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Status of Atlantic Salmon (*Salmo salar* L.) Stocks of the Newfoundland Region, 1995

by

M. F. O'Connell, J. B. Dempson, C. C. Mullins, D. G. Reddin,
N. M. Cochrane, and D. Caines
Science Branch
Department of Fisheries and Oceans
P. O. Box 5667
St. John's, Newfoundland A1C 5X1

Abstract

The five-year moratorium on the commercial Atlantic salmon fishery in insular Newfoundland entered its fourth year in 1995. There were further reductions in commercial quotas in Labrador and the opening of the commercial fishery was delayed from June 5 to July 3. The objective of the delayed season was to allow a greater escapement of large salmon into rivers in Labrador. The moratorium placed on the Northern Cod Fishery in 1992, which should have eliminated by-catch of Atlantic salmon in cod fishing gear in Salmon Fishing Areas (SFAs) 1-9, continued in 1995. The moratorium on cod fishing introduced in SFAs 11-14A in August 1993 also continued in 1995. Commercial fishery quotas were not caught in in any of the SFAs of Labrador in 1995. While the total catch (retained plus released fish) of small salmon in the recreational fishery for all of Labrador in 1995 was similar to 1994, the catch of large salmon increased. A similar pattern was noted for retained small and large salmon catches; CPUE in 1995 was the highest in recent years. Catches of small and large salmon in SFA 14B, an area of concern in 1994, improved in 1995. Estimated total population sizes (before any fisheries) of small (1SW) and large (2SW) salmon for Labrador in recent years were low compared to the late 1970s and early 1980s. In spite of continued restrictions on fisheries, compared to 1992-95, estimated spawning escapements of 1SW salmon in Labrador have been as high or higher in the past. Estimated spawning escapements of 2SW salmon however, have increased since the low observed in 1991, with the highest on record being achieved in 1995. The continued increase in spawning escapements of 2SW salmon in the face of declining total population sizes is consistent with the intent of management measures. However, spawning escapements of 2SW salmon in recent years, including 1995, remained below target requirement. Below average spawning escapements in 1990 and 1991 could contribute to lower future returns relative to 1995, should natural survival remain the same. In insular Newfoundland, many rivers, particularly in SFAs 6-10, were closed to angling for 1-2 weeks in July; other closures of similar duration occurred in mid-late August. In SFA 13, seven rivers were closed to angling on July 10 or 17 for the remainder of the season after an in-season review indicated total returns for 1995 would be less than 50% of target requirement. In spite of the closures, effort expenditure overall in 1995 for insular Newfoundland was the highest recorded, slightly above that of 1994; however, overall CPUE was below the mean for 1992-94 and comparable to the 1984-89 and 1986-91 means. Levels of recreational catch and returns to counting facilities, in the absence of commercial fisheries, suggest the overall total population sizes of small salmon for insular Newfoundland in 1992-95 were low relative to pre-salmon 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 1974-95, supports this conclusion. Spawning escapements for these rivers in 1991 were among the lowest on record; also, angling data overall and counts of small salmon at several counting facilities indicate that in general spawning escapements were among the lowest on record in 1991. This suggests that returns to Northern Peninsula East and Eastern (SFAs 3-8) and Northern Peninsula West (SFA 14A) rivers in 1996 could be lower than observed during the moratorium to date and returns to South (SFAs 9-11) and Southwest (SFAs 12-13) rivers could continue at the low levels indicative of the past few years, if natural survival rates remain low.

Résumé

Le moratoire de cinq ans imposé à la pêche commerciale du saumon de l'Atlantique à Terre-Neuve en était à sa quatrième année en 1995. Les quotas de la pêche commerciale du Labrador ont été encore réduits et l'ouverture de cette pêche a été reportée du 5 juin au 3 juillet. Ce report avait pour objectif d'accroître l'échappée de gros saumons des rivières du Labrador. Le moratoire imposé à la pêche de la morue du Nord en 1992, qui devrait avoir fait disparaître les prises accidentelles de saumon de l'Atlantique par les pêcheurs de morue dans les zones de pêche du saumon (ZPS) 1 à 9, a été maintenu en 1995, de même que le moratoire imposé en août 1993 à la pêche de la morue dans les ZPS 11 à 14A. Les quotas de la pêche commerciale n'ont été atteints dans aucune des ZPS du Labrador en 1995. Les captures totales (poissons conservés et remis à l'eau) de petits saumons de la pêche récréative de tout le Labrador ont été semblables à celles de 1994, mais celles de gros saumons ont augmenté. Une allure semblable a été notée pour les captures de gros et de petits saumons conservés; le PUE de 1995 est le plus élevé des dernières années. Les captures de petits et de gros saumons de la ZPS 14B, une zone problème en 1994, ont augmenté en 1995. L'effectif total estimé (avant toute pêche) de petits (UBM) et de gros (DBM) saumons des dernières années au Labrador est faible comparativement à ceux de la fin des années 1970 et du début des années 1980. En dépit du maintien des restrictions à la pêche, comparativement à la période 1992-1995, les échappées estimées de saumons UBM du Labrador ont été aussi ou plus importantes au cours des années précédentes. Celles de saumons DBM ont cependant augmenté, comparativement à la faible valeur de 1991, la plus élevée ayant été notée en 1995. Cette augmentation continue des échappées de géniteurs DBM dans un contexte d'effectifs totaux à la baisse est cohérent avec les objectifs des mesures de gestion. Les échappées de saumons DBM des dernières années, dont 1995, demeurent cependant inférieures aux valeurs cibles. Les échappées inférieures à la moyenne des années 1990 et 1991 pourraient donner lieu à des remontées inférieures à celle de 1995 au cours des prochaines années, si le taux de survie naturelle demeure le même. À Terre-Neuve même, bon nombre de rivières, notamment dans les ZPS 6 à 10, ont été interdites à la pêche à la ligne pendant une ou deux semaines en juillet et des fermetures d'une durée semblable ont été imposées à la fin d'août. Dans la ZPS 13, sept rivières ont été interdites à la pêche à la ligne le 10 ou le 17 juillet pour le reste de la saison après qu'une évaluation ait montré que les remontées totales de 1995 permettraient de satisfaire à moins de 50 % des besoins. En dépit de ces fermetures, l'effort de pêche total déployé à Terre-Neuve en 1995, légèrement supérieur à celui de 1994, a été le plus important jamais noté, mais le PUE général est inférieur au PUE moyen de la période 1992-1994 et se compare à ceux des périodes 1984-1989 et 1986-1991. Les prises récréatives et les remontées aux installations de dénombrement, en l'absence de pêche commerciale, portent à croire que l'effectif total de petits poissons de Terre-Neuve pendant la période 1992-1995 était faible comparativement aux années précédant le moratoire de la pêche du saumon. L'analyse des tendances des effectifs totaux estimés de petits saumons dans les rivières Gander (ZPS 4), Middle Brook (ZPS 5), Biscay Bay (ZPS 9), Humber (ZPS 13) et Western Arm Brook (ZPS 14 A) au cours de la période 1974-1995, appuie cette conclusion. Les échappées de ces rivières en 1991 comptent parmi les plus faibles jamais notées et l'ensemble des données de la pêche à la ligne, et les décomptes de petits saumons réalisés à plusieurs barrières de dénombrement, montrent que, de façon générale, les échappées comptaient parmi les plus faibles notées depuis 1991. Tout cela porte à croire que les remontées des rivières de l'est de la péninsule nord et de l'est de la péninsule est (ZPS 3 à 8) et de celles de l'ouest de la péninsule nord (ZPS 14A) en 1996 pourraient être inférieures à celles notées jusqu'à maintenant pendant le moratoire et que les remontées des rivières du sud (ZPS 9 à 11) et du sud-ouest (ZPS 12 et 13) pourraient demeurer aussi faibles qu'au cours des dernières années, si le taux de survie naturel demeure faible.

Introduction

This paper presents the general status of Atlantic salmon stocks of the Newfoundland Region (Fig. 1) in 1995. 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 1995. In 1983-93, assessments for Salmon Fishing Areas (SFAs) 12-14 were presented in separate documents.

MANAGEMENT MEASURES

In 1992, a five-year moratorium was placed on the commercial fishery in insular Newfoundland, 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 1992-95 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 1995 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

*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.

In 1995, the opening of the commercial fishery in Labrador was delayed from June 5 to July 3; the closure date of October 15 remained. Also in 1995, all remaining commercial fishers were removed from Eagle River estuary, a result of attrition over the years. 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 1974-95 are shown in Table 1. Each fisher was licensed to fish 366 m of gear.

In 1992, in addition to the closure of the commercial Atlantic salmon fishery, a moratorium on the Northern Cod Fishery was implemented in early July which should have resulted in the elimination by-catch in cod fishing gear in SFAs 1-9. The cod moratorium continued in 1995. In August 1993, a moratorium was placed on cod fishing in SFAs 11-14A which remained in effect in 1995.

Recreational fishery

In 1992 and 1993, the number of fish that could be retained in each SFA 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. In insular Newfoundland, the season bag limit for the retention of small salmon in 1994 decreased from eight to six, three to be caught prior to July 31 and three after that date. After the bag limit of three was reached in each time period, hook-and-release fishing only was permitted. These measures remained in effect in 1995. As in previous years, the retention of large salmon was not permitted in insular Newfoundland. In 1995, in Labrador, as was the case in 1994, there was no division of the bag limit before and after July 31. The season bag limit for large salmon was reduced from two to one. In both insular Newfoundland and Labrador, there was a daily bag limit of two fish. 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.

On a river-specific basis, Conne River (SFA 11) was closed to angling in 1995 and there was no First Peoples food fishery. Rocky River and Colinet River in SFA 9 and Flat Bay River in SFA 13 were also closed. Main River, Sop's Arm (SFA 3) and Exploits River (SFA 4) were managed under river-specific quotas; the same applied to five rivers in SFA 13 (Barachois River, Fischell's Brook, Harry's River, Fox Island River, and Serpentine River) and three rivers in SFA 14A (Lomond River, Watson's Brook, and Pincent's Brook). Only hook-and-release fishing was permitted after river quotas were caught. There was a fall hook-and-release fishery in Gander River from September 9 to October 8.

Seventy rivers throughout insular Newfoundland were closed to angling for varying periods in 1995 due to high water temperatures and low water levels (Table 2). In SFA 13, seven rivers were closed (Table 2) on July 10 or 17 for the remainder of the season after an in-season review indicated total returns for 1995 would be less than 50% of target requirement.

For the five-year period immediately preceeding the commercial salmon fishery moratorium, the average number of recreational fishery licenses sold in Newfoundland and labrador was 24493. Maximum license sales were recorded in 1988 (26445). By comparison, sales during the moratorium years were 25718 (1992), 26508 (1993), 22,596 (1994), and approximately 22,200 in 1995.

PUBLIC CONSULTATIONS

In 1995, in addition to the usual consultative and advisory meetings involving organized user groups and representatives of the Provincial Government, the Department of Fisheries and Oceans held several meetings with the public at large throughout Newfoundland and Labrador. The purpose of these meetings was to give the general public the opportunity to input into the stock assessment process. A description of the process and highlights and opinions expressed at each meeting are presented in O'Connell (1996).

Methods

Catch and effort information and counts at counting facilities in 1995 were compared to two pre-salmon moratorium means (1984-89 and and 1986-91) and to the 1992-94 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.* MS 1992a). In 1990 and 1991, the commercial fishery in both insular Newfoundland and Labrador 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 1995a). 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 1995 was similar to 1991-94. 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 1992-95. For SFAs 12-14, catch information for released large salmon has been available since

1985. Recreational fishing effort was presented as rod days, defined as any day or part of a day on which an angler fishes.

In SFAs 12-14, in 1995, in order to ensure that angling camps were contacted by DFO personnel for their catches, camps were supplied with Salmon Angling Logbooks to record 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 clientele 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. Mean counts for the moratorium period 1992-95 were compared to means for the pre-moratorium period 1986-91 using the GLM Procedure of SAS (SAS Institute 1985). Analyses were performed on rank transformed data (Conover 1980; Conover and Iman 1981) using the Rank Procedure of SAS.

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 1995b), Biscay Bay River (O'Connell *et al.* MS 1995c), and Sandhill River (Reddin *et al.* MS 1995, 1996).

IMPACTS OF MANAGEMENT MEASURES, LABRADOR

The effect 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 1995

In 1995, the commercial fishing season was shortened by three weeks from an opening date in the second week of June to the first week of July. The impact of this shortened season on 1995

salmon landings was examined using weekly landings from 1988-94 in SFAs 1 and 2, and 1993-94 in SFA 14B. The percentage of landings that would have occurred in the shorter season was calculated as the quotient of summed landings during the new weeks of the shorter season and landings actually made for that year in the longer 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 in the commercial fishery (0.8-0.9 for large salmon; 0.5-0.7 for small salmon) 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 1994 and 1995, 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 grilse (maturing one-sea-winter (1SW) salmon) and large (two-sea-winter (2SW)) 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 and 1995 values.

RECRUITMENT OVERFISHING, LABRADOR STOCKS

The first 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 $\beta_{j,k}$ 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 in year t can be written as:

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

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 1984-1995. Also note that this treats the large salmon category as if they were all 2SW spawners (either virgin or repeats). 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 target achieved provides a useful measure of recruitment overfishing. In this case, recruitment overfishing would then be deemed to have occurred if the percent of target 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 target spawning requirement for Labrador 2SW salmon is described in O'Connell *et al.* (MS 1996a).

Results and Discussion

THE LABRADOR COMMERCIAL FISHERY

The commercial catch of small salmon (6 t) in SFA 1 in 1995 (Table 3 and Fig. 2a) decreased from 1994 (14%) and the 1984-89 (80%), 1986-91 (75%), and 1992-94 (44%) means. The catch of large salmon in 1995 (9 t) also decreased from 1994 and the means (44, 87, 85, and 66%, respectively) (Table 3 and Fig. 2b). In SFA 2 , the 1995 catch of small salmon (9 t) (Table 4 and Fig. 2a) decreased from 1994 and the means (10, 88, 89, and 53%, respectively) as did the catch (30 t) of large salmon (45, 80, 78, and 54%, respectively) (Table 4 and Fig. 2b). In SFA 14B, the catch of small salmon (1 t) (Table 5 and Fig. 2a) in 1995 decreased from 1994 and the means (50, 93, 93, and 57%, respectively and this also applied to large salmon (1 t) (75, 97, 96, and 91%, respectively) (Table 5 and Fig. 2b) . For all SFAs in Labrador combined (Table 6 and Fig. 2a), the catch of small

salmon (15t) in 1995 decreased from 1994 (17%) and the means (88, 87, and 53%, respectively). The large salmon catch (40 t) in 1995 also declined from 1994 and the means (47, 84, 82, and 62%, respectively) (Table 6 and Fig. 2b).

Total commercial catch (15 t) in SFA 1 in 1995 (Table 3 and Fig. 2c) decreased from 1994 (35%) and the 1984-89 (85%), 1986-91 (82%), and 1992-94 (61%) means. Likewise, for SFA 2 (Table 4 and Fig. 2c), the catch in 1994 (38 t) decreased from 1994 and the means (41, 83,82, and 55%, respectively). In SFA 14B, total catch (2 t) was below 1994 (67%) and the means (95, 95, and 86%) (Table 5 and Fig. 2c). For all of Labrador (Table 6 and Fig. 2c), total catch (56 t) in 1995 decreased from 1994 by 40% and from the means by 85% (1984-89), 84% (1986-91), and 59% (1992-94). For all SFAs separately and combined, total catches in 1995 were the lowest recorded.

The percentage of quota caught and quotas (in parentheses) in 1990-95 were as follows:

YEAR	SFA 1	SFA 2	SFA 14B	SFAS 1, 2, & 14B
1990	65 (80)	64 (200)	38 (60)	59 (260)
1991	13 (80)	38 (200)	227 (15)	41 (295)
1992	83 (80)	67 (200)	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)

In 1995, quotas were not caught in any of the Labrador SFAs. It should be noted that quotas in 1993 (except for SFA 1), 1994, and 1995 were substantially lower than in years prior to 1993.

IMPACTS OF MANAGEMENT MEASURES, LABRADOR

Losses in landings due to reduced season

The results show varying percentages of reductions in landings among SFAs, size classes, and years (Fig. 3). Average small salmon landings in the reduced season (using years 1988-94) would have been 99.4% of the actual landings in SFA 1, 90.4% in SFA 2, and 83.9% in SFA 14B. Thus, small salmon landings in 1995 may have been reduced by 38 kg in SFA 1, 931 kg in SFA 2, and 92 kg in SFA 14B, based on the average reduction in landings from previous years. Average large salmon landings in the reduced season would have been 95.2% of the actual landings in SFA 1, 73.2% in SFA 2, and 50.8% in SFA 14B. Thus, large salmon landings in 1995 may have been reduced by 466 kg in SFA 1, 10857 kg in SFA 2, and 1154 kg in SFA 14B, based on the average reduction in

landings from previous years. Average total salmon landings in the reduced season would have been 96.6% of the actual landings in SFA 1, 78.2% in SFA 2, and 56.5% in SFA 14B. Thus, total salmon landings in 1995 may have been reduced by 504 kg in SFA 1, 11788 kg in SFA 2, and 1246 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 less than large salmon and the percentage landings in the shorter season were higher in SFA 1 than in SFAs 2 and 14B. Thus, the shorter 1995 commercial salmon fishing season in Labrador may have resulted in a reduction in landings of 14 t, an overall reduction of 20%.

Several authors have noted the relationship between sea temperature and salmon migration timing (Reddin and Shearer 1987; Reddin and Friedland 1993; Naraynan et al. 1995). Thus, the presence or absence of ice on the Labrador coast is an important influence on sea temperature and as 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. Landings in SFA 2 in 1994, a relatively ice free year, were 45.7% of those during the longer season while in 1991, which was a heavy ice year the shortened season had the same landings as the longer season. In 1995, ice conditions were similar to those of 1993 and 1994, both of which were years of little ice. Thus, in 1995 the percentage of landings were probably similar to those of 1993 and 1994 rather than average conditions.

The results from applying the weekly landings in 1993-94 show a much higher reduction in landings from the shorter season in 1995. Average small salmon landings in the reduced season would have been 99.2% of the actual landings in SFA 1, 80.9% in SFA 2, and 83.9% in SFA 14B. Thus, small salmon landings in 1995 may have been reduced by 50 kg in SFA 1, 2069 kg in SFA 2, and 92 kg in SFA 14B, based on the average reduction in landings from 1993-94. Average large salmon landings in the reduced season would have been 91.5% of the actual landings in SFA 1, 52.0% in SFA 2, and 50.8% in SFA 14B. Thus, large salmon landings in 1995 may have been reduced by 859 kg in SFA 1, 27374 kg in SFA 2, and 1154 kg in SFA 14B, based on the average reduction in landings from previous years. Average total salmon landings in the reduced season would have been 93.8% of the actual landings in SFA 1, 59.0% in SFA 2, and 56.5% in SFA 14B. Thus, total salmon landings in 1995 may have been reduced by 909 kg in SFA 1, 29443 kg in SFA 2, and 1246 kg in SFA 14B, based on the sum of average reductions in small and large salmon landings of 1993-94. In general, small salmon landings were reduced less than large salmon and the percentage of landings in the shorter season was higher in SFA 1 than in SFAs 2 and 14B. Thus, the shorter 1995 commercial salmon fishing season in Labrador may have resulted in a reduction in landings of small salmon by 2.2 t (1026 fish) and of large salmon by 29.4 t (7,485 fish), for a total of 31.6 t (8,511 fish), an overall reduction in landings of 36%.

Losses in landings due to effort reductions

For all of Labrador, licensed effort in 1994 and 1995 was 63% of the 1991 level, which should have reduced commercial exploitation on Labrador stocks. The adjusted estimates for

exploitation rates in the commercial fishery in 1995 were 15 to 25% for small salmon and 30 to 40% for large salmon in SFAs 1, 2, and 14B. Thus, reductions in commercial licensed effort may have resulted in a doubling of the returns of large salmon to rivers in SFAs 1, 2, and 14B 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 and the 1995 shortened season may have resulted in a tripling of returns to freshwater.

TOTAL POPULATION, LABRADOR STOCKS

Estimated total population size (recruits, prior to any fisheries) of Labrador grilse (maturing 1SW salmon) in 1995 increased slightly over 1994 but remained at the low levels indicative of the period 1990-95 (Fig. 4a). Previous lows achieved in 1973, 1978, and 1984 were quickly followed by increasing populations. Estimated total population size (recruits) of Labrador 2SW salmon in 1995 increased over 1994 and was the highest since 1988 (Fig. 4b). Some of the lowest population sizes on record occurred during 1990-94.

RECRUITMENT OVERFISHING, LABRADOR STOCKS

Estimated numbers of 1SW and 2SW returns (to the river, after the commercial fishery) and spawners (after the recreational fishery) for Labrador for the period 1971-95 are shown in Fig. 4a ,b. For 1SW salmon, substantially higher numbers spawners were encountered in years prior to 1995 and recent years. For 2SW salmon on the other hand, numbers of spawners since 1993 were comparable to past levels and the highest number on record occurred in 1995. Estimated numbers of 2SW salmon spawning in 1992-95 were above the replacement line, but remained below the target (threshold) spawning requirement (Fig. 4c). The closest year to target was 1995. Prior to 1992, spawners were on or below the replacement line for all years except 1980.

SMOLT-TO-ADULT SURVIVAL

Smolt-to-adult survival of 8.5% for 1995 (adult year) for Northeast Brook (Trepassey) (SFA 9) was the highest recorded (Table 7). The same was true for Rocky River (SFA 9) but to a lesser extent. Conne River (SFA 10) showed a marked increase in survival (5.8%) in 1995, the highest level achieved since 1990. Survival for Western Arm Brook (SFA 14A) in 1995 was the highest since 1983. For these rivers smolt-to-adult survival was based on unadjusted counts, i.e., repeat spawners were not removed.

Smolt-to-adult survival for Campbellton River (SFA 4) in 1995 was 7.3% (Table 7). This value overestimates survival from smolts to 1SW salmon (grilse) because some of these fish are repeat spawners. Survival with repeat spawners removed is shown in Appendix 1. The survival of kelts which were tagged as they descended the counting fence was 14.6%, and when repeat spawners

were removed using this value, the adjusted survival rate was 6.2%. Thus sea survival for Campbellton River in 1995 declined by 11% from 1994.

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, 1974-94, are presented in Appendix 2a-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 2d-g. Data for each individual SFA are shown in Appendix 2h-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 1995 and the 1984-89, 1986-91 and 1992-94 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. For 1992, there was no estimate of released fish and associated effort during the period of retention of catch which could impact on comparisons. In Table 9, catch (retained plus released fish), effort, and CPUE for 1994 are expressed as percentage change in relation to 1994, and the means. For insular Newfoundland, Northern Peninsula East and Eastern and 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 1995 and the 1984-89, 1986-91, and 1992-94 means for each SFA and combinations of SFAs are shown in Table 10. Percentage change in retained catch in 1995 in relation to 1994 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)

The total catch of small salmon (retained plus released fish) in 1995 (Table 8 and Fig. 5) was the same as for 1994 but increased over the means (Table 9). The catch of large salmon increased over 1994 and the means. Effort decreased slightly from 1994 but increased over the means. CPUE increased over 1994 and the means.

The number of small salmon retained in 1995 (Table 10 and Fig. 5) was similar to 1994 and the 1992-94 mean but was below the 1984-89 and 1986-91 means (Table 11 and Fig. 6). The number of large salmon retained was below 1994 and the 1984-89 and 1986-91 means but was similar to the mean for 1992-94. It should be pointed out that in 1993 the quota for retained fish was not caught in any of the SFAs of Labrador.

SFA 1: The total catch of small salmon in 1995 increased over 1994 and the means while that of large salmon decreased from 1995, increased over the 1984-89 (slightly) and 1986-91means, and was similar to the 1992-94 mean. Effort in 1995 decreased from 1994 and the 1984-89 and 1986-91 means but increased over the 1992-94 mean. CPUE increased over 1994 and the means.

The number of small salmon retained in 1995 increased over 1994 and the 1992-94 mean but decreased from the 1984-89 and 1986-91 means. The retained catch of large salmon decreased from 1994 and the means.

SFA 2: The total catch of small salmon in 1995 decreased from 1994 but increased over the means; the catch of large salmon increased over 1994 (slightly) and the means. Effort increased over 1994(slightly) and the means. CPUE decreased from 1994 but increased in relation to the means.

The number of small salmon retained in 1995 decreased from 1994 and the means. The retained catch of large salmon declined slightly from 1994 but increased over the means.

A counting fence was operated in Sandhill River in 1994 and 1995, the only two years since 1973. The count of small salmon in 1995 (Table 12) was slightly higher than that for 1994 but lower than the mean for 1970-73. The count of large salmon in 1995 (Table 13) was substantially lower than in 1994 but higher than the mean for 1970-73. The proportion of large salmon in 1995 decreased from 1994 but remained higher than the mean for 1970-73.

SFA 14B: The total catch of small salmon in 1995 increased over 1994, decreased from the 1984-89 and 1986-91 means, and was similar to the 1992-94 mean. The catch of large salmon increased over 1994 and the means. Effort in 1995 declined from 1994 and increased over the 1984-89, 1986-91, and 1992-94 (slightly) means. CPUE increased over 1994, decreased from the 1984-89 and 1986-91 means, and increased slightly over the 1992-94 mean.

The retained catch of small salmon in 1995 increased over 1994 but remained below the means. the catch of large salmon increased over 1994 and the means (less pronounced in the case of 1992-94).

Counting fences were operated in Forteau River and L'Anse-au-Loup River in 1994 and 1995. Counts of small and large salmon are provided in Tables 11 and 12, respectively and proportion of large salmon is shown in Table 13.

Insular Newfoundland (SFAs 3-14A combined)

The total catch of small salmon in 1995 (Table 8 and Fig. 7) was similar to 1994 and increased over the means (Table 9). A similar pattern was noted for effort. CPUE in 1995 changed marginally from 1994 and the means.

The number of small salmon retained in 1995 (Table 10 and Fig. 7) was similar to 1994 and the 1986-91 mean, decreased from the 1984-89 mean, and increased over the 1992-94 mean (Table 11 and Fig. 8).

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

The total catch of small salmon in 1995 (Table 8 and Fig. 9) decreased from 1994 and the 1994-92 mean (slightly) but increased over the 1984-89 and 1986-91 means (Table 9). Effort in 1995 decreased from 1994 but increased over the means. CPUE decreased from 1994, and the 1984-89 and 1992-94 means, and was similar to the 1986-91 mean.

The 1995 retained catch of small salmon (Table 10 and Fig. 9) decreased from 1994 and the 1984-89 mean but increased over the 1986-91 and 1992-94 means (Table 11 and Fig. 10).

SFA 3: Total catch of small salmon in 1995 decreased from 1994 and the 1992-94 mean and increased over the 1984-89 and 1986-91 means. Effort decreased from 1994 but increased over the 1984-89 and 1986-91 means, and was similar to the 1992-94 mean. CPUE in 1995 decreased from 1994 and the means.

The number of small salmon retained in 1995 decreased from 1994 and the 1992-94 mean but increased over the 1984-89 and 1986-91 means. The quota for retained small salmon for Main River (Sop's Arm) in 1995 was 500, of which 350 were caught.

SFA 4: The total catch of small salmon and effort in 1995 decreased from 1994 but increased over the means. CPUE increased over 1994 and the 1986-91 mean and decreased from the 1984-89 (slightly) and 1992-94 means.

The number of small salmon retained in 1995 decreased from 1994 and the 1984-89 mean but increased over the 1986-91 and 1992-94 means. The quota of 1330 small salmon for Exploits River was caught.

Counts of small (Table 12 and Fig. 11) and large salmon (Table 13 and Fig. 12) 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 1993-95. The count of small salmon for Campbellton River in 1995 increased over 1994 and decreased from 1993, while the count of large salmon was the highest of the three years. At Bishop's Falls, the count of small salmon in 1995 decreased slightly from 1994 and the 1992-94 mean but increased over the 1984-89 and 1986-91 means. The count of large salmon in 1995 was similar to 1994 and increased over the means. At Great Rattling Brook counts of small and large salmon for 1993-95 were partial counts which resulted from fish bypassing the fishway during periods of high water. The count of small salmon at the Gander River counting fence in 1995 increased over 1994 and the means with the increase over the 1992-94 mean being slight.

The count of large salmon was slightly less than in 1994, increased over the 1986-91 mean, and decreased from the 1992-94 mean. The counts of small and large salmon at Salmon Brook in 1995 increased over 1994 and the means. The proportion of large salmon for Bishop's Falls and Great Rattling Brook in 1995 increased over 1994 and the means (Table 14 and Fig. 13). The proportion for Salmon Brook in 1995 decreased from 1994 but increased over the means. At the Gander River counting fence, the proportion of large salmon in 1995 decreased from 1994 and the means.

SFA 5: The total catch of small salmon in 1995 decreased from 1994 and the 1992-94 (slightly) mean but increased over the 1984-89 and 1986-91 means. Effort decreased from 1994 and increased over the means. CPUE in 1995 decreased from 1994 (slightly) and the means.

The number of small salmon retained in 1995 decreased from 1994 and the 1984-89 mean, was similar to the 1986-91 mean, and increased over the 1992-94 mean.

Counts of grilse (Table 12 and Fig. 14) and large salmon (Table 13 and Fig. 15) are available from fishways in Middle Brook and Terra Nova River (upper and lower). The count of small salmon at Middle Brook in 1995 decreased from 1994 and the 1992-94 mean but increased over the 1984-89 and 1986-91 means. The count of large salmon in 1995 increased over 1994 and the means. At the lower Terra Nova River fishway, counts of small and large salmon increased over 1994 and the means.. 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 1992-94 means. At the upper Terra Nova River fishway, counts of small and large salmon in 1995 increased over 1994 and the means. The proportions of large salmon for Middle Brook, lower Terra Nova River, and upper Terra Nova River in 1995 increased over 1994 and the means (Table 14 and Fig. 16).

SFA 6: The total catch of small salmon in 1995 increased over 1994 and the means. Effort in 1995 was similar to 1994 and the 1992-94 mean but decreased from the 1984-89 and 1986-91 means. CPUE decreased from 1994 (slightly) and the means.

The number of small salmon retained in 1995 increased over 1994 and the 1992-94 mean, decreased from the 1984-89 mean, and was similar to the 1986-91 mean.

SFA 7: Total catch of small salmon, effort, and CPUE in 1995 increased over 1994 and the means.

The number of small salmon retained increased over 1994 and the means.

SFA 8: The total catch of small salmon and effort in 1995 increased over 1994 and the 1992-94 mean but decreased from the 1984-89 and 1986-91 means. CPUE in 1995 decreased from 1994

and the 1984-89 mean, was similar to the 1986-91 mean, and increased over the 1992-94 mean.

The number of small salmon retained in 1995 increased over 1994 and the 1992-94 mean and decreased from the 1984-89 and 1986-91 means.

South (SFAs 9-11)

The total catch of small salmon in 1995 (Table 8 and Fig. 17) increased over 1994, and the 1986-91 and 1992-94 means but decreased from the 1984-89 mean (Table 9). Effort in 1995 increased over 1994 and the means. CPUE increased over 1994 but decreased from the means (slightly in the case of 1992-94).

The retained catch of small salmon in 1995 (Table 10 and Fig. 17) increased over 1994 and the 1992-94 mean, decreased from the 1984-89 mean, and was similar to the 1986-91 mean (Table 11 and Fig. 10).

SFA 9: The total catch of small salmon and effort in 1995 increased over 1994 and the means. CPUE in 1995 increased over 1994 and the 1992-94 mean and decreased from the 1984-89 and 1986-91 means.

The number of small salmon retained in 1995 increased over 1994 and the 1986-91 and 1992-94 means but decreased from the 1984-89 mean. In 1993, the retention period for small salmon in this SFA lasted the entire season (i.e., the quota was not caught).

Counts of small salmon (Table 12 and Fig. 18) and large salmon (Table 13 and Fig. 19) were provided by counting fences (Biscay Bay River and Northeast Brook, Trepassey) and a fishway (Rocky River). The counts of small and large salmon for Biscay Bay River in 1995 decreased from 1994 and the means. The number of small salmon entering Northeast Brook, Trepassey in 1995 decreased from 1994 and the 1984-89 and 1986-91 means and was slightly higher than the mean for 1992-94; the count of large salmon decreased from 1994 and the means. The count of small salmon for Rocky River in 1995 increased over 1994 and the means; the count of large salmon increased over 1994 and the 1984-89 and 1986-91 means but decreased from the 1992-94 mean. The proportion of large salmon for Biscay Bay River in 1995 (Table 14 and Fig. 20) was similar to 1994 and the means while that of Northeast Brook, Trepassey was similar to 1994 but below the means. The proportion for Rocky River decreased from 1994 and the 1992-94 mean and increased over the 1984-89 and 1986-91 means.

SFA 10: The total catch of small salmon and effort in 1995 increased over 1994 and the means. CPUE increased over 1994 but declined from the means.

The number of small salmon retained in 1995 increased over 1994 and the means.

The count of small salmon (Table 12 and Fig. 21) at the fishway in Northeast River, Placentia in 1995 was similar to 1994, increased over the 1984-89 and 1986-91 means, and decreased from the 1992-94 mean. The count of large salmon (Table 13 and Fig. 22) increased over 1994 (slightly) and the means. The proportion of large salmon (Table 14 and Fig. 23) increased over 1994 and the means.

SFA 11: Total catch of small salmon in 1995 increased over 1994 and the 1986-91 and 1992-94 means but decreased from the 1984-89 mean. Effort increased over 1994 and the 1986-91 and 1992-94 means and was similar to the 1984-89 mean. CPUE increased slightly over 1994 but decreased from the means.

The number of small salmon retained in 1995 increased over 1994 and the 1992-94 mean but was lower than the 1984-89 and 1986-91 means.

The count of small salmon (Table 12 and Fig. 24) at the Conne River counting fence in 1995 increased over 1994 and the 1992-94 mean but remained below the 1984-89 and 1986-91 means. The count of large salmon (Table 13 and Fig. 25) increased sligltly over 1994 but was below the means. The proportion of large salmon for Conne River in 1995 decreased from 1994 and the means (Table 14 and Fig. 26).

Southwest (SFAs 12-13)

The total catch of small salmon in 1995 (Table 8 and Fig. 27) decreased from 1993 and the means as did effort (Table 9). The number of large salmon released in 1995 was similar to 1994 but increased over the means (to a much lesser extent for 1992-94). CPUE increased slightly over 1994 with the reverse true with respect to the means.

The number of small salmon retained in 1994 (Table 10 and Fig. 27) decreased from 1994 and the means (Table 11 and Fig. 10).

SFA 12: The total catch of small salmon and effort in 1995 decreased 1994 and the means. The number of large salmon released decreased from 1994 and the 1992-94 mean and increased over the 1984-89 and 1986-91 means. CPUE decreased from 1994 and the means.

The number of small salmon retained in 1995 decreased from 1994 and the means.

SFA 13: The total catch of small salmon for 1995 was similar to 1994 but decreased from the means. The number of large salmon released was similar to 1994 and increased over the means (to a lesser extent for 1992-94). Effort in 1995 decreased from 1994 and the means. CPUE in 1995 increased over 1994 and was similar to the means.

The retained catch of small salmon decreased from 1994 and the means.

The only river quota for retained fish reached in 1995 was for Fox Island River (on July 31). This is the only river in SFA13 that has been consistently effective in controlling catch. Flat Bay River was closed to angling in 1995. Individual river quotas and catches for SFA 13, 1989-95, were as follows:

River	Quota	1995	1994	1993	1992	1991	1990	1989
Barachois R.	175	53	154	230*	263*	68	138	79
Fischell's Bk.	200	80	216*	157	133	157	116	17
Flat Bay R.	250	**	128	173	211	251*	277*	130
Harry's R.	350	149	153	319	311	370*	706*	324
Fox Island R.	50	50*	55*	52*	52*	56*	91*	38
Serpentine R.	150	133	116	150*	176*	132	131	107

*Quota reached.
**River closed to angling.

A counting fence was operated in Highlands River in 1993-95; prior to this, counts were available for 1980-82. The count of small salmon (Table 12) in 1995 was the highest recorded for both time periods. The count of large salmon decreased from 1994 but remained higher than any previous counts. The proportion of large salmon for 1995 was 0.41 which compares to 0.505 for 1994, 0.363 for 1993, and 0.312 for the period 1980-82.

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 returns of small (highest on record) and large salmon for Humber River in 1995, determined through a mark-recapture study (Mullins and Reddin MS 1996), increased over 1994 and the 1992-94 mean and the pre-moratorium years 1990 and 1991. The count of small salmon for Pinchgut Brook in 1995 was the highest recorded while that of large salmon decreased from 1994 and the 1992-94 mean. The proportion of large salmon for Humber River and Pinchgut Brook in 1995 decreased from 1994 and the 1992-94 mean (Fig. 30).

Northern Peninsula West (SFA 14A)

The total catch of small and large salmon, effort, and CPUE in 1995 (Table 8 and Fig. 31) all increased over 1994 and the means(Table 9).

The number of small salmon retained in 1995 (Table 10 and Fig. 31) increased over 1994 and the means (Table 11 and Fig.10).

The quota for retained fish was met only in Watson's Brook in 1995. Quotas and catches for each river were as folows:

River	Quota	1995	1994	1993	1992	1991	1990	1989
Lomond R.	375	343	325	281	357*	328	386*	270
Watson's Bk.	50	53*	30	20	49*	6	36	6
Pincent's Bk.	10	9	2	2	0	3	10*	6

*Quota reached.

Adult salmon counting facilities are located in Lomond River, Torrent River, and Western Arm Brook. The counts of small (Table 12 and Fig. 32) and large (Table 13 and Fig. 33) salmon at the Lomond River and Torrent River fishways in 1995 increased over 1994 and the means. These counts were the highest on record for both rivers (except for large salmon in 1973 at Lomond River, not shown in Table). At the counting fence in Western Arm Brook, the count of small salmon in 1995 decreased from 1994 but increased over the means (slightly in the case of 1992-94). The count of large salmon in 1995 increased slightly over 1994 but substantially over the means. The proportion of large salmon for Torrent River and Western Arm Brook in 1995 increased over 1994 and the means; for Lomond River it increased over 1994 and the 1984-89 and 1986-91 means and was similar to the 1992-94 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 1986-91 and the moratorium period 1992-95 are shown in Table 15. For rivers in SFAs 4, 5, and 14A (Northern Peninsula 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 and large 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 significant for small salmon but not large salmon. Counts of small salmon increased (not significantly) over pre-moratorium years for Rocky River and Northeast River, Placentia but increases for large salmon were significant for both rivers. For SFA 13, counts of small and large salmon in Humber River did not increase significantly during the moratorium but this might due in part to the small pre-moratorium sample size (two years).

For the Northern Peninsula 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; decreases (not significant) occurred for Biscay Bay River, Northeast Brook, Trepassey, and Conne River. An increase was observed for Humber River (not significant).

EFFECTS OF BAG LIMIT SPLIT ON DISTRIBUTION OF CATCH AND EFFORT

During consultations with the general public in 1994 and 1995, an opinion was expressed that the split in the season bag limit of three fish prior to and after July 31, was in effect, a season limit of three fish. Anglers contended that historically considerably less effort was expended after July 31 than prior to that date. Table 16 shows this to be the case. In SFAs 3-5, the proportion of effort after July 31 in 1995 decreased from that observed in 1994 (see O'Connell et al. (MS 1995a) for 1994 data). For SFAs 6-12, there was also a decline from 1994 (except for SFA 9, where an increase occurred), but the amount of effort expended after July 31 remained substantial compared to the means; for SFA 13 there was a decline relative to 1994 while SFA 14A remained similar. Increases in effort after July 31 resulted in substantial increases in the proportion of small salmon catch after July 31 in SFAs 6, 8, 9, 10, and 11. The increased proportons could reflect river closures in July due to low water levels and high water temperatures. The low proportion of effort and catch for SFA 13 could be due in part to the river closures in St. George's Bay.

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, an attempt was made in 1995 to quantify the incidence of net-marked fish in Gander (O'Connell *et al.* MS 1996b), Campbellton (O'Connell *et al.* MS 1996c), and Conne (Dempson and Furey MS 1996) rivers. Of the fish examined at counting fences in these rivers, the incidence of net scarring observed was 8.9 (June 17-July 13), 5.0 (entire season), and 7.1% (June 4-July 21), respectively. Net scarring was also noted in Lomond River.

Labrador

The commercial fishery quota for all of Labrador was caught in 1994 for the first time since quotas were introduced in 1990; however, this quota was considerably diminished from previous years. The quota was exceeded slightly in SFA 2 but not attained in SFAs 1 and 14B. In 1995, the quota was reduced further and the commercial fishing season was delayed by approximately one

month. The delayed opening was designed to allow a greater escapement of large salmon to freshwater. The quota for 1995 was not caught in either of the SFAs. Since the overall commercial quota was not caught in years prior to 1994, data for these years (1990-93) can be used as indices of abundance. Decreases in licensed effort could have resulted in lower catches in all years. In 1992-95, it is possible that fish once taken in the commercial fishery in SFA 3 and to a lesser extent in SFAs 4-7, contributed to catches in Labrador. In the past Labrador-origin Atlantic salmon have been intercepted in these areas. While the total catch (retained plus released fish) of small salmon for all of Labrador in 1995 was similar to 1994, the catch of large salmon increased. A similar pattern was noted for retained small and large salmon catches. Also, CPUE in 1995 was the highest in recent years. Catches of small and large salmon in SFA 14B, an area of concern in 1994, improved in 1995. Catches of large salmon in this area have improved since 1992 but have fluctuated widely. Effort continues to increase compared to the 1984-89 and 1986-91 means while CPUE has declined. It should be pointed out that low catches in 1991 could have been due in part to a delay in the entry of fish into rivers as a result of severe sea-ice conditions throughout much of the summer.

Estimated total population sizes of small (1SW) and large (2SW) salmon have declined substantially in Labrador as a whole in recent years (Table 4a and 4b); this is corroborated by an analysis of trends for small and large salmon for Sandhill River (Reddin *et al.* MS 1996) (Table 17.). In spite the reductions in the commercial fisheries of Newfoundland and Labrador since 1992, compared to 1992-95, estimated spawning escapements of 1SW salmon for Labrador as a whole, as indicated by commercial and recreational fishery data and estimates of spawning escapement, have been as high or higher in the past. Estimated spawning escapements of 2SW salmon however, have increased since the low observed in 1991, with the highest on record being achieved in 1995. The continued increase in spawning escapements of 2SW salmon in recent years in the face of declining total population sizes, is consistent with the intent of the management measures employed.

Even though there appears to have been some inprovement in returns in the past few years compared to 1991, present estimated population sizes of 1SW and 2SW salmon are low compared to the late 1970s and early 1980s, years when there was a substantial commercial fishery. This is a matter of serious concern. Recreational catches and catch rates for 1990 and 1991 suggest below average spawning escapements (see also Table 4a-c), which could contribute to lower future returns relative to 1995, should natural survival remain the same. The marked decline in recreational catches of small and large salmon in SFA 14B in 1995 and the fact that the commercial quota for this area was not caught, is of particular concern. Consequently, exploitation of Labrador stocks and in particular the large salmon component, which contributes substantially to egg deposition, should be as low as possible until stocks improve.

<u>Insular Newfoundland</u>

As a result of the closure of many rivers throughout insular Newfoundland due to low water levels and high water temperatures and for conservation purposes, comparison of angling data for 1995 with past years for SFAs 3 and 4 and insular Newfoundland as a whole is not appropriate. A similar situation occurred in 1994 with respect to high water temperatures and low water levels. In

spite of the closures, effort expenditure overall in 1995 was the highest recorded, slightly above that of 1994; however, overall CPUE was below the mean for 1992-94 and comparable to the 1984-89 and 1986-91 means. For the Northern Peninsula West (SFA 14A) subdivision, catch and effort were the highest recorded and CPUE the highest since 1979.

For the Northern Peninsula East and Eastern (SFAs 3-8) subdivision, with the exception of Terra Nova River, counts of small salmon in 1992-95 were significantly higher than the 1986-91 mean at all counting facilities (including Gander River as evidenced by Salmon Brook); however, counts similar to or greater than those of 1992-95 have occurred in certain pre-salmon moratorium years. In Northern Peninsula West, counts of small salmon during the moratorium years overall have been higher than any during pre-moratorium years for Lomond and Torrent rivers and the count in 1995 was the highest on record for these 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 1992-95 were significantly higher than in 1986-91, there were pre-moratorium years when returns were higher. There were mixed indications of sea survival for northern Newfoundland in 1995; survival for Western Arm Brook improved while that of Campbellton River declined.

Returns of small salmon to counting facilities for the South (SFAs 9-11) subdivision in 1992-95 were low relative to pre-salmon moratorium years. Smolt-to-adult survival back to the river for Northeast Brook, Trepassey (SFA 9) and Conne River in 1995 improved substantially over recent years while Rocky River improved marginally. Overall, this suggests there was an improvement in natural sea survival for small salmon in 1995 for these rivers and possibly other south coast rivers. For Northeast Brook and Conne River, there were comparable levels of sea survival when there was a commercial fishery. Since 1987, smolt production for Conne River has been relatively stable. Conne River, in contrast to the other rivers under consideration, is characterized by early runs of grilse (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.

Catches of small salmon for Southwest (SFAs 12-13) during moratorium years were well below those recorded for most pre-moratorium years. Low returns to rivers in SFA 13 (St. George's Bay) resulted in closures to angling after July 10. On the other hand, the return of small salmon to Humber River in 1995 was the highest since assessments began in 1990. 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 retruns 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.

Levels of recreational catch and returns to counting facilities, in the absence of commercial fisheries, suggest the overall total population sizes of small salmon for insular Newfoundland in 1992-95 were low relative to pre-salmon moratorium years. An analysis of trends in estimated total population sizes of small salmon for Gander River (O'Connell *et al.* MS 1996b), Middle Brook and Biscay Bay River, and Western Arm Brook (O'Connell *et al.* MS 1995c), and Humber River (Mullins and Reddin MS 1996) for the period 1974-95, supports this conclusion. Spawning escapements for these rivers in 1991 were among the lowest on record; also, angling data overall and counts of small salmon at several counting facilities indicate that in general spawning escapements were among the lowest on record in 1991. This suggests that returns to Northern Peninsula (East and West) and Eastern rivers in 1996 could be lower than observed during the moratorium to date and returns to South and Southwest rivers could continue at the low levels indicative of the past few years, if natural survival rates remain low. It should be noted that, although returns to some rivers have increased since the commercial fishery moratorium, no new adults have yet been produced. Eggs laid in 1992 will not return as adults until at least 1997 and even later in more northern areas. It should be kept in mind that a single season of extreme low water levels could negatively influence survival of juvenile fish. For example, the low water levels in western Newfoundland in 1989 may have had a negative impact on adult salmon returns in 1995 similar to low water conditions in 1987 in other parts of the island.

An objective of the split in the recreational fishery bag limit (three fish before and after July 31) was to constrain overall retained catch to a level similar to that achieved by quotas in 1992 and 1993. 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 1994 and 1995 catches, however, could have been higher had there not been river closures due to low water levels and high water temperatures, and in 1995, quota restrictions implemented for Main River (Sop's Arm) and Exploits River. It appears that the 1994 and 1995 management measures did not achieve its objective of limiting exploitation to 1992 and 1993 levels and spawning escapements decreased accordingly.

Returns of large salmon showed an overall improvement in 1992-95 compared to the 1986-91 mean. For several Northern Peninsula and east coast counting facilities (SFAs 3-5 and 14A), the numbers of large salmon returning in 1995 were the highest on record. Prior to 1995, for several rivers there were moratorium years when numbers of large salmon returning were similar 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, although the return in 1995 was the second highest of the moratorium period. The return of large salmon for Northeast River, Placentia in 1995 was the highest on record but prior to 1995 returns during the moratorium remained comparable to some pre-moratorium years. Returns for the remaining south coast rivers did not improve during the moratorium and in fact decreased overall. 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. For all Northern Peninsula and eastern counting facilities proportions of large salmon during the moratorium were higher than in

1986-91 and significantly so in most cases. Along the south coast, the proportion of large salmon increased only at Rocky River and Northeast River Placentia.

In 1995, detailed stock assessments were carried out for twenty-three rivers (tributaries) with counting facilities, spread throughout the Newfoundland Region. Target spawning requirement was met in less than half of these rivers or tributaries (Table 18).

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Table 1. The number of licensed commercial Atlantic salmon fishers for SFAs 1, 2 , 14B and Labrador total, 1974-1995.

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	157	13	213
1995	43	157	13	213

Table 2. Opening and closure dates of the Atlantic salmon recreational fishery for each SFA, and variations by river, 1995.

SFA 1 June 24 - Sept 17

SFA 2 June 24 - Sept 17

SFA 3 June 24 - Sept 4

Main River (Sops Arm) June 24 - July 7 catch-and-release only
July 8 - September 4 a quota of 500 fish.
Northwest branch catch-and-release all season.

River	Close dates	Reason for closure
West River	August 18-23	Low water levels
Salmon river	August 18-23	"
Easter Brook	August 18-23	"
Northeast Brook	August 18-23	"
Beaver Brook	August 18-23	"
Northwest Brook	August 18-23	"
Coney Arm River	August 14-31	"
Wild Cove Brook	August 14-27	"
Western Brook	August 14-27	"
Middle Arm Brook	August 14-27	"
Southern Arm Brook	August 14-27	"
Baie Verte River	August 14-27	"
Woodstock Brook	August 14-27	"

SFA 4 June 24 - Sept 4

Indian River June 24 - August 27

Exploits River June 24 - July 7 catch-and-release only.
Below Grand Falls (July 8 - 31 a quota of 700 fish: Aug 1 - 27 a quota of 300 fish.)
Above Grand Falls catch-and-release fishing only all season.

Burlington River	August 14-27	Low water levels
Indian River	August 14-23	"
West River	August 14-23	"
South Brook	August 14-23	"
Tommy's Arm River	August 9 -13	catch-and-release
	August 14-23	Low water levels
	Aug 24-Sept 4	catch-and-release
Campbellton River	August 21-23	Low water levels
Gander River (all tribs except NW andSW)	August 21-23	"
(Main river up to Gander Lake)	Sept 9 - Oct 8	catch-and-release

SFA 5 June 24 - Sept 4

Terra Nova River June 24 - August 27

SFA 6 June 24 - Sept 4

Bellevue River	July 13 - 19	Low water levels

SFA 7 June 24 - Sept 4

Salmon Cove River	July 13 - 19	Low water levels
North River	July 13 - 19	"
South River	July 13 - 19	"

SFA 8 June 24 - Sept 4

Renews River	July 10 - 19	Low water levels

SFA 9 June 24 - Sept 4

Biscay Bay River	July 10 - 19	Low water levels
Northwest Brook (Trepassey)	July 10 - 19	"
Peters River	July 10 - 19	"
Salmonier River	July 10 - 19	"
North Harbour River	July 10 - 19	"
Little Salmonier River	July 10 - 19	"
Big Barachois Brook	July 10 - 19	"
Branch River	July 10 - 19	"

Table 2. Cont'd.

SFA 10 June 24 - Sept 4		
Southeast River, Placentia June 24 - Aug 27		
Northeast River, Placentia June 28 - Aug 27		
Tides Brook June 24 - Aug 27		
Great Barasway Brook	July 13-19, Aug 11-25	Low water levels
Southeast River (Placentia)	July 13-19, Aug 11-25	"
Northeast River (Placentia)	July 13-19, Aug 11-25	"
Come By Chance River	July 13-19, Aug 11-25	"
North Harbour River (PB)	July 13-19, Aug 11-25	"
Watsons Brook	July 13-19, Aug 11-25	"
Black River	July 13-19	"
Pipers Hole River	July 13-19	"
Cape Roger River	July 7-19, Aug 16-25	"
Nonsuch Brook	July 7-19, Aug 16-25	"
Baie De Leau River	July 7-19, Aug 16-20	"
Red Harbour River	July 7-19, Aug 16-20	"
Northwest Brook (Mortier)	July 7-19, Aug 16-25	"
Tides Brook	July 7-19, Aug 16-25	"
Big Salmonier River (Burin)	July 7-19, Aug 16-25	"
Little St. Lawrence River	July 7-19, Aug 16-25	"
Lawn River	July 7-19, Aug 16-25	"
Taylors Bay Brook	July 7-19, Aug 16-25	"
Salmonier River (Lamaline)	July 7-19, Aug 16-25	"
Piercey's Brook	July 7-19, Aug 16-25	"
SFA 11 June 17 - Sept 4		
Garnish River June 24 - Aug 27		
Grand Bank Brook	July 7-19, Aug 16-25	Low water levels
Garnish Rvier	July 7-19, Aug 16-25	"
Simmons	August 16 - 25	"
Southwest Brook	August 16 - 25	"
Old Bay Brook	August 16 - 25	"
Taylors Bay Brook	August 16 - 25	"
Grandy Brook	August 4 - 14	"
SFA 12 June 3 - Sept 4		
Lapoile River	Aug 14 - 24	Low water levels
Farmers Arm River	Aug 14 - Sept 4	"
Garia River	Aug 14 - 24	"
Northwest Brook, Garia Bay	Aug 14 - 24	"
Burnt Island River	Aug 14 - Sept 4	"
Isle Aux Morts River	Aug 14 - Sept 4	"
Grand Bay River	Aug 14 - Sept 4	"
SFA 13 June 3 - Sept 4		
Little Codroy River June 10 - Sept 4		
Little Barachois Brook June 10 - Sept 4		
Harry's River June 10 - Sept 4		
Adies Lake, Humber River June 3 - July 30		
Goose Arm River June 10 - Sept 4		
Bear Cove River	Aug 14 - 24	Low water levels
Little Codroy River	Aug 14 - 24	"
Grand Codroy River	Aug 14 - 24	"
Crabbes River	July 10	In season review - H & R only
Barachois River	July 10	"
Robinsons River	July 10	"
Fishells Brook	July 10	"
Little Barachois Brook	July 17	"
Southwest & Bottom Brook	July 17	"
Harry's River	July 17	"
Fox Island River	July 31	Quota (50) taken. H & R only
Serpentine River	August 3	In season review - H & R only
SFA 14A June 24 - Sept 4		
Torrent River Hook & release only until 750 fish passed through the fishway		
St. Genevieve River June 3 - Sept 4		
Parker River July 22 - Sept 4		
Lomond River	July 24 - Sept 4	catch-and-release only
Torrent River	July 18	opens to retention
Watson's River	Aug 3 - Sept 4	Quota (50) taken. H & R only
Parker River	Aug 21 - Sept 4	
SFA 14B June 24 - Sept 17		

Table 3. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 1, 1974-1995. Weight in metric tonnes. Also shown is percentage change for 1995 in relation to 1994 and the 1984-89, 1986-91and 1992-94 means.

SALMON FISHING AREA 1

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	19	9848	68	13866	87	23714	
1975	66	34937	123	28601	190	63538	
1976	37	17589	174	38555	211	56144	
1977	36	17796	138	28158	174	45954	
1978	33	17095	145	30824	177	47919	
1979	21	9712	93	21291	114	31003	
1980	50	22501	144	28750	193	51251	
1981	45	21596	182	36147	227	57743	
1982	37	18478	113	24192	150	42670	
1983	31	15964	86	19403	117	35367	
1984	24	11474	55	11726	79	23200	
1985	29	15400	60	13252	89	28652	
1986	36	17779	97	19152	133	36931	
1987	27	13714	87	18257	115	31971	
1988	37	19641	59	12621	97	32262	
1989	26	13233	73	16261	99	29494	
1990	16	8736	36	7313	52	16049	
1991	3	1410	7	1369	10	2779	
1992	18	9588	47	9981	66	19569	80**
1993	7	3893	17	3825	25	7718	80**
1994	7	3303	16	3464	23	6767	24**
1995*	6	2990	9	1873	15	4863	19**
$\bar{X}$ 84-89	29.8	15206.8	71.8	15211.5	102.0	30418.3	
S.D.	5.4	3045.4	17.0	3117.8	19.3	4567.3	
95% LCL	24.1	12010.3	53.9	11939.0	81.7	25624.4	
95% UCL	35.5	18403.4	89.7	18484.0	122.3	35212.3	
$\bar{X}$ 86-91	24.2	12418.8	59.8	12495.5	84.3	24914.3	
S.D.	12.9	6602.9	33.6	6962.1	45.3	12943.9	
95% LCL	10.6	5488.4	24.5	5188.0	36.8	11328.3	
95% UCL	37.7	19349.2	95.1	19803.0	131.9	38500.4	
$\bar{X}$ 92-94	10.7	5594.7	26.7	5756.7	38.0	11351.3	
S.D.	6.4	3470.9	17.6	3662.8	24.3	7132.6	
95% LCL	-5.1	-3028.2	-17.1	-3343.0	-22.3	-6368.4	
95% UCL	26.4	14217.5	70.4	14856.4	98.3	29071.1	
%Change, 1995 vs:							
1994	-14	-9	-44	-46	-35	-28	
$\bar{X}$ 84-89	-80	-80	-87	-88	-85	-84	
$\bar{X}$ 86-91	-75	-76	-85	-85	-82	-80	
$\bar{X}$ 92-94	-44	-47	-66	-67	-61	-57	

* Preliminary data.
**Allowance catch

Table 4. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 2, 1974-1995. Weight in metric tonnes. Also shown is percentage change for 1995 in relation to 1994 and the 1984-89, 1986-91 and 1992-94 means.

SALMON FISHING AREA 2

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	75	37145	456	93036	530	130181	
1975	110	57560	306	71168	415	128728	
1976	100	47468	349	77796	450	125264	
1977	81	40539	343	70158	425	110697	
1978	23	12535	230	48934	253	61469	
1979	60	28808	120	27073	180	55881	
1980	159	72485	435	87067	595	159552	
1981	179	86426	356	68581	536	155007	
1982	107	53592	249	53085	356	106677	
1983	60	30185	153	33320	213	63505	
1984	24	11695	115	25258	138	36953	
1985	46	24499	76	16789	122	41288	
1986	90	45321	174	34071	264	79392	
1987	128	64351	240	49799	367	114150	
1988	107	56381	153	32386	260	88767	
1989	69	34200	121	26836	190	61036	
1990	43	20699	85	17316	127	38015	
1991	40	20055	36	7679	76	27734	
1992	25	13336	96	19608	121	32944	180
1993	23	12037	46	9651	68	21688	90
1994	10	4535	55	11056	64	15591	60
1995*	9	3981	30	8028	38	12009	48
$\bar{X}$ 84-89	77.3	39407.8	146.5	30856.5	223.5	70264.3	
S.D.	38.7	19812.2	56.8	11107.6	92.0	29617.7	
95% LCL	36.7	18612.8	86.8	19197.9	127.0	39177.4	
95% UCL	118.0	60202.8	206.2	42515.1	320.0	101351.3	
$\bar{X}$ 86-91	79.5	40167.8	134.8	28014.5	214.0	68182.3	
S.D.	35.3	18403.4	71.2	14558.4	105.1	32433.4	
95% LCL	42.5	20851.5	60.1	12733.9	103.7	34140.1	
95% UCL	116.5	59484.1	209.6	43295.1	324.3	102224.6	
$\bar{X}$ 92-94	19.3	9969.3	65.7	13438.3	84.3	23407.7	
S.D.	8.1	4750.9	26.7	5389.1	31.8	8803.4	
95% LCL	-0.9	-1833.5	-0.5	50.1	5.3	1537.1	
95% UCL	39.6	21772.1	131.9	26826.6	163.4	45278.3	
%Change, 1995 vs:							
1994	-10	-12	-45	-27	-41	-23	
$\bar{X}$ 84-89	-88	-90	-80	-74	-83	-83	
$\bar{X}$ 86-91	-89	-90	-78	-71	-82	-82	
$\bar{X}$ 92-94	-53	-60	-54	-40	-55	-49	

* Preliminary data.

Table 5. Summary of Atlantic salmon commercial catch data for Salmon Fishing Area 14B, 1974-1995. Weight in metric tonnes. Also shown is percentage change for 1995 in relation to 1994 and the 1984-89, 1986-91 and 1992-94 means.

SALMON FISHING AREA 14B

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	19	9328	78	15863	96	25191	
1975	37	19294	63	14752	100	34046	
1976	28	13152	68	15189	96	28341	
1977	23	11267	91	18664	114	29931	
1978	8	4026	55	11715	63	15741	
1979	15	7194	17	3874	32	11068	
1980	19	8493	46	9138	65	17631	
1981	14	6658	38	7606	52	14264	
1982	15	7379	27	5966	42	13345	
1983	7	3292	33	7489	40	10781	
1984	5	2421	30	6218	35	8639	
1985	11	7460	16	3954	27	11414	
1986	15	8296	26	5342	41	13638	
1987	23	11389	58	11114	81	22503	
1988	15	7087	23	4591	38	11678	
1989	19	9053	22	4646	41	13699	
1990	8	3592	15	2858	23	6450	
1991	11	5303	23	4417	34	9720	
1992	3	1325	14	2752	17	4077	13
1993	2	1144	17	3620	19	4764	8
1994	2	802	4	857	6	1659	8
1995*	1	217	1	312	2	529	6.5
$\bar{X}$ 84-89	14.7	7617.7	29.2	5977.5	43.8	13595.2	
S.D.	6.3	2968.3	14.9	2631.9	18.9	4740.4	
95% LCL	8.1	4502.1	13.6	3215.0	24.0	8619.6	
95% UCL	21.2	10733.3	44.8	8740.0	63.7	18570.8	
$\bar{X}$ 86-91	15.2	7453.3	27.8	5494.7	43.0	12948.0	
S.D.	5.4	2772.2	15.2	2872.3	19.8	5414.7	
95% LCL	9.5	4543.6	11.9	2479.9	22.2	7264.7	
95% UCL	20.8	10363.1	43.8	8509.4	63.8	18631.3	
$\bar{X}$ 92-94	2.3	1090.3	11.7	2409.7	14.0	3500.0	
S.D.	0.6	265.6	6.8	1413.0	7.0	1630.9	
95% LCL	0.9	430.5	-5.2	-1100.6	-3.4	-551.8	
95% UCL	3.8	1750.2	28.6	5919.9	31.4	7551.8	
%Change, 1995 vs:							
1994	-50	-73	-75	-64	-67	-68	
$\bar{X}$ 84-89	-93	-97	-97	-95	-95	-96	
$\bar{X}$ 86-91	-93	-97	-96	-94	-95	-96	
$\bar{X}$ 92-94	-57	-80	-91	-87	-86	-85	

* Preliminary data.

Table 6. Summary of Atlantic salmon commercial catch data for Labrador (Salmon Fishing Areas 1, 2, & 14B), 1974-1995. Weight in metric tonnes. Also shown is percentage change for 1995 in relation to 1994 and the 1984-89, 1986-91 and 1992-94 means.

LABRADOR (SFAs 1, 2 & 14B)

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	QUOTA WEIGHT
1974	113	56321	602	122765	713	179086	
1975	213	111791	492	114521	705	226312	
1976	165	78209	591	131540	757	209749	
1977	140	69602	572	116980	713	186582	
1978	64	33656	430	91473	493	125129	
1979	96	45714	230	52238	326	97952	
1980	228	103479	625	124955	853	228434	
1981	238	114680	576	112334	815	227014	
1982	159	79449	389	83243	548	162692	
1983	98	49441	272	60212	370	109653	
1984	53	25590	200	43202	252	68792	
1985	86	47359	152	33995	238	81354	
1986	141	71396	297	58565	438	129961	
1987	178	89454	385	79170	563	168624	
1988	159	83109	235	49598	395	132707	
1989	114	56486	216	47743	330	104229	
1990	67	33027	136	27487	202	60514	
1991	54	26768	66	13465	120	40233	
1992	46	24249	157	32341	204	56590	273
1993	32	17074	80	17096	112	34170	178
1994	18	8640	75	15377	93	24017	92
1995*	15	7188	40	10213	56	17401	73.5
$\bar{X}$ 84-89	121.8	62232.3	247.5	52045.5	369.3	114277.8	
S.D.	46.9	23907.0	82.3	15535.6	122.8	36859.2	
95% LCL	72.6	37139.4	161.1	35739.3	240.4	75590.1	
95% UCL	171.0	87325.3	333.9	68351.7	498.3	152965.5	
$\bar{X}$ 86-91	118.8	60040.0	222.5	46004.7	341.3	106044.7	
S.D.	50.0	25983.4	113.3	23131.7	161.2	48180.0	
95% LCL	66.3	32767.7	103.6	21725.5	172.2	55474.6	
95% UCL	171.4	87312.3	341.4	70283.8	510.5	156614.7	
$\bar{X}$ 92-94	32.0	16654.3	104.0	21604.7	136.3	38259.0	
S.D.	14.0	7813.0	46.0	9337.6	59.4	16667.0	
95% LCL	-2.8	-2755.7	-10.2	-1593.0	-11.2	-3147.5	
95% UCL	66.8	36064.4	218.2	44802.4	283.8	79665.5	
%Change, 1995 vs:							
1994	-17	-17	-47	-34	-40	-28	
$\bar{X}$ 84-89	-88	-88	-84	-80	-85	-85	
$\bar{X}$ 86-91	-87	-88	-82	-78	-84	-84	
$\bar{X}$ 92-94	-53	-57	-62	-53	-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).

	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
1084													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			792			7786			62749			15144		

[1]Includes Native food fishery.

Table 8. Atlantic salmon recreational catch (retained + released), effort, and catch per unit of effort (CPUE) data for 1994 and 1995 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 1992-94 means are included; 95% Confidence Intervals are in parentheses.

	Effort (rod days)					Small salmon (< 63 cm.)					Large Salmon (>= 63 cm.)					CPUE**				
SFA	1995	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94	1995	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94	1995	1994	$\bar{X}$84-89*	$\bar{X}$86-91*	$\bar{X}$ 92-94	1995	1994	$\bar{X}$84-89*	$\bar{X}$86-91*	$\bar{X}$ 92-94
Labrador (1, 2 & 14B)	9846	10297	8222	8711	9319	5405	5392	4179	4112	4227	946	765	513	454	675	0.65	0.60	0.57	0.52	0.53
			(1490)	(1051)	(2428)			(1214)	(1341)	(2989)			(153)	(229)	(444)			(0.08)	(0.13)	(0.18)
1	757	848	1116	1077	616	1315	1157	861	742	509	163	181	157	114	164	1.95	1.58	0.91	0.80	1.09
			(324)	(345)	(719)			(366)	(499)	(1395)			(37)	(61)	(328)			(0.12)	(0.33)	(1.51)
2	3667	3540	2456	2746	3424	3046	3456	2018	2046	2665	491	472	191	198	304	0.96	1.11	0.90	0.82	0.87
			(517)	(270)	(937)			(637)	(633)	(1932)			(104)	(103)	(380)			(0.15)	(0.25)	(0.54)
14B	5422	5909	4650	4888	5278	1044	779	1300	1324	1053	292	112	165	142	207	0.25	0.15	0.32	0.30	0.24
			(770)	(582)	(1589)			(375)	(355)	(894)			(78)	(91)	(209)			(0.07)	(0.07)	(0.23)
Northern Peninsula East & Eastern (3 - 8)	63184	72813	45518	39919	53902	17561	21533	13857	11264	18203	421	539			325	0.28	0.30	0.30	0.28	0.34
			(10759)	(9388)	(45492)			(5483)	(5262)	(14559)					(691)			(0.06)	(0.07)	(0.16)
3	5438	7715	2137	2547	5353	2295	5158	1115	1260	3635	186	404			187	0.46	0.72	0.52	0.49	0.71
			(756)	(1157)	(5108)			(527)	(611)	(4416)					(501)			(0.09)	(0.13)	(0.52)
4	36717	43242	28158	24472	31228	11178	12079	9005	6697	10613	151	79			81	0.31	0.28	0.32	0.27	0.34
			(7876)	(6573)	(29515)			(3876)	(3372)	(8265)					(190)			(0.06)	(0.08)	(0.21)
5	16691	18000	10528	8725	13393	3446	3905	3165	2820	3558	76	52			53	0.21	0.22	0.30	0.32	0.27
			(2841)	(2694)	(10935)			(1410)	(1528)	(1927)					(132)			(0.10)	(0.08)	(0.15)
6	2513	2429	2884	2731	2493	397	262	372	328	302	8	4			4	0.16	0.11	0.13	0.12	0.12
			(573)	(849)	(659)			(110)	(140)	(221)					(11)			(0.05)	(0.04)	(0.06)
7	1425	1162	1317	1008	1194	170	71	101	76	57	0	0			0	0.12	0.06	0.08	0.08	0.05
			(482)	(524)	(265)			(28)	(47)	(39)								(0.03)	(0.04)	(0.04)
8	400	265	494	435	362	75	58	100	83	57	0	0			0	0.19	0.22	0.20	0.19	0.16
			(197)	(197)	(1226)			(30)	(57)	(19)								(0.05)	(0.09)	(0.58)
South (9 - 11)	35146	25073	28274	24702	24151	7798	4972	8348	6378	5544	47	61			51	0.22	0.20	0.30	0.26	0.23
			(3855)	(6192)	(14028)			(2619)	(3187)	(2532)					(97)			(0.06)	(0.07)	(0.08)
9	10487	7154	8228	7545	7892	1901	922	1800	1482	1130	11	2			6	0.18	0.13	0.22	0.20	0.14
			(1318)	(1180)	(5414)			(583)	(810)	(973)					(19)			(0.05)	(0.08)	(0.03)
10	10210	7028	5908	4806	6035	1704	1096	1272	928	1076	23	21			18	0.17	0.16	0.22	0.19	0.18
			(1134)	(1529)	(5676)			(318)	(592)	(807)					(26)			(0.03)	(0.06)	(0.06)
11	14449	10891	14137	12351	10224	4193	2954	5276	3968	3338	13	38			27	0.29	0.27	0.37	0.32	0.33
			(1975)	(3784)	(3738)			(1845)	(1897)	(988)					(57)			(0.09)	(0.06)	(0.14)
Southwest (12 - 13)	20786	22576	25167	25003	24306	5094	5298	7431	6973	6400	989	977	388	375	919	0.29	0.28	0.31	0.29	0.30
			(3171)	(3164)	(4121)			(2382)	(2145)	(2391)			(203)	(212)	(359)			(0.07)	(0.06)	(0.07)
12	2679	2853	3203	2955	3015	594	730	1127	873	912	41	48	32	23	49	0.24	0.27	0.36	0.30	0.32
			(649)	(543)	(746)			(506)	(314)	(466)			(20)	(9)	(70)			(0.13)	(0.08)	(0.2)
13	18107	19723	21964	22049	21291	4500	4568	6305	6099	5489	948	929	356	352	869	0.30	0.28	0.30	0.29	0.30
			(2815)	(2715)	(3551)			(1979)	(1862)	(1981)			(198)	(204)	(296)			(0.06)	(0.06)	(0.05)
Northern Peninsula West (14A)	24159	21046	15937	15997	18674	8177	5526	4601	4623	5581	731	475	79	102	407	0.37	0.29	0.29	0.30	0.32
			(1934)	(1807)	(5186)			(1128)	(1164)	(752)			(56)	(54)	(147)			(0.06)	(0.06)	(0.09)
Insular Newfoundland (3 -14A)	143275	141508	115484	106188	121033	38630	37329	34350	29262	35728	2188	2052	487	490	1702	0.28	0.28	0.30	0.28	0.31
			(16883)	(19617)	(57482)			(11147)	(11995)	(15705)			(310)	(306)	(805)			(0.06)	(0.07)	(0.09)

*1987 is not included in SFAs 3-11, Northern Peninsula East & Eastern, South, and Insular Newfoundland.
**CPUE for 1994, 1995 and 1992-94 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.

Table 9. Atlantic salmon recreational catch (retained + released), effort, and catch per unit effort in 1995 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 1994, 1984-89, 1986-91 and 1992-94 means.

	Effort (rod days)				Small salmon (<63 cm.)				Large salmon (>= 63 cm.)				CPUE			
SFA	1994	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-94	1994	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-94	1994	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-94	1994	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-94
Labrador (1, 2 & 14B)	-4	20	13	6	0	29	31	28	24	85	109	40	8	13	23	23
1	-11	-32	-30	23	14	53	77	158	-10	4	43	-0	24	114	146	79
2	4	49	34	7	-12	51	49	14	4	157	148	62	-13	7	18	11
14B	-8	17	11	3	34	-20	-21	-1	161	77	106	41	63	-22	-18	3
Northern Peninsula East & Eastern (3 - 8)	-13	39	58	17	-18	27	56	-4	-22			29	-6	-7	1	-17
3	-30	154	114	2	-56	106	82	-37	-54			-1	-37	-13	-8	-36
4	-15	30	50	18	-7	24	67	5	91			87	10	-4	13	-10
5	-7	59	91	25	-12	9	22	-3	46			42	-4	-30	-35	-22
6	3	-13	-8	1	52	7	21	31	100			85	47	25	34	31
7	23	8	41	19	139	69	123	197					95	56	58	148
8	51	-19	-8	11	29	-25	-9	33					-14	-7	-1	20
South (9 - 11)	40	24	42	46	57	-7	22	41	-23			-8	11	-24	-14	-4
9	47	27	39	33	106	6	28	68	450			83	41	-17	-7	27
10	45	73	112	69	55	34	84	58	10			30	6	-21	-12	-7
11	33	2	17	41	42	-21	6	26	-66			-52	6	-22	-9	-12
Southwest (12 - 13)	-8	-17	-17	-14	-4	-31	-27	-20	1	155	164	8	5	-6	-0	-3
12	-6	-16	-9	-11	-19	-47	-32	-35	-15	29	78	-17	-13	-34	-22	-26
13	-8	-18	-18	-15	-1	-29	-26	-18	2	167	170	9	8	-1	3	1
Northern Peninsula West (14A)	15	52	51	29	48	78	77	47	54	825	618	80	29	26	25	15
Insular Newfoundland (3-14A)	1	24	35	18	3	12	32	8	7	349	347	29	2	-6	2	-8

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

Table 10. Atlantic salmon recreational catch (retained only), 1994 and 1995 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 1992-94 means are included; 95% confidence intervals are in parentheses.

	Small salmon (< 63 cm.)					Large Salmon (>= 63 cm.)				
SFA	1995	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94	1995	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94
Labrador (1, 2 & 14B)	2597	2657	4179	4112	2634	546	474	513	454	544
			(1214)	(1341)	(290)			(153)	(229)	(523)
1	470	293	861	742	181	67	86	157	114	126
			(366)	(499)	(260)			(37)	(61)	(359)
2	1310	1671	2018	2046	1588	271	287	191	198	225
			(637)	(633)	(462)			(104)	(103)	(206)
14B	817	693	1300	1324	865	208	101	165	142	194
			(375)	(355)	(440)			(78)	(91)	(199)
Northern Peninsula East & Eastern (3 - 8)	12823	16250	13857	11264	11681					
			(5483)	(5262)	(9865)					
3	1405	3314	1115	1260	2119					
			(527)	(611)	(2574)					
4	7979	9351	9005	6697	6788					
			(3876)	(3372)	(5540)					
5	2860	3216	3165	2820	2416					
			(1410)	(1528)	(1731)					
6	336	241	372	328	265					
			(110)	(140)	(126)					
7	170	71	101	76	56					
			(28)	(47)	(39)					
8	73	57	100	83	55					
			(30)	(57)	(25)					
South (9 - 11)	6299	4055	8348	6378	4159					
			(2619)	(3187)	(2503)					
9	1594	829	1800	1482	983					
			(583)	(810)	(978)					
10	1450	946	1272	928	630					
			(318)	(592)	(884)					
11	3255	2280	5276	3968	2546					
			(1845)	(1897)	(1158)					
Southwest (12 - 13)	3843	4225	7431	6973	5382					
			(2382)	(2145)	(2507)					
12	507	593	1127	873	659					
			(506)	(314)	(194)					
13	3336	3632	6305	6099	4723					
			(1979)	(1862)	(2386)					
Northern Peninsula West (14A)	6090	4429	4601	4623	4371					
			1128	1164	1092					
Insular Newfoundland (3 - 14A)	29055	28959	34350	29262	25593					
			(11147)	(11995)	(7498)					

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

Table 11. Atlantic salmon recreational catch (retained only) in 1995 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 1994, the 1984-89, 1986-91, and 1992-94 means.

	Small salmon (< 63 cm.)				Large Salmon (>= 63 cm.)			
SFA	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94	1994	$\bar{X}$ 84-89*	$\bar{X}$ 86-91*	$\bar{X}$ 92-94
Labrador (1, 2 & 14B)	-2	-38	-37	-1	15	7	20	0
1	60	-45	-37	160	-22	-57	-41	-47
2	-22	-35	-36	-18	-6	42	37	20
14B	18	-37	-38	-6	106	26	47	7
Northern Peninsula East & Eastern (3 - 8)	-21	-7	14	10				
3	-58	26	12	-34				
4	-15	-11	19	18				
5	-11	-10	1	18				
6	39	-10	2	27				
7	139	69	123	202				
8	28	-27	-12	33				
South (9 - 11)	55	-25	-1	51				
9	92	-11	8	62				
10	53	14	56	130				
11	43	-38	-18	28				
Southwest (12 - 13)	-9	-48	-45	-29				
12	-15	-55	-42	-23				
13	-8	-47	-45	-29				
Northern Peninsula West (14A)	38	32	32	39				
Insular Newfoundland (3 - 14A)	0	-15	-1	14				

*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 1974-95 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 1995 in relation to 1994, 84-89 mean, 86-91 mean, and the 92-94 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
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	7515				354	2815	525		
1987		9014	2327		493		914	974	570	1302	91	80	325	9687				355	2505	378		
1988		8974	3433		1562		772	1737	795	1695	97	313	543	7118				437	2075	251		
1989		7192	1694		596	7743	496	1138	668	***912***	62	168	706	4469					1369	455		
1990		6629	1057		***345***	7520	745	1149	(410)	1657	71	401	551	4321			12216		2296	322		
1991		5245	1060		245	6445	562	873	(311)	394	99	211	353	2086			5724		1415	233		
1992		12538	3520		1168	***18179***	1182	1443	886	***1442***	49	237	921	1973		222	17571	435	2347	480		
1993		21319	(5615)	4001	1560	25905	1959	(2713)	962	***1107***	79	292	847	2355	137	576	18477	526	4009	947		
1994	***2006***	16168	(2488)	2857	968	18080	1513	1571	1179	1592	99	158	677	1533	145	562	7995	701	3592	954	228	14
1995	***2573***	15691	(2719)	3035	1600	22002	1139	2258	1298	1071	80	385	663	3498	171	752	27898	1002	5799	823	315	80
$\bar{X}$ 84-89	3392 *	11458	3302		1077		917	1282	771	1753	104	187	517	7197				355	2020	358		
CV	33	38	50		45		32	24	19	36	32	63	33	30				29	28	41		
95% UCL	5158	16000	5343		1580		1223	1598	924	2411	138	479	695	10603				481	2606	513		
95% LCL	1626	6916	1262		573		610	965	617	1096	69	-105	339	3791				229	1434	202		
N	4	6	5		6		6	6	6	6	6	3	6	4				5	6	6		
$\bar{X}$ 86-91		7792	2107		718	7236	754	1154	690	1413	96	235	534	5866				382	2079	361		
CV		22	48		70	10	27	26	14	52	35	53	32	47				12	28	32		
95% UCL		9593	3168		1244	8960	969	1473	841	2178	132	390	711	8741				500	2694	481		
95% LCL		5991	1046		191	5512	540	835	538	647	61	79	356	2991				264	1464	240		
N		6	6		6	3	6	6	4	6	6	5	6	6				3	6	6		
$\bar{X}$ 92-94		16675			1232	20721	1551	1909	1009	1380	76	229	815	1954		453	14681	554	3316	794		
CV		26			24	22	25	37	15	18	33	29	15	21		44	40	24	26	34		
95% UCL		27637			1980	31875	2520	3646	1387	1997	138	396	1126	2976		951	29110	890	5464	1469		
95% LCL		5713			484	9568	583	172	631	763	13	62	504	932		-45	252	218	1168	119		
N		3			3	3	3	3	3	3	3	3	3	3		3	3	3	3	3		
% change, 1995 vs:																						
1994	28	-3	9	6	65	22	-25	44	10	-33	-19	144	-2	128	18	34	249	43	61	-14	38	471
$\bar{X}$ 84-89	-24	37	-18		49		24	76	68	-39	-23	106	28	-51				182	187	130		
$\bar{X}$ 86-91		101	29		123	204	51	96	88	-24	-17	64	24	-40				162	179	128		
$\bar{X}$ 92-94		-6			30	6	-27	18	29	-22	6	68	-19	79		66	90	81	75	4		

1. Sandhill River counting fence
2. Exploits River
   (a) Bishop's Falls fishway
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9. Rocky River fishway
10. Northeast River (Placentia) fishway
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12. Highlands River counting fince
13. Pinchgut Brook counting fence
14. Humber River mark-recapture
15. Lomond River fishway
16. Torrent River fishway
17. Western Arm Brook counting fence
18. Forteau River counting fence
19. Lanse Au Loup River counting fence

* 1970-73 mean.

Table 13. Counts of large salmon from fishways and counting fences in Newfoundland and Labrador 1974-95 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 1995 in relation to 1994, 84-89 mean, 86-91 mean, and 92-94 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
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	397				32	92	0		
1987		310	41		9		19	56	38	106	30	1	16	498				11	68	1		
1988		147	10		24		14	206	45	61	19	6	11	418				21	44	1		
1989		89	14		24	473	19	142	51	***107***	18	9	15	319					60	0		
1990		122	15		***8***	508	13	144	(34)	71	9	17	25	361			855		82	0		
1991		99	40		2	670	14	114	(26)	35	13	16	8	87			401		73	1		
1992		314	242		101	***4162***	43	270	224	***51***	10	46	46	154		5	2945	80	169	8		
1993		627	(312)	145	87	1734	87	(470)	173	***120***	17	72	65	98	78	43	636	34	222	8		
1994	***715***	916	(333)	191	83	1072	90	242	172	68	15	19	70	100	148	47	1030	50	331	31	74	4
1995	**542**	941	(394)	218	125	1121	168	634	260	56	12	39	74	107	120	28	2064	95	611	33	136	11
$\bar{X}$ 84-89	266 *	269	55		22		25	127	58	81	29	5	21	408				25	97	1		
CV	60	60	122		47		65	39	36	40	31	76	82	18				59	99	122		
95% UCL	520	439	139		33		42	179	80	114	38	15	39	525				43	198	2		
95% LCL	12	99	-29		11		8	75	36	47	19	-5	3	291				7	-4	-0		
N	4	6	5		6		6	6	6	6	6	3	6	4				5	6	6		
$\bar{X}$ 86-91		187	49		13	550	16	134	48	80	20	10	19	347				21	70	1		
CV		62	128		68	19	17	36	18	37	44	69	60	41				49	24	110		
95% UCL		308	115		23	811	18	185	62	111	29	18	31	494				47	88	1		
95% LCL		66	-17		4	289	13	83	34	49	11	1	7	199				-5	52	-0		
N		6	6		6	3	6	6	4	6	6	5	6	6				3	6	6		
$\bar{X}$ 92-94		619			90	2323	73	327	190	80	14	46	60	117		32	1537	55	241	16		
CV		49			10	70	36	38	16	45	26	58	21	27		73	80	43	34	85		
95% UCL		1367			114	6365	139	636	264	169	23	112	92	196		89	4606	113	446	49		
95% LCL		-129			67	-1719	8	18	116	-10	5	-20	29	38		-26	-1532	-3	35	-17		
N		3			3	3	3	3	3	3	3	3	3	3		3	3	3	3	3		
% change, 1995 vs:																						
1994	-24	3	18	14	51	5	87	162	51	-18	-20	105	6	7	-19	-40	100	90	85	6	84	175
$\bar{X}$ 84-89	104	250	611		464		568	399	346	-30	-58	631	255	-74				280	530	4850		
$\bar{X}$ 86-91		403	704		849	104	972	374	442	-30	-39	298	289	-69				345	775	6500		
$\bar{X}$ 92-94		52			38	-52	129	94	37	-30	-14	-15	23	-9		-12	34	74	154	111		

1. Sandhill River counting fence
2. Exploits River
   (a) Bishop's Falls fishway
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9. Rocky River fishway
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17. Western Arm Brook counting fence
18. Forteau River counting fence
19. Lanse Au Loup counting fence

* 1970-73 mean.

Table 14. Proportion of large salmon at counting facilities in Newfoundland in 1992 - 1995, the 1984-89 mean, the 1986-91 mean, and the 1992-94 mean.

	Proportion of large salmon						
Counting facility	1992	1993	1994	1995	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-94
SFA 2							
Sandhill River			0.263	0.174	0.073 *		
SFA 4							
Exploits River (Bishop's Falls)	0.024	0.029	0.054	0.057	0.023	0.023	0.036
Exploits River (Gt. Rattlling Bk.)	0.064	0.053	0.118	0.127	0.016	0.023	
Gander River (Salmon Bk.)	0.080	0.053	0.079	0.072	0.020	0.018	0.068
Gander River (counting fence)	0.186	0.063	0.056	0.048		0.071	0.101
SFA 5							
Middle Brook	0.035	0.043	0.056	0.129	0.027	0.020	0.045
Terra Nova River (Lower)	0.158	0.148	0.133	0.219	0.090	0.104	0.146
Terra Nova River (Upper)	0.202	0.152	0.127	0.167	0.070	0.065	0.158
SFA 9							
Biscay Bay River	0.034	0.098	0.041	0.050	0.044	0.054	0.055
Northeast Brook (Trepassey)	0.169	0.177	0.132	0.130	0.216	0.171	0.156
Rocky River	0.163	0.198	0.107	0.092	0.028	0.040	0.166
SFA 10							
Northeast River (Placentia)	0.048	0.071	0.094	0.100	0.039	0.034	0.069
SFA 11							
Conne River	0.072	0.040	0.061	0.030	0.054	0.056	0.057
SFA 13							
Pinchgut Brook	0.022	0.069	0.077	0.036			0.065
Humber River	0.144	0.033	0.114	0.069			0.095
SFA 14A							
Lomond River	0.155	0.061	0.067	0.087	0.066	0.053	0.090
Torrent River	0.067	0.052	0.084	0.095	0.046	0.032	0.068
Western Arm Brook	0.016	0.008	0.031	0.039	0.002	0.001	0.019
SFA 14B							
Forteau River			0.245	0.302			
Lanse Au Loup River			0.222	0.121			

*1970 - 73 mean.

Table 15. Comparison of mean counrts of small and large salmon during moratorium years 1992-95 with means for the pre-moratorium period 1986-91. The direction of change in the moratorium means relative to the pre-moratorium means is denoted by + (increase) or - (decrease).

	Small			Large			Proportion large		
River	(+/-)	F	P	(+/-)	F	P	(+/-)	F	P
SFA 4									
Exploits River	+	21.33	0.0017	+	12.57	0.0076	+	3.82	0.0864
Gander River	+	15.00	0.0117	+	15.00	0.0117	+	0.45	0.5301
SFA 5									
Middle Brook	+	21.33	0.0017	+	22.33	0.0015	+	12.57	0.0076
Terra Nova River (Lower)	+	8.16	0.0212	+	21.33	0.0017	+	21.33	0.0017
SFA 9									
Biscay Bay River	-	0.16	0.6953	-	0.16	0.6953	-	0.16	0.6953
Northeast Brook, Trepassey	-	0.53	0.4870	-	1.79	0.2176	-	0.00	1.0000
Rocky River	+	0.05	0.8247	+	21.00	0.0025	+	21.00	0.0025
SFA 10									
Northeast River, Placentia	+	3.82	0.0864	+	21.33	0.0017	+	12.57	0.0076
SFA 11									
Conne River	-	8.16	0.0212	-	3.82	0.0864	-	0.38	0.5543
SFA 13									
Humber River	+	3.82	0.0864	+	3.82	0.0864	+	1.78	0.2191
SFA 14A									
Torrent River	+	8.16	0.0212	+	21.33	0.0017	+	21.33	0.0017
Western Arm Brook	+	12.57	0.0076	+	26.67	0.0009	+	23.41	0.0013

Table 16. Percent total season small salmon retained and Effort (rod days), for each SFA after July 31 for 1995 and the 1984-91 mean. Also shown are maximum and minimum values, and percentage change for 1994 vs. the 1984-91 mean.

	% Sm salmon after July 31				% Change	% Effort after July 31				% Change
SFA	1995	$\bar{X}$ 84-91	Max.	Min.	1995 vs. $\bar{X}$	1995	$\bar{X}$ 84-91	Max.	Min.	1995 vs. $\bar{X}$
3	22.9	23.0	32	15	-0.4	24.5	22.5	25	18	9.2
4	25.7	26.2	40	15	-2.3	31.4	26.6	36	17	18.0
5	24.0	28.2	52	6	-14.8	29.8	29.5	42	6	0.9
6	49.7	38.8	54	9	28.1	41.7	34.4	41	11	21.2
7	26.5	32.7	64	0	-19.1	45.2	33.0	50	0	36.8
8	42.5	24.5	73	2	73.7	37.0	24.7	43	3	49.6
9	32.1	10.0	21	1	220.9	39.7	14.2	23	1	180.5
10	23.7	13.5	35	1	74.9	28.3	19.7	29	6	43.6
11	16.9	6.4	14	5	162.9	19.7	9.5	15	5	106.8
12	6.5	6.3	13	2	3.4	15.1	13.2	21	10	14.2
13	19.2	20.2	30	11	-4.6	21.6	21.4	30	14	0.7
14A	28.9	26.4	33	17	9.4	34.2	28.4	41	21	20.3

Table 17. Estimated total production of Atlantic salmon from Sand Hill River, Labrador. Commercial exploitation rates were 0.83 to 0.97 for large salmon and 0.28 to 0.51 for small salmon in Nfld and Labrador, Greenland exploitation at 0.22, 1970-73. Exploitation rates were adjusted for decreased licensed effort in 94 & 95, for closure of Newfoundland fishery and for season change in 1995 . Mid-points are in table.

	Total returns to freshwater		Total production prior to commercial fishing		Entrants to freshwater with no commercial change	
Year	Small	Large	Small	Large	Small	Large
70	3600	138	6173	3469	3600	138
71	3596	266	6167	6687	3596	266
72	2038	175	3495	4399	2038	175
73	4761	504	8164	12670	4761	504
94	2159	730	2482	1525	1447	61
95	2781	559	3159	924	1842	37
AVG 70-73	3499	271	6000	6806	3499	271
SD 70-73	1118	165	1916	4136	1340	165
CL-95%	2235	329	3833	8272	2680	329

Table 18. Newfoundland Region summary of the percent egg deposition requirement attained for various rivers during the five-year period prior to the commercial salmon fishery moratorium (1987-91) and the four years during the moratorium (1992-95).

SFA	River	1987	1988	1989	1990	1991	1992	1993	1994	1995
2	Sandhill River								39	44
4	Exploits River:									
	-Lower	65	61	48	47	35	79	109	124	99
	-Middle	9	12	14	12	16	20	23	27	24
	-Upper	97	125	119	88	0	2	6	7	12
	Gander River			35	36	33	112	135	89	93
	Campbellton River							320	245	295
5	Terra Nova River	15	30	20	20	16	31	56	29	49
	Middle Brook	90	66	50	75	51	145	222	175	120
	Northwest Brook									40
9	Biscay Bay River	119	127	89	128	39	132	91	134	77
	Rocky River	22	30	17	40	22	28	34	25	33
10	Northeast River	153	209	278	253	162	497	471	387	378
11	Conne River	214	159	103	112	51	51	61	40	81
	Little River*	51	30	61	105	47	45	82	38	22
13	Harry's River						12	38	48	49
	Pinchgut (tributary of Harry's)						36	117	145	150
	Highlands River							47	77	68
	Humber River				60	27	117	96	40	129
	Flat Bay River								27	29
14 A	Lomond River	56	70				121	118	143	187
	Torrent River	201	266	225	221	176	314	538	530	1033
	Western Arm Brook	103	67	142	114	68	151	288	292	284
14 B	Forteau River								37	63

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

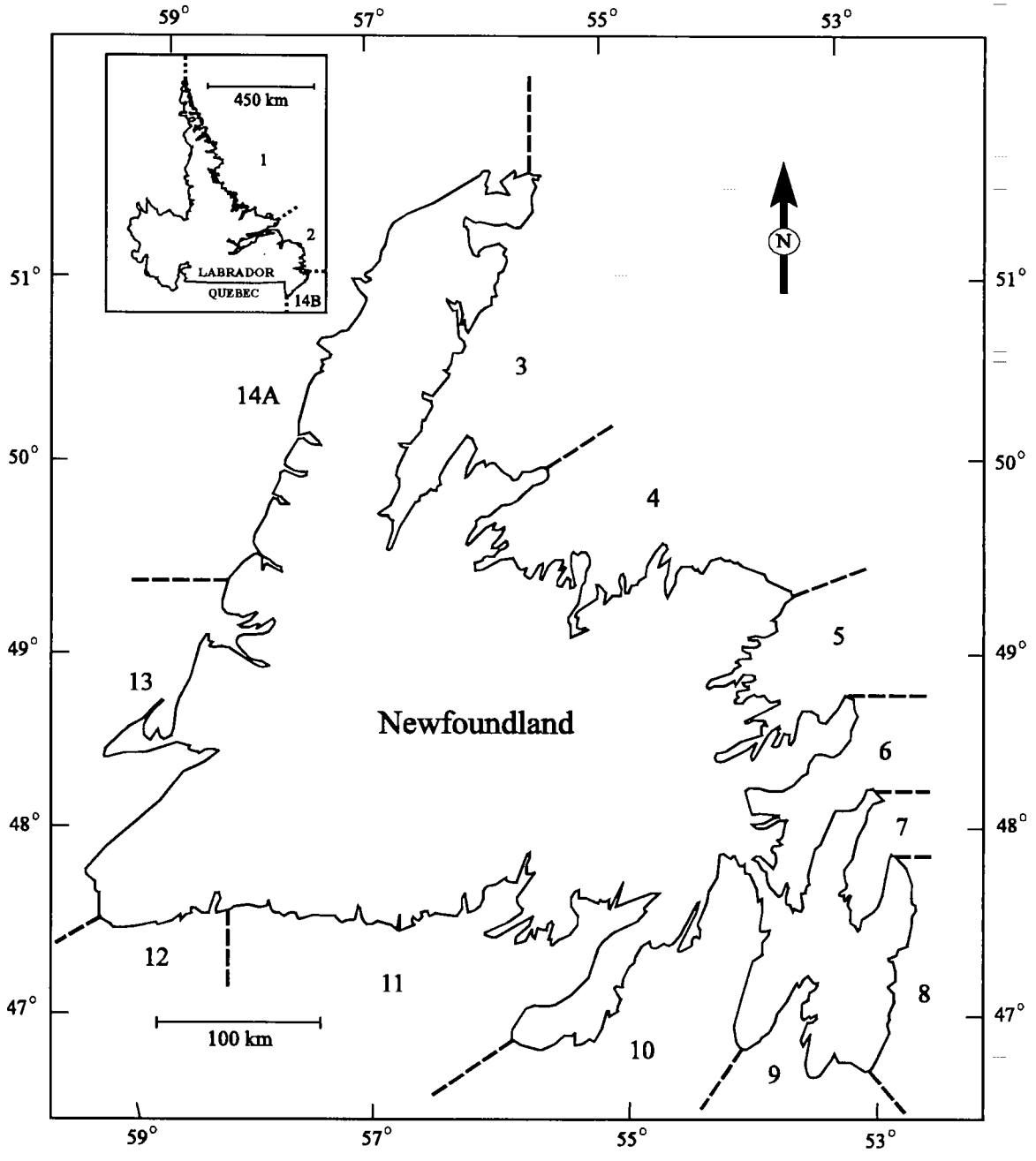

Fig. 1. Map showing the 14 Salmon Fishing Areas of the Newfoundland Region.

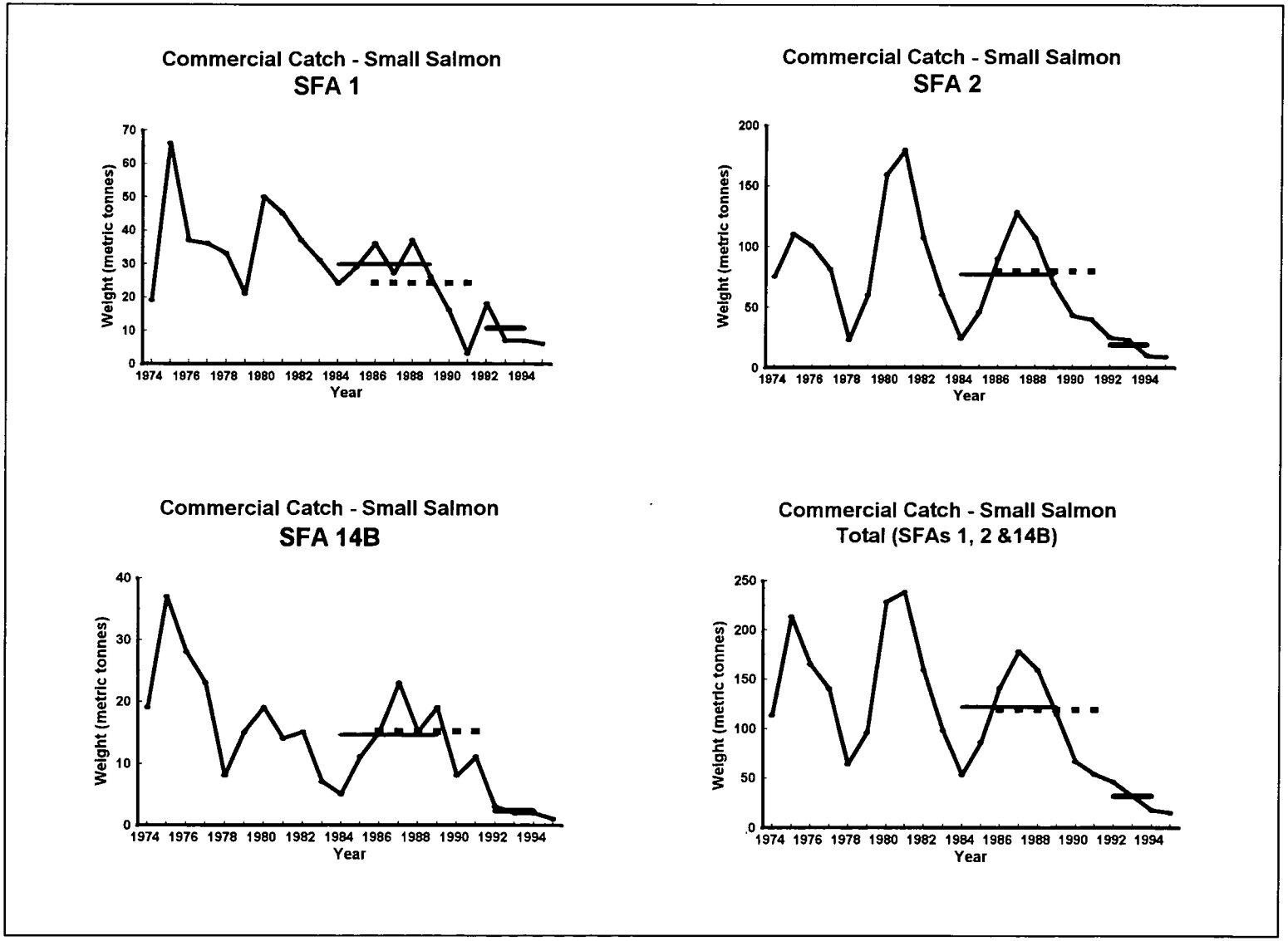

Fig. 2a. Commercial catch of small salmon (tonnes) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-1995. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-94 mean.

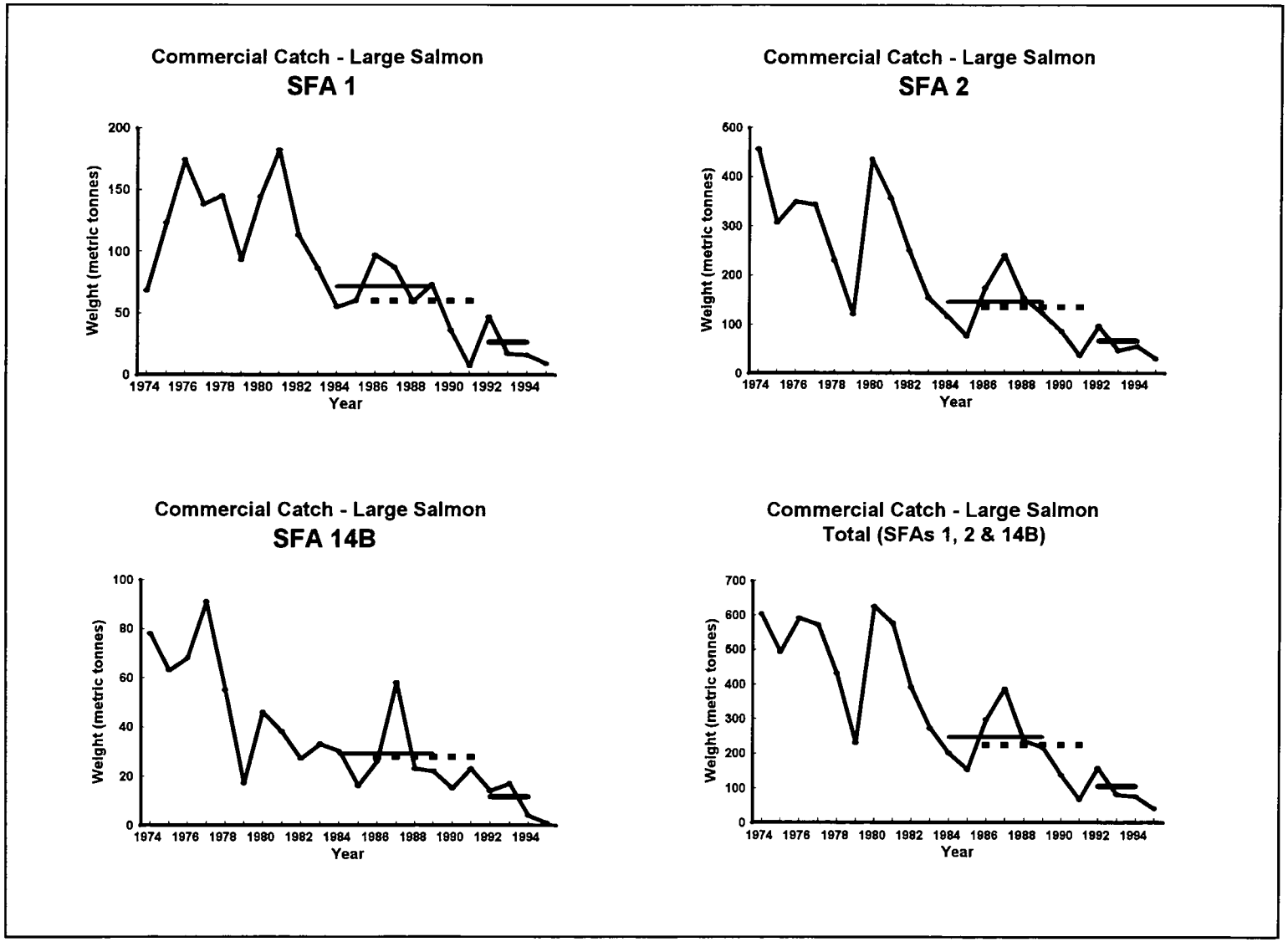

Fig. 2b. Commercial catch of large salmon (tonnes) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-1995. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-94 mean.

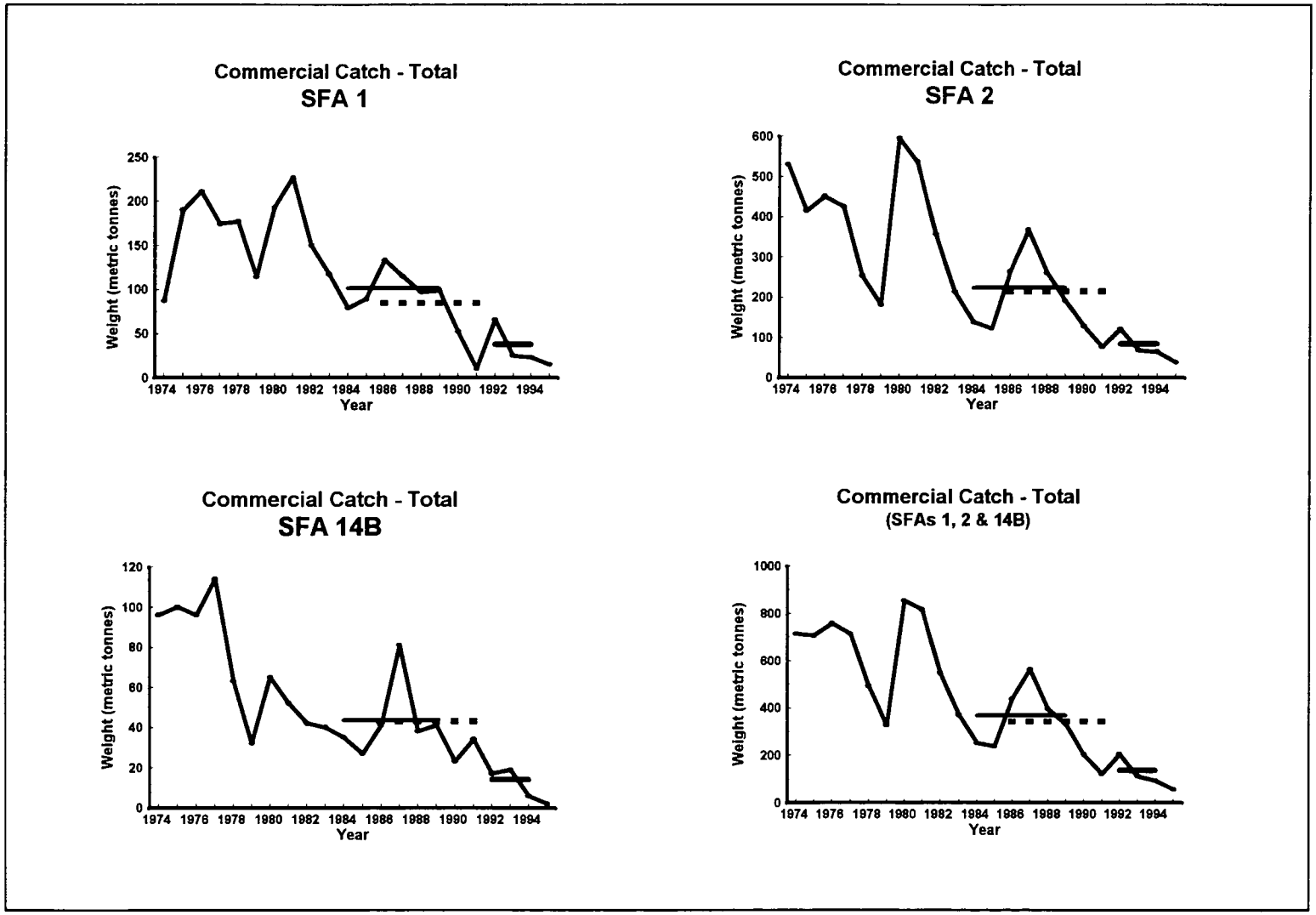

Fig. 2c. Total commercial catch (tonnes) for SFAs 1, 2, and 14B separately and combined, Labrador, 1974-1995. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-94 mean.

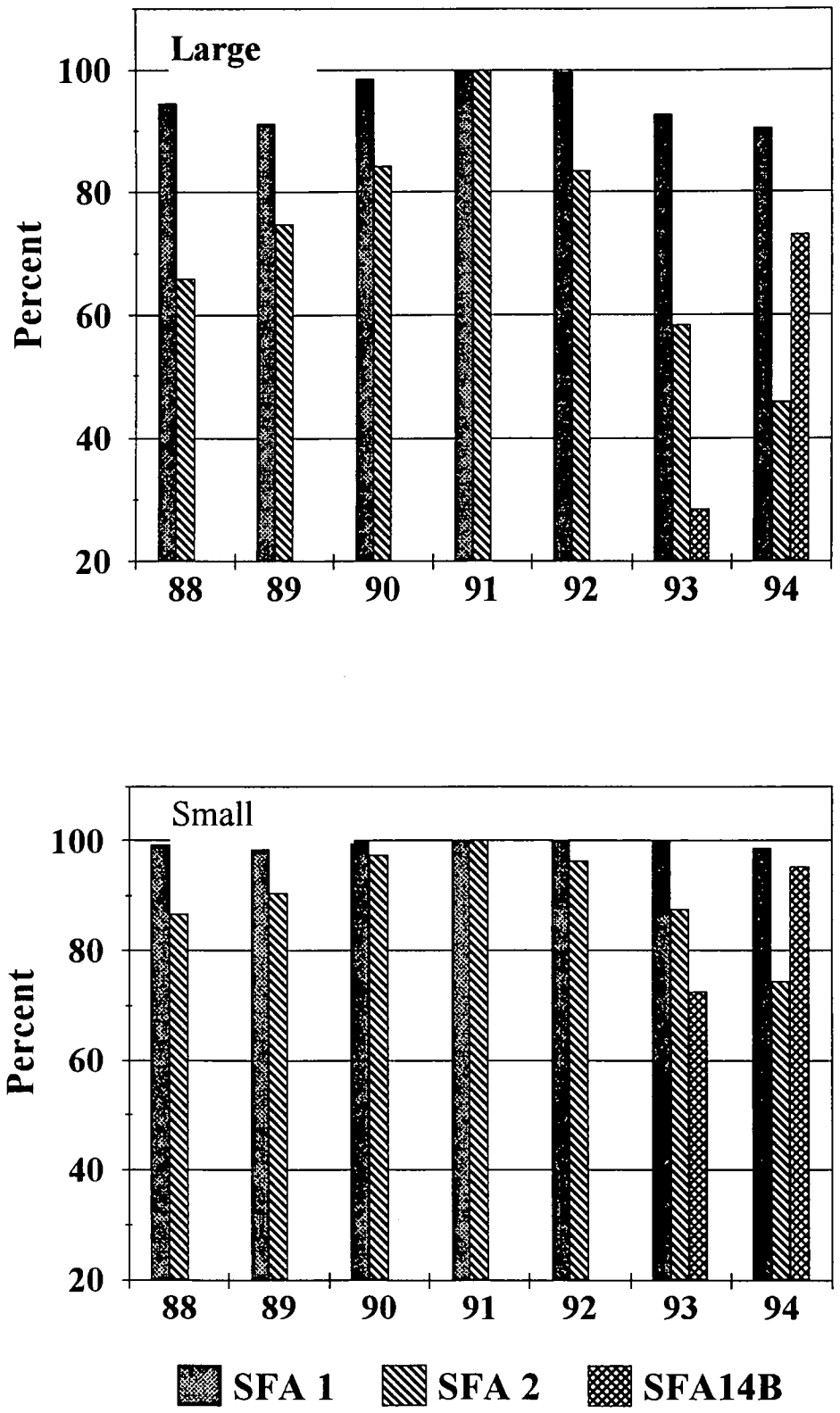

Fig. 3. Effects of the 1995 reduced fishing season on commercial landings in Labrador imputed by applying the July 3 opening date to landings in years 1988-94 for SFAs 1 and 2 and 1993-94 for SFA 14B.

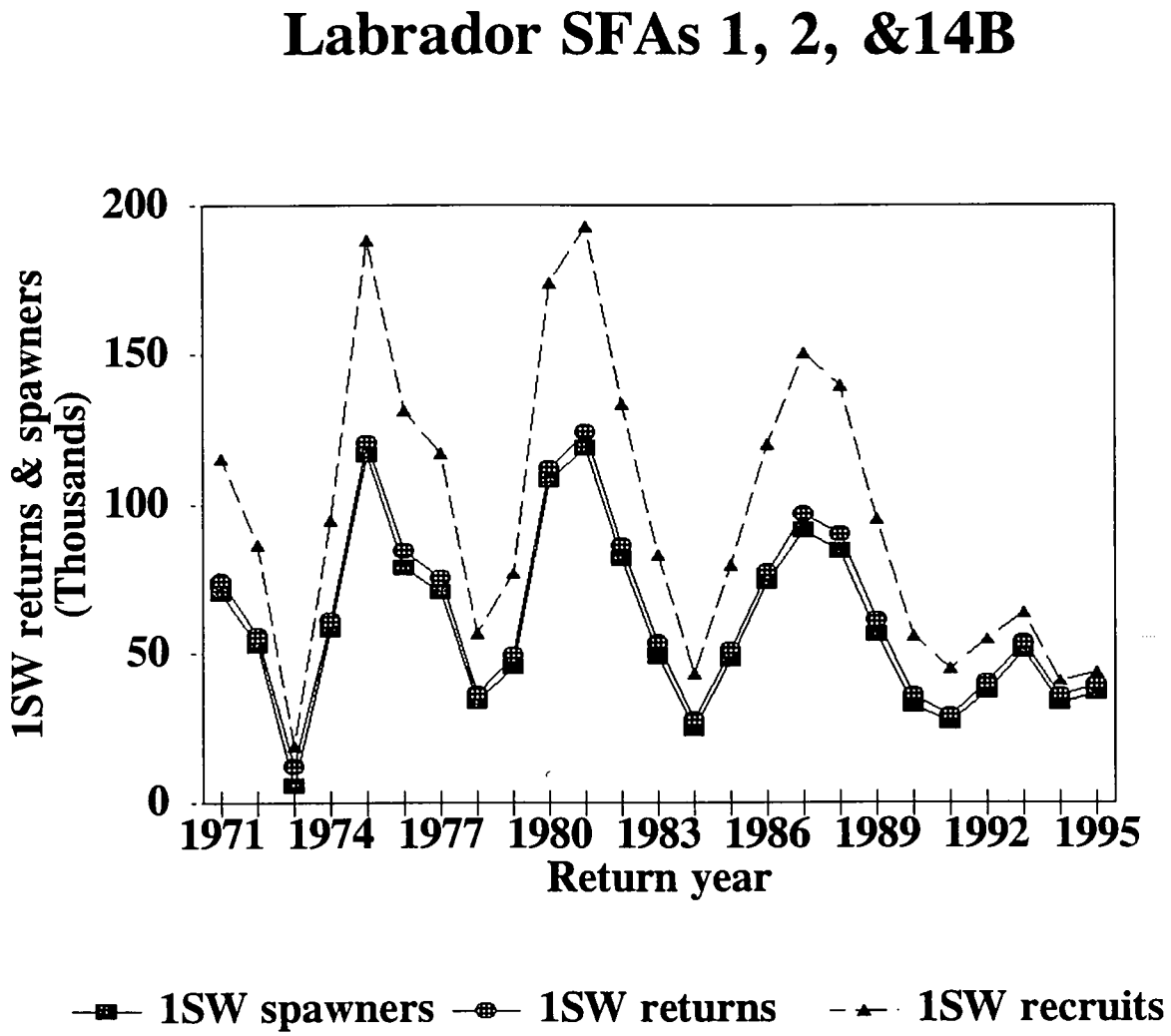

Fig. 4a. Estimated numbers of 1SW Atlantic salmon recruits (prior to commercial fishery), returns (after commercial fishery), and spawners (after recreational fishery) for SFAs 1,2, and 14B of Labrador combined, 1971-95.

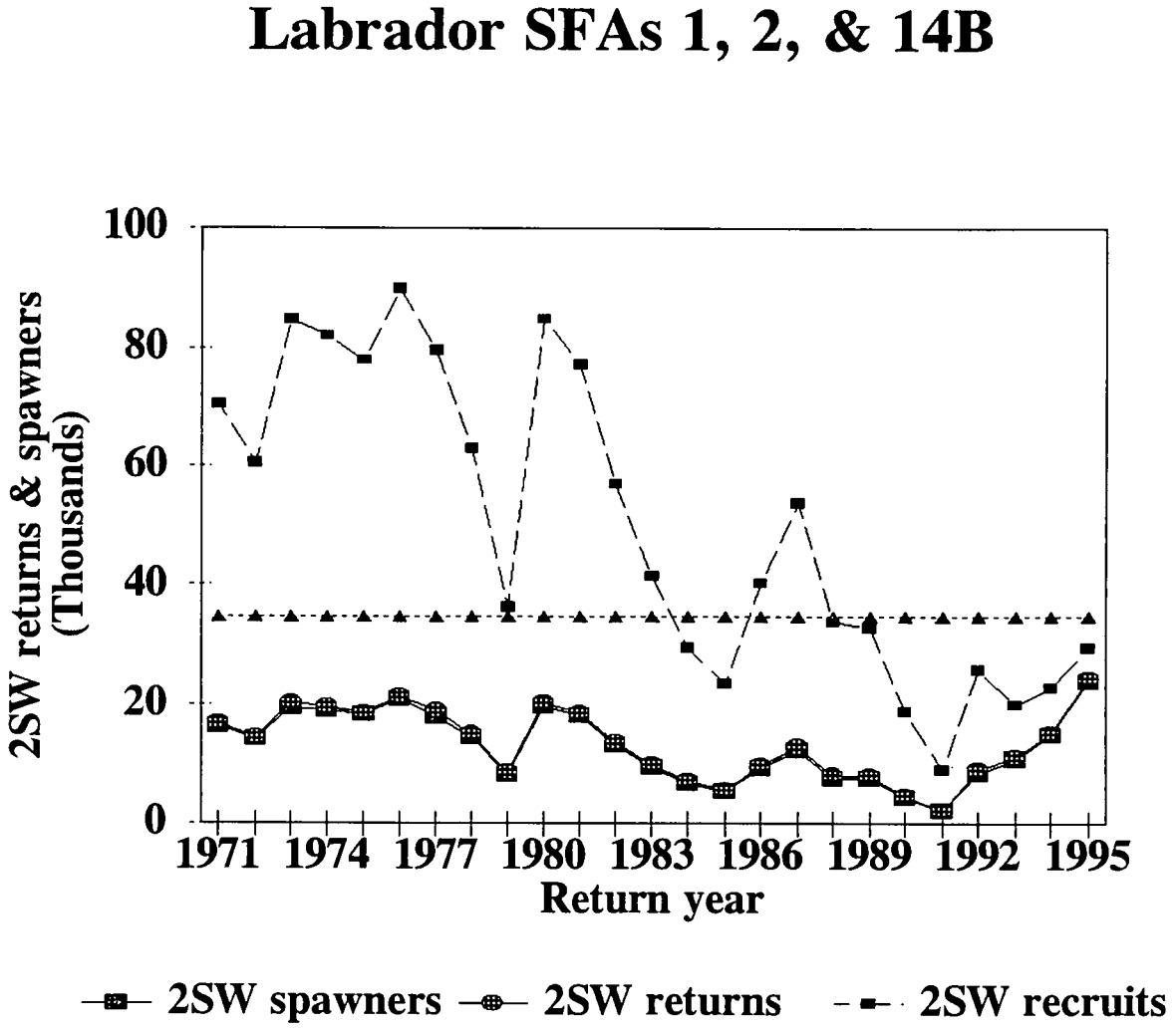

Fig. 4b. Estimated numbers of 2SW Atlantic salmon recruits (prior to commercial fishery), returns (after commercial fishery), and spawners (after recreational fishery) for SFAs 1,2, and 14B of Labrador combined, 1971-95. The horizontal line is the target spawning requirement for 2SW salmon.

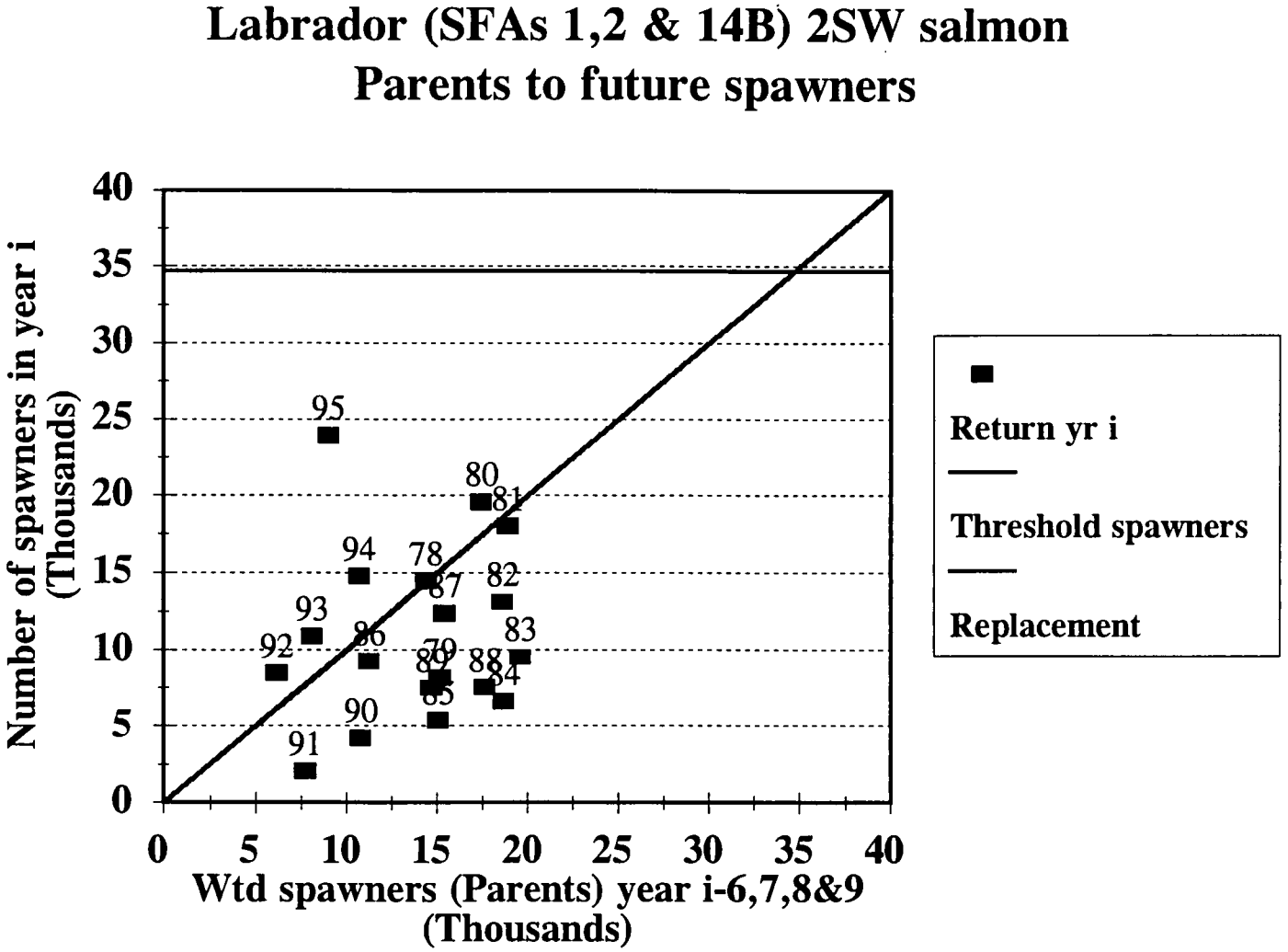

Fig. 4c. The relationship between 2SW Atlantic salmon parents and spawners (after all exploitation), the replacement (diagonal) line, and target spawning requirement for SFAa 1,2, and 14B of Labrador combind, 1983-95.

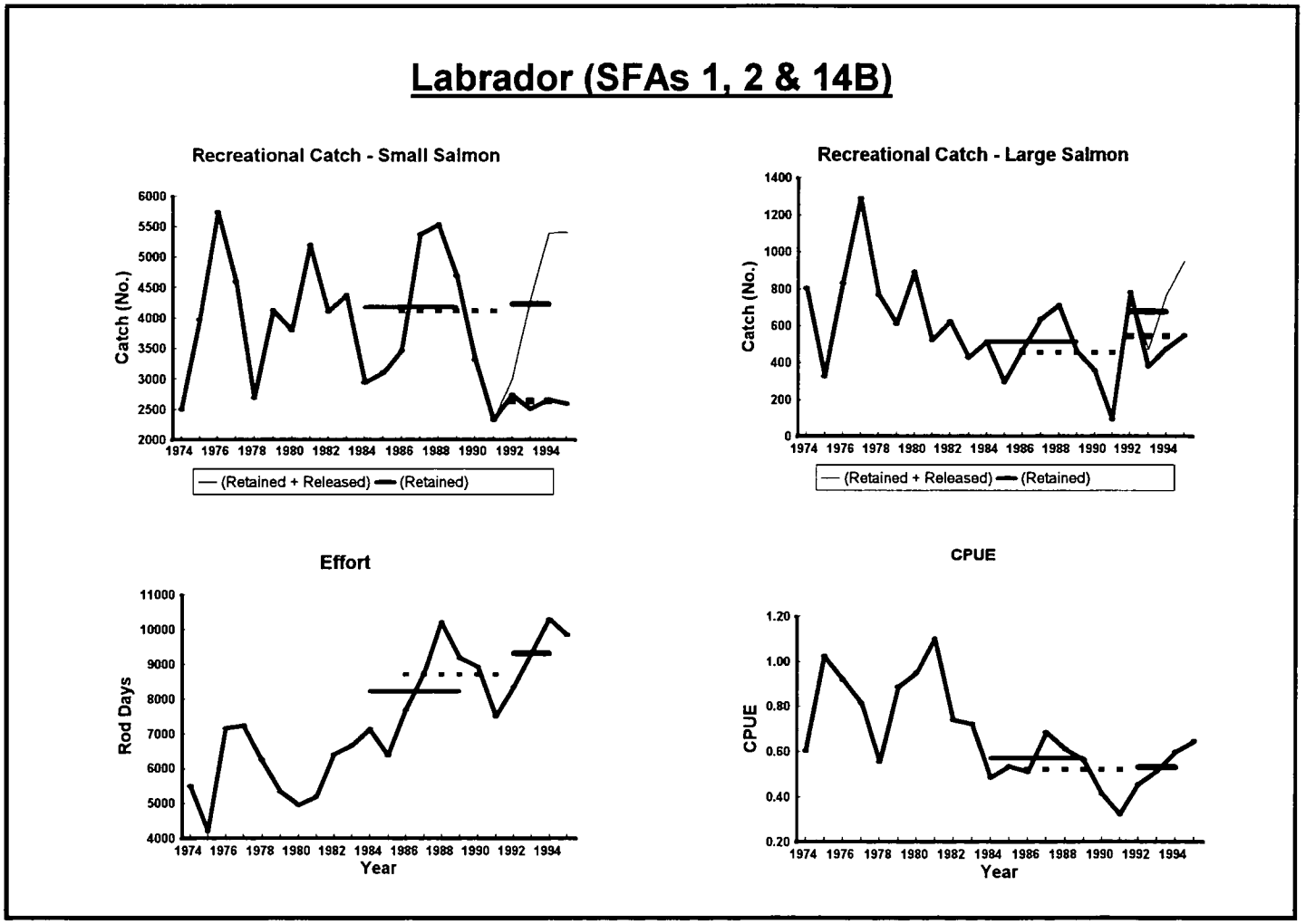

Fig. 5. Recreational catch of small and large salmon (retained, 1974-95; retained plus released, 1992-95), effort, and catch per unit of effort (CPUE), 1974-1995 for Labrador (SFAs 1, 2 & 14B). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

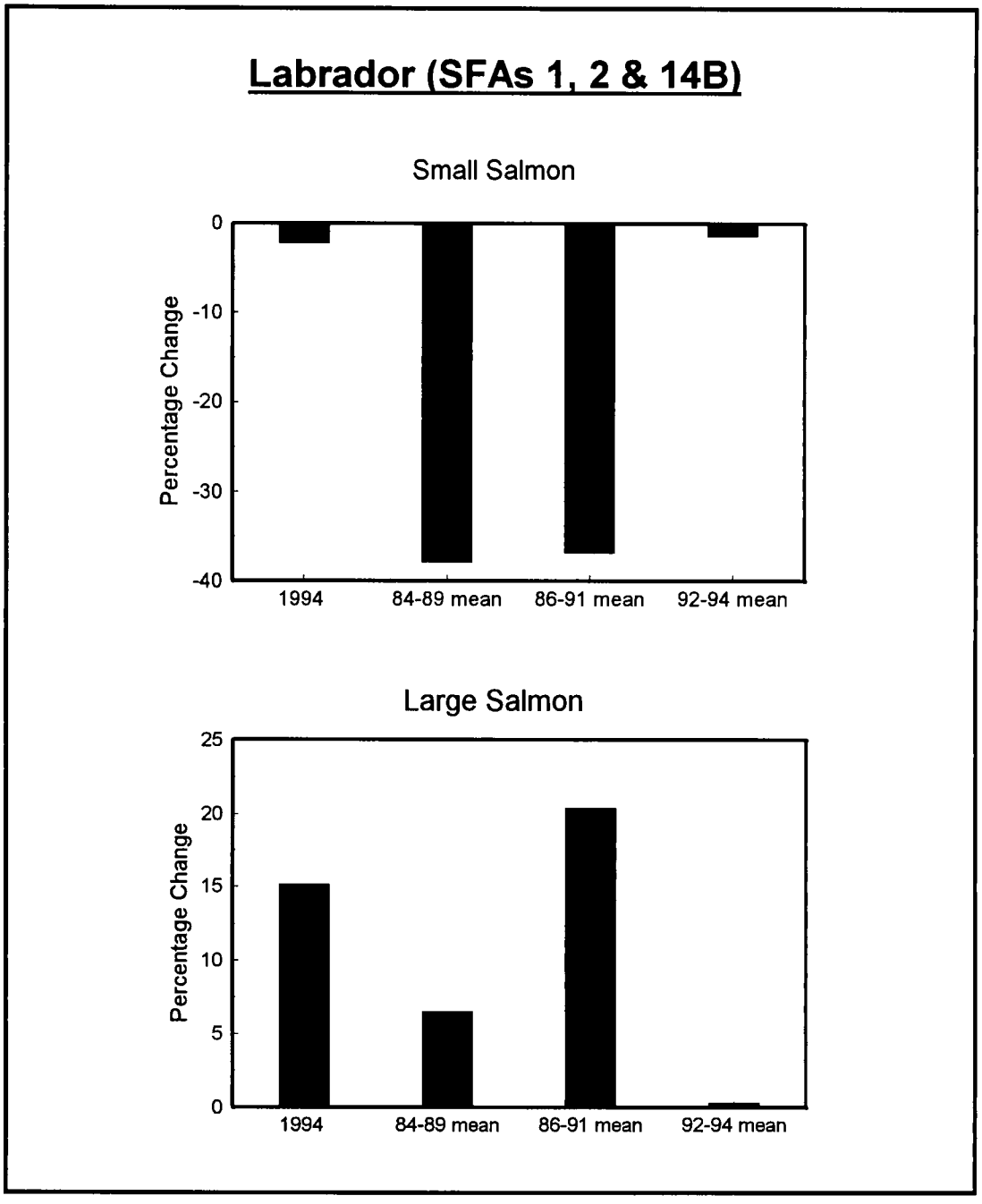

Fig. 6. Percentage change in recreational catch (retained) of small and large salmon in 1995 compared to 1994, the 1984-89 mean, the 1986-91, and the 1992-94 mean for Labrador (SFAs 1, 2 & 14B).

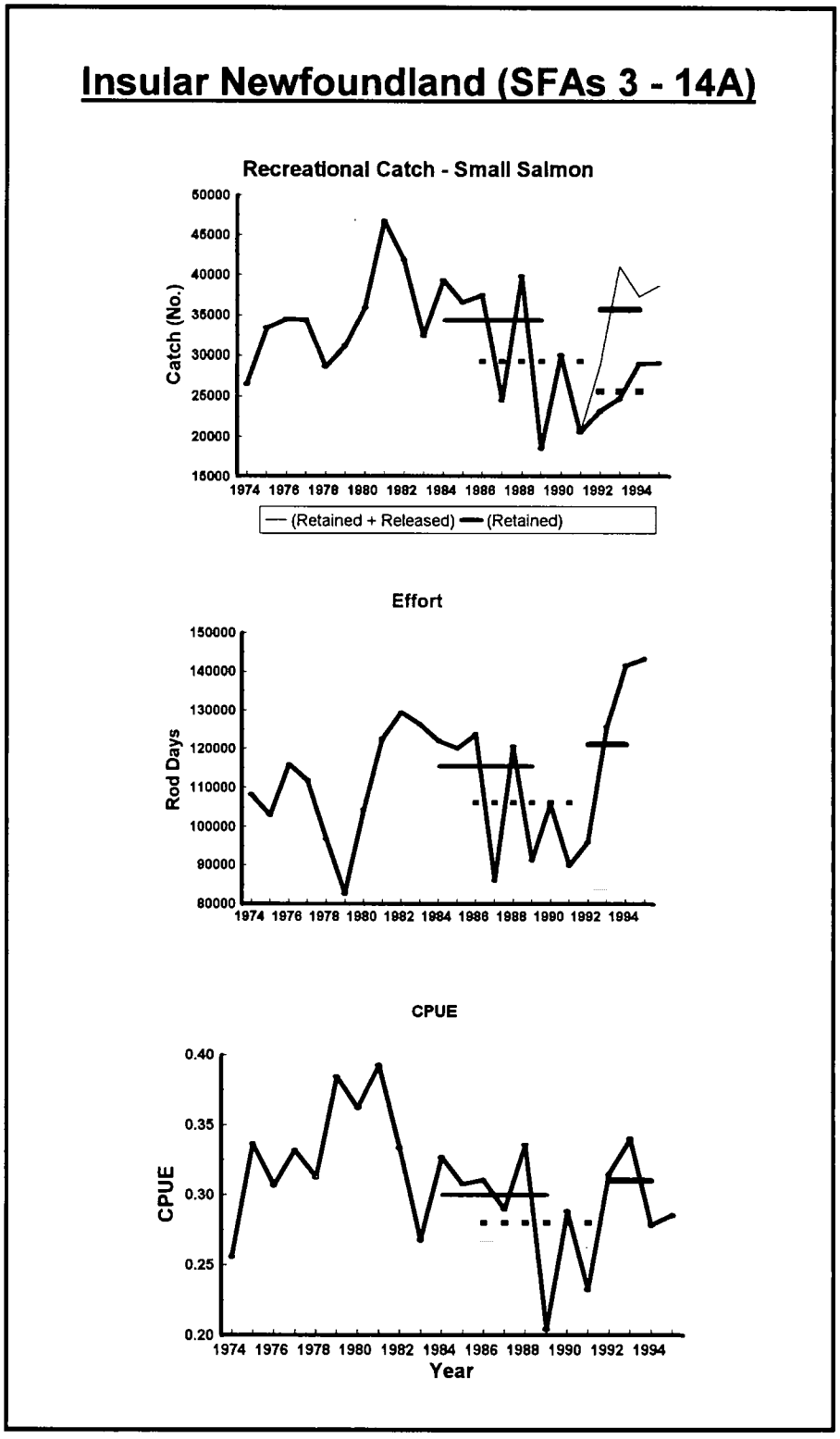

Fig. 7. Recreational catch of small salmon (retained, 1974-95; retained plus released, 1992-95), effort and catch per unit of effort (CPUE), 1974-1995, for Insular Newfoundland (SFAs 3 - 14A). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986 -91 mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

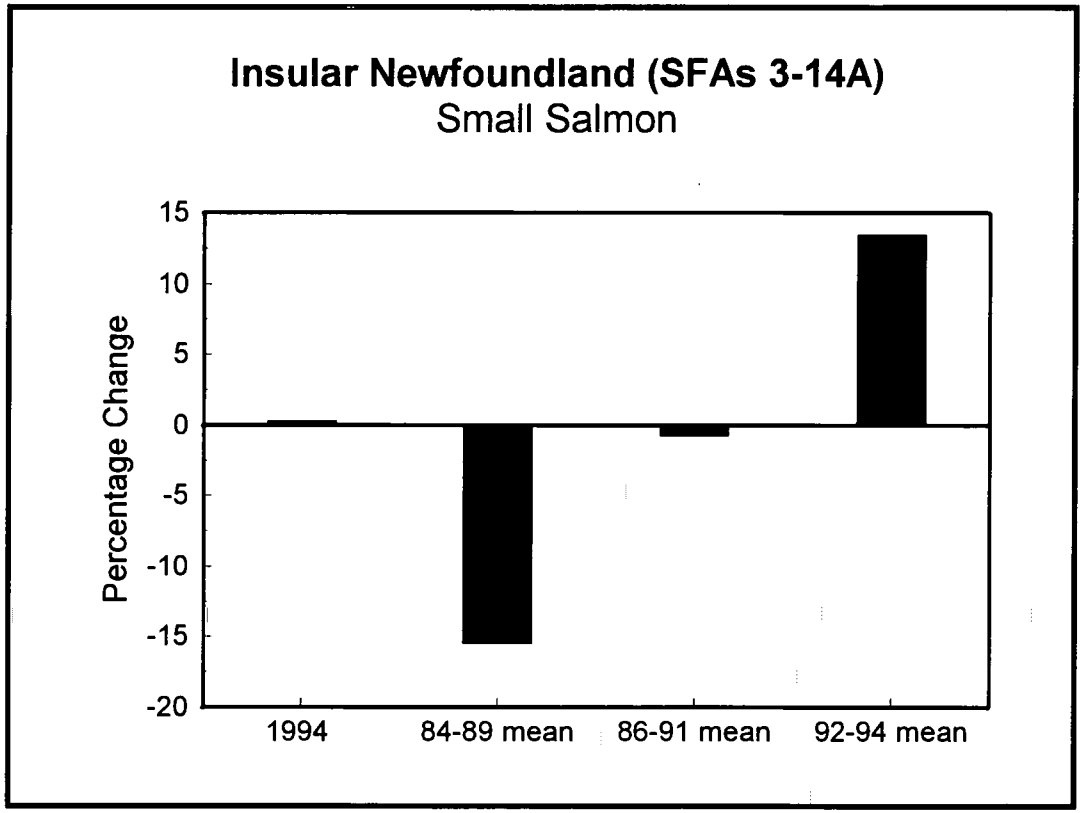

Fig. 8. Percentage change in recreational catch (retained) of small salmon in 1995 compared to 1994, the 1984-89 mean, the 1986-91, and the 1992-94 mean for Insular Newfoundland (SFAs 3 - 14A).

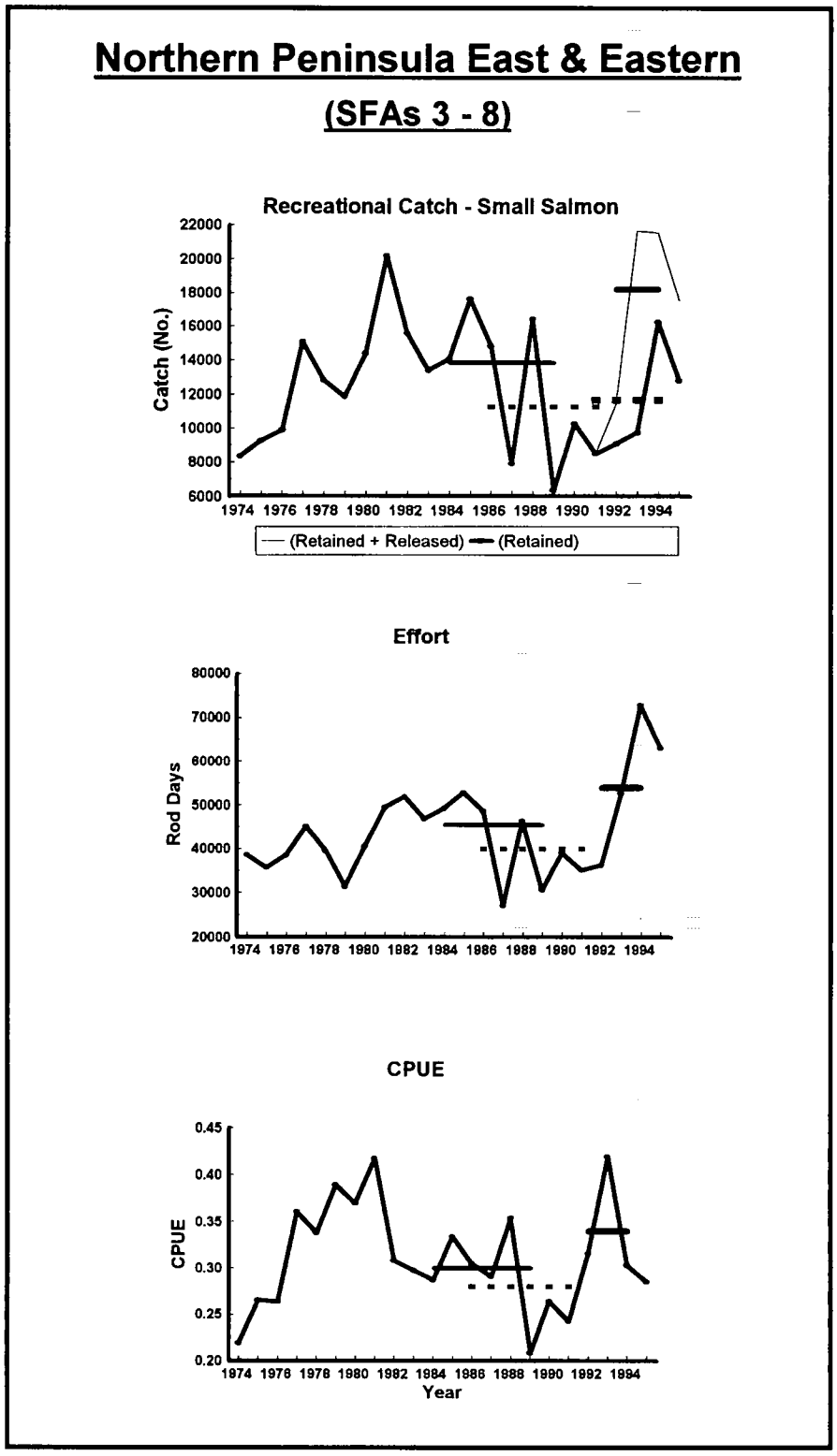

Fig. 9. Recreational catch of small salmon (retained, 1974-95; retained plus released, 1992-95), effort, and catch per unit of effort (CPUE), 1974-1995, for Northern Peninsula East & Eastern (SFAs 3 - 8). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

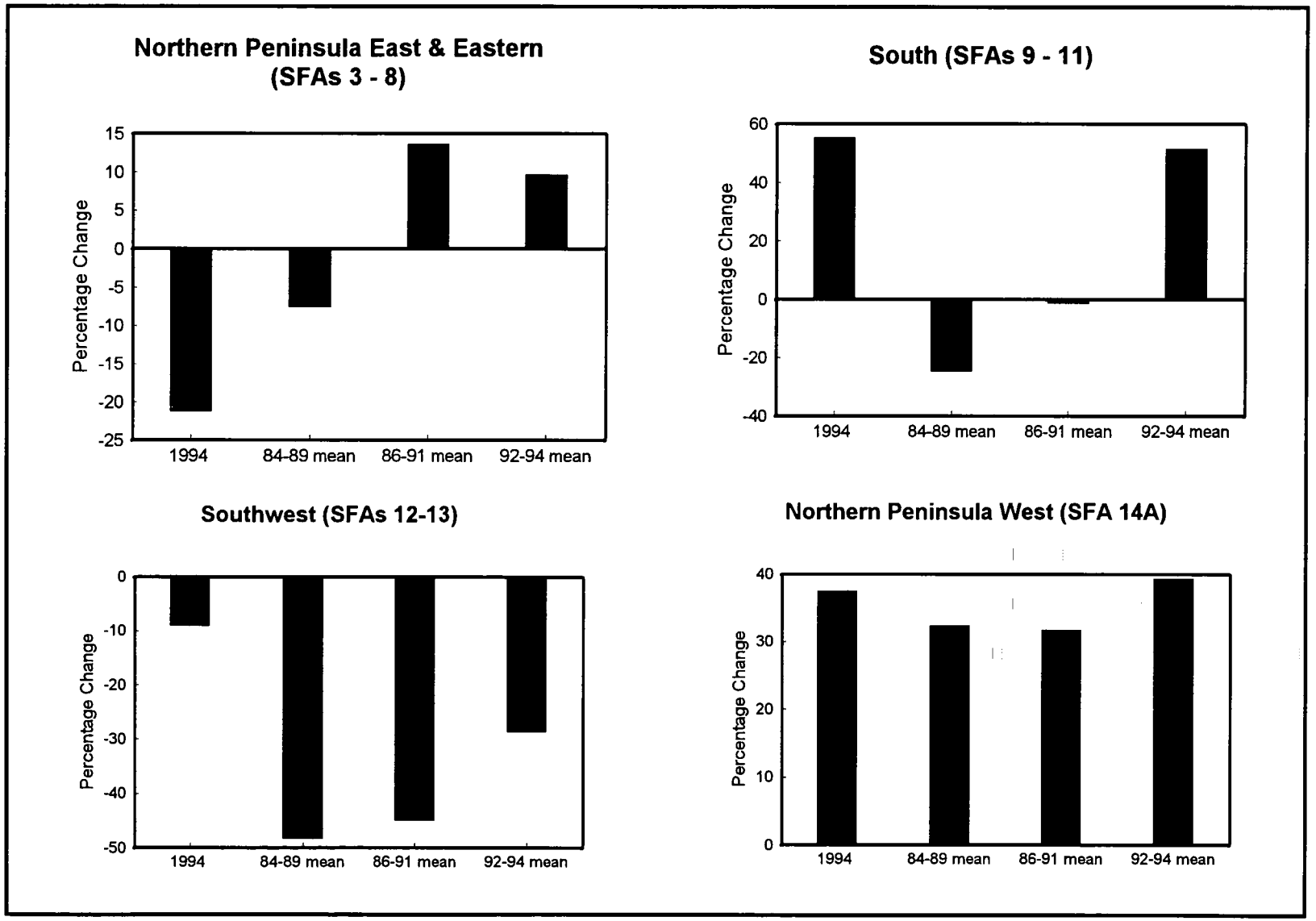

Fig. 10. Percentage change in recreational catch (retained) for small salmon in 1995 compared to 1994, the 1984-89 mean, the 1986-91 mean and the 1992-94 mean for Northern Peninsula East & Eastern (SFAs 3 - 8), South (SFAs 9 - 11), Southwest (SFAs 12 - 13), and Northern Peninsula West (SFA 14A).

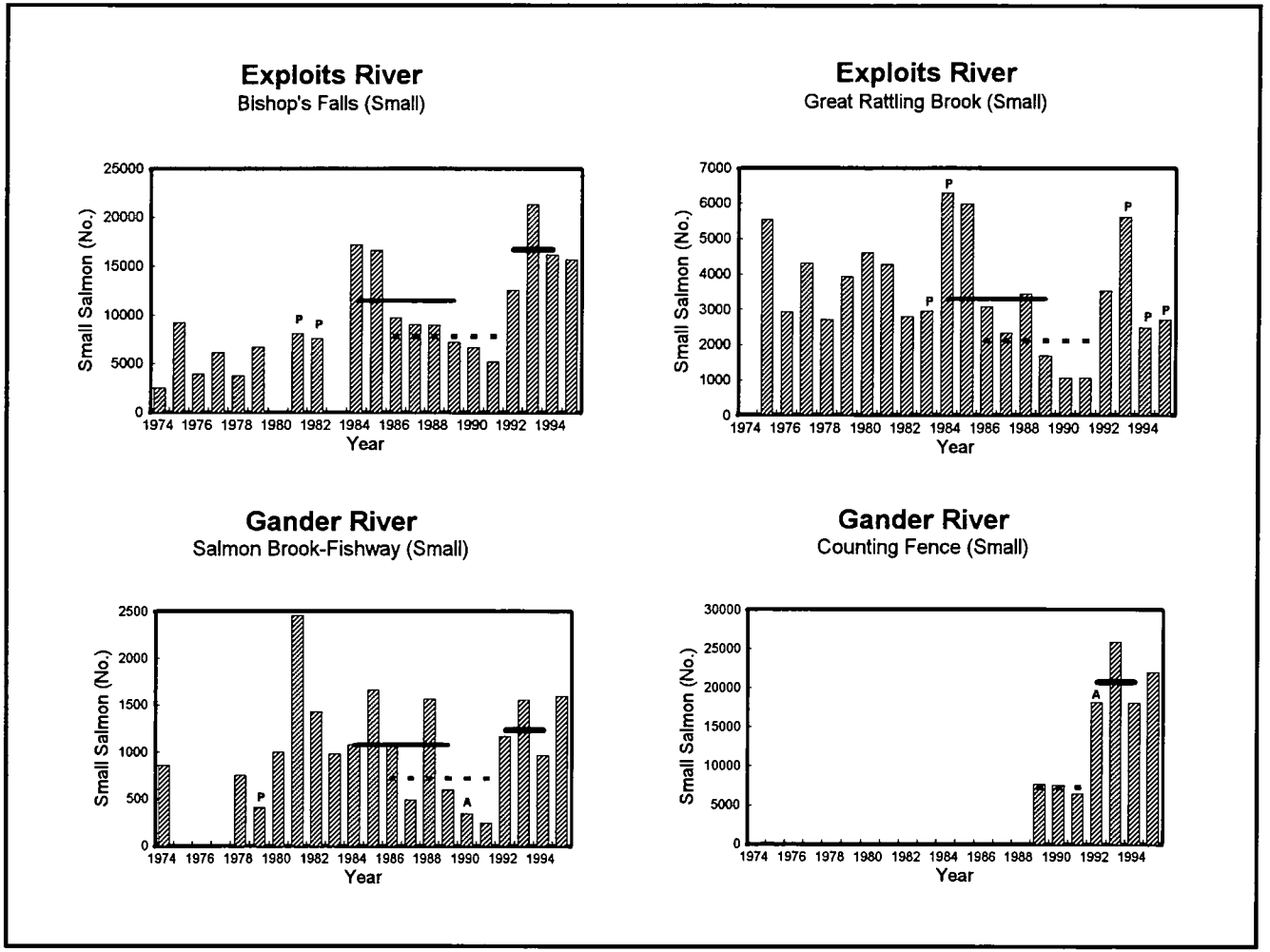

Fig. 11. Counts of small salmon at the Bishop's Falls fishway (main stem of the Exploits River) and the fishway in the Great Rattling Brook tributary, and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. A = adjusted count and P = partial count, not included in means.

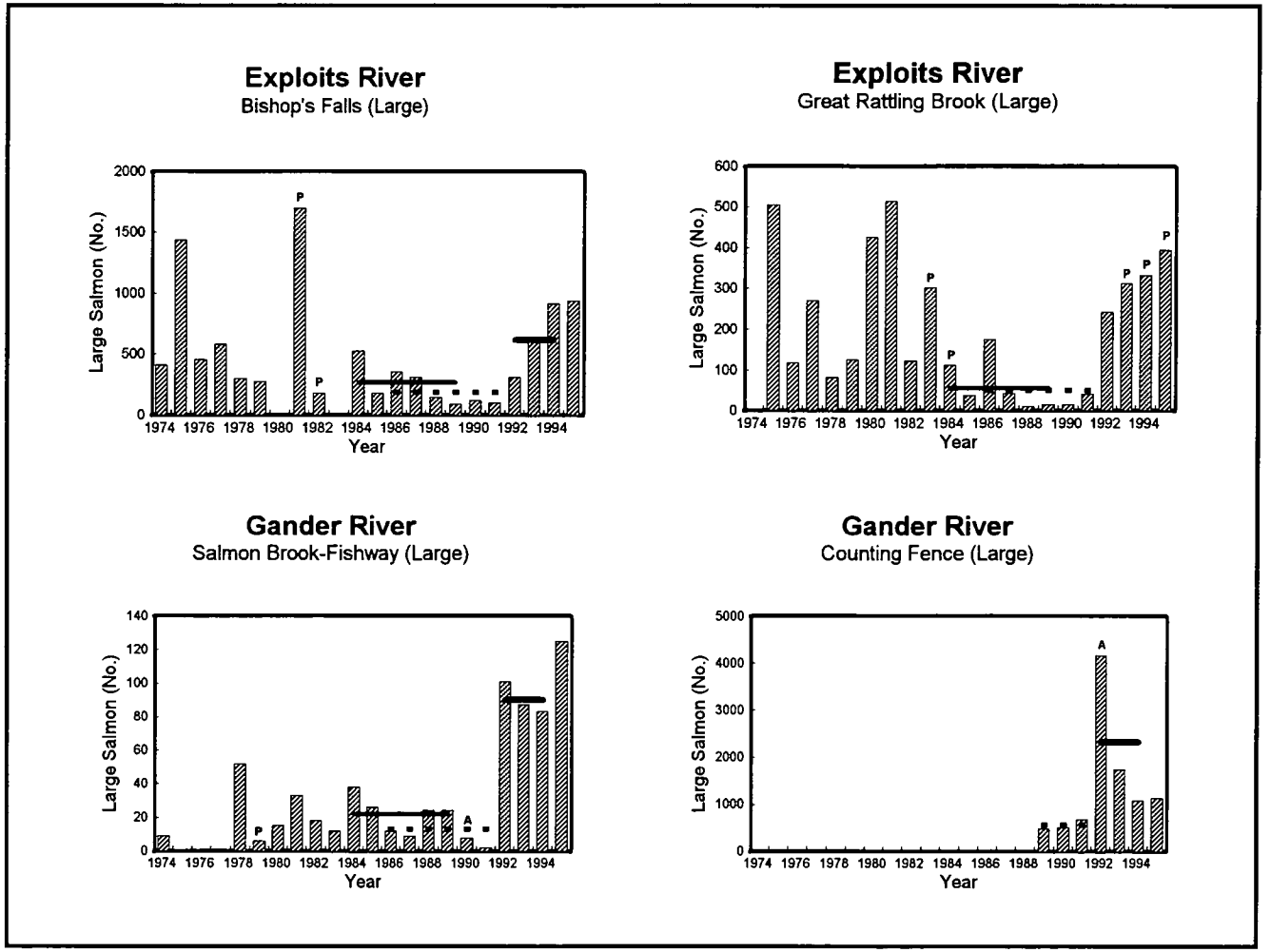

Fig. 12. Counts of large salmon at the Bishop's Falls fishway (main stem of the Exploits River) and the fishway in the Great Rattling Brook tributary, and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. A = adjusted count and P = partial count, not included in means.

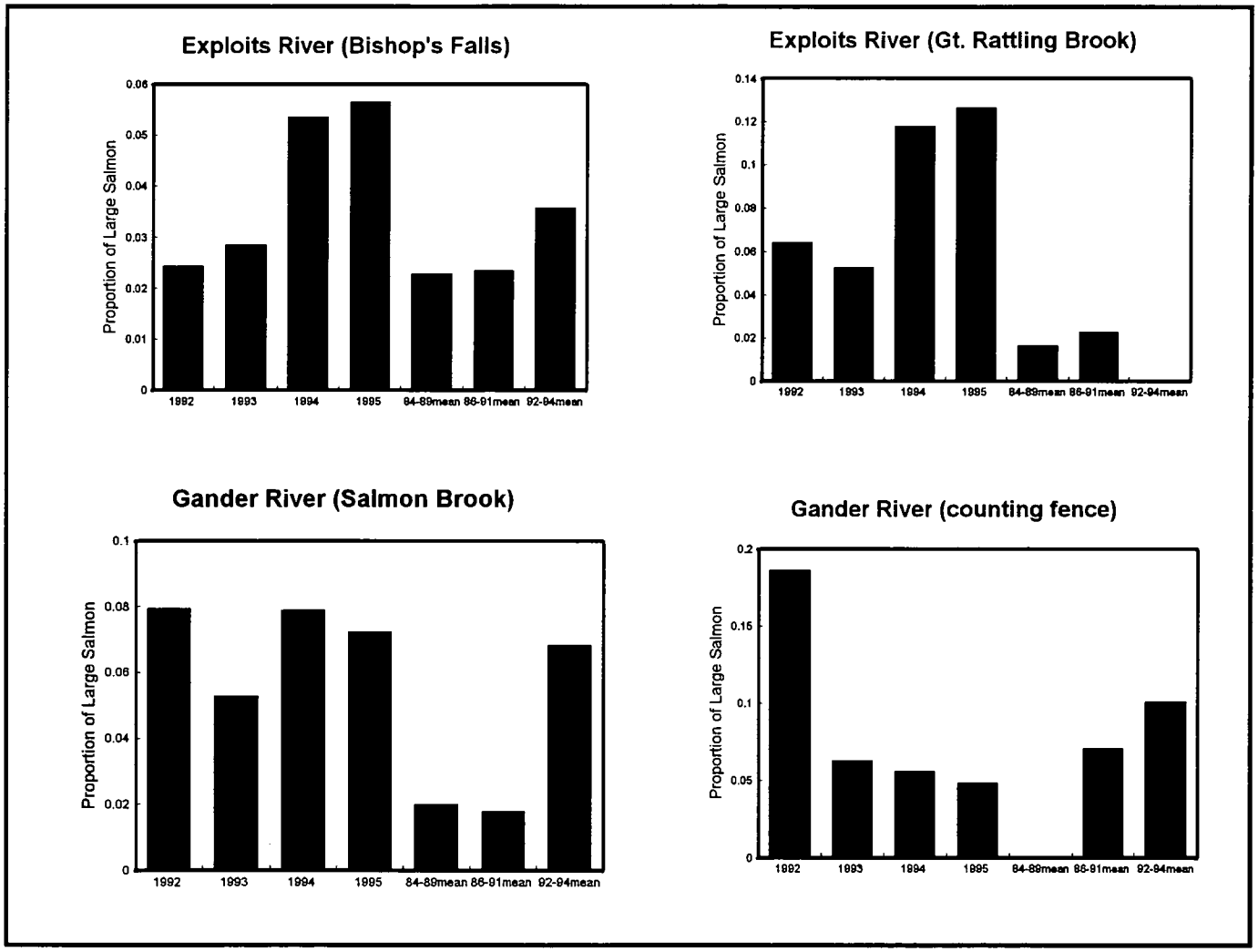

Fig. 13. Proportion of large salmon for Exploits River (Bishop's Falls), Great Rattling Brook tributary, Gander River counting fence and the Salmon Brook tributary, SFA 4, 1992-95, and the 84-89, 86-91, and 92-94 means.

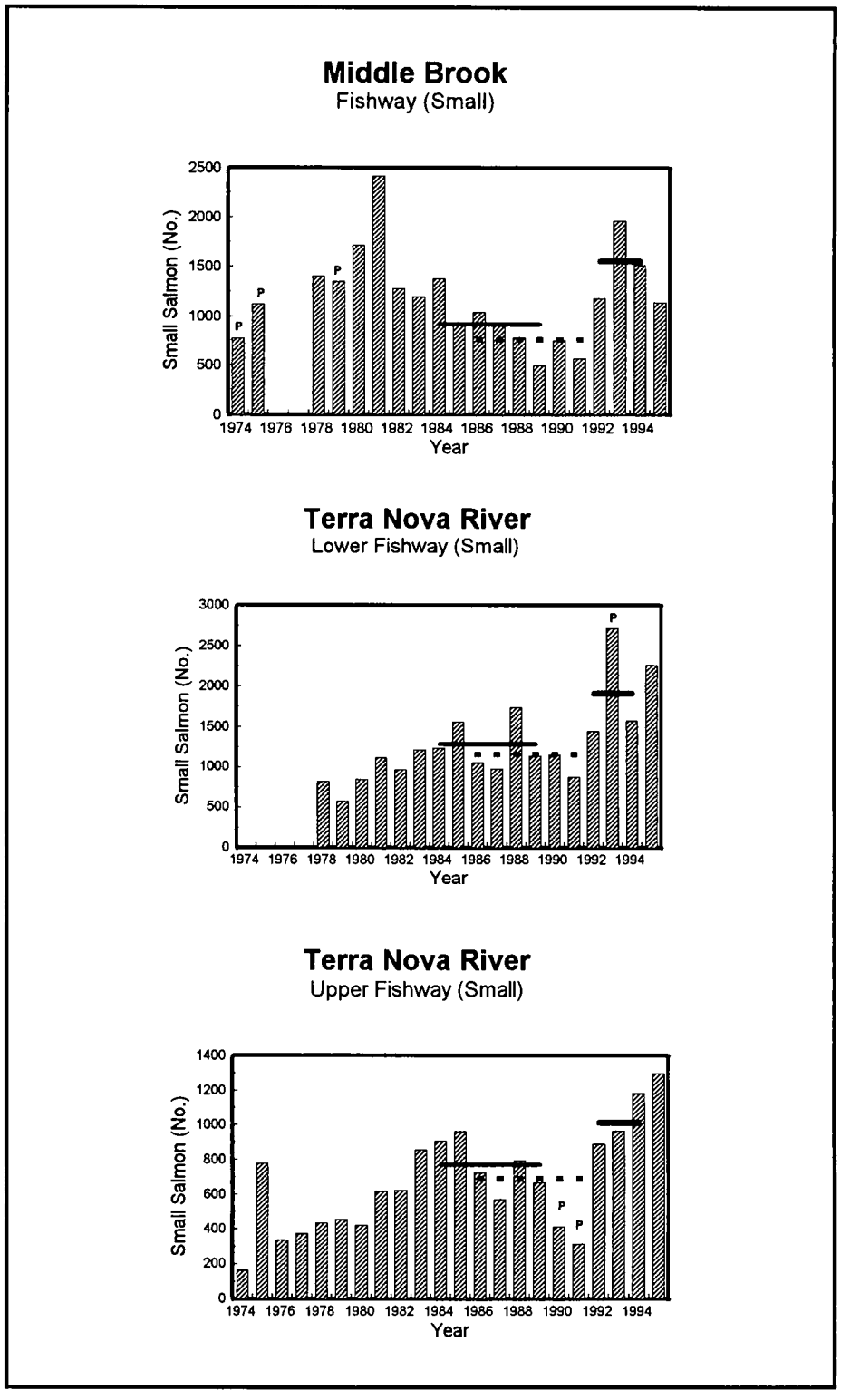

Fig. 14. Counts of small salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. P=partial count, not included in means.

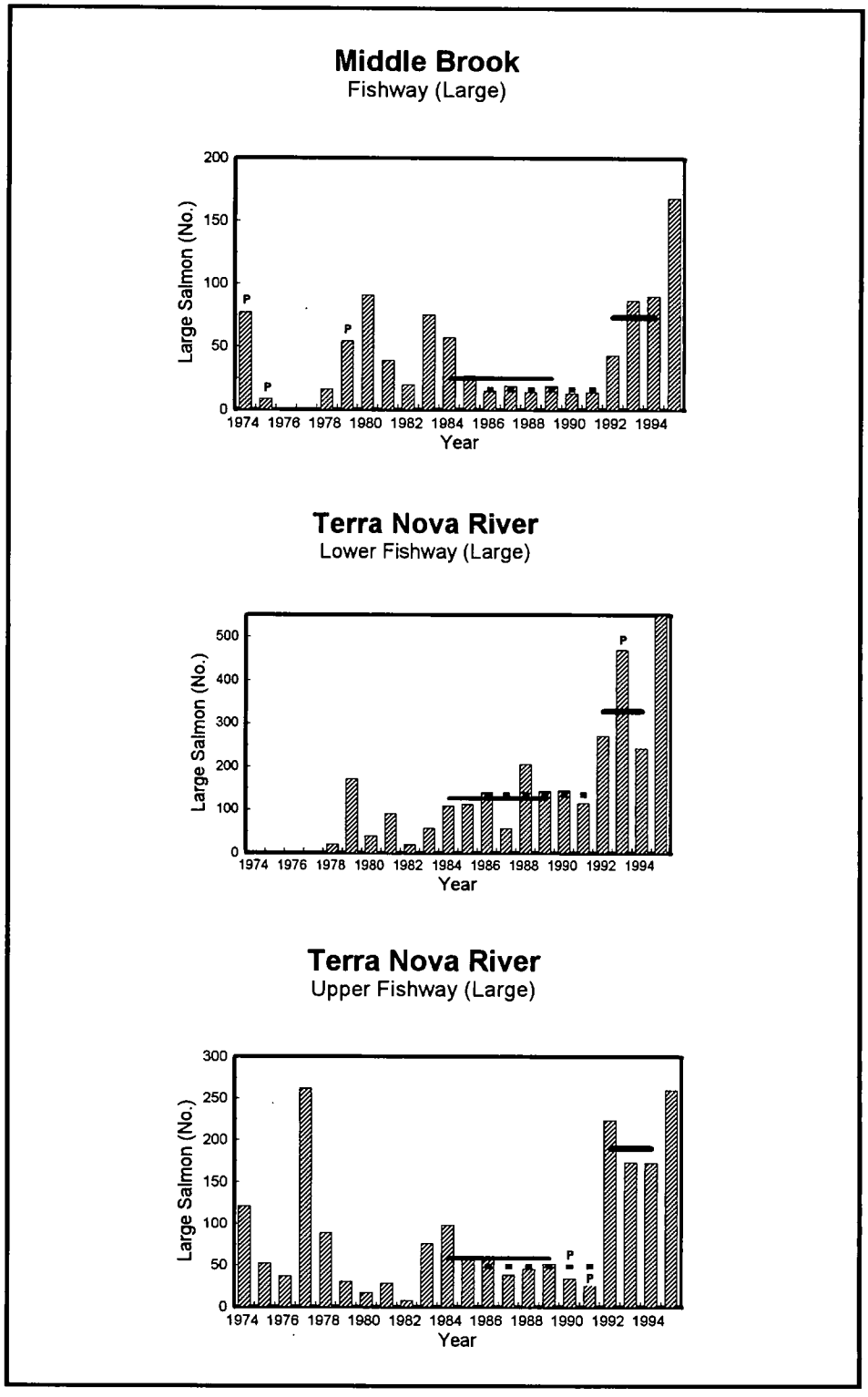

Fig. 15. Counts of large salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. P=partial count, not included in means.

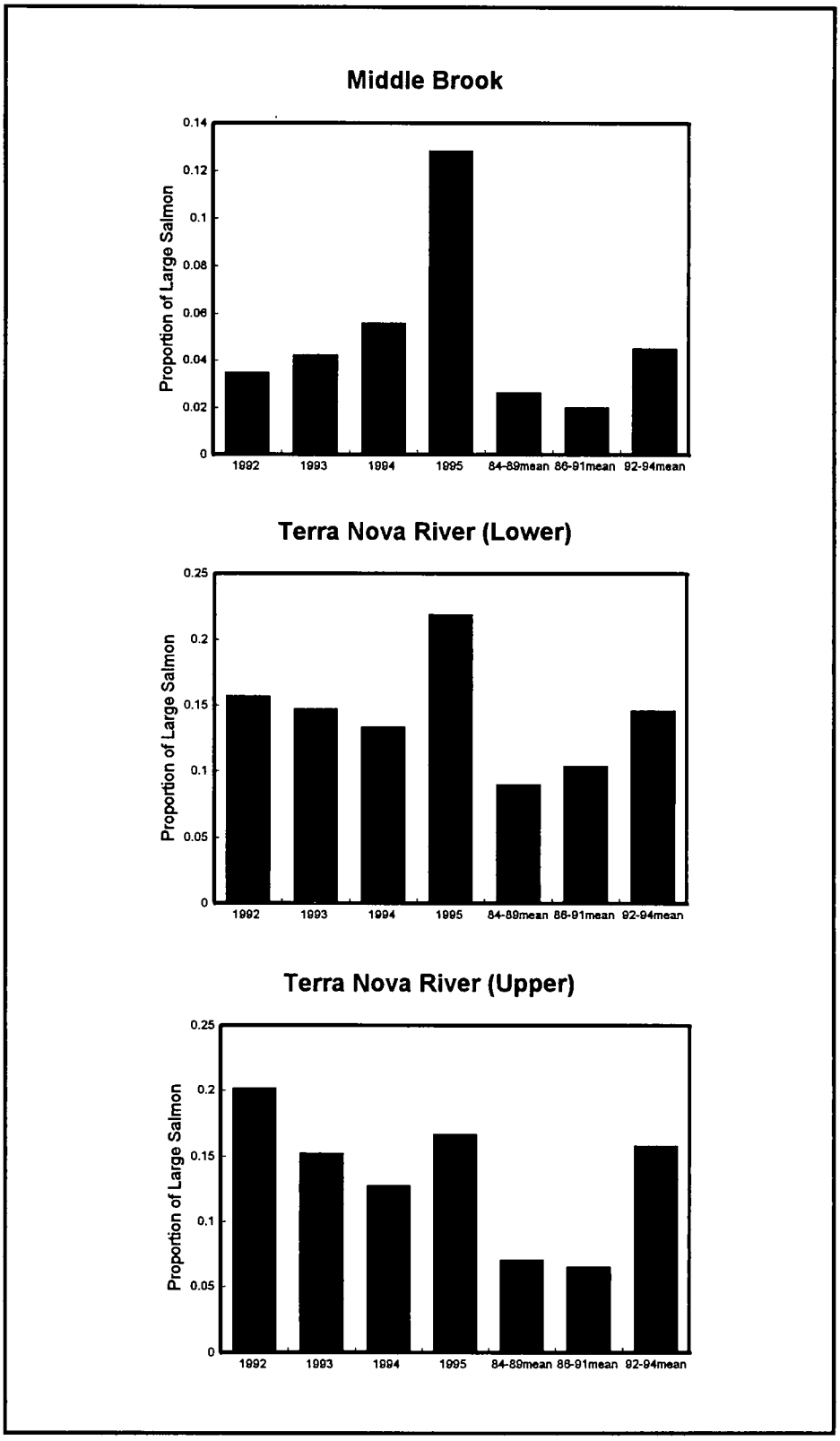

Fig. 16. Proportion of large salmon for Middle Brook and the lower and upper Terra Nova River, SFA 5, 1992-95, and the 84-89, 86-91, and 92-94 means.

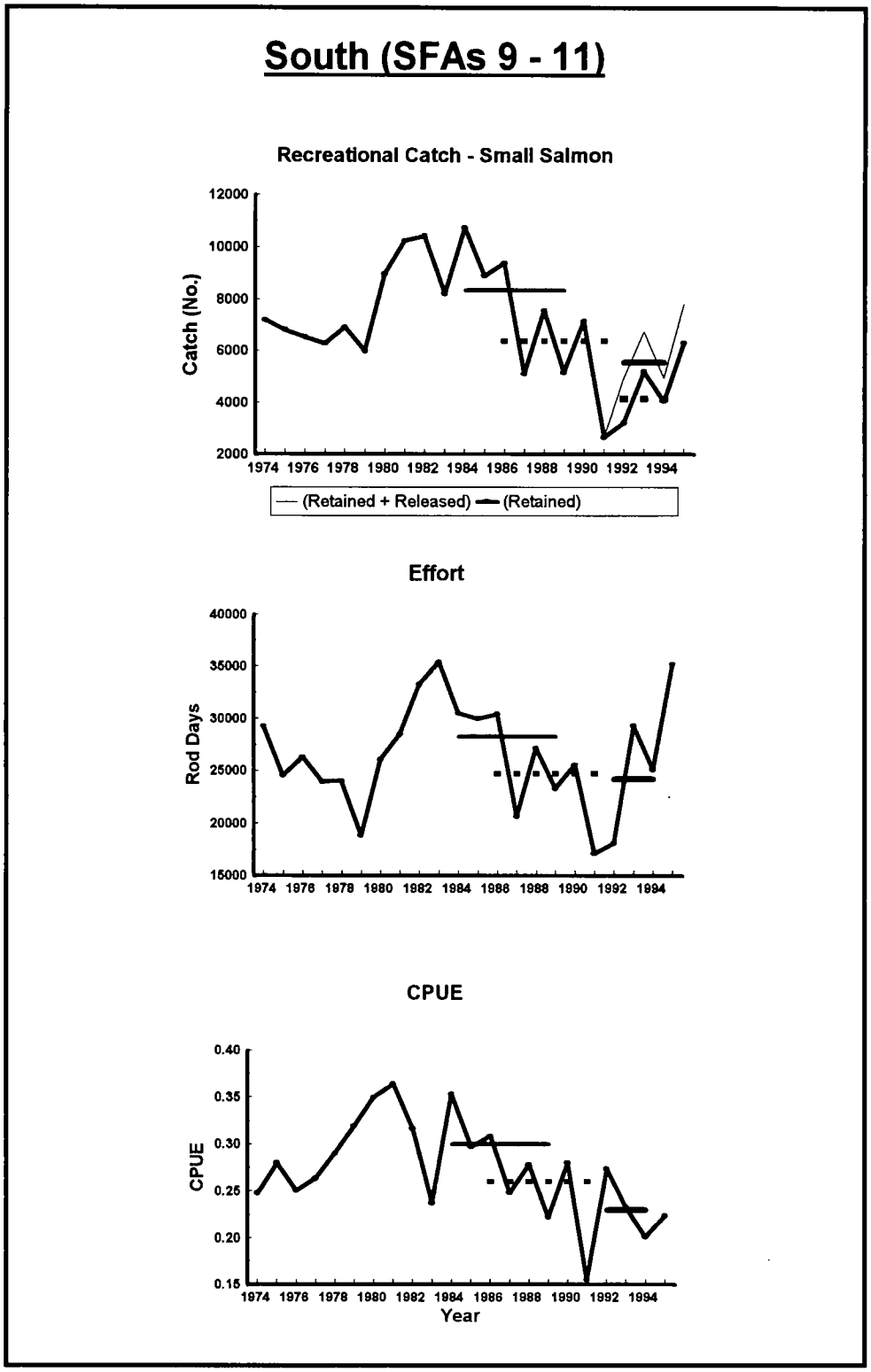

Fig. 17. Recreational catch of small salmon (retained, 1974-95; retained plus released, 1992-95), effort, and catch per unit of effort (CPUE), 1974-1995, for South (SFAs 9 - 11). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

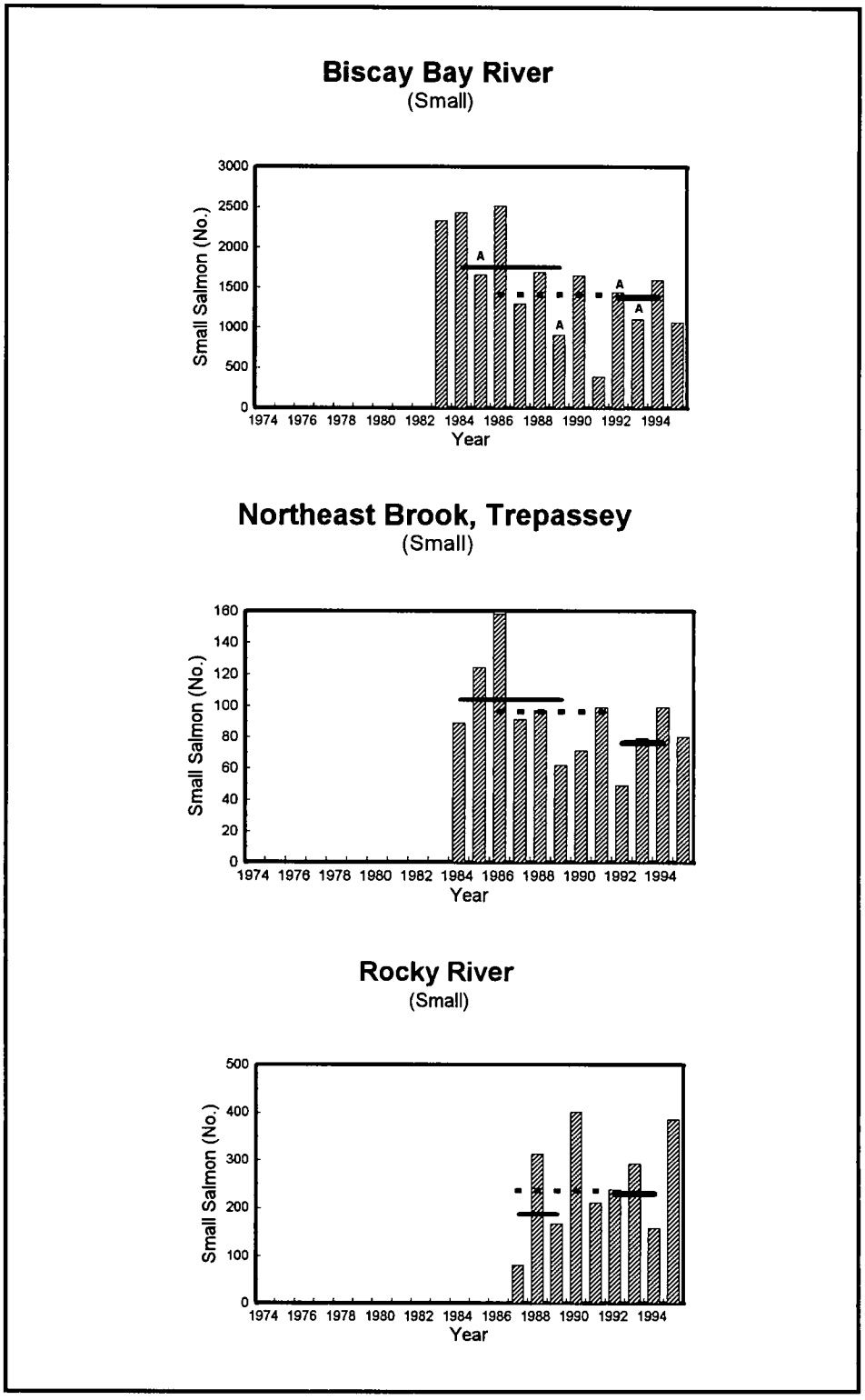

Fig. 18. Counts of small salmon at counting fences in Biscay Bay River and Northeast Brook (Trepassey) and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. A = adjusted count.

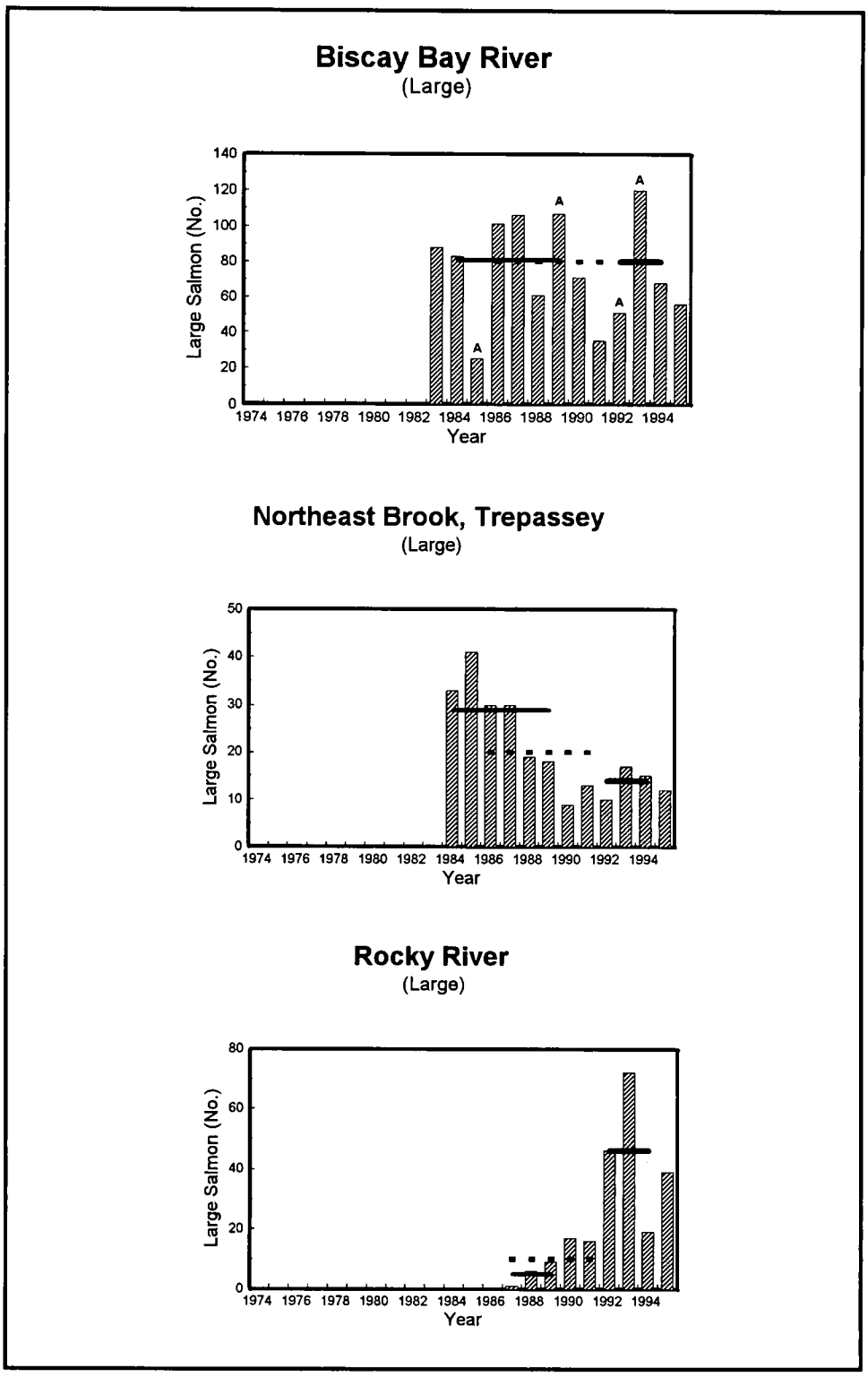

Fig. 19. Counts of large salmon at counting fences in Biscay Bay River and Northeast Brook (Trepassey) and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. A = adjusted count.

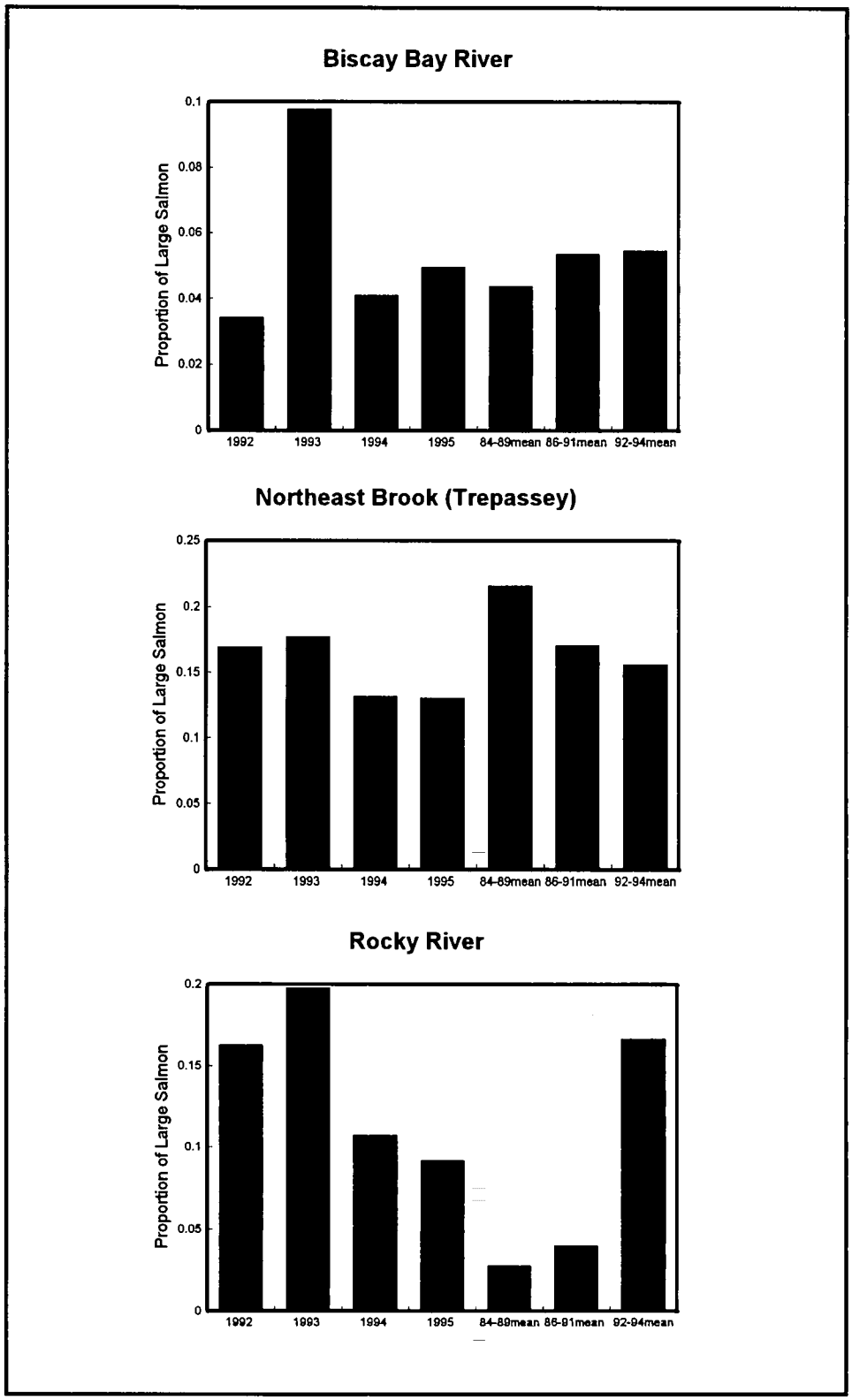

Fig. 20. Proportion of large salmon for Biscay Bay River, Northeast Brook (Trepassey), and Rocky River, SFA 9, 1992-95, and the 84-89 , 86-91 and 92-94 means.

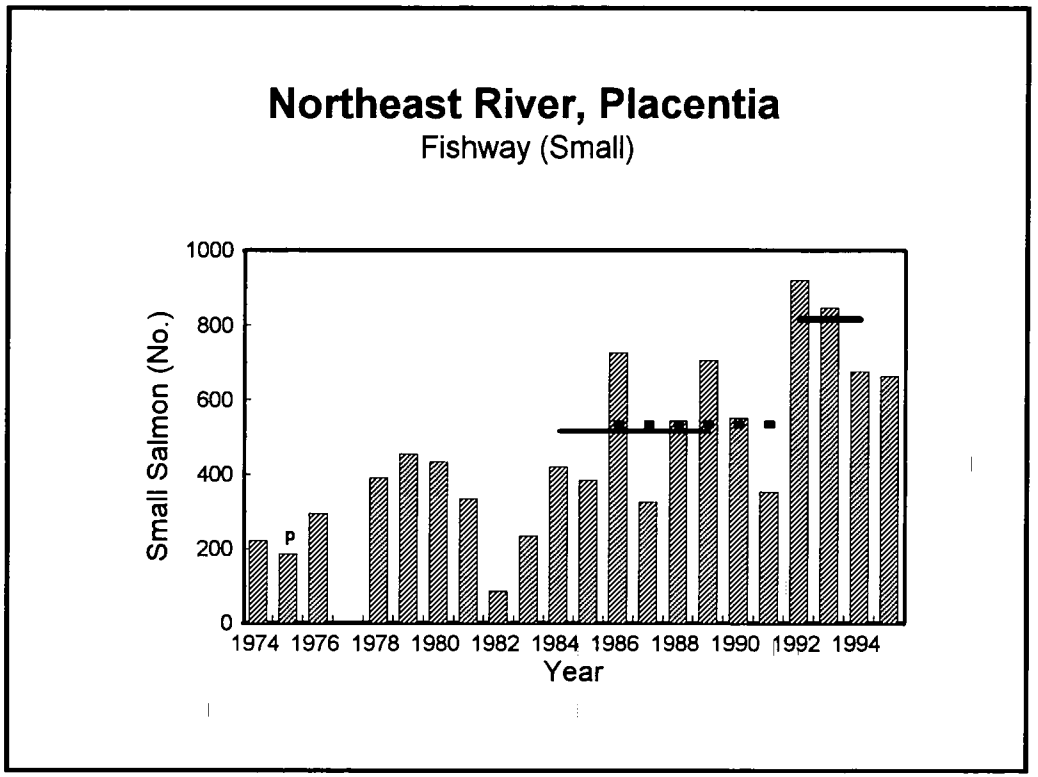

Fig. 21. Counts of small salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. P= partial count.

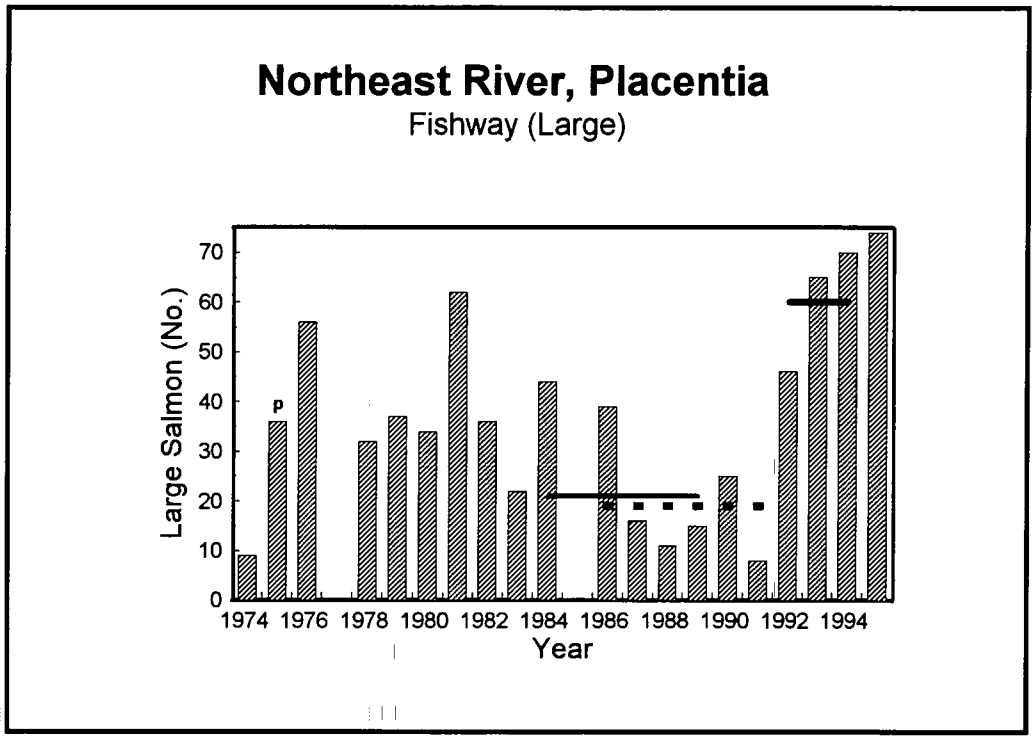

Fig. 22. Counts of large salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. P= partial count.

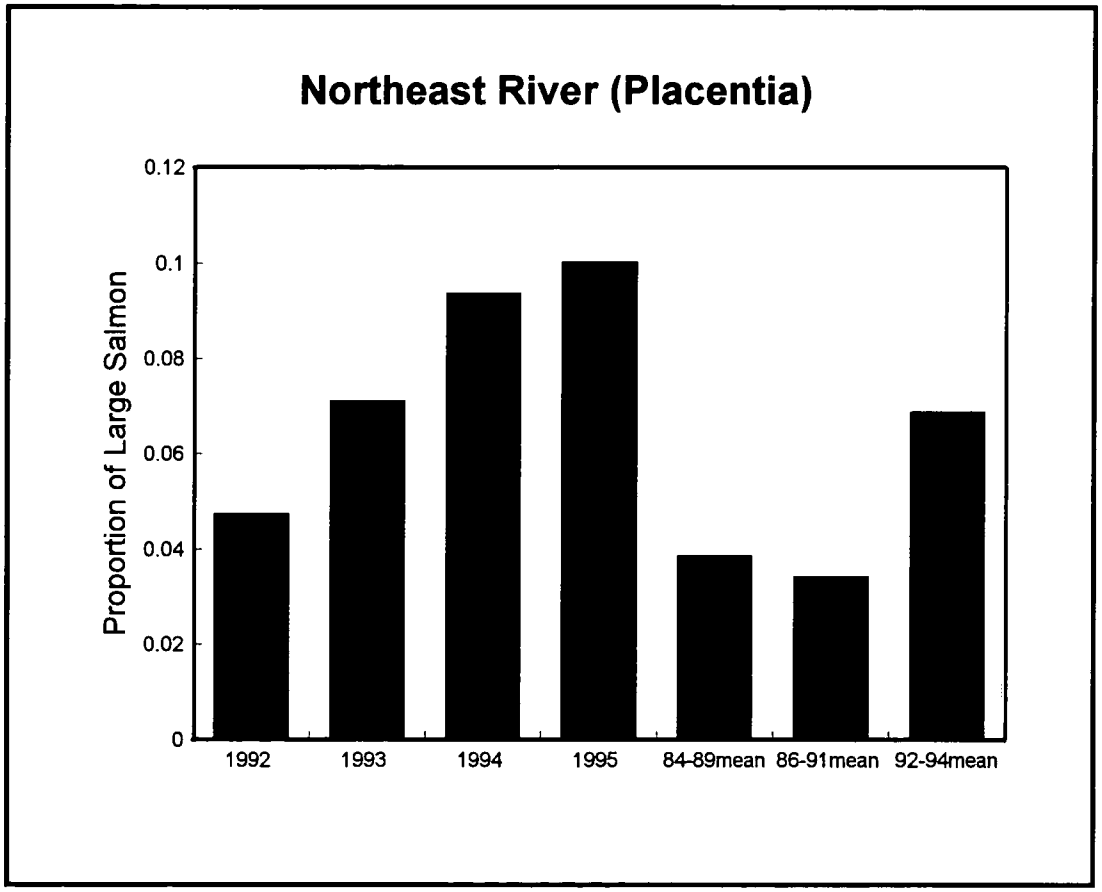

Fig. 23. Proportion of large salmon for Northeast River (Placentia), SFA 10, 1992-95 and the 84-89, 86-91, and 92-94 means.

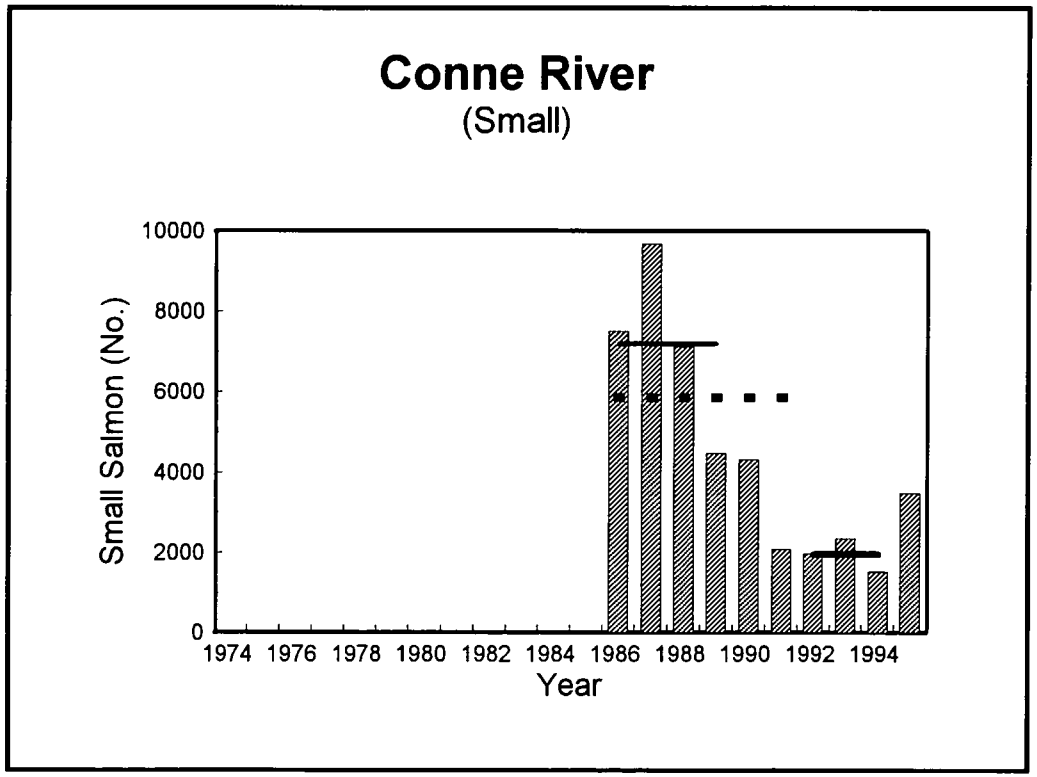

Fig. 24. Counts of small salmon at the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean.

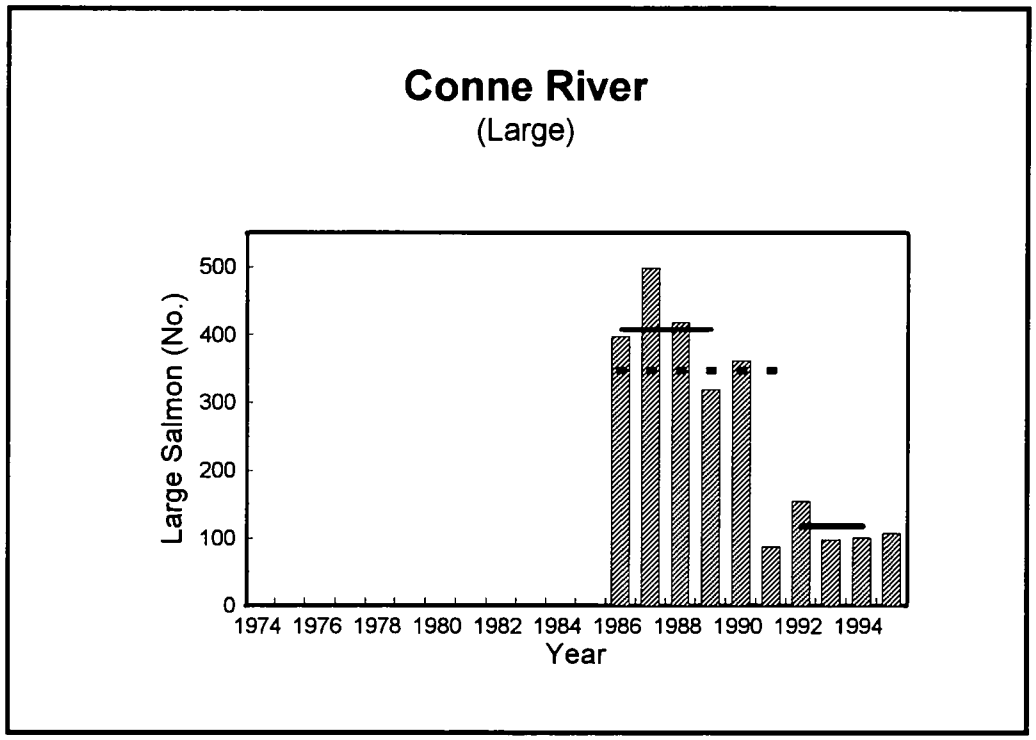

Fig. 25. Counts of large salmon at the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean.

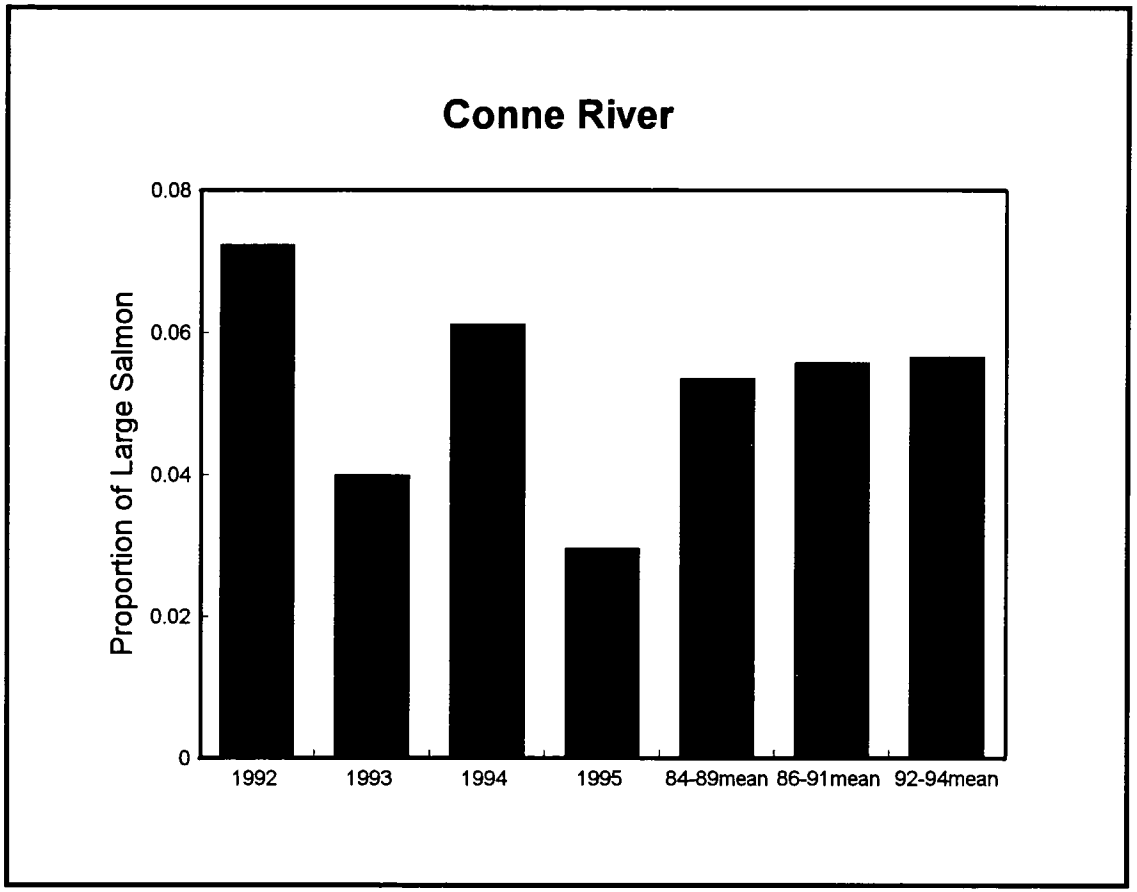

Fig. 26. Proportion of large salmon for Conne River, SFA 11, 1992-95 and the 84-89, 86-91, and 92-94 means.

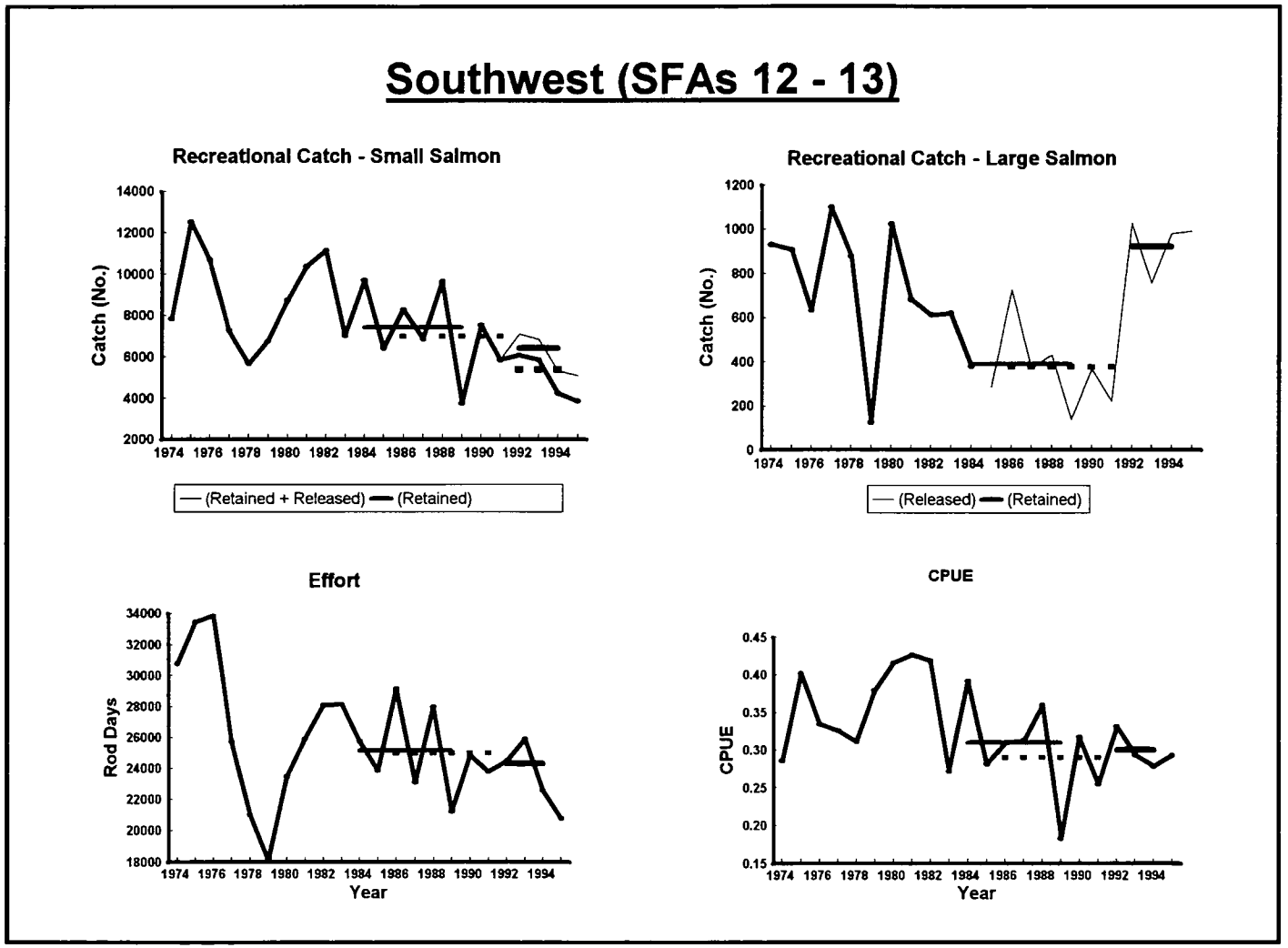

Fig. 27. Recreational catch of small salmon (retained, 1974-95; retained plus released, 1992-95), effort, and catch per unit of effort (CPUE), 1974-1995 for Southwest (SFAs 12 - 13). The catch of large salmon prior to 1985 is retained and for 1985-95 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

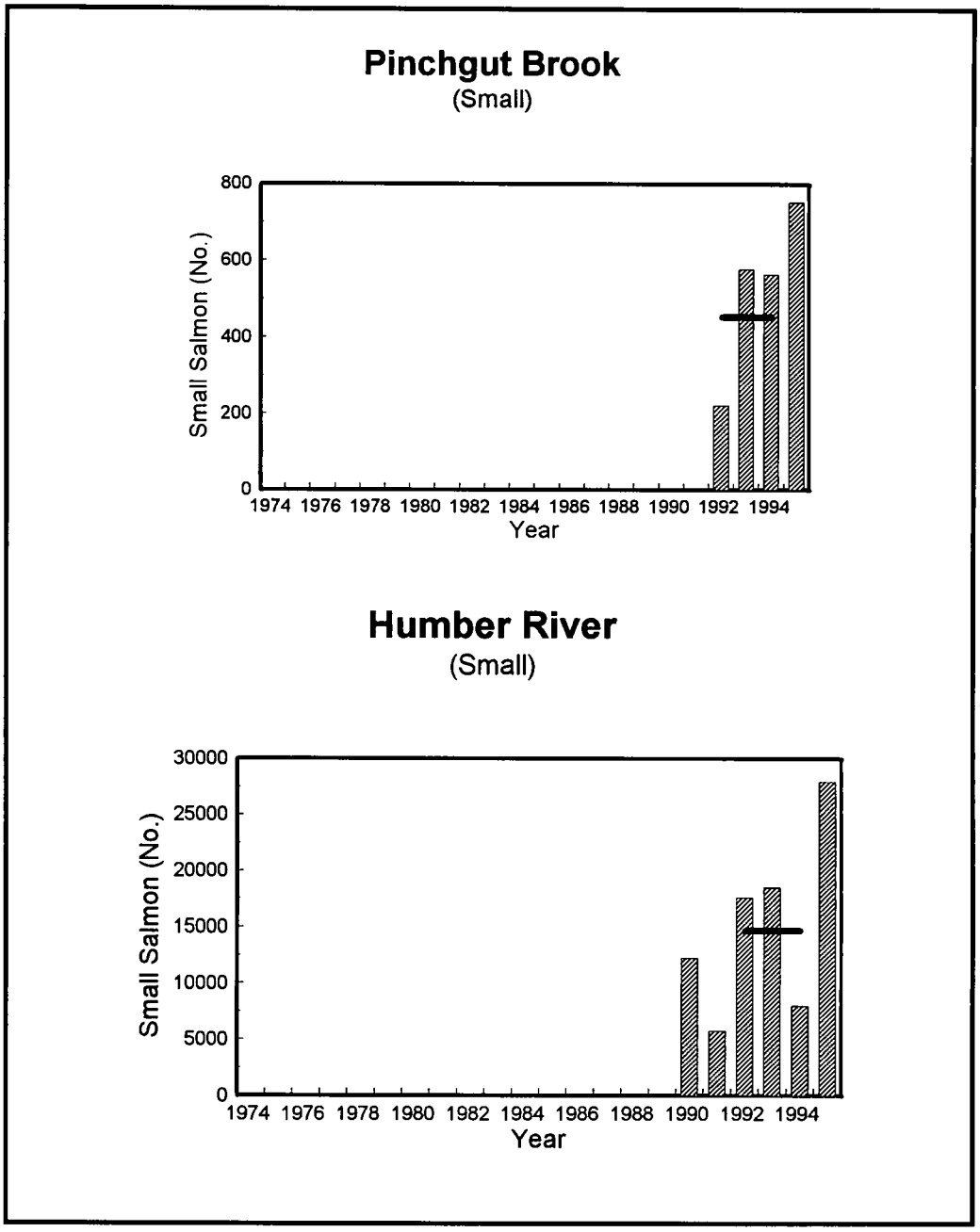

Fig. 28. Counts of small salmon at the Pinchgut Brook counting fence and from the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 92-94 mean.

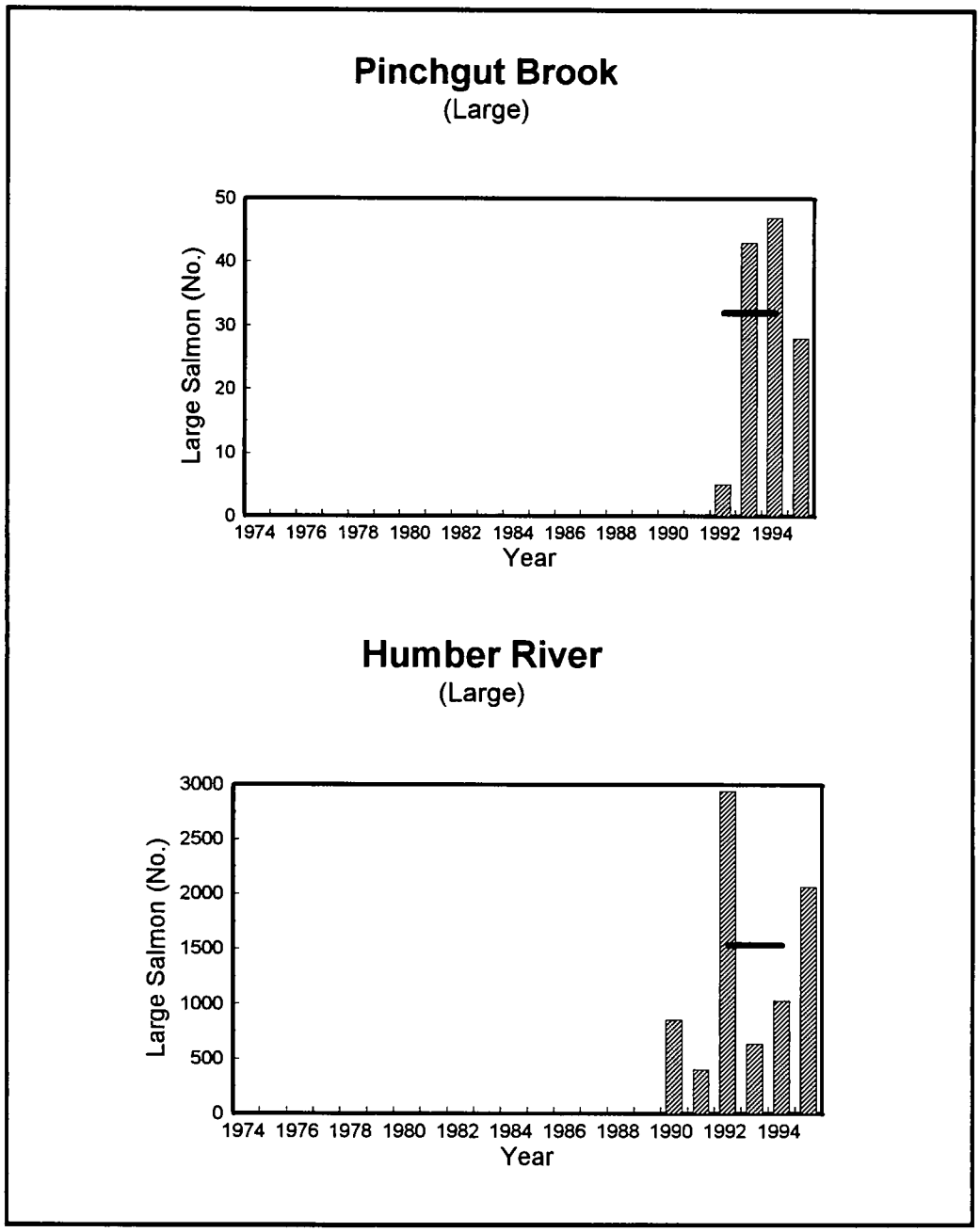

Fig. 29. Counts of large salmon at the Pinchgut Brook counting fence and from the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 92-94 mean.

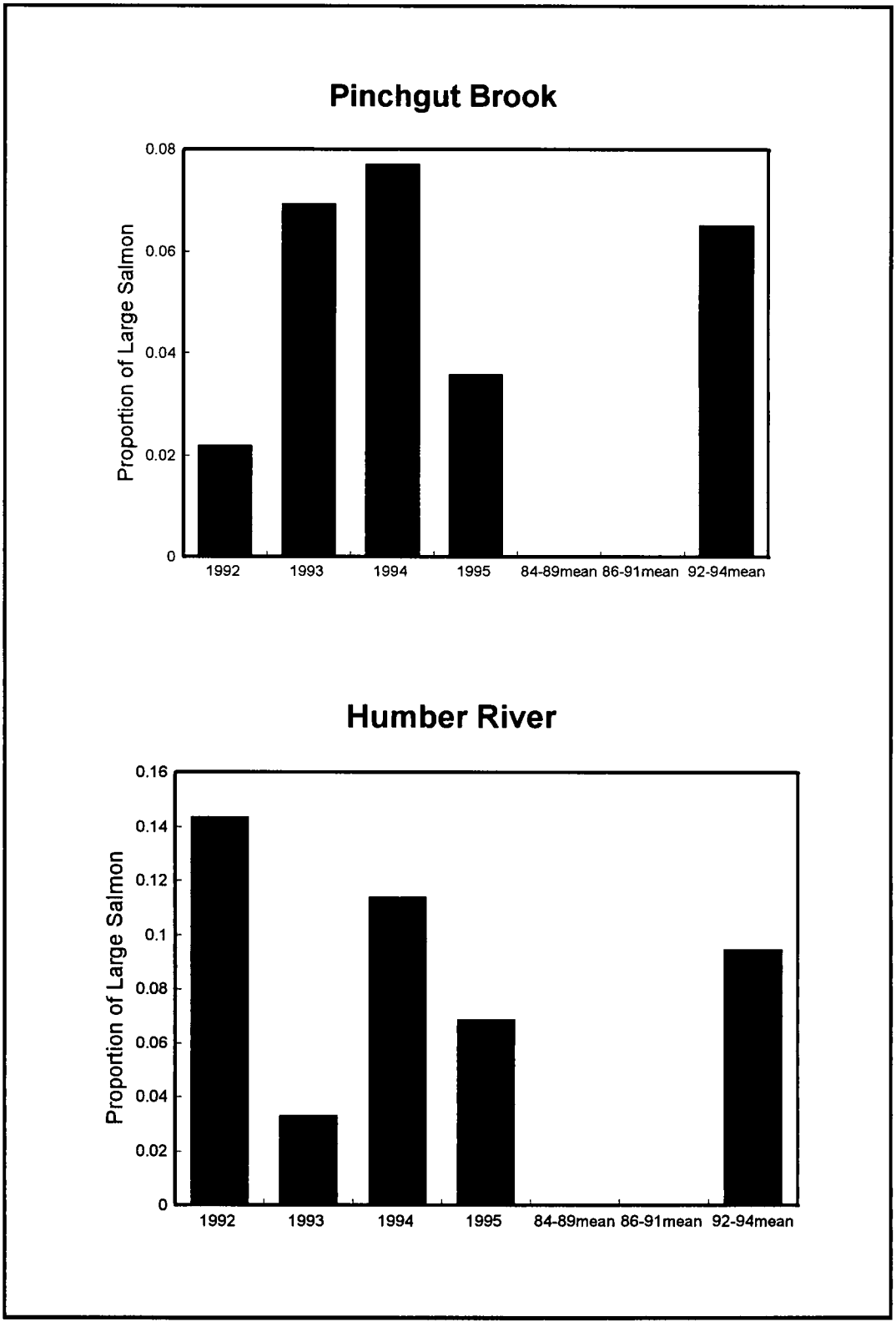

Fig. 30. Proportion of large salmon for Pinchgut Brook and Humber River, SFA 13, 1992-95, and the 92-94 mean.

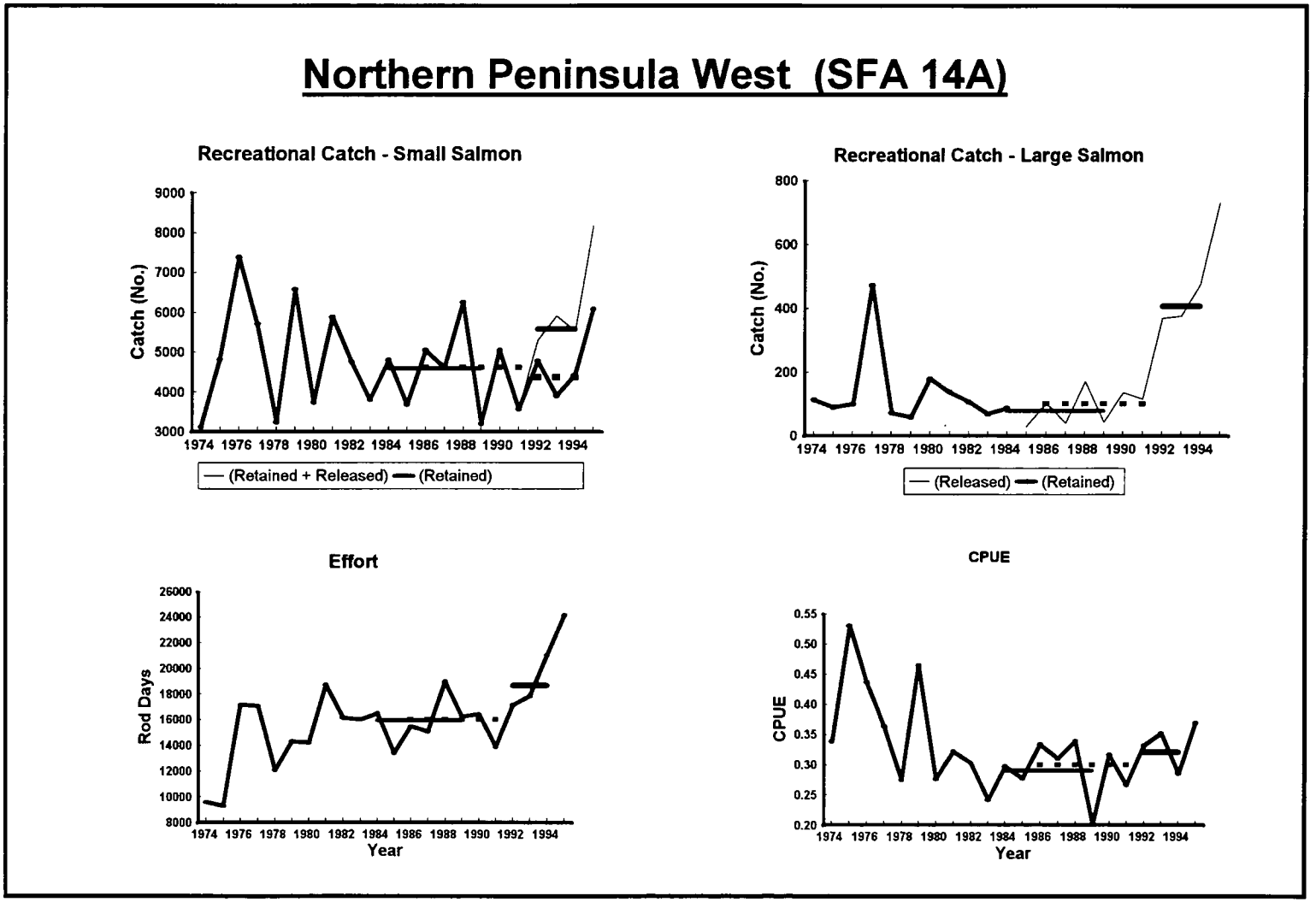

Fig. 31. Recreational catch of small salmon (retained, 1974-95; retained plus released, 1992-95), effort, and catch per unit of effort (CPUE), 1974-1995 for Northern Peninsula West (SFAs 14A). The catch of large salmon prior to 1985 is retained and for 1985-95 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-94 mean (retained + released) and the thick broken line the 1992-94 mean (retained only).

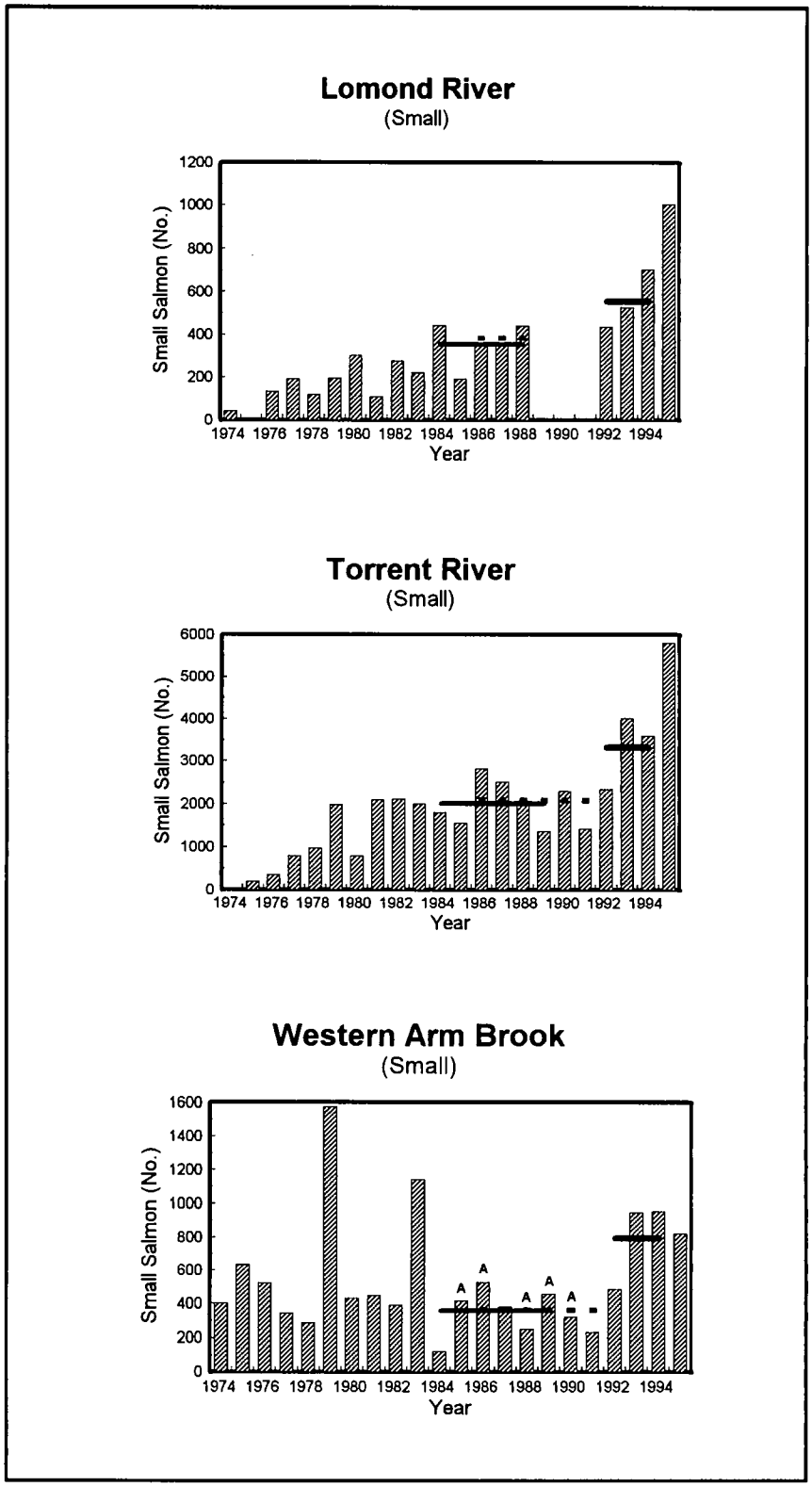

Fig. 32. Counts of small salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean. A = adjusted count.

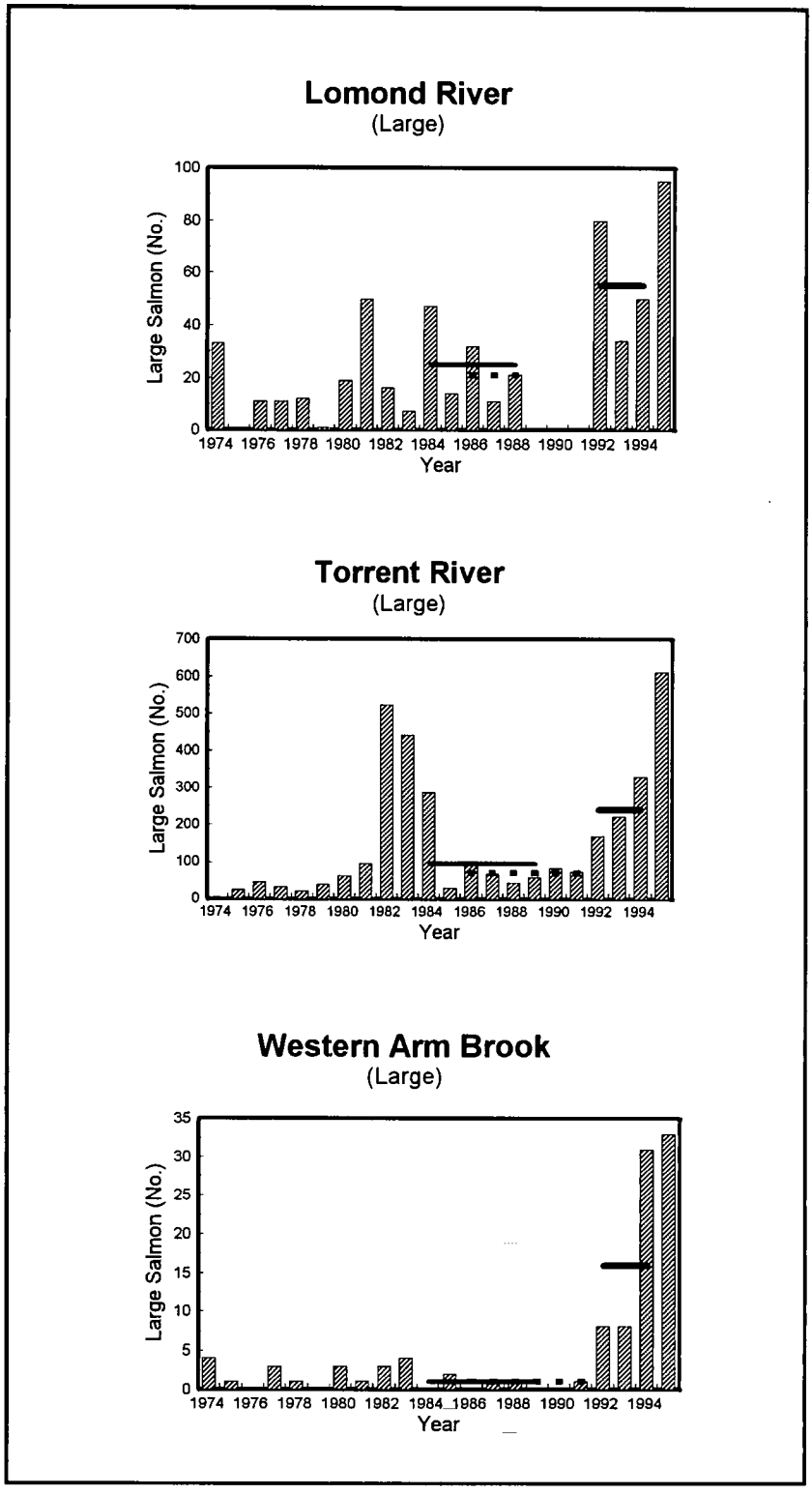

Fig. 33. Counts of large salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 84-89 mean, the broken line the 86-91 mean and the thick solid line the 92-94 mean.

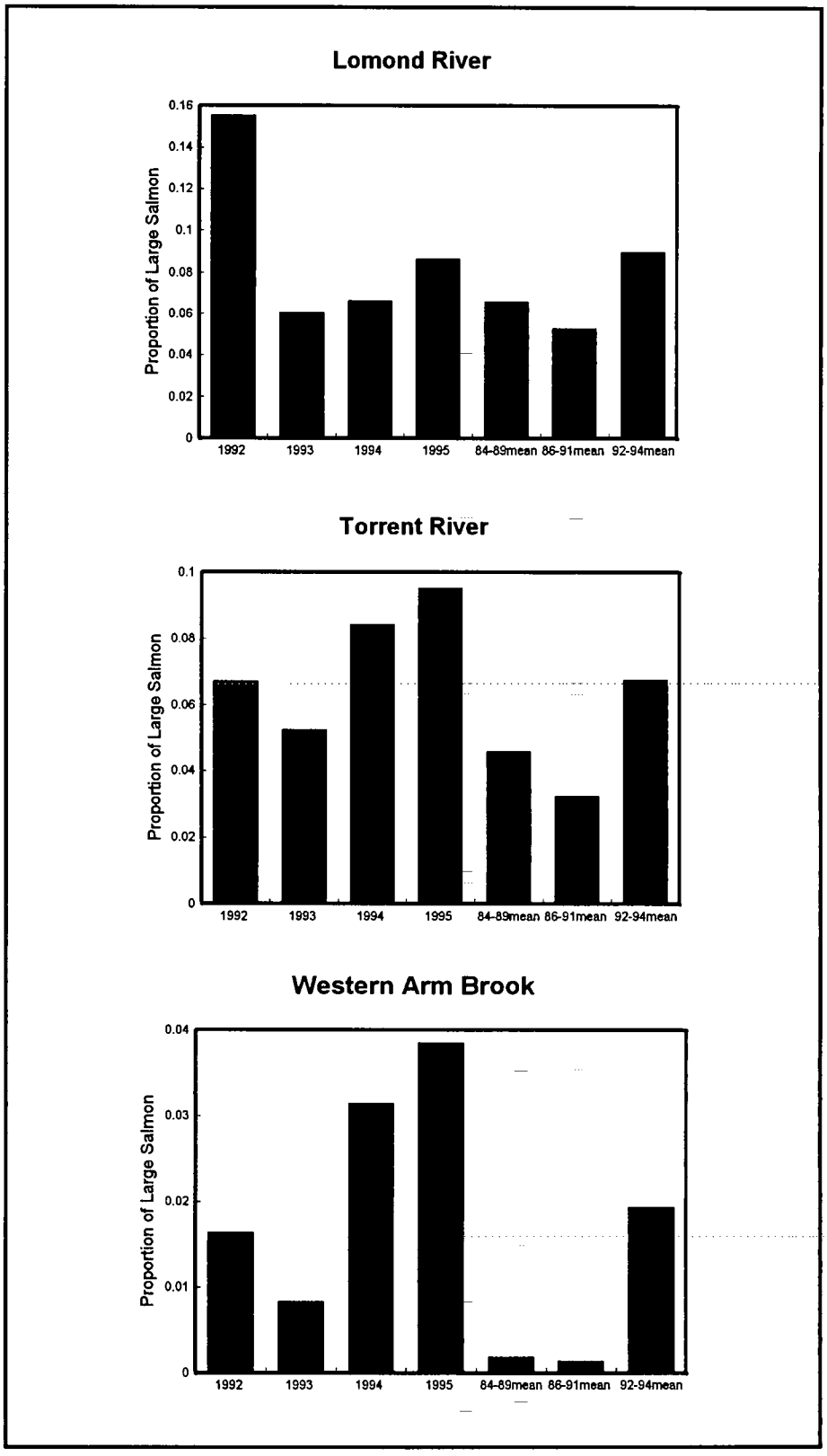

Fig. 34. Proportion of large salmon for Lomond River, Torrent River, and Western Arm Brook, SFA 14A, 1992-95, and the 84-89, 86-91 and 92-94 means.

Appendix 1

Sea survival rates for

Campbellton River salmon

Sea survival rates for 94 smolt class

Smolt count - 94	41,663
Adult count (small only) - 95	3,035
Sea survival rate - 94	3,035 / 41,663 = 7.28 % (uncorrected)

Previous spawners:

Kelts (downstream) - 95			1,874
Tagged kelts (downstream) - 95			448
Ratio untagged:tagged (total)	1,874 / 448	=	4.18
Overwintering survival - 94/95	1,874 / 3,048	=	68.5 %

The following table is a summary of the estimated numbers of previous spawners in small and large categories:

	UPSTREAM MIGRANTS			
	Tagged	Est. previous spawners	Total '94	% previous spawners
Small	106	443	3,035	14.6
Large	25	105	218	48.2
Total	131	548	3,253	16.9

Sea survival rates with correction for previous spawners:

Smolt count - 94	41,663
Upstream grilse - 95	2,592 (3,035-443)
Corrected sea survival - 94	2,592 / 41,663 = 6.2 %
Previous spawners survival 3 mo	548 / 1,874 = 29.2 %

Appendix 2a. Atlantic salmon recreational fishery catch and effort data for Labrador (SFAs 1, 2, &14B), 1974-1995. 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
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
92-94 $\bar{X}$	9319.0	2634.3	1593.0	4227.3	544.3	130.7	675.0	3178.7	1723.7	4902.3	0.53
95% CL	2428.4	289.8	3115.4	2989.1	523.0	359.3	444.4	793.0	3451.9	2966.3	0.18
N	3	3	3	3	3	3	3	3	3	3	3

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Appendix 2b. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3 - 14A), 1974-1995
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	122479	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	120049	36604	.	36604	*	316	316	36604	316	36920	0.31
1986	123611	37513	.	37513	*	826	826	37513	826	38339	0.31
1987	85969	24480	.	24480	*	410	410	24480	410	24890	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	23127	5633	28760	*	1413	1413	23127	7046	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
84-89 $\bar{X}$	115484.4	34350.2	.	34350.2	.	481.3	487.2	34452.4	481.3	34837.4	0.30
95% CL	16882.8	11146.9	.	11146.9	.	458.6	310.3	11238.1	458.6	11365.3	0.06
N	5	5	0	5	0	4	5	5	4	5	5
86-91 $\bar{X}$	106188.4	29262.4	.	29262.4	.	489.6	489.6	29262.4	489.6	29752.0	0.28
95% CL	19617.1	11994.7	.	11994.7	.	306.1	306.1	11994.7	306.1	12271.9	0.07
N	5	5	0	5	0	5	5	5	5	5	5
92-94 $\bar{X}$	121033.3	25593.0	10135.3	35728.3	.	1701.7	1701.7	25593.0	11837.0	37430.0	0.31
95% CL	57483.2	7498.7	13906.9	15705.6	.	804.8	804.8	7498.7	13995.3	16160.1	0.09
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 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2c. Atlantic salmon recreational fishery catch and effort data for Newfoundland and Labrador combined (SFAs 1 - 14B), 1974-1995. 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	127677	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	126415	39705	.	39705	294	316	610	39999	316	40315	0.32
1986	131305	40977	.	40977	467	826	1293	41444	826	42270	0.32
1987	94723	29846	.	29846	633	410	1043	30479	410	30889	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	25865	5884	31749	781	1423	2204	26646	7307	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
84-89 $\bar{X}$	123599.6	38291.6	.	38291.6	590.6	481.3	975.6	38882.2	481.3	39267.2	0.32
95% CL	16227.9	10830.2	.	10830.2	350.9	458.6	420.2	10969.0	458.6	11115.8	0.05
N	5	5	0	5	5	4	5	5	4	5	5
86-91 $\bar{X}$	114890.2	33123.0	.	33123.0	417.6	489.6	907.2	33540.6	489.6	34030.2	0.30
95% CL	19987.6	12669.4	.	12669.4	276.8	306.1	485.3	12879.3	306.1	13141.0	0.06
N	5	5	0	5	5	5	5	5	5	5	5
92-94 $\bar{X}$	130352.3	28227.3	11728.3	39955.7	544.3	1832.3	2376.7	28771.7	13560.7	42332.3	0.32
95% CL	59876.0	7477.2	15352.3	17966.8	523.0	1163.4	954.7	7232.8	15678.0	18193.1	0.07
N	3	3	3	3	3	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 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Appendix 2d. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1974-1995. 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
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
92-94 $\bar{X}$	53902.3	11680.7	7732.3	18203.0	.	325.3	325.3	11680.7	6847.7	18528.3	0.34
95% CL	45493.6	9865.7	13981.1	14559.8	.	690.7	690.7	9865.7	12558.7	15235.5	0.16
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 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2e. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9 - 11), 1974-1995. 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
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
92-94 $\bar{X}$	24151.0	4159.3	1385.0	5544.3	.	51.0	51.0	4159.3	1436.0	5595.3	0.23
95% CL	14028.4	2503.1	1045.3	2531.9	.	96.8	96.8	2503.1	1002.8	2604.7	0.08
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2f. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 & 13), 1974-1995. 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	25877	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	*	724	724	8284	724	9008	0.31
1987	23099	6847	.	6847	*	369	369	6847	369	7216	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	6078	997	7075	*	1025	1025	6078	2022	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
84-89 $\bar{X}$	25166.8	7431.2	.	7431.2	.	389.6	387.5	7494.0	389.6	7818.7	0.31
95% CL	3170.6	2382.1	.	2382.1	.	268.5	203.1	2465.0	268.5	2515.4	0.07
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	25003.0	6972.5	.	6972.5	.	374.5	374.5	6972.5	374.5	7347.0	0.29
95% CL	3164.0	2144.6	.	2144.6	.	212.5	212.5	2144.6	212.5	2307.1	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-94 $\bar{X}$	24306.3	5382.3	1018.0	6400.3	.	918.7	918.7	5382.3	1936.7	7319.0	0.30
95% CL	4121.1	2506.9	119.4	2391.4	.	359.3	359.3	2506.9	428.8	2336.5	0.07
N	3	3	3	3	0	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Appendix 2g. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1974-1995. 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	13407	3678	.	3678	*	29	29	3678	29	3707	0.28
1986	15465	5047	.	5047	*	102	102	5047	102	5149	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
84-89 $\bar{X}$	15936.8	4601.0	.	4601.0	.	77.4	79.0	4615.5	77.4	4680.0	0.29
95% CL	1933.9	1127.6	.	1127.6	.	73.8	56.0	1131.7	73.8	1178.3	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15996.7	4622.7	.	4622.7	.	101.8	101.8	4622.7	101.8	4724.5	0.30
95% CL	1807.0	1163.9	.	1163.9	.	54.0	54.0	1163.9	54.0	1201.2	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-94 $\bar{X}$	18673.7	4370.7	1210.0	5580.7	.	406.7	406.7	4370.7	1616.7	5987.3	0.32
95% CL	5186.4	1091.7	1843.3	752.1	.	147.3	147.3	1091.7	1838.4	752.1	0.09
N	3	3	3	3	0	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Appendix 2h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 1, Labrador, 1974-1995. 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	694	875	.	875	432	.	432	1307	.	1307	1.88
1979	1367	905	.	905	430	.	430	1335	.	1335	0.98
1980	780	704	.	704	232	.	232	936	.	936	1.20
1981	414	660	.	660	195	.	195	855	.	855	2.07
1982	831	834	.	834	379	.	379	1213	.	1213	1.46
1983	763	488	.	488	137	.	137	625	.	625	0.82
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	895	523	.	523	90	.	90	613	.	613	0.68
1991	888	108	.	108	8	.	8	116	.	116	0.13
1992	709	164	4	168	286	0	286	450	4	454	0.64
1993	292	86	116	202	5	19	24	91	135	226	0.77
1994	848	293	864	1157	86	95	181	379	959	1338	1.58
1995	757	470	845	1315	67	96	163	537	941	1478	1.95
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 $\bar{X}$	1076.7	742.2	.	742.2	113.8	.	113.8	856.0	.	856.0	0.80
95% CL	344.5	499.1	.	499.1	61.0	.	61.0	551.7	.	551.7	0.33
N	6	6	0	6	6	0	6	6	0	6	6
92-94 $\bar{X}$	616.3	181.0	328.0	509.0	125.7	38.0	163.7	306.7	366.0	672.7	1.09
95% CL	718.8	259.7	1161.6	1394.8	359.3	124.9	327.6	472.3	1286.2	1459.2	1.51
N	3	3	3	3	3	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Appendix 2i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 2, Labrador, 1974-1995. 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	3141	1243	.	1243	152	.	152	1395	.	1395	0.44
1979	1817	2312	.	2312	60	.	60	2372	.	2372	1.31
1980	1692	2158	.	2158	320	.	320	2478	.	2478	1.46
1981	1431	2833	.	2833	105	.	105	2938	.	2938	2.05
1982	2290	1999	.	1999	162	.	162	2161	.	2161	0.94
1983	2365	1884	.	1884	161	.	161	2045	.	2045	0.86
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	2957	1720	.	1720	169	.	169	1889	.	1889	0.64
1991	2595	1063	.	1063	36	.	36	1099	.	1099	0.42
1992	3003	1718	183	1901	257	10	267	1975	193	2168	0.72
1993	3730	1375	1263	2638	131	42	173	1506	1305	2811	0.75
1994	3540	1671	1785	3456	287	185	472	1958	1970	3928	1.11
1995	3667	1310	1736	3046	271	220	491	1581	1956	3537	0.96
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 $\bar{X}$	2745.5	2045.8	.	2045.8	198.0	.	198.0	2243.8	.	2243.8	0.82
95% CL	270.3	633.3	.	633.3	102.5	.	102.5	733.0	.	733.0	0.25
N	6	6	0	6	6	0	6	6	0	6	6
92-94 $\bar{X}$	3424.3	1588.0	1077.0	2665.0	225.0	79.0	304.0	1813.0	1156.0	2969.0	0.87
95% CL	936.7	462.0	2029.8	1932.4	205.6	231.5	379.8	660.8	2230.5	2212.5	0.54
N	3	3	3	3	3	3	3	3	3	3	3

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

Appendix 2j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	5353.3	2118.7	1516.3	3635.0	.	187.0	187.0	2118.7	1703.3	3822.0	0.71
95% CL	5108.2	2573.8	3142.1	4415.8	.	501.3	501.3	2573.8	3449.7	4887.9	0.52
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	31228.3	6788.3	3825.0	10613.3	.	80.7	80.7	6788.3	3905.7	10694.0	0.34
95% CL	29515.9	5539.9	7483.4	8265.7	.	190.1	190.1	5539.9	7665.1	8440.4	0.21
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2l. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	13393.0	2416.0	1141.7	3557.7	.	53.3	53.3	2416.0	1195.0	3611.0	0.27
95% CL	10935.6	1731.3	1864.5	1927.1	.	131.7	131.7	1731.3	1979.4	2048.1	0.15
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	2492.7	264.7	37.3	302.0	.	4.3	4.3	264.7	41.7	306.3	0.12
95% CL	659.1	126.2	94.9	221.1	.	11.2	11.2	126.2	105.6	231.8	0.06
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	1194.0	56.3	1.0	57.3	.	0.0	0.0	56.3	1.0	57.3	0.05
95% CL	265.0	38.7	4.3	39.3	.	0.0	0.0	38.7	4.3	39.3	0.04
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	361.5	55.0	1.5	56.5	.	0.0	0.0	55.0	1.5	56.5	0.16
95% CL	1226.1	25.4	6.4	19.1	.	0.0	0.0	25.4	6.4	19.1	0.58
N	2	2	2	2	0	2	2	2	2	2	2

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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	7891.7	983.3	146.7	1130.0	.	6.0	6.0	983.3	152.7	1136.0	0.14
95% CL	5414.0	978.5	128.3	973.5	.	19.4	19.4	978.5	129.9	992.9	0.03
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	6035.3	630.3	446.0	1076.3	.	17.7	17.7	630.3	463.7	1094.0	0.18
95% CL	5676.4	883.6	680.9	807.3	.	25.9	25.9	883.6	683.5	832.5	0.06
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2r. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1974-1995. 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
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
92-94 $\bar{X}$	10224.0	2545.7	792.3	3338.0	.	27.3	27.3	2545.7	819.7	3365.3	0.33
95% CL	3738.4	1158.3	530.8	987.9	.	57.0	57.0	1158.3	474.1	998.9	0.14
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 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2s. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1974-1995. 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	2038	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	*	33	33	938	33	971	0.28
1987	2212	829	.	829	*	27	27	829	27	856	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
84-89 $\bar{X}$	3203.0	1126.5	.	1126.5	.	24.6	31.8	1137.8	24.6	1158.3	0.36
95% CL	649.4	505.7	.	505.7	.	11.1	20.4	529.6	11.1	523.2	0.13
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	2954.5	873.3	.	873.3	.	23.0	23.0	873.3	23.0	896.3	0.30
95% CL	543.4	314.3	.	314.3	.	9.4	9.4	314.3	9.4	318.8	0.08
N	6	6	0	6	0	6	6	6	6	6	6
92-94 $\bar{X}$	3015.3	659.0	252.7	911.7	.	49.3	49.3	659.0	302.0	961.0	0.32
95% CL	746.4	193.7	459.5	466.5	.	69.6	69.6	193.7	520.8	510.0	0.20
N	3	3	3	3	0	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2t. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1974-1995. 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	*	691	691	7346	691	8037	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	5439	531	5970	*	947	947	5439	1478	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
84-89 $\bar{X}$	21963.8	6304.7	.	6304.7	.	365.0	355.7	6356.2	365.0	6660.3	0.30
95% CL	2814.9	1979.3	.	1979.3	.	260.3	198.3	2033.4	260.3	2116.9	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	22048.5	6099.2	.	6099.2	.	351.5	351.5	6099.2	351.5	6450.7	0.29
95% CL	2715.2	1862.2	.	1862.2	.	204.5	204.5	1862.2	204.5	2022.3	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-94 $\bar{X}$	21291.0	4723.3	765.3	5488.7	0.0	869.3	869.3	4723.3	1634.7	6358.0	0.30
95% CL	3550.9	2385.7	521.4	1981.5	0.0	296.3	296.3	2385.7	506.2	1879.7	0.05
N	3	3	3	3	3	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2u. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1974-1995. 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	13407	3678	.	3678	*	29	29	3678	29	3707	0.28
1986	15465	5047	.	5047	*	102	102	5047	102	5149	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
84-89 $\bar{X}$	15936.8	4601.0	.	4601.0	.	77.4	79.0	4615.5	77.4	4680.0	0.29
95% CL	1933.9	1127.6	.	1127.6	.	73.8	56.0	1131.7	73.8	1178.3	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15996.7	4622.7	.	4622.7	.	101.8	101.8	4622.7	101.8	4724.5	0.30
95% CL	1807.0	1163.9	.	1163.9	.	54.0	54.0	1163.9	54.0	1201.2	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-94 $\bar{X}$	18673.7	4370.7	1210.0	5580.7	.	406.7	406.7	4370.7	1616.7	5987.3	0.32
95% CL	5186.4	1091.7	1843.3	752.1	.	147.3	147.3	1091.7	1838.4	752.1	0.09
N	3	3	3	3	0	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2v. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14B, Labrador, 1974-1995. 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
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
92-94 $\bar{X}$	5278.3	865.3	188.0	1053.3	193.7	13.7	207.3	1059.0	201.7	1260.7	0.24
95% CL	1589.2	440.2	487.0	894.4	199.4	37.7	209.4	619.5	523.0	1069.0	0.23
N	3	3	3	3	3	3	3	3	3	3	3

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

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1995 AND ON RETAINED FISH ONLY PRIOR TO 1992.