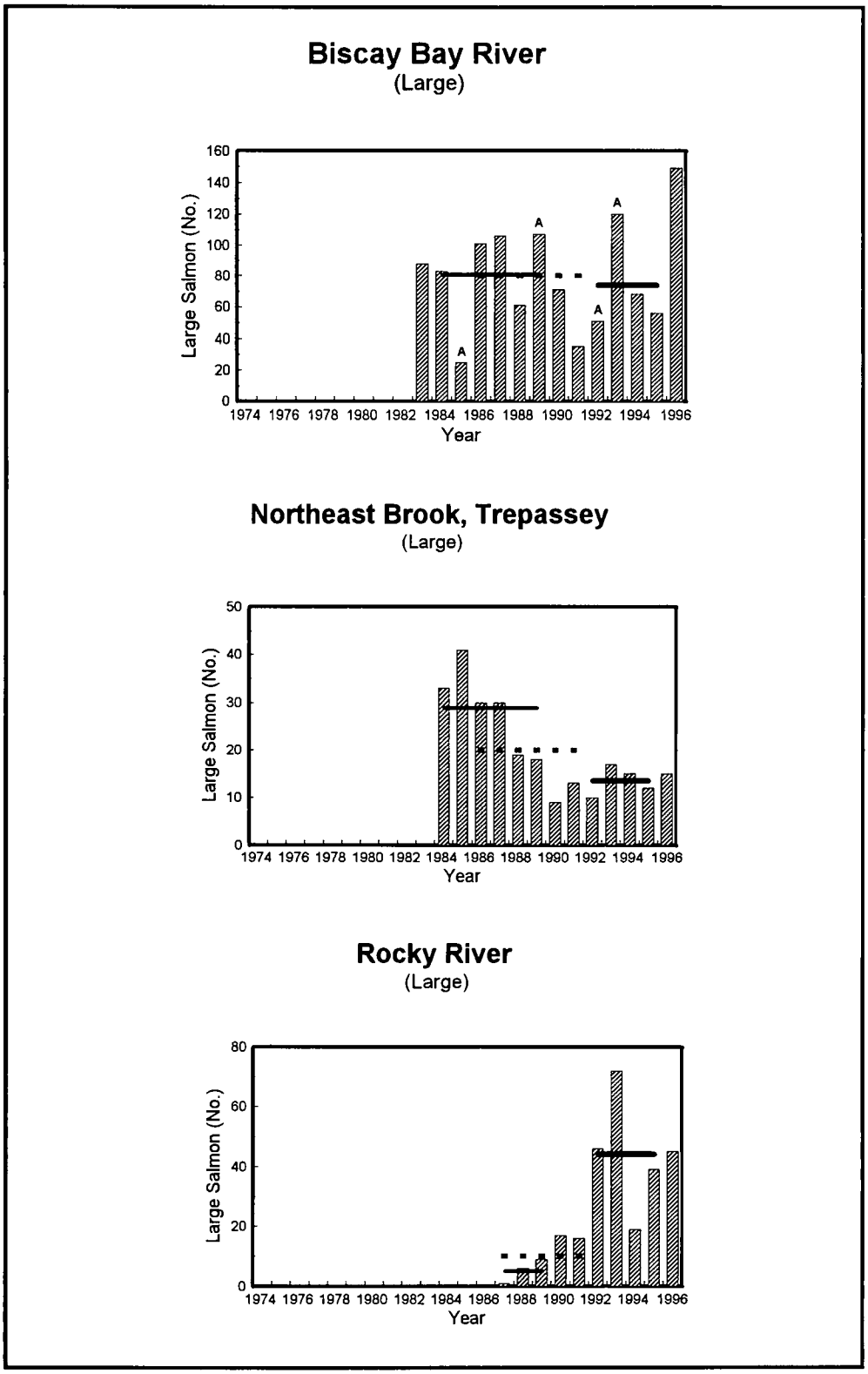


Fig. 19. Counts of large salmon at counting fences in Biscay Bay River and Northeast Brook (Trepassey) and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. A = adjusted count.

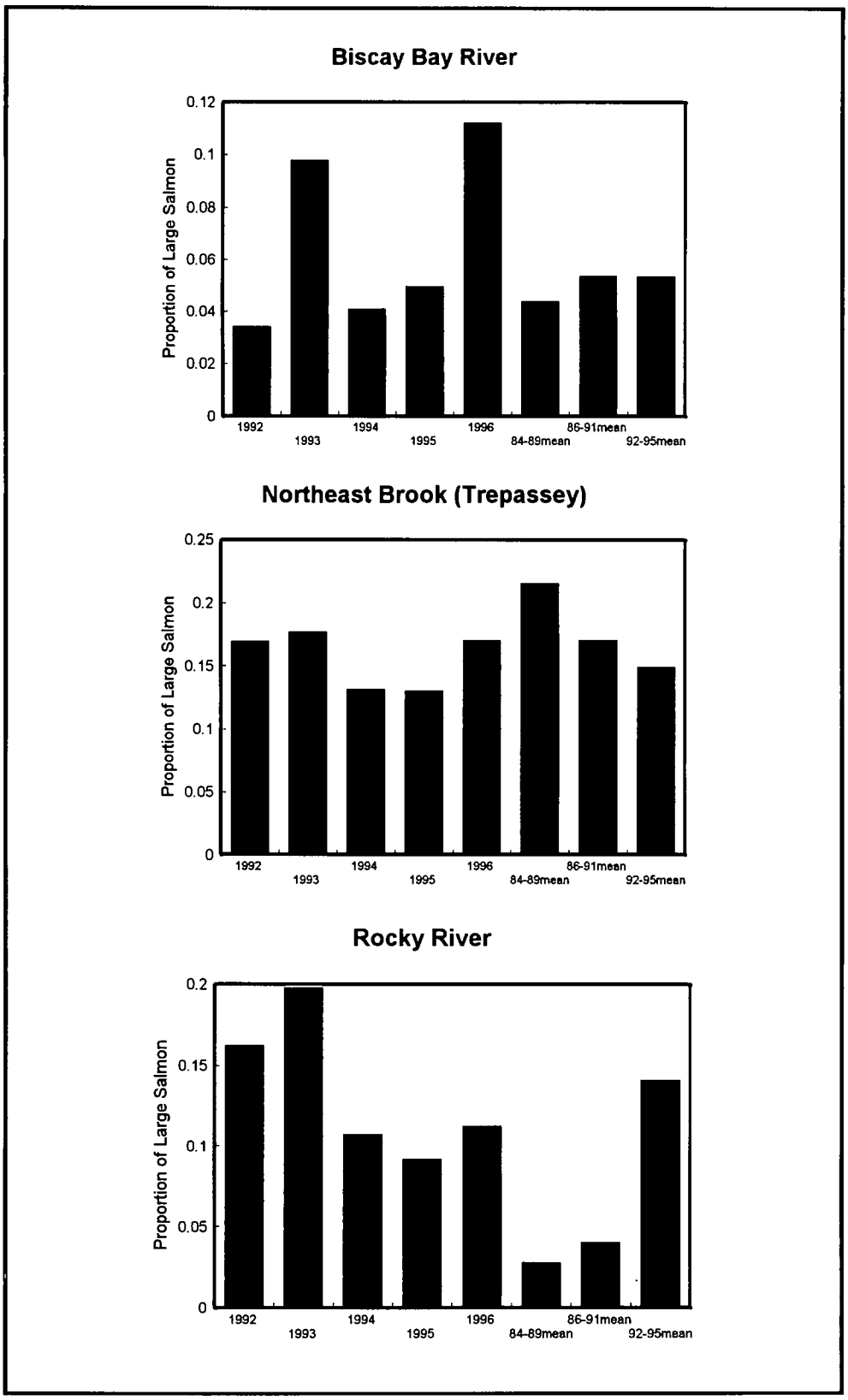


Fig. 20. Proportion of large salmon for Biscay Bay River, Northeast Brook (Trepassey), and Rocky River, SFA 9, 1992-96, and the 84-89 , 86-91 and 92-95 means.

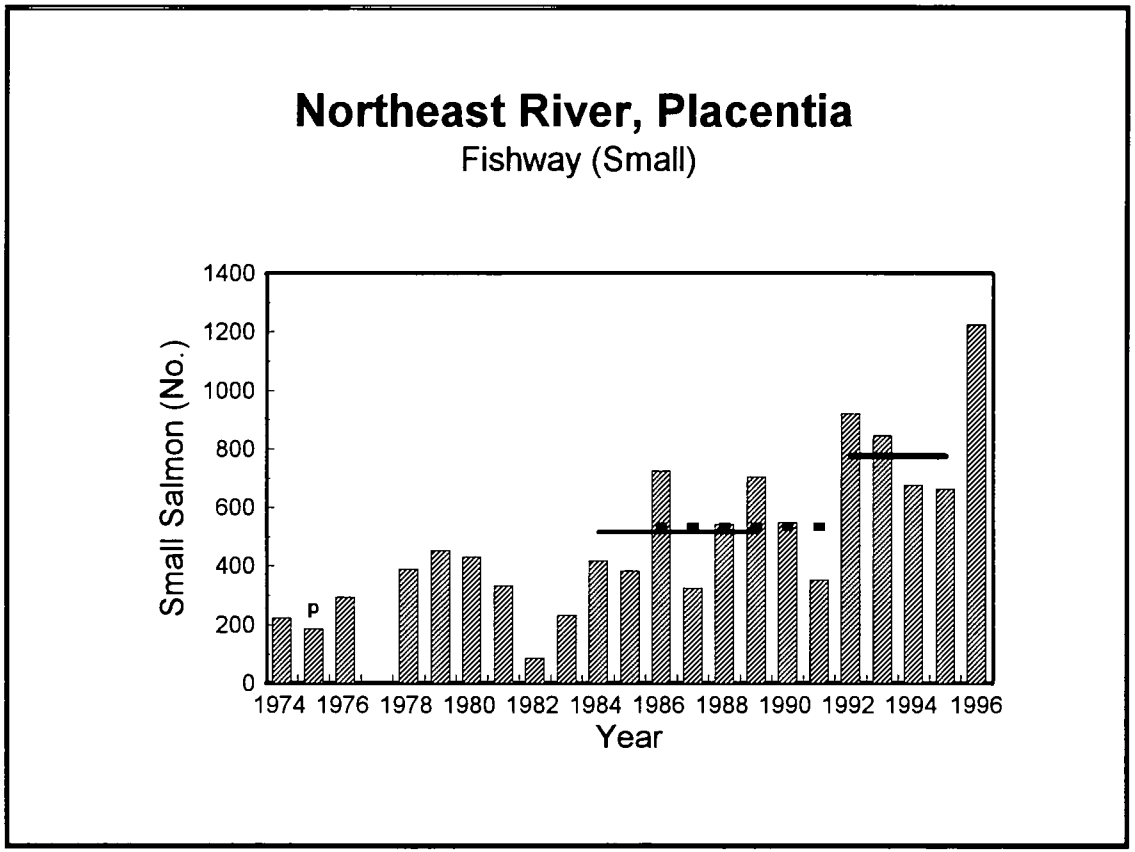


Fig. 21. Counts of small salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. P= partial count.

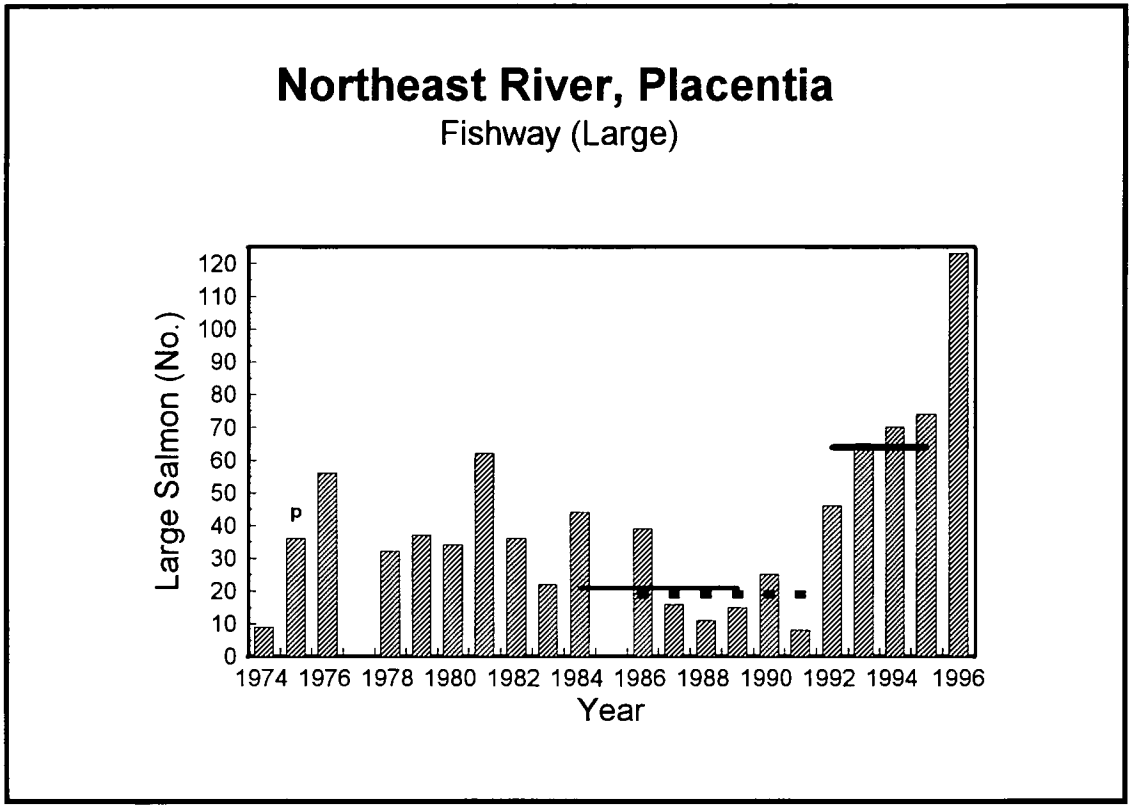


Fig. 22. Counts of large salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. P= partial count.

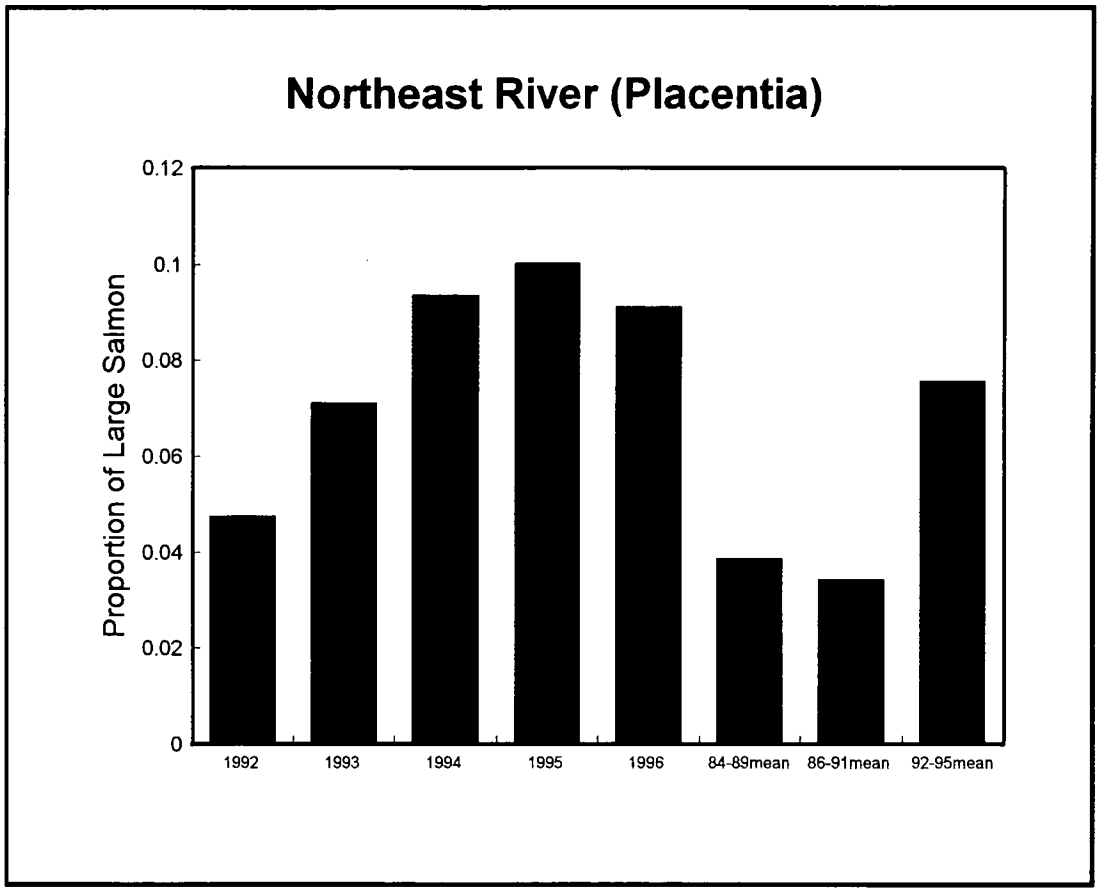


Fig. 23. Proportion of large salmon for Northeast River (Placentia), SFA 10, 1992-96 and the 84-89, 86-91, and 92-95 means.

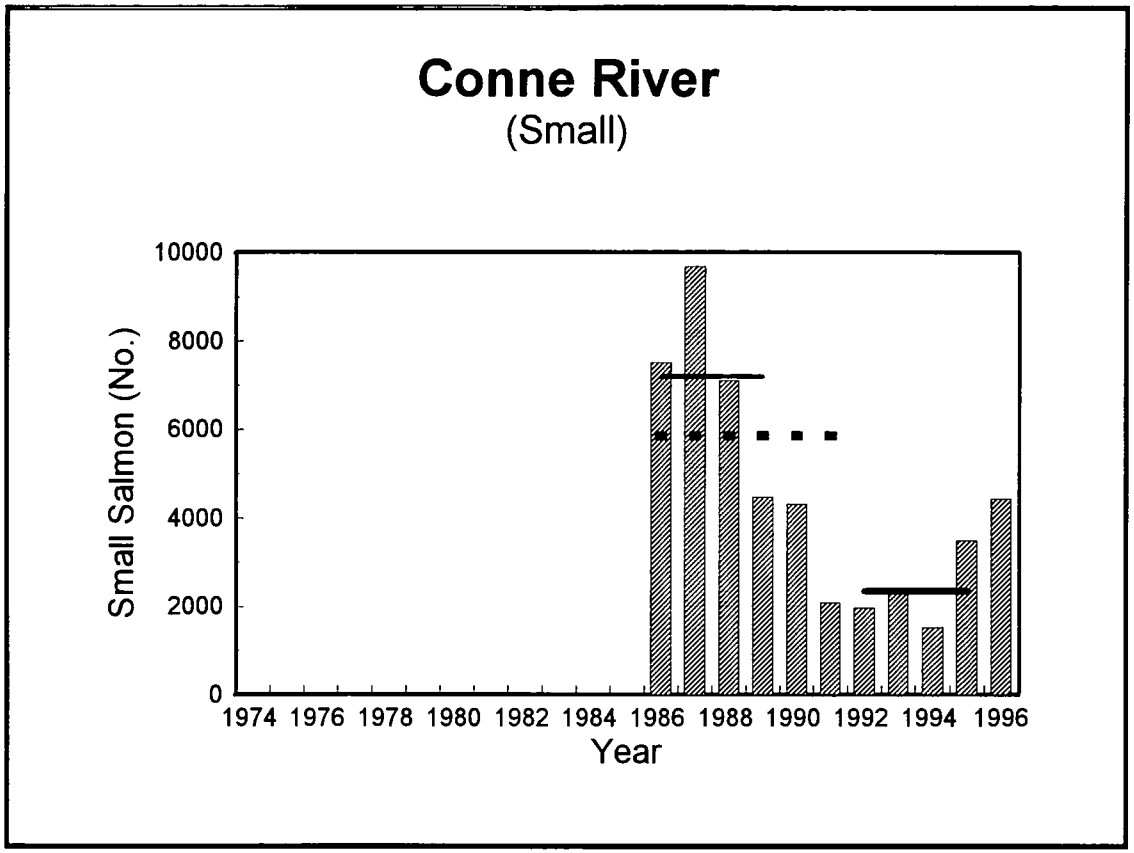


Fig. 24. Counts of small salmon at the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean.

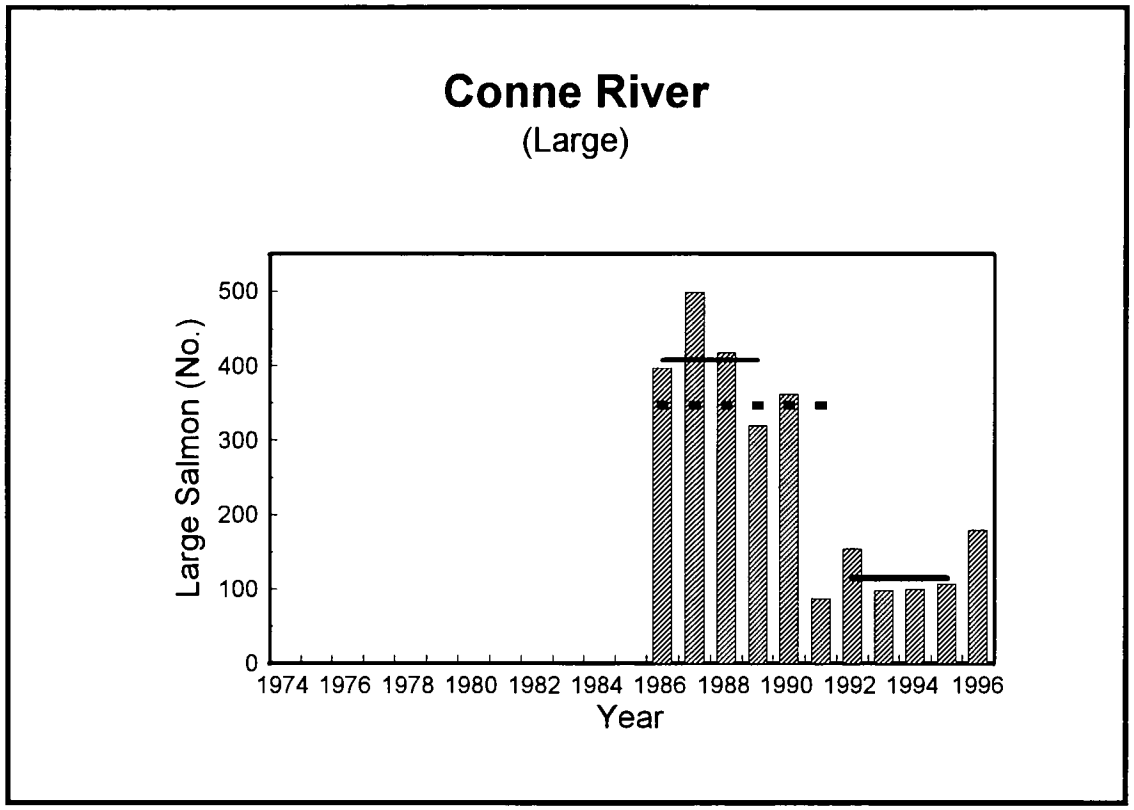


Fig. 25. Counts of large salmon at the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean.

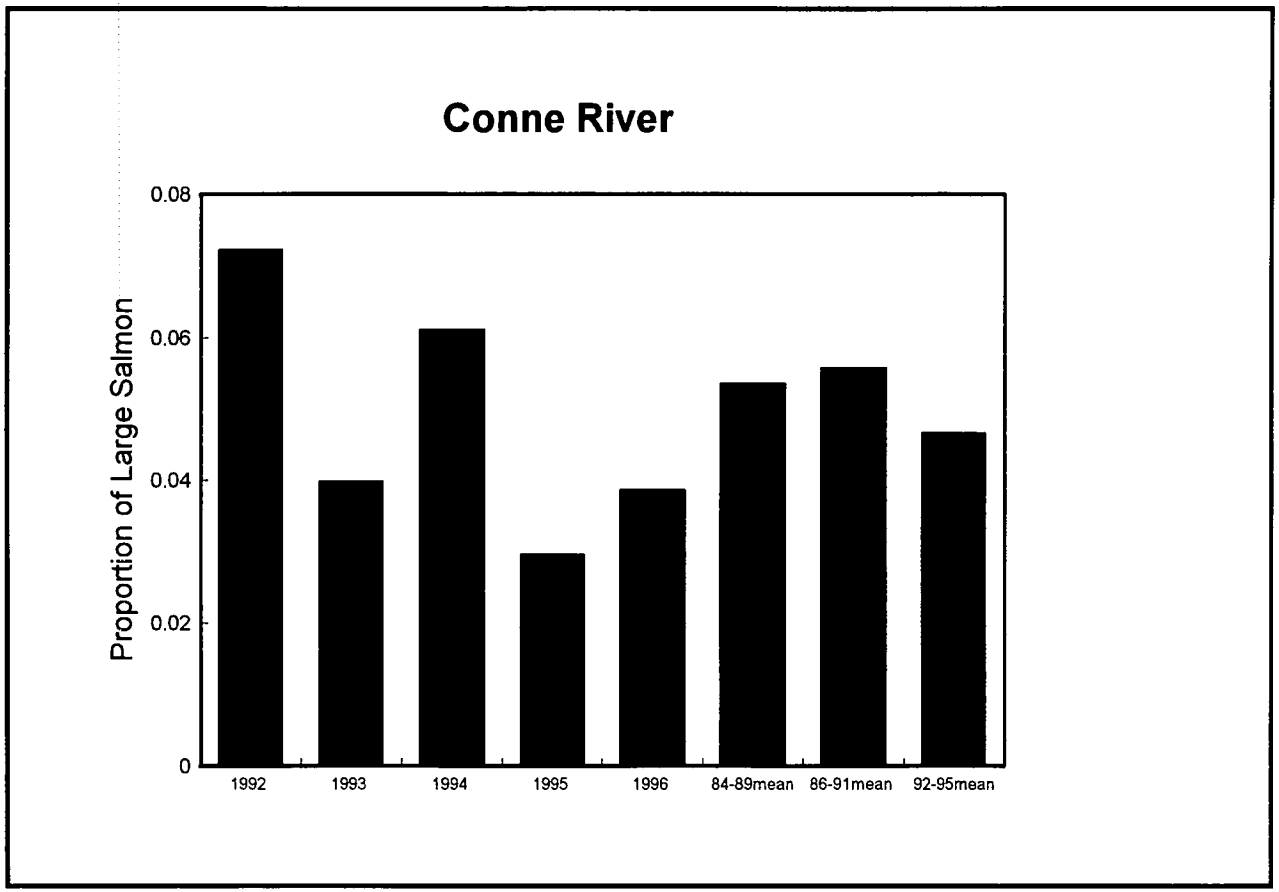


Fig. 26. Proportion of large salmon for Conne River, SFA 11, 1992-96 and the 84-89, 86-91, and 92-95 means.

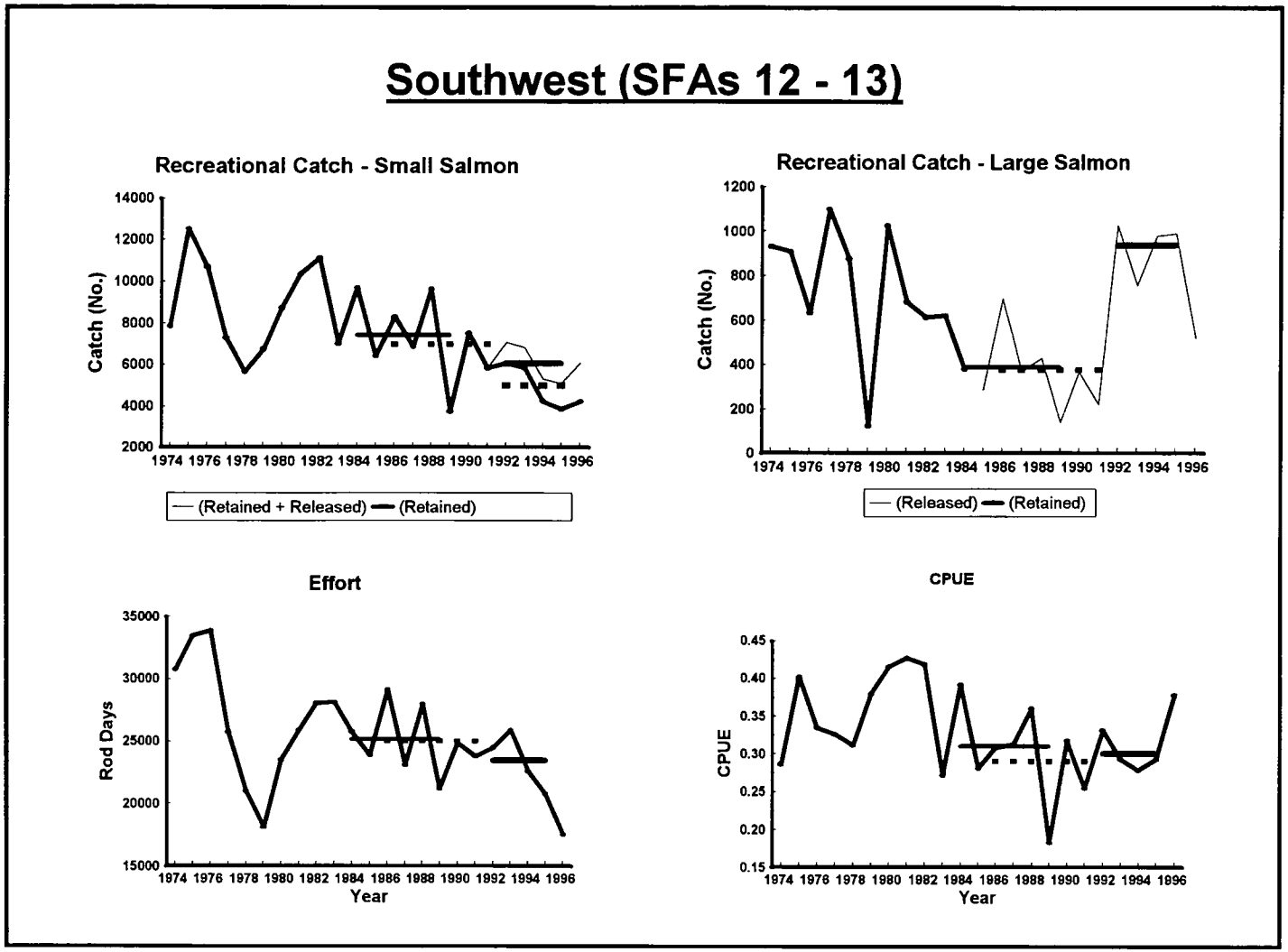


Fig. 27. Recreational catch of small salmon (retained, 1974-96; retained plus released, 1992-96), effort, and catch per unit of effort (CPUE), 1974-96 for Southwest (SFAs 12 - 13). The catch of large salmon prior to 1985 is retained and for 1985-96 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only). Catch and effort totals for 1996 are incomplete because data were unavailable for several rivers in SFAs 12 and 13.

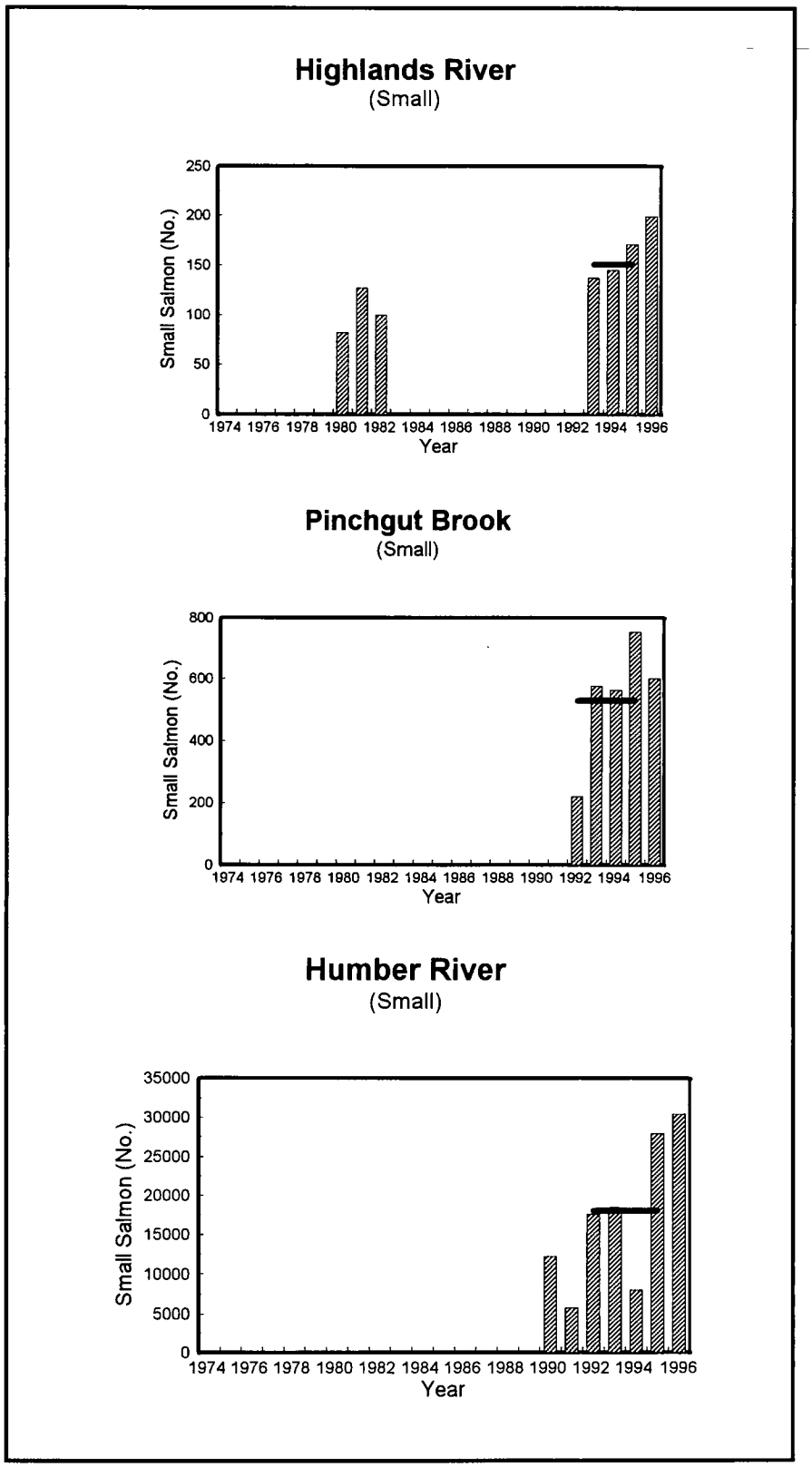


Fig. 28. Counts of small salmon at counting fences in Highlands River and Pinchgut Brook and the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 92-95 mean.

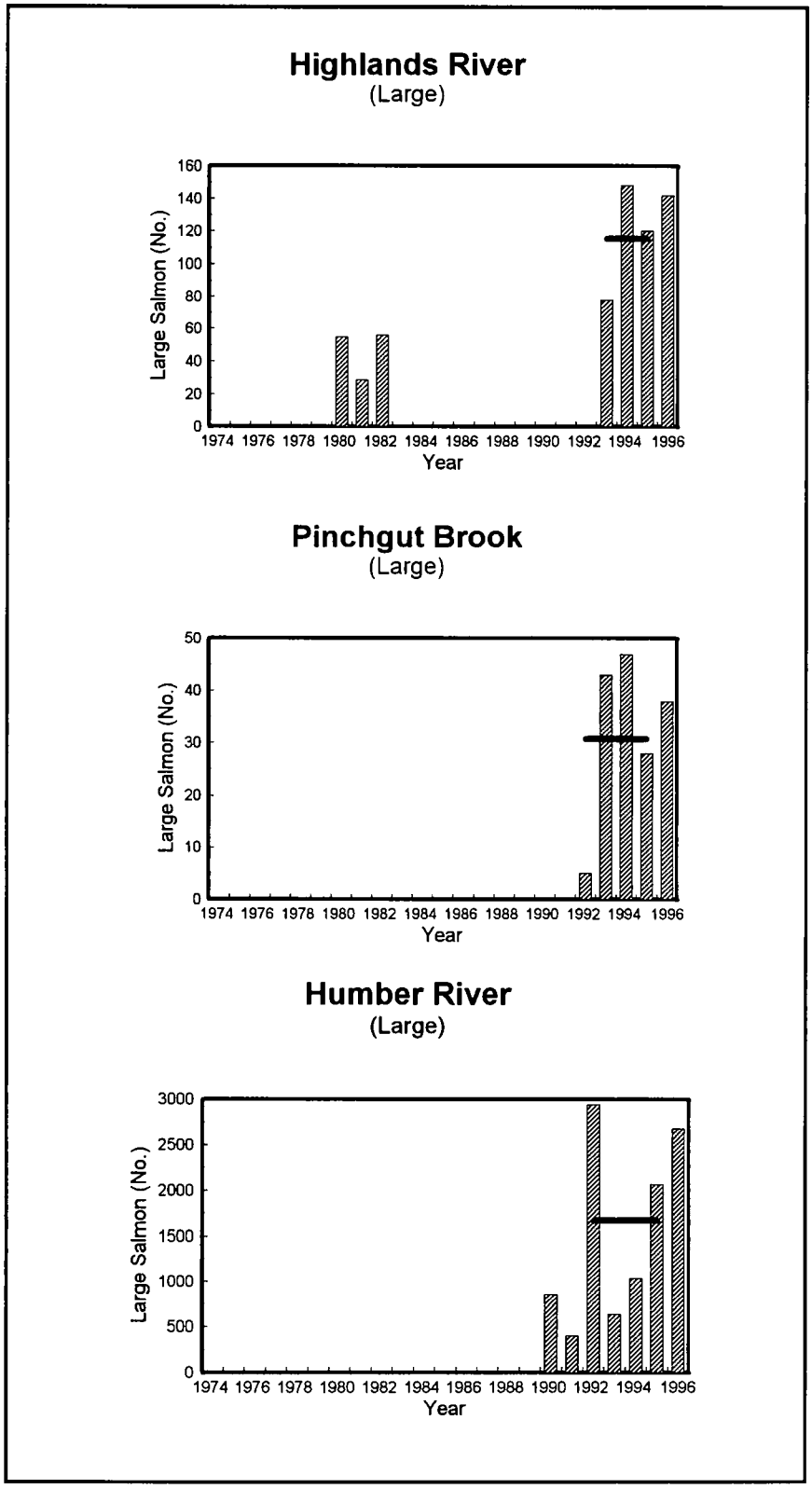


Fig. 29. Counts of large salmon at counting fences in Highlands River and Pinchgut Brook and the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 92-95 mean.

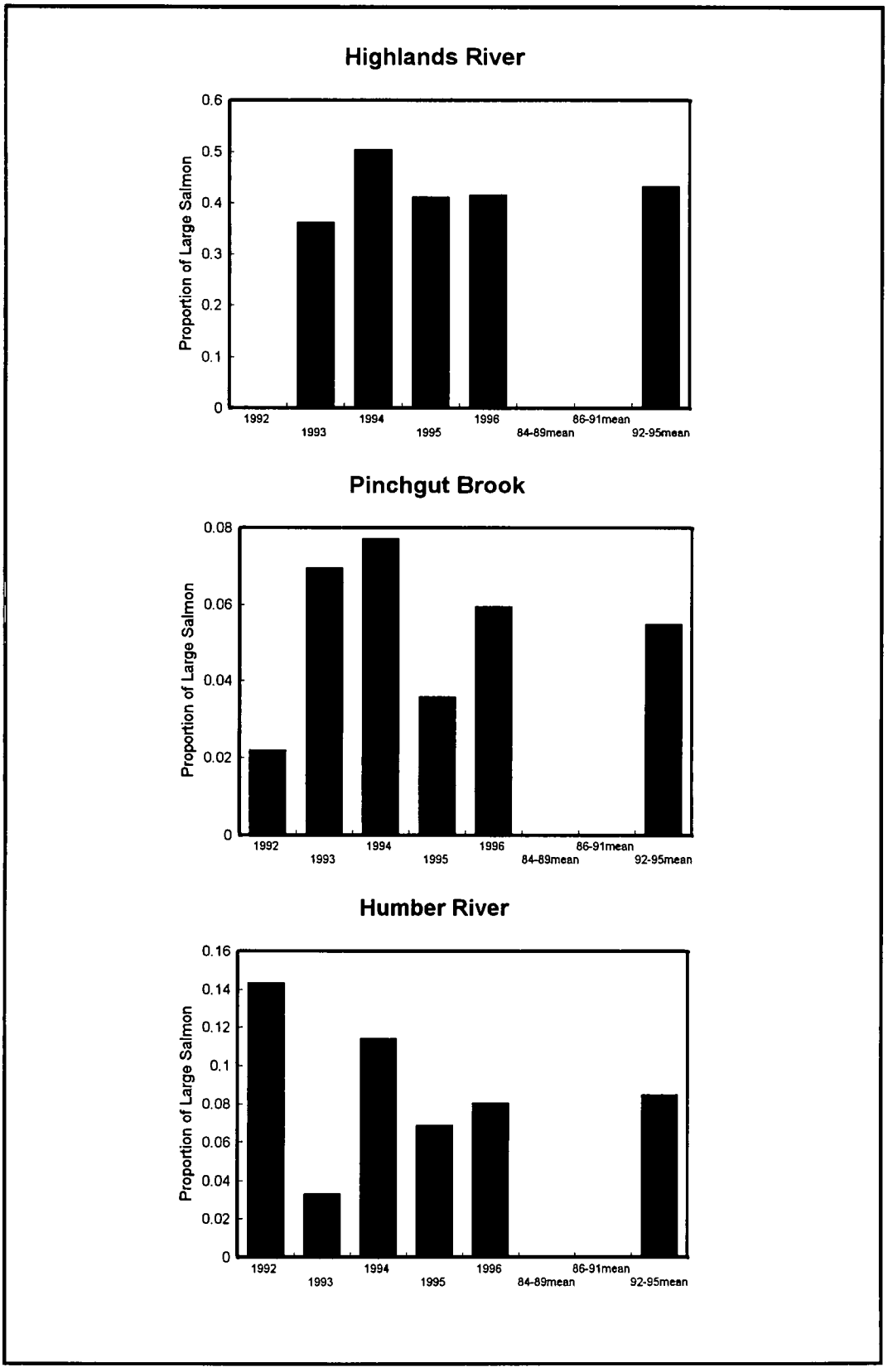


Fig. 30. Proportion of large salmon for Highlands River, Pinchgut Brook and Humber River, SFA 13, 1992-96, and the 92-95 mean.

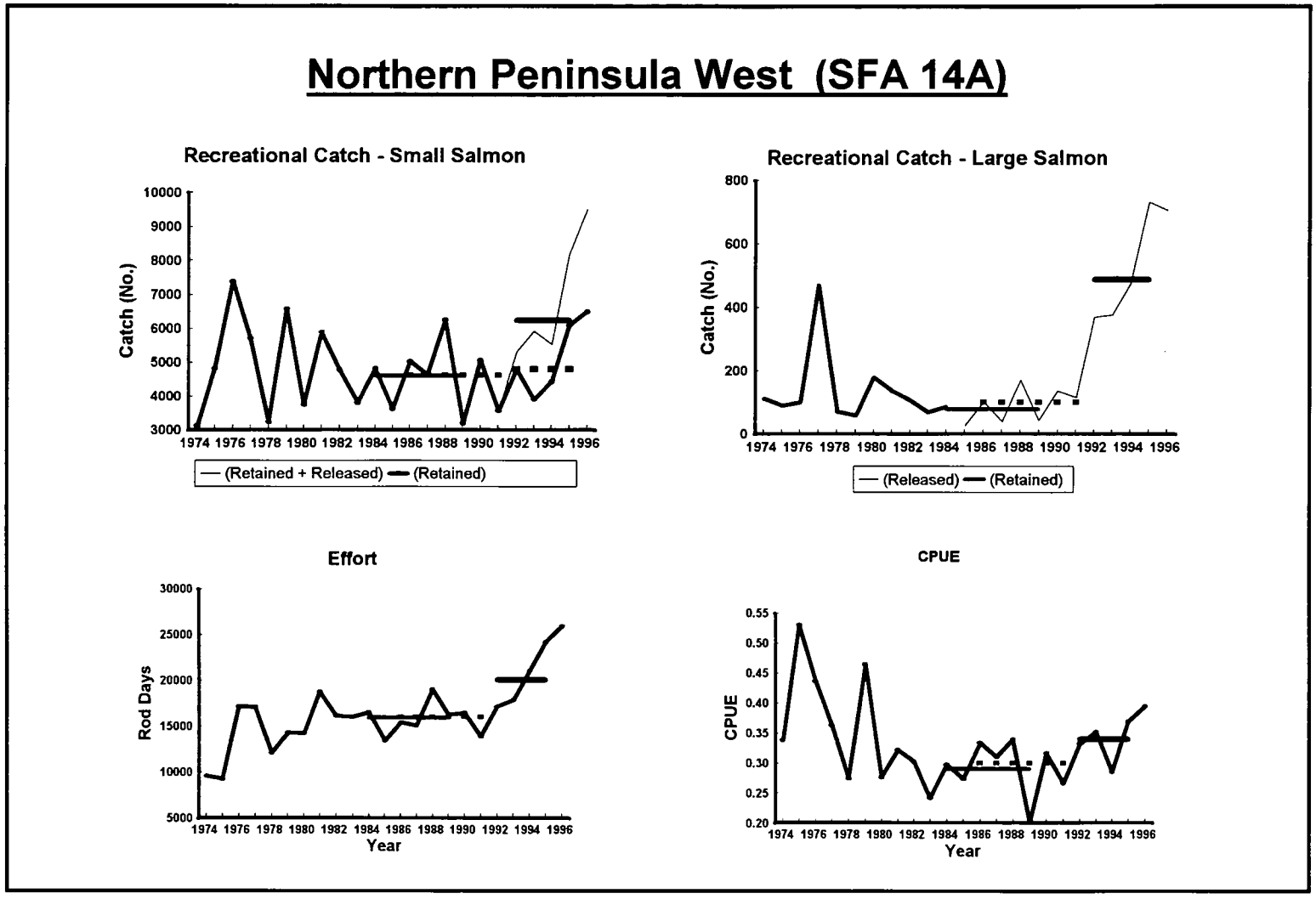


Fig. 31. Recreational catch of small salmon (retained, 1974-96; retained plus released, 1992-96), effort, and catch per unit of effort (CPUE), 1974-96 for Northern Peninsula West (SFAs 14A). The catch of large salmon prior to 1985 is retained and for 1985-96 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-95 mean (retained + released) and the thick broken line the 1992-95 mean (retained only).

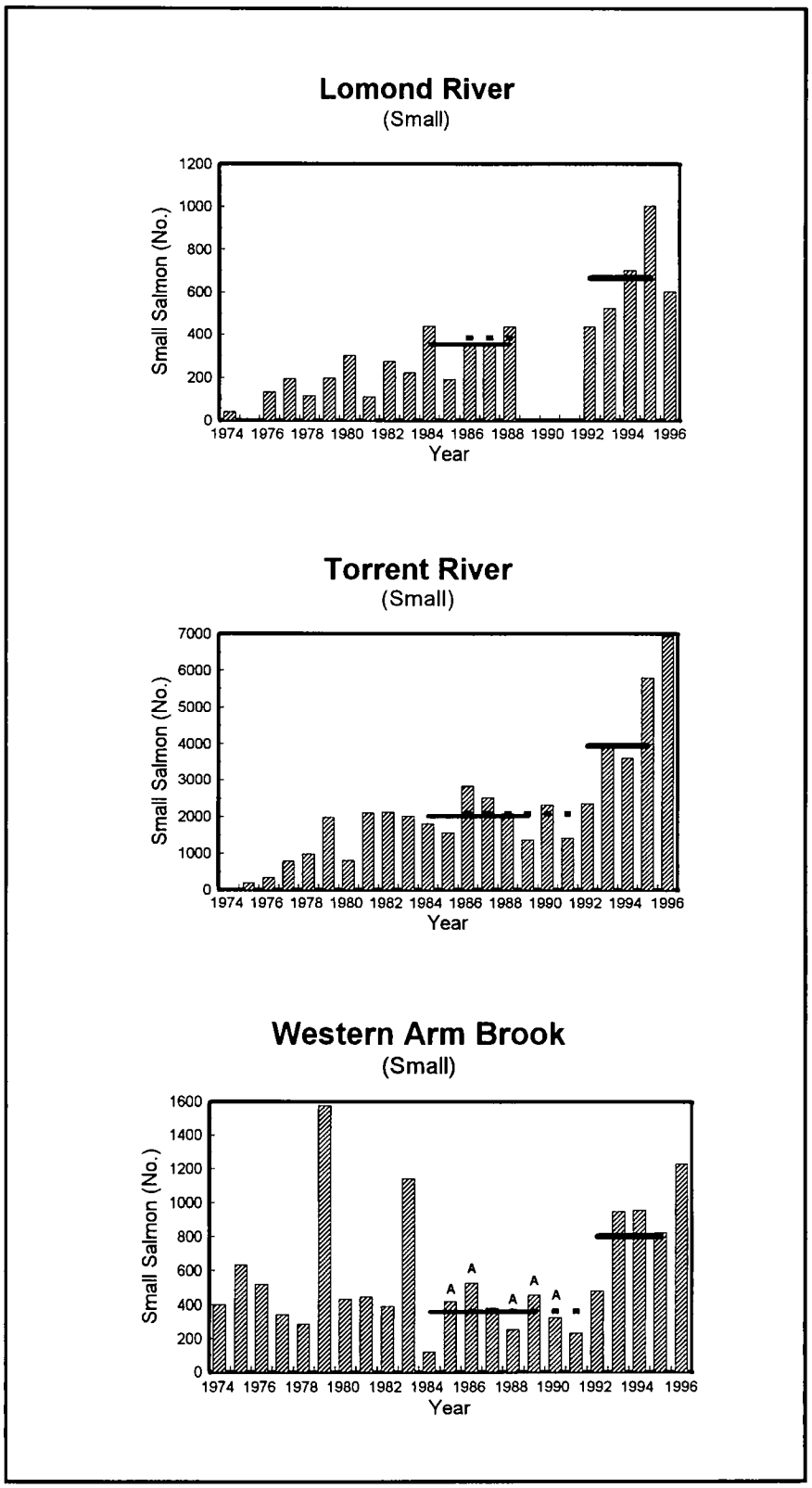


Fig. 32. Counts of small salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean. A = adjusted count.

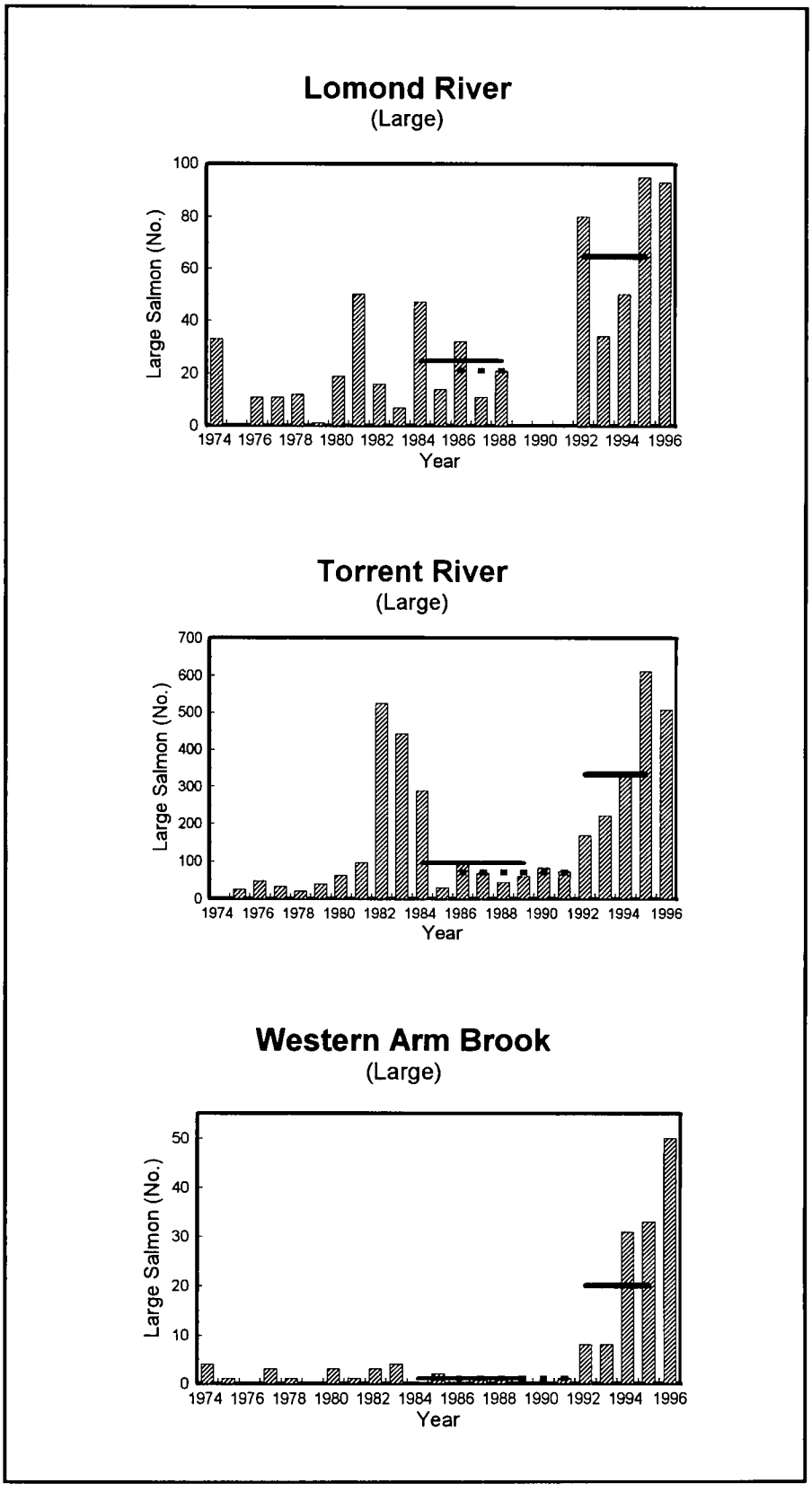


Fig. 33. Counts of large salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-95 mean.

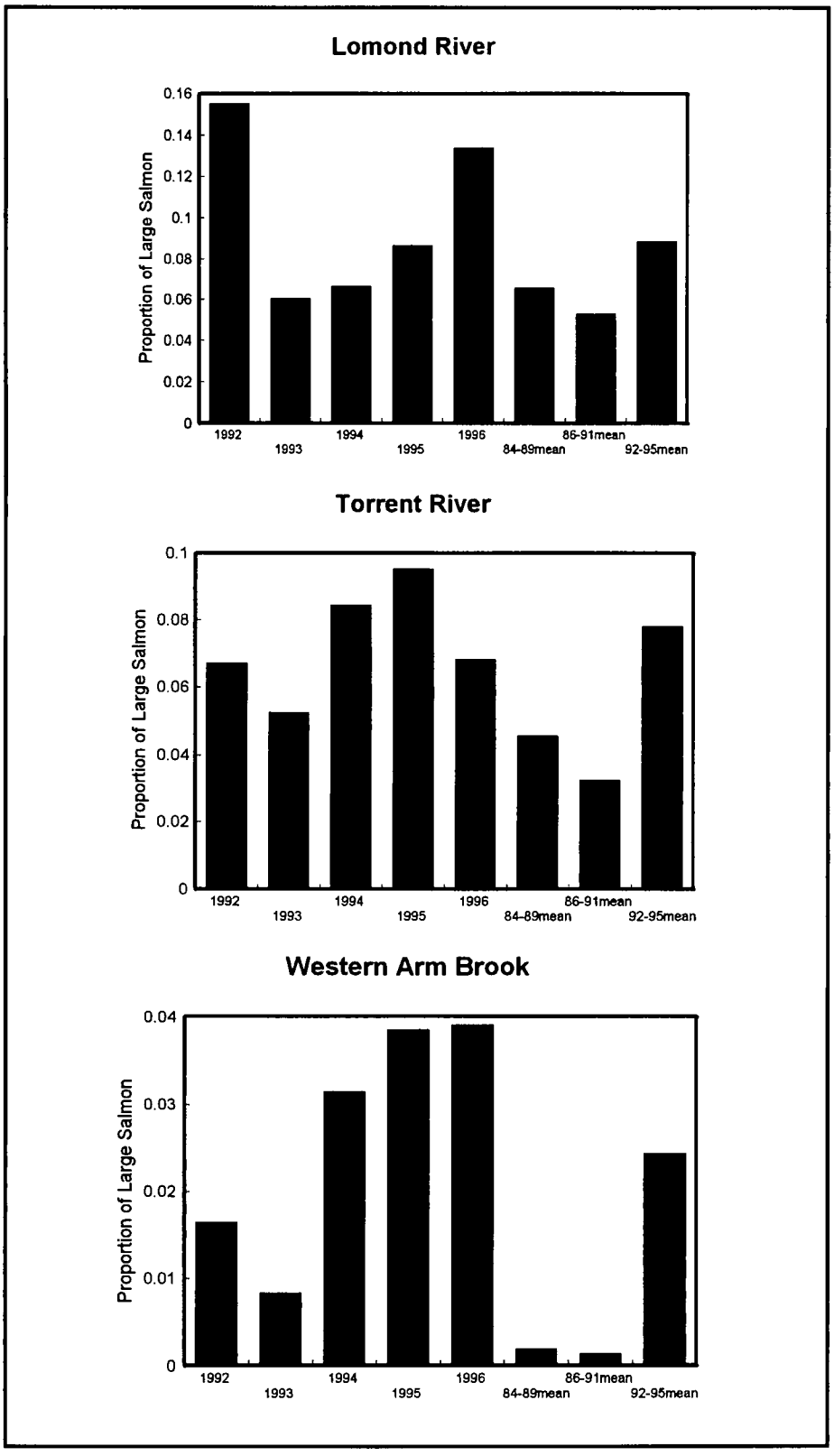


Fig. 34. Proportion of large salmon for Lomond River, Torrent River, and Western Arm Brook, SFA 14A, 1992-96, and the 84-89, 86-91 and 92-95 means.

Appendix 1a. Atlantic salmon recreational fishery catch and effort data for Labrador (SFAs 1, 2, &14B), 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	5492	2501	.	2501	803	.	803	3304	.	3304	0.60
1975	4209	3972	.	3972	327	.	327	4299	.	4299	1.02
1976	7155	5726	.	5726	830	.	830	6556	.	6556	0.92
1977	7234	4594	.	4594	1286	.	1286	5880	.	5880	0.81
1978	6248	2691	.	2691	767	.	767	3458	.	3458	0.55
1979	5333	4118	.	4118	609	.	609	4727	.	4727	0.89
1980	4948	3800	.	3800	889	.	889	4689	.	4689	0.95
1981	5198	5191	.	5191	520	.	520	5711	.	5711	1.10
1982	6400	4104	.	4104	621	.	621	4725	.	4725	0.74
1983	6657	4372	.	4372	428	.	428	4800	.	4800	0.72
1984	7128	2935	.	2935	510	.	510	3445	.	3445	0.48
1985	6366	3101	.	3101	294	.	294	3395	.	3395	0.53
1986	7694	3464	.	3464	467	.	467	3931	.	3931	0.51
1987	8754	5366	.	5366	633	.	633	5999	.	5999	0.69
1988	10211	5523	.	5523	710	.	710	6233	.	6233	0.61
1989	9177	4684	.	4684	461	.	461	5145	.	5145	0.56
1990	8927	3309	.	3309	357	.	357	3666	.	3666	0.41
1991	7500	2323	.	2323	93	.	93	2416	.	2416	0.32
1992	8342	2738	251	2989	781	10	791	3519	261	3780	0.45
1993	9318	2508	1793	4301	378	91	469	2886	1884	4770	0.51
1994	10297	2657	2735	5392	474	291	765	3131	3026	6157	0.60
1995	9846	2597	2808	5405	546	400	946	3143	3208	6351	0.65
1996	7150	2251	2672	4923	305	313	618	2556	2985	5541	0.77
84-89 $\bar{X}$	8221.7	4178.8	.	4178.8	512.5	.	512.5	4691.3	.	4691.3	0.57
95% CL	1489.7	1214.2	.	1214.2	152.8	.	152.8	1336.3	.	1336.3	0.08
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	8710.5	4111.5	.	4111.5	453.5	.	453.5	4565.0	.	4565.0	0.52
95% CL	1051.3	1340.5	.	1340.5	228.8	.	228.8	1557.1	.	1557.1	0.13
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	9450.8	2625.0	1896.8	4521.8	544.8	198.0	742.8	3169.8	2094.8	5264.5	0.56
95% CL	1337.2	154.4	1894.2	1822.3	273.5	285.0	317.0	415.6	2156.9	1932.3	0.13
N	4	4	4	4	4	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Note: Data were unavailable for rivers in southern Labrador (SFA 14B) in 1996.

Appendix 1b. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3 - 14A), 1974-96. Ret = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	108199	26485	.	26485	1213	.	1213	27698	.	27698	0.26
1975	102907	33390	.	33390	1241	.	1241	34631	.	34631	0.34
1976	115847	34463	.	34463	1051	.	1051	35514	.	35514	0.31
1977	111836	34352	.	34352	2755	.	2755	37107	.	37107	0.33
1978	96659	28619	.	28619	1563	.	1563	30182	.	30182	0.31
1979	82578	31169	.	31169	561	.	561	31730	.	31730	0.38
1980	104332	35849	.	35849	1922	.	1922	37771	.	37771	0.36
1981	122476	46670	.	46670	1369	.	1369	48039	.	48039	0.39
1982	129369	41871	.	41871	1248	.	1248	43119	.	43119	0.33
1983	126308	32420	.	32420	1382	.	1382	33802	.	33802	0.27
1984	121979	39331	.	39331	511	.	511	39842	.	39842	0.33
1985	120030	36552	.	36552	*	315	315	36552	315	36867	0.31
1986	123528	37496	.	37496	*	798	798	37496	798	38294	0.31
1987	85969	24482	.	24482	*	410	410	24482	410	24892	0.29
1988	120497	39841	.	39841	*	600	600	39841	600	40441	0.34
1989	91286	18462	.	18462	*	183	183	18462	183	18645	0.20
1990	105736	29967	.	29967	*	503	503	29967	503	30470	0.29
1991	89812	20529	.	20529	*	336	336	20529	336	20865	0.23
1992	95931	23118	5642	28760	*	1413	1413	23118	7055	30173	0.31
1993	125661	24693	16403	41096	*	1640	1640	24693	18043	42736	0.34
1994	141508	28959	8370	37329	*	2052	2052	28959	10422	39381	0.28
1995	143275	29055	9575	38630	*	2188	2188	29055	11763	40818	0.28
1996	156631	35759	15549	51308	*	1871	1871	35759	17420	53179	0.34
84-89 $\bar{X}$	115464.0	34336.4	.	34336.4	.	474.0	481.4	34438.6	474.0	34817.8	0.30
95% CL	16865.5	11141.0	.	11141.0	.	441.3	298.9	11232.5	441.3	11356.3	0.06
N	5	5	0	5	0	4	5	5	4	5	5
86-91 $\bar{X}$	106171.8	29259.0	.	29259.0	.	484.0	484.0	29259.0	484.0	29743.0	0.28
95% CL	19588.7	11990.2	.	11990.2	.	294.4	294.4	11990.2	294.4	12259.7	0.07
N	5	5	0	5	0	5	5	5	5	5	5
92-95 $\bar{X}$	126593.8	26456.3	9997.5	36453.8	.	1823.3	1823.3	26456.3	11820.8	38277.0	0.30
95% CL	34878.5	4796.8	7280.9	8530.6	.	571.6	571.6	4796.8	7313.3	8869.4	0.05
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Note: Data were unavailable for some rivers in insular Newfoundland (SFAs 12 and 13) in 1996.

Appendix 1c. Atlantic salmon recreational fishery catch and effort data for Newfoundland and Labrador combined (SFAs 1 - 14B), 1974-96. Ret = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	113691	28986	.	28986	2016	.	2016	31002	.	31002	0.27
1975	107116	37362	.	37362	1568	.	1568	38930	.	38930	0.36
1976	123002	40189	.	40189	1881	.	1881	42070	.	42070	0.34
1977	119070	38946	.	38946	4041	.	4041	42987	.	42987	0.36
1978	102907	31310	.	31310	2330	.	2330	33640	.	33640	0.33
1979	87911	35287	.	35287	1170	.	1170	36457	.	36457	0.41
1980	109280	39649	.	39649	2811	.	2811	42460	.	42460	0.39
1981	127674	51861	.	51861	1889	.	1889	53750	.	53750	0.42
1982	135769	45975	.	45975	1869	.	1869	47844	.	47844	0.35
1983	132965	36792	.	36792	1810	.	1810	38602	.	38602	0.29
1984	129107	42266	.	42266	1021	.	1021	43287	.	43287	0.34
1985	126396	39653	.	39653	294	315	609	39947	315	40262	0.32
1986	131222	40960	.	40960	467	798	1265	41427	798	42225	0.32
1987	94723	29848	.	29848	633	410	1043	30481	410	30891	0.33
1988	130708	45364	.	45364	710	600	1310	46074	600	46674	0.36
1989	100463	23146	.	23146	461	183	644	23607	183	23790	0.24
1990	114663	33276	.	33276	357	503	860	33633	503	34136	0.30
1991	97312	22852	.	22852	93	336	429	22945	336	23281	0.24
1992	104273	25856	5893	31749	781	1423	2204	26637	7316	33953	0.33
1993	134979	27201	18196	45397	378	1731	2109	27579	19927	47506	0.35
1994	151805	31616	11105	42721	474	2343	2817	32090	13448	45538	0.30
1995	153121	31652	12383	44035	546	2588	3134	32198	14971	47169	0.31
1996	163781	38010	18221	56231	305	2184	2489	38315	20405	58720	0.36
84-89 $\bar{X}$	123579.2	38277.8	.	38277.8	590.6	474.0	969.8	38868.4	474.0	39247.6	0.32
95% CL	16211.5	10826.0	.	10826.0	350.9	441.3	412.6	10965.5	441.3	11109.2	0.05
N	5	5	0	5	5	4	5	5	4	5	5
86-91 $\bar{X}$	114873.6	33119.6	.	33119.6	417.6	484.0	901.6	33537.2	484.0	34021.2	0.30
95% CL	19961.3	12665.3	.	12665.3	276.8	294.4	476.9	12875.3	294.4	13130.2	0.06
N	5	5	0	5	5	5	5	5	5	5	5
92-95 $\bar{X}$	136044.5	29081.3	11894.3	40975.5	544.8	2021.3	2566.0	29626.0	13915.5	43541.5	0.32
95% CL	36170.5	4770.5	8038.8	9939.4	273.5	855.2	782.4	4666.7	8268.3	10261.7	0.04
N	4	4	4	4	4	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Note: Data were unavailable for some Newfoundland (SFAS 12 and 13) and Labrador (SFA 14B) rivers in 1996.

Appendix 1d. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1974-96. Ret = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	38626	8336	.	8336	110	.	110	8446	.	8446	0.22
1975	35673	9259	.	9259	190	.	190	9449	.	9449	0.26
1976	38552	9885	.	9885	256	.	256	10141	.	10141	0.26
1977	45112	15102	.	15102	1154	.	1154	16256	.	16256	0.36
1978	39561	12829	.	12829	539	.	539	13368	.	13368	0.34
1979	31365	11866	.	11866	349	.	349	12215	.	12215	0.39
1980	40581	14401	.	14401	588	.	588	14989	.	14989	0.37
1981	49396	20187	.	20187	430	.	430	20617	.	20617	0.42
1982	51961	15568	.	15568	435	.	435	16003	.	16003	0.31
1983	46821	13404	.	13404	518	.	518	13922	.	13922	0.30
1984	49240	14091	.	14091	25	.	25	14116	.	14116	0.29
1985	52799	17628	.	17628	*	.	.	17628	.	17628	0.33
1986	48582	14803	.	14803	*	.	.	14803	.	14803	0.30
1987	27158	7888	.	7888	*	.	.	7888	.	7888	0.29
1988	46400	16412	.	16412	*	.	.	16412	.	16412	0.35
1989	30571	6352	.	6352	*	.	.	6352	.	6352	0.21
1990	38956	10262	.	10262	*	.	.	10262	.	10262	0.26
1991	35084	8489	.	8489	*	.	.	8489	.	8489	0.24
1992	36254	9063	2904	11436	*	11	11	9063	2384	11447	0.32
1993	52640	9729	13913	21640	*	426	426	9729	12337	22066	0.42
1994	72813	16250	6380	21533	*	539	539	16250	5822	22072	0.30
1995	63184	12823	6825	17561	*	421	421	12823	5159	17982	0.28
1996	71615	17555	11252	25799	*	505	505	17555	8749	26304	0.37
84-89 $\bar{X}$	45518.4	13857.2	.	13857.2	.	.	.	13862.2	.	13862.2	0.30
95% CL	10759.4	5483.0	.	5483.0	.	.	.	5483.4	.	5483.4	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	39918.6	11263.6	.	11263.6	.	.	.	11263.6	.	11263.6	0.28
95% CL	9388.1	5261.9	.	5261.9	.	.	.	5261.9	.	5261.9	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	56222.8	11966.3	7505.5	18042.5	.	349.3	349.3	11966.3	6425.5	18391.8	0.33
95% CL	24907.9	5238.1	7346.2	7630.3	.	369.1	369.1	5238.1	6702.9	7978.4	0.10
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1e. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9 - 11), 1974-96. Ret = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29268	7182	.	7182	61	.	61	7243	.	7243	0.25
1975	24518	6800	.	6800	55	.	55	6855	.	6855	0.28
1976	26301	6517	.	6517	64	.	64	6581	.	6581	0.25
1977	23945	6273	.	6273	32	.	32	6305	.	6305	0.26
1978	24038	6894	.	6894	77	.	77	6971	.	6971	0.29
1979	18834	5983	.	5983	30	.	30	6013	.	6013	0.32
1980	26044	8972	.	8972	132	.	132	9104	.	9104	0.35
1981	28488	10241	.	10241	122	.	122	10363	.	10363	0.36
1982	33239	10419	.	10419	96	.	96	10515	.	10515	0.32
1983	35346	8212	.	8212	177	.	177	8389	.	8389	0.24
1984	30500	10740	.	10740	22	.	22	10762	.	10762	0.35
1985	29984	8899	.	8899	*	.	.	8899	.	8899	0.30
1986	30427	9379	.	9379	*	.	.	9379	.	9379	0.31
1987	20651	5125	.	5125	*	.	.	5125	.	5125	0.25
1988	27166	7548	.	7548	*	.	.	7548	.	7548	0.28
1989	23291	5173	.	5173	*	.	.	5173	.	5173	0.22
1990	25538	7147	.	7147	*	.	.	7147	.	7147	0.28
1991	17089	2643	.	2643	*	.	.	2643	.	2643	0.15
1992	18100	3208	1732	4940	*	8	8	3208	1740	4948	0.27
1993	29280	5215	1506	6721	*	84	84	5215	1590	6805	0.23
1994	25073	4055	917	4972	*	61	61	4055	978	5033	0.20
1995	35146	6299	1499	7798	*	47	47	6299	1546	7845	0.22
1996	41628	7498	2425	9923	*	139	139	7498	2564	10062	0.24
84-89 $\bar{X}$	28273.6	8347.8	.	8347.8	.	.	.	8352.2	.	8352.2	0.30
95% CL	3855.2	2619.5	.	2619.5	.	.	.	2627.3	.	2627.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24702.2	6378.0	.	6378.0	.	.	.	6378.0	.	6378.0	0.26
95% CL	6191.6	3187.5	.	3187.5	.	.	.	3187.5	.	3187.5	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	26899.8	4694.3	1413.5	6107.8	.	50.0	50.0	4694.3	1463.5	6157.8	0.23
95% CL	11415.3	2147.2	554.1	2228.6	.	50.7	50.7	2147.2	531.6	2248.9	0.04
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1f. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 & 13), 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	30736	7847	.	7847	929	.	929	8776	.	8776	0.29
1975	33457	12513	.	12513	906	.	906	13419	.	13419	0.40
1976	33848	10680	.	10680	631	.	631	11311	.	11311	0.33
1977	25712	7270	.	7270	1097	.	1097	8367	.	8367	0.33
1978	20991	5655	.	5655	875	.	875	6530	.	6530	0.31
1979	18094	6742	.	6742	123	.	123	6865	.	6865	0.38
1980	23488	8733	.	8733	1022	.	1022	9755	.	9755	0.42
1981	25874	10360	.	10360	680	.	680	11040	.	11040	0.43
1982	28056	11121	.	11121	610	.	610	11731	.	11731	0.42
1983	28121	7004	.	7004	618	.	618	7622	.	7622	0.27
1984	25742	9693	.	9693	377	.	377	10070	.	10070	0.39
1985	23859	6399	.	6399	*	287	287	6399	287	6686	0.28
1986	29137	8284	.	8284	*	696	696	8284	696	8980	0.31
1987	23099	6849	.	6849	*	369	369	6849	369	7218	0.31
1988	27963	9630	.	9630	*	429	429	9630	429	10059	0.36
1989	21201	3734	.	3734	*	139	139	3734	139	3873	0.18
1990	24829	7508	.	7508	*	367	367	7508	367	7875	0.32
1991	23789	5832	.	5832	*	219	219	5832	219	6051	0.25
1992	24460	6069	1006	7075	*	1025	1025	6069	2031	8100	0.33
1993	25883	5844	984	6828	*	754	754	5844	1738	7582	0.29
1994	22576	4225	1073	5298	*	977	977	4225	2050	6275	0.28
1995	20786	3843	1251	5094	*	989	989	3843	2240	6083	0.29
1996	17512	4221	1872	6093	*	521	521	4221	2393	6614	0.38
84-89 $\bar{X}$	25166.8	7431.5	.	7431.5	.	384.0	382.8	7494.3	384.0	7814.3	0.31
95% CL	3170.6	2382.0	.	2382.0	.	255.2	193.0	2464.9	255.2	2512.4	0.07
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	25003.0	6972.8	.	6972.8	.	369.8	369.8	6972.8	369.8	7342.7	0.29
95% CL	3164.0	2144.5	.	2144.5	.	202.4	202.4	2144.5	202.4	2302.7	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-95 $\bar{X}$	23426.3	4995.3	1078.5	6073.8	.	936.3	936.3	4995.3	2014.8	7010.0	0.30
95% CL	3533.6	1789.3	192.6	1625.9	.	196.0	196.0	1789.3	329.7	1568.3	0.04
N	4	4	4	4	0	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Note: Data were unavailable for a number of rivers in SFAs 12 and 13 in 1996.

Appendix 1g. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-95 $\bar{X}$	20045.0	4800.5	1429.3	6229.8	.	487.8	487.8	4800.5	1917.0	6717.5	0.34
95% CL	5137.7	1482.1	1189.9	2102.5	.	269.3	269.3	1482.1	1355.5	2356.4	0.06
N	4	4	4	4	0	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Appendix 1h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 1, Labrador, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	801	347	.	347	311	.	311	658	.	658	0.82
1975	245	379	.	379	117	.	117	496	.	496	2.02
1976	928	891	.	891	368	.	368	1259	.	1259	1.36
1977	809	688	.	688	533	.	533	1221	.	1221	1.51
1978	704	875	.	875	432	.	432	1307	.	1307	1.86
1979	1367	905	.	905	430	.	430	1335	.	1335	0.98
1980	780	704	.	704	232	.	232	936	.	936	1.20
1981	422	669	.	669	195	.	195	864	.	864	2.05
1982	831	834	.	834	379	.	379	1213	.	1213	1.46
1983	834	488	.	488	137	.	137	625	.	625	0.75
1984	1074	702	.	702	222	.	222	924	.	924	0.86
1985	946	642	.	642	135	.	135	777	.	777	0.82
1986	741	421	.	421	129	.	129	550	.	550	0.74
1987	1011	854	.	854	141	.	141	995	.	995	0.98
1988	1629	1278	.	1278	171	.	171	1449	.	1449	0.89
1989	1296	1269	.	1269	144	.	144	1413	.	1413	1.09
1990	1245	563	.	563	115	.	115	678	.	678	0.54
1991	1056	130	.	130	8	.	8	138	.	138	0.13
1992	899	283	29	312	335	0	335	618	29	647	0.72
1993	422	121	124	245	22	25	47	143	149	292	0.69
1994	1036	453	933	1386	114	96	210	567	1029	1596	1.54
1995	880	500	854	1354	92	97	189	592	951	1543	1.75
1996	879	260	62	322	50	17	67	310	79	389	0.44
84-89 $\bar{X}$	1116.2	861.0	.	861.0	157.0	.	157.0	1018.0	.	1018.0	0.91
95% CL	324.5	365.8	.	365.8	36.7	.	36.7	372.1	.	372.1	0.12
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	1163.0	752.5	.	752.5	118.0	.	118.0	870.5	.	870.5	0.75
95% CL	316.4	489.3	.	489.3	59.8	.	59.8	539.5	.	539.5	0.36
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	809.3	339.3	485.0	824.3	140.8	54.5	195.3	480.0	539.5	1019.5	1.26
95% CL	425.4	274.9	754.7	1003.8	215.3	78.9	187.7	359.0	832.8	1037.0	0.85
N	4	4	4	4	4	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Appendix 1i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 2, Labrador, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1978	1414	.	1414	201	.	201	1615	.	1615	0.82
1975	1784	2524	.	2524	56	.	56	2580	.	2580	1.45
1976	2331	2337	.	2337	152	.	152	2489	.	2489	1.07
1977	2507	2244	.	2244	160	.	160	2404	.	2404	0.96
1978	3131	1243	.	1243	152	.	152	1395	.	1395	0.45
1979	1817	2312	.	2312	60	.	60	2372	.	2372	1.31
1980	1692	2158	.	2158	320	.	320	2478	.	2478	1.46
1981	1423	2824	.	2824	105	.	105	2929	.	2929	2.06
1982	2290	1999	.	1999	162	.	162	2161	.	2161	0.94
1983	2294	1884	.	1884	161	.	161	2045	.	2045	0.89
1984	2057	1246	.	1246	103	.	103	1349	.	1349	0.66
1985	1756	1367	.	1367	59	.	59	1426	.	1426	0.81
1986	2310	1972	.	1972	154	.	154	2126	.	2126	0.92
1987	2750	2625	.	2625	277	.	277	2902	.	2902	1.06
1988	2875	2653	.	2653	288	.	288	2941	.	2941	1.02
1989	2986	2242	.	2242	264	.	264	2506	.	2506	0.84
1990	2607	1680	.	1680	144	.	144	1824	.	1824	0.70
1991	2427	1041	.	1041	36	.	36	1077	.	1077	0.44
1992	2813	1599	158	1757	208	10	218	1807	168	1975	0.70
1993	3600	1340	1255	2595	114	36	150	1454	1291	2745	0.76
1994	3352	1511	1716	3227	259	184	443	1770	1900	3670	1.09
1995	3544	1280	1727	3007	246	219	465	1526	1946	3472	0.98
1996	6271	1991	2610	4601	255	296	551	2246	2906	5152	0.82
84-89 $\bar{X}$	2455.7	2017.5	.	2017.5	190.8	.	190.8	2208.3	.	2208.3	0.90
95% CL	517.1	637.4	.	637.4	103.6	.	103.6	736.8	.	736.8	0.15
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	2659.2	2035.5	.	2035.5	193.8	.	193.8	2229.3	.	2229.3	0.84
95% CL	273.8	645.5	.	645.5	104.6	.	104.6	747.9	.	747.9	0.23
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	3327.3	1432.5	1214.0	2646.5	206.8	112.3	319.0	1639.3	1326.3	2965.5	0.89
95% CL	571.0	235.4	1173.5	1031.4	104.2	166.4	252.3	279.2	1317.1	1226.4	0.28
N	4	4	4	4	4	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Appendix 1j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1890	839	.	839	4	.	4	843	.	843	0.45
1975	1948	1107	.	1107	0	.	0	1107	.	1107	0.57
1976	2284	947	.	947	1	.	1	948	.	948	0.42
1977	2249	1530	.	1530	4	.	4	1534	.	1534	0.68
1978	2030	758	.	758	1	.	1	759	.	759	0.37
1979	2514	2040	.	2040	0	.	0	2040	.	2040	0.81
1980	2585	1743	.	1743	37	.	37	1780	.	1780	0.69
1981	3113	2358	.	2358	3	.	3	2361	.	2361	0.76
1982	3907	2634	.	2634	88	.	88	2722	.	2722	0.70
1983	4075	1617	.	1617	2	.	2	1619	.	1619	0.40
1984	2248	1001	.	1001	0	.	0	1001	.	1001	0.45
1985	2355	1310	.	1310	*	.	.	1310	.	1310	0.56
1986	1430	772	.	772	*	.	.	772	.	772	0.54
1987	1121	563	.	563	*	.	.	563	.	563	0.50
1988	2979	1756	.	1756	*	.	.	1756	.	1756	0.59
1989	1672	738	.	738	*	.	.	738	.	738	0.44
1990	3159	1718	.	1718	*	.	.	1718	.	1718	0.54
1991	3495	1316	.	1316	*	.	.	1316	.	1316	0.38
1992	3961	1562	120	1682	*	5	5	1562	125	1687	0.43
1993	4384	1480	2585	4065	*	152	152	1480	2737	4217	0.96
1994	7715	3314	1844	5158	*	404	404	3314	2248	5562	0.72
1995	5438	1405	890	2295	*	186	186	1405	1076	2481	0.46
1996	6363	2122	1118	3240	*	143	143	2122	1261	3383	0.53
84-89 $\bar{X}$	2136.8	1115.4	.	1115.4	.	.	.	1115.4	.	1115.4	0.52
95% CL	756.4	527.3	.	527.3	.	.	.	527.3	.	527.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2547.0	1260.0	.	1260.0	.	.	.	1260.0	.	1260.0	0.49
95% CL	1156.8	611.2	.	611.2	.	.	.	611.2	.	611.2	0.13
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	5374.5	1940.3	1359.8	3300.0	.	186.8	186.8	1940.3	1546.5	3486.8	0.65
95% CL	2671.9	1460.7	1716.9	2543.2	.	262.1	262.1	1460.7	1871.6	2769.5	0.34
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	22038	5373	.	5373	82	.	82	5455	.	5455	0.25
1975	22384	5943	.	5943	166	.	166	6109	.	6109	0.27
1976	24787	6683	.	6683	188	.	188	6871	.	6871	0.28
1977	28117	8396	.	8396	1086	.	1086	9482	.	9482	0.34
1978	24131	8774	.	8774	502	.	502	9276	.	9276	0.38
1979	21496	8026	.	8026	327	.	327	8353	.	8353	0.39
1980	25172	9414	.	9414	507	.	507	9921	.	9921	0.39
1981	32282	13536	.	13536	361	.	361	13897	.	13897	0.43
1982	32929	9973	.	9973	258	.	258	10231	.	10231	0.31
1983	26649	8954	.	8954	297	.	297	9251	.	9251	0.35
1984	29633	9900	.	9900	15	.	15	9915	.	9915	0.33
1985	34329	12190	.	12190	*	.	.	12190	.	12190	0.36
1986	31650	9293	.	9293	*	.	.	9293	.	9293	0.29
1987	18564	5453	.	5453	*	.	.	5453	.	5453	0.29
1988	27413	9854	.	9854	*	.	.	9854	.	9854	0.36
1989	17767	3786	.	3786	*	.	.	3786	.	3786	0.21
1990	23533	5661	.	5661	*	.	.	5661	.	5661	0.24
1991	21999	4892	.	4892	*	.	.	4892	.	4892	0.22
1992	19485	5290	1515	6805	*	5	5	5290	1520	6810	0.35
1993	30958	5724	7232	12956	*	158	158	5724	7390	13114	0.42
1994	43242	9351	2728	12079	*	79	79	9351	2807	12158	0.28
1995	36717	7979	3199	11178	*	151	151	7979	3350	11329	0.31
1996	44385	10960	6374	17334	*	232	232	10960	6606	17566	0.40
84-89 $\bar{X}$	28158.4	9004.6	.	9004.6	.	.	.	9007.6	.	9007.6	0.32
95% CL	7875.7	3875.8	.	3875.8	.	.	.	3877.2	.	3877.2	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24472.4	6697.2	.	6697.2	.	.	.	6697.2	.	6697.2	0.27
95% CL	6573.0	3372.1	.	3372.1	.	.	.	3372.1	.	3372.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	32600.5	7086.0	3668.5	10754.5	.	98.3	98.3	7086.0	3766.8	10852.8	0.33
95% CL	16039.4	3047.7	3944.6	4345.4	.	114.1	114.1	3047.7	4032.3	4442.2	0.10
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1l. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9335	1637	.	1637	21	.	21	1658	.	1658	0.18
1975	7527	1988	.	1988	23	.	23	2011	.	2011	0.27
1976	6975	1898	.	1898	65	.	65	1963	.	1963	0.28
1977	10572	4616	.	4616	44	.	44	4660	.	4660	0.44
1978	9108	2858	.	2858	28	.	28	2886	.	2886	0.32
1979	3926	1331	.	1331	20	.	20	1351	.	1351	0.34
1980	8155	2702	.	2702	29	.	29	2731	.	2731	0.33
1981	8863	3488	.	3488	35	.	35	3523	.	3523	0.40
1982	9935	2433	.	2433	53	.	53	2486	.	2486	0.25
1983	10195	2357	.	2357	170	.	170	2527	.	2527	0.25
1984	12403	2703	.	2703	1	.	1	2704	.	2704	0.22
1985	11613	3484	.	3484	*	.	.	3484	.	3484	0.30
1986	11510	4053	.	4053	*	.	.	4053	.	4053	0.35
1987	5267	1664	.	1664	*	.	.	1664	.	1664	0.32
1988	10497	4166	.	4166	*	.	.	4166	.	4166	0.40
1989	6617	1417	.	1417	*	.	.	1417	.	1417	0.21
1990	7999	2414	.	2414	*	.	.	2414	.	2414	0.30
1991	7002	2048	.	2048	*	.	.	2048	.	2048	0.29
1992	9230	1941	728	2669	*	1	1	1941	729	2670	0.29
1993	12949	2091	2008	4099	*	107	107	2091	2115	4206	0.32
1994	18000	3216	689	3905	*	52	52	3216	741	3957	0.22
1995	16691	2860	586	3446	*	76	76	2860	662	3522	0.21
1996	16415	3948	706	4654	*	113	113	3948	819	4767	0.29
84-89 $\bar{X}$	10528.0	3164.6	.	3164.6	.	.	.	3164.8	.	3164.8	0.30
95% CL	2841.4	1410.2	.	1410.2	.	.	.	1410.1	.	1410.1	0.10
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	8725.0	2819.6	.	2819.6	.	.	.	2819.6	.	2819.6	0.32
95% CL	2694.0	1528.2	.	1528.2	.	.	.	1528.2	.	1528.2	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	14217.5	2527.0	1002.8	3529.8	.	59.0	59.0	2527.0	1061.8	3588.8	0.25
95% CL	6291.3	971.7	1070.5	1011.6	.	71.2	71.2	971.7	1118.5	1073.3	0.09
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2685	303	.	303	1	.	1	304	.	304	0.11
1975	1851	94	.	94	1	.	1	95	.	95	0.05
1976	2864	247	.	247	2	.	2	249	.	249	0.09
1977	1869	401	.	401	19	.	19	420	.	420	0.22
1978	2237	296	.	296	7	.	7	303	.	303	0.14
1979	1766	244	.	244	2	.	2	246	.	246	0.14
1980	2807	320	.	320	14	.	14	334	.	334	0.12
1981	3406	605	.	605	29	.	29	634	.	634	0.19
1982	3031	288	.	288	17	.	17	305	.	305	0.10
1983	3684	296	.	296	10	.	10	306	.	306	0.08
1984	3218	312	.	312	5	.	5	317	.	317	0.10
1985	2256	429	.	429	*	.	.	429	.	429	0.19
1986	2596	445	.	445	*	.	.	445	.	445	0.17
1987	1306	137	.	137	*	.	.	137	.	137	0.10
1988	3392	429	.	429	*	.	.	429	.	429	0.13
1989	2959	246	.	246	*	.	.	246	.	246	0.08
1990	3089	334	.	334	*	.	.	334	.	334	0.11
1991	1620	186	.	186	*	.	.	186	.	186	0.11
1992	2265	230	10	240	*	0	0	230	10	240	0.11
1993	2784	323	81	404	*	9	9	323	90	413	0.15
1994	2429	241	21	262	*	4	4	241	25	266	0.11
1995	2513	336	61	397	*	8	8	336	69	405	0.16
1996	2331	327	43	370	*	17	17	327	60	387	0.17
84-89 $\bar{X}$	2884.2	372.2	.	372.2	.	.	.	373.2	.	373.2	0.13
95% CL	573.2	109.8	.	109.8	.	.	.	108.8	.	108.8	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2731.2	328.0	.	328.0	.	.	.	328.0	.	328.0	0.12
95% CL	848.8	139.9	.	139.9	.	.	.	139.9	.	139.9	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	2497.8	282.5	43.3	325.8	.	5.3	5.3	282.5	48.5	331.0	0.13
95% CL	345.0	87.1	53.1	138.1	.	6.5	6.5	87.1	59.4	144.4	0.04
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2019	133	.	133	2	.	2	135	.	135	0.07
1975	1436	40	.	40	0	.	0	40	.	40	0.03
1976	1128	30	.	30	0	.	0	30	.	30	0.03
1977	1775	78	.	78	1	.	1	79	.	79	0.04
1978	1786	99	.	99	1	.	1	100	.	100	0.06
1979	1332	125	.	125	0	.	0	125	.	125	0.09
1980	1546	102	.	102	1	.	1	103	.	103	0.07
1981	1348	123	.	123	2	.	2	125	.	125	0.09
1982	1621	155	.	155	10	.	10	165	.	165	0.10
1983	1804	139	.	139	34	.	34	173	.	173	0.10
1984	1381	96	.	96	4	.	4	100	.	100	0.07
1985	1635	112	.	112	*	.	.	112	.	112	0.07
1986	700	102	.	102	*	.	.	102	.	102	0.15
1987	632	28	.	28	*	.	.	28	.	28	0.04
1988	1645	128	.	128	*	.	.	128	.	128	0.08
1989	1226	66	.	66	*	.	.	66	.	66	0.05
1990	827	49	.	49	*	.	.	49	.	49	0.06
1991	644	36	.	36	*	.	.	36	.	36	0.06
1992	1313	40	0	40	*	0	0	40	0	40	0.03
1993	1107	58	3	61	*	0	0	58	3	61	0.06
1994	1162	71	0	71	*	0	0	71	0	71	0.06
1995	1425	170	0	170	*	0	0	170	0	170	0.12
1996	1603	139	3	142	*	0	0	139	3	142	0.09
84-89 $\bar{X}$	1317.4	100.8	.	100.8	.	.	.	101.6	.	101.6	0.08
95% CL	481.5	28.5	.	28.5	.	.	.	28.3	.	28.3	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	1008.4	76.2	.	76.2	.	.	.	76.2	.	76.2	0.08
95% CL	524.3	47.3	.	47.3	.	.	.	47.3	.	47.3	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	1251.8	84.8	0.8	85.5	.	0.0	0.0	84.8	0.8	85.5	0.07
95% CL	230.1	92.7	2.4	92.0	.	0.0	0.0	92.7	2.4	92.0	0.07
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	659	51	.	51	0	.	0	51	.	51	0.08
1975	527	87	.	87	0	.	0	87	.	87	0.17
1976	514	80	.	80	0	.	0	80	.	80	0.16
1977	530	81	.	81	0	.	0	81	.	81	0.15
1978	269	44	.	44	0	.	0	44	.	44	0.16
1979	331	100	.	100	0	.	0	100	.	100	0.30
1980	316	120	.	120	0	.	0	120	.	120	0.38
1981	384	77	.	77	0	.	0	77	.	77	0.20
1982	538	85	.	85	9	.	9	94	.	94	0.17
1983	414	41	.	41	5	.	5	46	.	46	0.11
1984	357	79	.	79	0	.	0	79	.	79	0.22
1985	611	103	.	103	*	.	.	103	.	103	0.17
1986	696	138	.	138	*	.	.	138	.	138	0.20
1987	268	43	.	43	*	.	.	43	.	43	0.16
1988	474	79	.	79	*	.	.	79	.	79	0.17
1989	330	99	.	99	*	.	.	99	.	99	0.30
1990	349	86	.	86	*	.	.	86	.	86	0.25
1991	324	11	.	11	*	.	.	11	.	11	0.03
1992	.	.	.	.	*	.	.	.	.	.	.
1993	458	53	2	55	*	0	0	53	2	55	0.12
1994	265	57	1	58	*	0	0	57	1	58	0.22
1995	400	73	2	75	*	0	0	73	2	75	0.19
1996	518	59	0	59	*	0	0	59	0	59	0.11
84-89 $\bar{X}$	493.6	99.6	.	99.6	.	.	.	99.6	.	99.6	0.20
95% CL	196.8	30.0	.	30.0	.	.	.	30.0	.	30.0	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	434.6	82.6	.	82.6	.	.	.	82.6	.	82.6	0.19
95% CL	196.7	57.2	.	57.2	.	.	.	57.2	.	57.2	0.09
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	374.3	61.0	1.7	62.7	.	0.0	0.0	61.0	1.7	62.7	0.17
95% CL	246.0	26.3	1.4	26.8	.	0.0	0.0	26.3	1.4	26.8	0.13
N	3	3	3	3	0	3	3	3	3	3	3

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9162	1494	.	1494	9	.	9	1503	.	1503	0.16
1975	10046	1872	.	1872	6	.	6	1878	.	1878	0.19
1976	8809	1623	.	1623	12	.	12	1635	.	1635	0.19
1977	8766	1080	.	1080	9	.	9	1089	.	1089	0.12
1978	7224	1303	.	1303	17	.	17	1320	.	1320	0.18
1979	5859	1704	.	1704	15	.	15	1719	.	1719	0.29
1980	6446	2379	.	2379	61	.	61	2440	.	2440	0.38
1981	6343	1862	.	1862	52	.	52	1914	.	1914	0.30
1982	8574	1825	.	1825	33	.	33	1858	.	1858	0.22
1983	10754	2303	.	2303	71	.	71	2374	.	2374	0.22
1984	8754	2264	.	2264	5	.	5	2269	.	2269	0.26
1985	9385	1750	.	1750	*	.	.	1750	.	1750	0.19
1986	8807	2298	.	2298	*	.	.	2298	.	2298	0.26
1987	5994	867	.	867	*	.	.	867	.	867	0.14
1988	7157	1373	.	1373	*	.	.	1373	.	1373	0.19
1989	7039	1315	.	1315	*	.	.	1315	.	1315	0.19
1990	8240	1866	.	1866	*	.	.	1866	.	1866	0.23
1991	6482	560	.	560	*	.	.	560	.	560	0.09
1992	6177	690	196	886	*	1	1	690	197	887	0.14
1993	10344	1431	151	1582	*	15	15	1431	166	1597	0.15
1994	7154	829	93	922	*	2	2	829	95	924	0.13
1995	10487	1594	307	1901	*	11	11	1594	318	1912	0.18
1996	10365	1371	251	1622	*	25	25	1371	276	1647	0.16
84-89 $\bar{X}$	8228.4	1800.0	.	1800.0	.	.	.	1801.0	.	1801.0	0.22
95% CL	1318.4	583.4	.	583.4	.	.	.	584.9	.	584.9	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	7545.0	1482.4	.	1482.4	.	.	.	1482.4	.	1482.4	0.20
95% CL	1179.8	810.1	.	810.1	.	.	.	810.1	.	810.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	8540.5	1136.0	186.8	1322.8	.	7.3	7.3	1136.0	194.0	1330.0	0.16
95% CL	3503.8	705.5	144.1	797.1	.	10.9	10.9	705.5	148.0	806.6	0.04
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	10987	1212	.	1212	14	.	14	1226	.	1226	0.11
1975	5999	427	.	427	9	.	9	436	.	436	0.07
1976	8811	730	.	730	10	.	10	740	.	740	0.08
1977	7213	1097	.	1097	5	.	5	1102	.	1102	0.15
1978	8764	1595	.	1595	42	.	42	1637	.	1637	0.19
1979	6405	849	.	849	8	.	8	857	.	857	0.13
1980	9588	1524	.	1524	27	.	27	1551	.	1551	0.16
1981	9309	1317	.	1317	29	.	29	1346	.	1346	0.14
1982	9331	1256	.	1256	10	.	10	1266	.	1266	0.14
1983	9173	1140	.	1140	79	.	79	1219	.	1219	0.13
1984	6361	1457	.	1457	2	.	2	1459	.	1459	0.23
1985	6887	1326	.	1326	*	.	.	1326	.	1326	0.19
1986	6387	1535	.	1535	*	.	.	1535	.	1535	0.24
1987	3348	429	.	429	*	.	.	429	.	429	0.13
1988	5198	1142	.	1142	*	.	.	1142	.	1142	0.22
1989	4709	898	.	898	*	.	.	898	.	898	0.19
1990	4778	835	.	835	*	.	.	835	.	835	0.17
1991	2960	230	.	230	*	.	.	230	.	230	0.08
1992	3422	245	497	742	*	6	6	245	503	748	0.22
1993	7656	700	691	1391	*	26	26	700	717	1417	0.19
1994	7028	946	150	1096	*	21	21	946	171	1117	0.16
1995	10210	1450	254	1704	*	23	23	1450	277	1727	0.17
1996	15128	2092	428	2520	*	88	88	2092	516	2608	0.17
84-89 $\bar{X}$	5908.4	1271.6	.	1271.6	.	.	.	1272.0	.	1272.0	0.22
95% CL	1133.5	318.4	.	318.4	.	.	.	318.8	.	318.8	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	4806.4	928.0	.	928.0	.	.	.	928.0	.	928.0	0.19
95% CL	1529.5	592.5	.	592.5	.	.	.	592.5	.	592.5	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	7079.0	835.3	398.0	1233.3	.	19.0	19.0	835.3	417.0	1252.3	0.18
95% CL	4454.1	799.1	387.4	653.8	.	14.2	14.2	799.1	387.0	665.6	0.03
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1r. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9119	4476	.	4476	38	.	38	4514	.	4514	0.50
1975	8473	4501	.	4501	40	.	40	4541	.	4541	0.54
1976	8681	4164	.	4164	42	.	42	4206	.	4206	0.48
1977	7966	4096	.	4096	18	.	18	4114	.	4114	0.52
1978	8050	3996	.	3996	18	.	18	4014	.	4014	0.50
1979	6570	3430	.	3430	7	.	7	3437	.	3437	0.52
1980	10010	5069	.	5069	44	.	44	5113	.	5113	0.51
1981	12836	7062	.	7062	41	.	41	7103	.	7103	0.55
1982	15334	7338	.	7338	53	.	53	7391	.	7391	0.48
1983	15419	4769	.	4769	27	.	27	4796	.	4796	0.31
1984	15385	7019	.	7019	15	.	15	7034	.	7034	0.46
1985	13712	5823	.	5823	*	.	.	5823	.	5823	0.42
1986	15233	5546	.	5546	*	.	.	5546	.	5546	0.36
1987	11309	3829	.	3829	*	.	.	3829	.	3829	0.34
1988	14811	5033	.	5033	*	.	.	5033	.	5033	0.34
1989	11543	2960	.	2960	*	.	.	2960	.	2960	0.26
1990	12520	4446	.	4446	*	.	.	4446	.	4446	0.36
1991	7647	1853	.	1853	*	.	.	1853	.	1853	0.24
1992	8501	2273	1039	3312	*	1	1	2273	1040	3313	0.39
1993	11280	3084	664	3748	*	43	43	3084	707	3791	0.34
1994	10891	2280	674	2954	*	38	38	2280	712	2992	0.27
1995	14449	3255	938	4193	*	13	13	3255	951	4206	0.29
1996	16135	4035	1746	5781	*	26	26	4035	1772	5807	0.36
84-89 $\bar{X}$	14136.8	5276.2	.	5276.2	.	.	.	5279.2	.	5279.2	0.37
95% CL	1974.9	1844.8	.	1844.8	.	.	.	1850.3	.	1850.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	12350.8	3967.6	.	3967.6	.	.	.	3967.6	.	3967.6	0.32
95% CL	3784.3	1897.3	.	1897.3	.	.	.	1897.3	.	1897.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-95 $\bar{X}$	11280.3	2723.0	828.8	3551.8	.	23.8	23.8	2723.0	852.5	3575.5	0.32
95% CL	3888.1	827.8	300.8	854.1	.	31.9	31.9	827.8	269.0	848.5	0.07
N	4	4	4	4	0	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1s. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1423	658	.	658	13	.	13	671	.	671	0.47
1975	1204	510	.	510	20	.	20	530	.	530	0.44
1976	926	297	.	297	5	.	5	302	.	302	0.33
1977	1238	558	.	558	48	.	48	606	.	606	0.49
1978	1305	366	.	366	20	.	20	386	.	386	0.30
1979	1711	733	.	733	10	.	10	743	.	743	0.43
1980	2175	820	.	820	29	.	29	849	.	849	0.39
1981	2035	1060	.	1060	17	.	17	1077	.	1077	0.53
1982	2810	1555	.	1555	15	.	15	1570	.	1570	0.56
1983	2648	667	.	667	8	.	8	675	.	675	0.25
1984	3590	1922	.	1922	68	.	68	1990	.	1990	0.55
1985	3722	1097	.	1097	*	30	30	1097	30	1127	0.30
1986	3430	938	.	938	*	34	34	938	34	972	0.28
1987	2212	831	.	831	*	27	27	831	27	858	0.39
1988	3607	1413	.	1413	*	23	23	1413	23	1436	0.40
1989	2657	560	.	560	*	10	10	560	10	570	0.21
1990	3060	856	.	856	*	30	30	856	30	886	0.29
1991	2761	644	.	644	*	15	15	644	15	659	0.24
1992	2831	639	466	1105	*	78	78	639	544	1183	0.42
1993	3362	745	155	900	*	22	22	745	177	922	0.27
1994	2853	593	137	730	*	48	48	593	185	778	0.27
1995	2679	507	87	594	*	41	41	507	128	635	0.24
1996	1612	462	168	630	*	27	27	462	195	657	0.41
84-89 $\bar{X}$	3203.0	1126.8	.	1126.8	.	24.8	32.0	1138.2	24.8	1158.8	0.36
95% CL	649.4	505.5	.	505.5	.	11.4	20.4	529.3	11.4	522.9	0.13
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	2954.5	873.7	.	873.7	.	23.2	23.2	873.7	23.2	896.8	0.30
95% CL	543.4	314.3	.	314.3	.	9.6	9.6	314.3	9.6	318.8	0.08
N	6	6	0	6	0	6	6	6	6	6	6
92-95 $\bar{X}$	2931.3	621.0	211.3	832.3	.	47.3	47.3	621.0	258.5	879.5	0.30
95% CL	473.2	157.7	274.1	351.2	.	37.0	37.0	157.7	305.5	372.0	0.12
N	4	4	4	4	0	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Note: Data were unavailable for some rivers in SFA 12 for 1996.

Appendix 1t. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29313	7189	.	7189	916	.	916	8105	.	8105	0.28
1975	32253	12003	.	12003	886	.	886	12889	.	12889	0.40
1976	32922	10383	.	10383	626	.	626	11009	.	11009	0.33
1977	24474	6712	.	6712	1049	.	1049	7761	.	7761	0.32
1978	19686	5289	.	5289	855	.	855	6144	.	6144	0.31
1979	16383	6009	.	6009	113	.	113	6122	.	6122	0.37
1980	21313	7913	.	7913	993	.	993	8906	.	8906	0.42
1981	23839	9300	.	9300	663	.	663	9963	.	9963	0.42
1982	25246	9566	.	9566	595	.	595	10161	.	10161	0.40
1983	25473	6337	.	6337	610	.	610	6947	.	6947	0.27
1984	22152	7771	.	7771	309	.	309	8080	.	8080	0.36
1985	20137	5302	.	5302	*	257	257	5302	257	5559	0.28
1986	25707	7346	.	7346	*	662	662	7346	662	8008	0.31
1987	20887	6018	.	6018	*	342	342	6018	342	6360	0.30
1988	24356	8217	.	8217	*	406	406	8217	406	8623	0.35
1989	18544	3174	.	3174	*	129	129	3174	129	3303	0.18
1990	21769	6652	.	6652	*	337	337	6652	337	6989	0.32
1991	21028	5188	.	5188	*	204	204	5188	204	5392	0.26
1992	21629	5430	540	5970	*	947	947	5430	1487	6917	0.32
1993	22521	5099	829	5928	*	732	732	5099	1561	6660	0.30
1994	19723	3632	936	4568	*	929	929	3632	1865	5497	0.28
1995	18107	3336	1164	4500	*	948	948	3336	2112	5448	0.30
1996	15900	3759	1704	5463	*	494	494	3759	2198	5957	0.37
84-89 $\bar{X}$	21963.8	6304.7	.	6304.7	.	359.2	350.8	6356.2	359.2	6655.5	0.30
95% CL	2814.9	1979.3	.	1979.3	.	246.4	187.6	2033.4	246.4	2112.7	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	22048.5	6099.2	.	6099.2	.	346.7	346.7	6099.2	346.7	6445.8	0.29
95% CL	2715.2	1862.2	.	1862.2	.	194.0	194.0	1862.2	194.0	2017.4	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-95 $\bar{X}$	20495.0	4374.3	867.3	5241.5	.	889.0	889.0	4374.3	1756.3	6130.5	0.30
95% CL	3140.5	1660.7	412.2	1300.8	.	167.1	167.1	1660.7	458.4	1220.7	0.03
N	4	4	4	4	0	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Note: Data were unavailable for some rivers in SFA 13 for 1996.

Appendix 1u. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1974-96. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-95 $\bar{X}$	20045.0	4800.5	1429.3	6229.8	.	487.8	487.8	4800.5	1917.0	6717.5	0.34
95% CL	5137.7	1482.1	1189.9	2102.5	.	269.3	269.3	1482.1	1355.5	2356.4	0.06
N	4	4	4	4	0	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1v. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14B, Labrador, 1974-96.
Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2713	740	.	740	291	.	291	1031	.	1031	0.38
1975	2180	1069	.	1069	154	.	154	1223	.	1223	0.56
1976	3896	2498	.	2498	310	.	310	2808	.	2808	0.72
1977	3918	1662	.	1662	593	.	593	2255	.	2255	0.58
1978	2413	573	.	573	183	.	183	756	.	756	0.31
1979	2149	901	.	901	119	.	119	1020	.	1020	0.47
1980	2476	938	.	938	337	.	337	1275	.	1275	0.51
1981	3353	1698	.	1698	220	.	220	1918	.	1918	0.57
1982	3279	1271	.	1271	80	.	80	1351	.	1351	0.41
1983	3529	2000	.	2000	130	.	130	2130	.	2130	0.60
1984	3997	987	.	987	185	.	185	1172	.	1172	0.29
1985	3664	1092	.	1092	100	.	100	1192	.	1192	0.33
1986	4643	1071	.	1071	184	.	184	1255	.	1255	0.27
1987	4993	1887	.	1887	215	.	215	2102	.	2102	0.42
1988	5707	1592	.	1592	251	.	251	1843	.	1843	0.32
1989	4895	1173	.	1173	53	.	53	1226	.	1226	0.25
1990	5075	1066	.	1066	98	.	98	1164	.	1164	0.23
1991	4017	1152	.	1152	49	.	49	1201	.	1201	0.30
1992	4630	856	64	920	238	0	238	1094	64	1158	0.25
1993	5296	1047	414	1461	242	30	272	1289	444	1733	0.33
1994	5909	693	86	779	101	11	112	794	97	891	0.15
1995	5422	817	227	1044	208	84	292	1025	311	1336	0.25
1996	.	.	.	.	.	.	.	.	.	.	.
84-89 $\bar{X}$	4649.8	1300.3	.	1300.3	164.7	.	164.7	1465.0	.	1465.0	0.32
95% CL	770.4	375.4	.	375.4	77.7	.	77.7	422.5	.	422.5	0.07
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	4888.3	1323.5	.	1323.5	141.7	.	141.7	1465.2	.	1465.2	0.30
95% CL	581.7	354.9	.	354.9	90.9	.	90.9	422.5	.	422.5	0.07
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	5314.3	853.3	197.8	1051.0	197.3	31.3	228.5	1050.5	229.0	1279.5	0.24
95% CL	838.8	233.4	256.5	467.7	104.9	59.3	128.6	325.0	287.0	562.2	0.12
N	4	4	4	4	4	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.