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Status of Atlantic Salmon (*Salmo salar* L.) Stocks of Insular Newfoundland (SFAs 3-14A), 2002.

État des stocks de saumon atlantique (*Salmo salar* L.) à l'île de Terre-Neuve (ZPS 3-14A) en 2002.

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Abstract

The commercial Atlantic salmon fishery moratorium, implemented in insular Newfoundland in 1992, entered its 11th year in 2002. Returns of small salmon to monitored rivers on the northeast and east coasts in 2002 were similar to or decreased from 2001 in Exploits River (19%), Campbellton River (8%), Middle Brook (42%), and Terra Nova River (36%) while the reverse was true for Gander River (5%) and Northwest River, Port Blandford (443%). With respect to the 1992-2001 means, all rivers showed a decrease (ranging from 22% for Exploits River to 51% for Middle Brook) except Northwest River, Port Blandford, which increased (11%). Returns of large salmon in 2002 were similar to or increased over 2001 (ranging from 3% for Campbellton River to 128% for Northwest River, Port Blandford) for all rivers except Exploits and Terra Nova, which showed decreases of 34% and 18%. All rivers declined in relation to the 1992-2001 means (ranging from 9% for Northwest River, Port Blandford to 58% for Campbellton River). In southern Newfoundland, returns of small salmon in 2002 increased over 2001 in all monitored rivers (ranging from 16% for Northeast Brook, Trepassey to 71% for Conne River). The reverse occurred in relation to the 1992-2001 means (decreases ranging from 12% for Rocky River to 43% for Northeast River, Placentia). Returns of large salmon in 2002 increased over 2001 in Rocky (30%) and Conne (19%) rivers but decreased in Northeast Brook, Trepassey (75%) and Northeast River, Placentia (38%). Returns were similar to or higher than the 1992-2001 means in Conne (-3%) and Rocky (15%) rivers but below average in Northeast Brook, Trepassey (84%) and Northeast River, Placentia (70%). In Bay St. George (SFA 13), returns of small salmon to monitored rivers in 2002 increased over 2001 in Highlands, Fischells, Flat Bay, and Harry's rivers (125, 67, 36, and 60%, respectively) and were similar to or lower than 2001 in Crabbes, Middle Barachois, and Robinsons rivers (-8, -39, and -48%, respectively). Returns of large salmon in 2002 increased over 2001 in four out of the seven Bay St. George rivers (ranging from 15% for Flat Bay Brook to 116% for Harry's River) while decreases were noted for the remainder (range of 7% in Fischells River – 24% in Crabbes River). Declines in relation to the 1992-2001 means were noted for all rivers (ranging from 5% for Robinsons River to 71% for Fischells River) except Middle Barachois River and Harry's River where returns increased by 40% and 139%. On the northwest coast, returns of small salmon in 2002 increased over 2001 in all three monitored rivers (56 % for Lomond River, 80% for Torrent River, and 160 % for Western Arm Brook); returns were similar to or increased over the 1992-2001 means (-9, 5, and 50%, respectively). Returns of large salmon to Torrent River in 2002 were similar to those of 2001 (-2%) but decreased in Lomond River (12%); Western Arm Brook increased by 71%. Torrent River (-9%) and Western Arm Brook (-1%) remained similar in relation to the 1992-2001 means but Lomond River showed a decrease (24%). Sea survival for small salmon increased in Northeast Brook, Trepassey and Western Arm Brook while decreases were noted for Campbellton, Rocky, and Conne rivers. A record number of smolts was counted at Northeast Brook, Trepassey in 2002 while Rocky River showed a slight increase over 2001. When smolt production increases, returns of small salmon are expected to be higher in the following year unless there are decreases in marine survival that offset the increased numbers of smolts. Slight declines in smolt production from 2001 were noted for Campbellton River, Conne River, and Western Arm Brook.

Résumé

Entré en vigueur à l'île de Terre-Neuve en 1992, le moratoire sur la pêche commerciale du saumon atlantique en était donc à sa onzième année en 2002. Sur les côtes nord-est et est de Terre-Neuve, par rapport à 2001, les remontes de petits saumons en 2002 ont diminué dans les rivières Exploits (19 %), Campbellton (8 %) et Terra Nova (36 %) ainsi que dans le ruisseau Middle (42 %), et ont augmenté dans les rivières Gander (5 %) et Northwest (443 %), à Port Blandford. Par rapport à la moyenne de 1992-2001, ces remontes ont baissé dans tous les cours d'eau (de 22 % pour la rivière Exploits à 51 % pour le ruisseau Middle) à l'exception de la rivière Northwest (hausse de 11 %). Les remontes de gros saumons en 2002 ont augmenté par rapport à 2001 dans tous les cours d'eau (de 3 % pour la rivière Campbellton à 128 % pour la rivière Northwest) à l'exception des rivières Exploits et Terra Nova, où elles ont diminué respectivement de 34 et de 18 %. Par rapport à la moyenne de 1992-2001, ces remontes ont diminué dans tous les cours d'eau (de 9 % pour la rivière Northwest à 58 % pour la rivière Campbellton). Dans le sud de Terre-Neuve, les remontes de petits saumons en 2002 ont augmenté par rapport à 2001 dans tous les cours d'eau surveillés (de 16 % pour le ruisseau Northeast, à Trepassey, à 71 % pour la rivière Conne) et ont diminué par rapport à la moyenne de 1992-2001 (de 12 % pour la rivière Rocky à 43 % pour la rivière Northeast, à Placentia). Par rapport à 2001, les remontes de gros saumons en 2002 ont augmenté dans les rivières Rocky (30 %) et Conne (19 %) et diminué dans le ruisseau Northeast (75 %) et la rivière Northeast (38%). Les remontes ont été semblables ou supérieures à la moyenne de 1992-2001 dans les rivières Conne (-3 %) et Rocky (15 %) et inférieures à la moyenne dans le ruisseau Northeast (84 %) et la rivière Northeast (70 %). Dans la baie St. George (ZPS 13), par rapport à 2001, les remontes de petits saumons en 2002 ont augmenté dans les rivières Highlands (125 %), Fischells (67 %) et Harry's (60 %) ainsi que dans le ruisseau Flat Bay (36 %) et ont diminué dans les rivières Crabbes (-8 %), Middle Barachois (-39 %) et Robinsons (-48 %). Par rapport à 2001, les remontes de gros saumons en 2002 ont augmenté dans quatre des sept cours d'eau qui se jettent dans la baie St. George (de 15 % pour le ruisseau Flat Bay à 116 % pour la rivière Harry's) et ont diminué dans les trois autres (de 7 % pour la rivière Fischells à 24 % pour la rivière Crabbes). Par rapport à la moyenne de 1992-2001, ces remontes ont baissé dans tous les cours d'eau (de 5 % pour la rivière Robinsons à 71 % pour la rivière Fischells) à l'exception des rivières Middle Barachois et Harry's, où les remontes ont augmenté respectivement de 40 et de 139 %. Sur la côte nord-ouest, les remontes de petits saumons en 2002 ont augmenté par rapport à 2001 dans les trois cours d'eau surveillés (rivière Lomond [56 %], rivière Torrent [80 %] et ruisseau Western Arm [160 %]) et ont été semblables ou supérieures par rapport à la moyenne de 1992-2001 dans ces mêmes cours d'eau (Lomond [-9 %], Torrent [5 %] et Western Arm [50 %]). Par rapport à 2001, les remontes de gros saumons en 2002 se sont maintenues dans la rivière Torrent (-2 %), ont diminué dans la rivière Lomond (12 %) et ont augmenté dans le ruisseau Western Arm (71 %). Par rapport à la moyenne de 1992-2001, les remontes se sont à peu près maintenues dans la rivière Torrent (-9 %) et le ruisseau Western Arm (-1 %) et ont diminué dans la rivière Lomond (24 %). Le taux de survie en mer des petits saumons des ruisseaux Northeast, à Trepassey, et Western Arm a augmenté, mais celui des petits saumons des rivières Campbellton, Rocky et Conne a baissé. En 2002, un nombre record de saumoneaux ont été dénombrés dans le ruisseau Northeast, à Trepassey, tandis qu'un nombre légèrement supérieur à 2001 a été observé dans la rivière Rocky. Une hausse de la production de

saumoneaux entraîne normalement un accroissement des remontes de petits saumons, à moins que le taux de survie en mer de ceux-ci baisse suffisamment pour annuler la hausse du nombre de saumoneaux. Par rapport à 2001, la production de saumoneaux a légèrement baissé dans les rivières Campbellton et Conne ainsi que dans le ruisseau Western Arm.

Introduction

This paper presents the general status of Atlantic salmon stocks in Salmon Fishing Areas (SFAs) 3-14A of the Newfoundland Region (Fig. 1) in 2002. Catch and effort data from the recreational fishery and counts and total returns at fishways and counting fences are examined in relation to historical data and management measures in effect in 2002.

Management measures, past and present

The moratorium on the commercial Atlantic salmon fishery in insular Newfoundland continued in 2002. The implementation of the moratorium in 1992 was accompanied by a commercial license retirement program and 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 (O'Connell *et al.* MS 1992b) and the moratorium years (1992-2002). These regulations continue a long-standing history of management programs designed to prevent stock declines and to allow populations to rebuild (May 1993).

A quota on the number of small salmon (< 63 cm in fork length) that could be retained in the Atlantic salmon recreational fishery was introduced in each SFA in 1992 and 1993. The quota was assigned for each SFA as a whole as opposed to individual river quotas. Only hook-and-release fishing was permitted after the quota was caught in each SFA. Quotas were eliminated in 1994. The seasonal bag limit for the retention of small salmon was lowered from eight to six fish in 1994, three to be caught prior to July 31 and three after that date. Hook-and-release fishing only was permitted after the bag limit of three was reached in each time period. These measures remained in effect in 1995-1997. Returns of small salmon to many rivers in insular Newfoundland in 1997 were substantially lower than expected (Dempson *et al.* MS 1998; O'Connell *et al.* MS 1998). As a result of this and uncertainties regarding levels of future returns, the management plan for 1998 was much more conservative than for previous years. The seasonal bag limit for the retention of small salmon in insular Newfoundland was reduced to one, pending the results of an in-season review. As a result of the findings of the in-season review, anglers were allowed to additionally retain three small salmon from July 4 until the end of the angling season. Beginning on July 8, 1998 only the use of barbless hooks was permitted. As in previous years, the retention of large salmon (∃ 63 cm in fork length) was not permitted in insular Newfoundland in 2002.

A three-year management plan was implemented in 1999, a significant component of which was the introduction of a River Classification System for insular Newfoundland, used to develop retention levels based on the health of individual stocks, without jeopardising conservation goals. This was a major departure from previous years when stocks were managed on a more regional or SFA basis. Details of the three-year plan and a description of the River Classification System are provided in Anon. (1999). A five-year management plan was introduced in 2002 (Anon. 2002a), wherein the River Classification System, though variously modified, was retained.

Special management measures were in effect for several rivers in 2002 and a number of rivers were closed for the season, details of which are provided in Anon. (2002b). More details on openings and closures throughout the season on a river-specific basis, including times when rivers were closed due to high water temperatures and low water levels, are presented in Table 1.

As was the case for the period 1995-2001, there were fall hook-and-release fisheries (September 8-October 7) in Gander River (SFA 4) and in Humber River (SFA 13) in 2002. A fall fishery was also introduced for Exploits River in 2002 and the same opening and closure dates as for Gander and Humber rivers applied.

For the five-year period immediately preceding the commercial salmon fishery moratorium, the average number of recreational fishery licenses sold in Newfoundland and Labrador was 24493. Maximum license sales prior to the moratorium were recorded in 1988 (26445). By comparison, sales during the moratorium years were 25718 (1992), 26508 (1993), 22596 (1994), 21489 (1995), 25553 (1996), 21403 (1997), 18490 (1998), 17927 (1999), 17244 (2000), 17876 (2001), and 18705 (preliminary) in 2002.

Methods

Fishway, counting fence, and swim-through survey (five rivers in Bay St. George) data were added to that presented in O'Connell *et al.* (MS 2002). Recreational fishery data are provided for the period 1994-2002 and were derived from the License Stub Return System. The information for 2002 is preliminary at this stage. Recreational fishing effort was presented as rod days, defined as any day or part of a day on which an angler fishes.

Recreational fishery catch and effort data in 2002 were compared to means for 1994-2001. Counts of salmon at counting facilities in 2002 were compared to two pre-salmon moratorium means (1984-1989 and 1986-1991). The 1984-1989 mean corresponds to years under major management changes in the commercial fishery in the Newfoundland Region (O'Connell *et al.* 1992a). The commercial fishery in each SFA in insular Newfoundland in 1990 and 1991 was under quota control (O'Connell *et al.* MS 1992b). The 1986-1991 mean incorporates the quota years of 1990 and 1991. The mix of management measures in effect during 1984-1989 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 1986-1991 mean. The mean used for the moratorium years was for the period 1992-2001.

Total river returns of small and large salmon (which typically are counts at counting facilities or from swim-through surveys plus angling removals below counting facilities or before swim-through surveys plus an adjustment for hook-and-release mortality), in 2002, were assessed against 2001 and mean returns for the moratorium period 1992-2001. Total river returns for individual rivers differ slightly from one year to another as angling data in the current year are preliminary. References for river-specific methodologies used for the calculation of total river returns of small and large salmon can be found in CSAS (2001, 2002a, 2002b) and O'Connell *et al*. (MS 2002).

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

Results and Discussion

Smolt-to-adult (small salmon) survival

The smolt-to-adult survival (repeat spawners included) of 5.3% for Campbellton River in 2002 (adult year) decreased from 2001 (Table 2); the highest survival for this river occurred in 1994 (9.0%). A survival of 7.1% was observed for Northeast Brook, Trepassey (SFA 9) in 2002, a substantial improvement over that of 2001 and the highest since 1995. Rocky River (SFA 9) recorded a survival of 2.9% in 2002, down slightly from that of 2001. Survival for Conne River (SFA 11) in 2002 (3.0%) increased over 2001 but remained markedly below the 8.1% achieved in 2000. The highest survival for Conne River (10.2%) was reached in 1988. There was no smolt count for Highlands River in 2001 and hence survival cannot be determined. Survival for Western Arm Brook (SFA 14A) in 2002 (9.1%) showed a marked improvement over 2001 and was the second highest of the moratorium years (the record high of 12.1% occurred in the pre-moratorium year 1979).

Fig. 2 shows graphically trends in sea survival for the rivers mentioned above. Survival adjusted for marine exploitation (from Dempson *et al*. MS 1998) is also shown for Conne River, Northeast Brook, Trepassey, and Western Arm Brook. During the moratorium years, estimates of sea survival from smolts to adult small salmon are believed to represent natural survival rates. Pre-moratorium adjusted survival rates approaching 15% were achieved in Conne River and Northeast Brook, Trepassey. Ocean survival for both of these stocks fell throughout the late 1980s and early 1990s. Despite major changes to fisheries and corresponding reductions in marine exploitation, sea survival rates for Conne River and Northeast Brook, Trepassey remain low, as highlighted by the adjusted sea survival rates. The same statement holds for Western Arm Brook, if several years prior to 1985 (the earliest year shown in Fig. 2) presented in Table 2 were adjusted for marine exploitation.

Smolt production

A record number of smolts was counted at Northeast Brook, Trepassey in 2002 (an increase of 126% over 2001, in which year the second lowest count on record occurred) while the number for Rocky River increased by 8% over that of 2001 (Table 2). Slight declines from 2001 were noted for Campbellton River (12%), Conne River (6%), and Western Arm Brook (6%).

Recreational fishery and counts at counting facilities

Recreational catches of small and large salmon for insular Newfoundland (SFAs 3-14A combined) are presented in Appendix 1a. 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 1b-e. Data for each individual SFA are shown in Appendix 1f-q. Calculation of catch per unit of effort (CPUE) is in terms of small and large retained and released fish combined.

Entire Insular Newfoundland (SFAs 3-14A)

Recreational fishery

The total catch of small salmon (retained + released fish) and retained catch of small salmon in 2002 were among the lowest of the time series (Fig. 3). The number of large salmon released decreased from 2001 and also remained below the 1994-2001 mean and among the lowest recorded. Effort increased over 2001 but was well below average. Catch per unit of effort (CPUE) in 2002 decreased from the near average level of 2001.

Northern Peninsula East and Eastern (SFAs 3-8)

Recreational fishery

Total and retained catches of small salmon in 2002 decreased somewhat from 2001 and remained below the 1994-2001 means (Fig. 4). The number of large salmon released was the second lowest recorded and effort expenditure the lowest. CPUE decreased from the average level of 2001.

Counting facilities – northeast coast

SFA 3: The counting fence in Northwest Branch tributary of Main River (Sop's Arm) has not operated since 1999.

SFA 4: Counts of small (Table 3) and large (Table 4) salmon are available for fishways located in the Exploits River (Bishop's Falls) and Salmon Brook tributary of Gander River and a counting fence in Campbellton River. The counting fence on the main stem of the Gander River did not operate in 2000-2002. Counts of small and large salmon for Exploits River in 2002 decreased from 2001 and the mean for 1992-2001 but remained above the 1984-1989 and 1986-1991 means. Counts of small and large salmon in Campbellton River in 2002 decreased slightly or were similar to 2001 but below the 1992-2001 mean. The count of small salmon in Salmon Brook tributary of Gander River in 2002 increased slightly over 2001 and was similar to the mean for 1986-1991 but below the remaining means. The count of large salmon was similar to 2001 and increased over the 1984-1989 and 1986-1991 means but decreased marginally from the 1992-2001 mean.

Counting facilities – east coast

SFA 5: Counts of small (Table 3) and large (Table 4) salmon are available from fishways in Middle Brook and the lower Terra Nova River and a counting fence in Northwest River, Terra Nova National Park. There was no count for the upper Terra Nova River fishway in 2002 and the counting fence in Indian Bay Brook did not operate in 2000-2002. There was no adult enumeration at the lower Terra Nova River fishway in 2000 but counting resumed in 2001 and 2002. The count of small salmon in Middle Brook in 2002 decreased from 2001 and the 1984-1989 and 1992-2001 means but increased over the 1986-1991 mean; the count of large salmon increased over 2001 and all but the 1992-2001 mean. The count of small salmon at the lower Terra Nova River fishway in 2002 decreased from 2001 and the 1992-2001 mean and increased over the remaining means. The count of large salmon showed a similar pattern but the magnitude of increases over the 1984-1989 and 1986-1991 means was greater than for small salmon. The count of small salmon for Northwest River in 2002 increased over 2001 and the mean; the count of large salmon also increased over 2001 but was similar to the mean.

South (SFAs 9-11)

Recreational fishery

Total and retained catches of small salmon, the number of large salmon released, and effort expenditure in 2002 was among the lowest recorded (Fig. 5). CPUE, however, was average.

Counting facilities

SFA 9: Counts of small (Table 3) and large (Table 4) salmon are available from a counting fence in Northeast Brook, Trepassey and a fishway in Rocky River. The count of small salmon in Northeast Brook, Trepassey in 2002 increased over 2001 but remained below the means; the count of large salmon decreased from 2001 and the means. The count of small salmon in Rocky River increased over 2001 and all means except 1992-2001; the count of large salmon surpassed 2001 and the means.

SFA 10: Counts of small (Table 3) and large (Table 4) salmon are provided by a fishway located in Northeast River, Placentia. The count of small salmon in 2002 increased over 2001 but decreased in relation to the means; the count of large salmon decreased from 2001 and the 1992-2001 mean while increasing over the 1984-1989 and 1986-1991 means.

SFA 11: Counts of small (Table 3) and large (Table 4) salmon are available from counting fences in Conne River and Little River. Counts of both small and large salmon in 2002 for Conne River increased over 2001 but decreased from the means (similar in the case of the 1992-2001 mean for large salmon). The count of small salmon for Little River in 2002 increased over 2001 and the means; the count of large salmon increased over 2001 and the 1984-1989 and 1986-1991 means and was similar to the 1992-2001 mean.

Southwest (SFAs 12-13)

Recreational fishery

Total and retained catches of small salmon in 2002 were similar to 2001 and the mean while the number of large salmon released showed a decline (Fig. 6). Effort expenditure increased over 2001 and the mean while CPUE on the other hand was the second lowest on record.

Counting facilities

SFA 13: Counts of small (Table 3) and large (Table 4) salmon are available from counting fences in Highlands River and Pinchgut Brook. The counts of small salmon for Highlands River in 2002 increased over 2001 and the 1992-2001 mean (slightly); the count of large salmon increased over 2001 but was below the mean. Counts of small and large salmon in Pinchgut Brook in 2002 increased over 2001; small salmon increased relative to the mean while large salmon showed a decrease. Estimates for Humber River using the mark-recapture method were not available in 2000-2002.

Northern Peninsula West (SFA 14A)

Recreational fishery

Total and retained catches of small salmon, the number of large salmon released, effort expenditure, and CPUE in 2002 all increased over 2001 and were above average.

Counting facilities

Counts of small (Table 3) and large (Table 4) salmon are available from fishways located in Lomond River and Torrent River and counting fences in Western Arm Brook and Trout River (operated for the first time in 2001). Partial counts were obtained at Trout River in 2001. Counts of small and large salmon in Trout River in 2002 were similar to the partial counts obtained in 2001. The counts of small salmon in Lomond and Torrent rivers in 2002 increased over 2001 and the means except for 1992-2001; counts of large salmon decreased from 2001 and the moratorium mean but increased over the means for 1984-1989 and 1986-1991. The count of small salmon in Western Arm Brook in 2002 increased over 2001 and the means and the same was true for large salmon except in relation to the 1992-2001 mean.

Total returns

Total returns of small and large salmon to rivers in insular Newfoundland are presented in Tables 5 and 6. The information contained in Tables 5 and 6 is also presented graphically below. Since the closure of the commercial salmon fishery in 1992, returns of small and large salmon to rivers are assumed to be total population sizes.

Northern Peninsula East and Eastern (SFAs 3-8)

Northeast coast, SFA 4

Total returns of small (Table 7) and large (Table 8) salmon to the Exploits River in 2002 (Fig. 8) decreased from 2001 and the 1992-2001 means. Returns of both size components to Gander River increased slightly over 2001 but remained below the 1992-2001 means. Since there was no angling below the counting fence in Campbellton River, total returns (Fig. 8) are the same as the counts, which have been dealt with previously.

The proportion of large salmon in total returns to Exploits River in 2002 decreased slightly from 2001 and was similar to the 1992-2001 mean (Table 9 and Fig. 9). The proportion for Campbellton River increased slightly over 2001 but remained below the 1992-2001 mean while there was little change for Gander River.

East coast, SFA 5

Total returns of small salmon to Middle Brook and the lower Terra Nova River in 2002 (Fig. 10) decreased from 2001 and the 1992-2001 mean (Table 7). Total returns to Northwest River (Fig. 10) are equivalent to the count at the counting fence, dealt with previously.

Total returns of large salmon to Middle Brook in 2002 (Fig. 10) increased over 2001 while the reverse was true for lower Terra Nova River (Table 8); however, both rivers remained below the mean for 1992-2001. Returns to Northwest River are equivalent to the count at the counting fence (Fig. 10), dealt with previously.

The proportion of large salmon in total returns (Table 9 and Fig. 11) for Middle Brook and lower Terra Nova River in 2002 increased over 2001 and was similar to the 1992-2001 mean in both cases. The proportion for Northwest River showed a decrease from 2001 and the 1992-2001 mean.

South (SFAs 9-11)

SFA 9

Since there was no angling in Northeast Brook, Trepassey and Rocky River, total returns of small and large salmon are equivalent to the counts at the counting facilities and these were dealt with previously. Returns for small and large salmon are shown graphically in Fig. 12.

The proportion of large salmon in total returns to Northeast Brook, Trepassey in 2002 decreased from 2001 and the mean for 1992-2001 (Table 9 and Fig. 13). The proportion for Rocky River increased over 2001 and the 1992-2000 mean.

SFA 10

Total returns of small salmon to Northeast River, Placentia in 2002 (Fig. 12) increased over 2001 but remained below the mean for 1992-2001 (Table 7). Returns of large salmon decreased from 2001 and the 1992-2001 mean, as did the proportion of large salmon (Table 9 and Fig. 13)

SFA 11

Total returns of small and large salmon to Conne River in 2002 (Fig. 12) increased over 2001 and was below the 1992-2001 means, slightly so in the case of large salmon (Tables 7 and 8). Returns of small and large salmon to Little River are equivalent to the counts at the counting fence and these were dealt with previously.

The proportion of large salmon in total returns to Conne River 2002 showed a decrease from 2001 and was slightly above 1992-2000 mean, while that of Little River decreased from both 2001 and the mean (Table 9 and Fig. 13).

Southwest (SFAs 12-13)

SFA 13

Returns of small salmon to Highlands River, Flat Bay Brook, and Harry's River in 2002 (Fig. 14) all increased over 2001 and were similar to the 1992-2001 means (Table 7). Robinsons River, Crabbes River, and Middle Barachois River showed decreases from 2001 and the 1992-2000 means. Fischells River improved over 2001 but remained below the mean for 1992-2001.

Returns of large salmon to Highlands River, Middle Barachois River, Flat Bay Brook, and Harry's River in 2002 (Fig. 14) increased to varying degrees over 2001 and in the case of Middle Barachois River and Harry's River, surpassed the 1992-2001 mean (Table 8). Crabbes River and Robinsons River declined from 2001; in relation to the 1992-2001 mean, the former river decreased and the latter was similar. Returns to Fischells River in 2002 were similar to 2001 but below the mean.

The proportions of large salmon in total returns decreased in relation to 2001 and the 1992-2001 means in Highlands River, Crabbes River, Fischells River, and Flat Bay Brook (Table 9 and Fig. 15). The reverse was true for Middle Barachois River, Robinsons River, and Harry's River.

Northern Peninsula West (SFA 14A)

Total returns of small salmon to Lomond River, Torrent River, and Western Arm Brook in 2002 (Fig. 16) increased over 2001 and were similar to or increased over the 1992-2001 means (Tables 7). Returns of large salmon in Lomond River in 2002 (Fig. 16) decreased from 2001 and the 1992-2001 mean (Table 8). Returns were similar to 2001 and slightly below the

1992-2001 mean for Torrent River while for Western Arm Brook, returns increased over 2001 and were similar to the mean.

The proportions of large salmon in total returns for all three of the above rivers in 2002, showed decreases from 2001 and the 1992-2001 means (Table 9 and Fig. 17).

Net marks

The incidence of net-marked fish has been determined for a number of rivers throughout insular Newfoundland since 1994. The results for small and large salmon combined are presented below:

River	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Gander River[1]	15.9	8.9	12.2	15.9	2.9	5.2	3.9	3.7	3.0
Campbellton River	6.2	5.0	4.3	4.3	5.8	4.1	11.4	4.9	3.7
Middle Brook				15.8	11.6	4.5	7.7	3.0	7.0
Terra Nova River				2.9	1.2	3.1		4.8	4.1
Northeast Riv., Plac.							7.5		
Conne River	18.6	7.1	6.2	7.2	3.7	4.0	3.3	8.0	2.6
Harry's River			0.6	9.3	1.8	0.1	2.6		
Humber River		1.4	2.6	7.6	4.1	2.4			

[1]Determined at the fishway in Salmon Brook tributary in 2000-2002 and at the counting fence in other years

The incidence of marked fish in 2002 decreased from 2001 in Campbellton River and was the lowest recorded to date. It should be noted that, unlike the other rivers, marks recorded for Campbellton River include all marks (e.g. resulting from encounters with predators, etc.) and not just net marks. Fish were counted with a video system in this river and it is not possible to accurately distinguish the various markings. It was possible to determine the incidence of net marks for the remaining rivers. Compared to 2001, Gander, lower Terra Nova, and Conne rivers showed decreases to varying degrees in 2002 while an increase was evident for Middle Brook. Net marks were likely the result of encounters with both legally set gear for other species and illegal gear in the marine environment and with illegal gear in freshwater. It is not possible to estimate the extent of such removals, therefore, total returns considered in the context of being equivalent to total production during the moratorium, have to be regarded as minimum values.

Summary and Conclusions

Returns of small salmon to most monitored rivers in insular Newfoundland in 2002 decreased from the 1992-2001 means (Table 7) and in most cases were as low or lower than observed in 1997, a year of unexpected low returns, as mentioned earlier (see Dempson *et al*. MS 1998). Prior to the closure of the commercial salmon fishery, marine exploitation rates for the period 1984-1991 averaged 45.3% on small salmon and 74.2% on large salmon (Dempson *et al*. 2001). Hence the continued low returns of salmon to a number of rivers remains problematic. For some rivers, 2002 marked the third or fourth year out of the past six where returns were below average. Returns to Northwest River, Terra Nova National Park in 2002 improved substantially over the record low year of 2001 and were similar to the mean for 1992-2001. Returns to northwest coast rivers in 2002 showed an overall recovery from the below average levels recorded in 2001. In spite of greatly increased spawning escapements beginning with the moratorium in 1992 (Table 10), returns of small salmon to most rivers on the northwest, northeast, and east coasts have not shown a corresponding increase in adult recruitment (which should have started in 1997 and 1998, depending on smolt age-composition). Some rivers in southern Newfoundland did not receive the same immediate benefits from the closure of the commercial fishery as was evident in northern areas and indeed returns were lower during moratorium years than prior to the moratorium in Northeast Brook, Trepassey and Conne River. Returns to Northeast River, Placentia however improved over pre-moratorium levels up to 1998, but since that year, there have been marked declines. With the exception of Highlands River, Flat Bay Brook, and Harry's River, returns to rivers in Bay St. George in 2002 were below the means for the moratorium years.

Returns of large salmon during the moratorium period increased over pre-moratorium years for all rivers except Northeast Brook, Trepassey and Conne River. Returns in 2002 decreased from the 1992-2001 means in most monitored rivers (Table 8). The proportions of large salmon in total returns in 2002 decreased from 2001 in 13 out of 21 rivers while 12 decreased relative to 1992-2001 means.

Certain rivers were closed to angling for varying periods (mainly in August) in SFAs 3-11, due to low water levels and high water temperatures. This most likely affected angling effort and catches to some extent (historically, most angling activity and the bulk of catches occur in June-July). For insular Newfoundland overall (Fig. 3), the catch rate in 2002 was below average, consistent with the observations on total returns presented above. Overall, catch rates have been below average from 1999 onwards.

Compared to 2001, smolt production in 2002 increased by 8 and 126% in two out of five rivers but decreased from 6 to 12% in the remaining three. When smolt production increases, returns of small salmon are expected to be higher in the following year, unless correspondingly there are decreases in marine survival that offset increased numbers of smolts. The converse holds when there are decreases in smolt production.

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Table 1. Opening and closure dates of the Atlantic salmon recreational fishery for each SFA, and variations by river, 2002.

River	Class	Close dates	Reason for closure
SFA 3 June 15 - September 7			
Hampden River	III	August 2 (am. only)	Low water levels & high water temperatures
Wild Cove Brook	II	"	"
Western Arm Brook	II	"	"
Middle Arm Brook	II	"	"
Southern Arm Brook	II	"	"
Baie Verte River	II	"	"
Woodstock Brook	II	"	"
SFA 4 June 15 - September 7			
Burlington River	II	August 2 (am. only)	Low water levels & high water temperatures
Indian River	II	"	"
West River	II	"	"
South Brook	II	"	"
Tommy's Arm River	II	"	"
Northwest Arm Brook	II	"	"
Western Arm Brook	II	"	"
Leamington River	II	"	"
Charles Brook	II	"	"
Northern Arm River	II	"	"
Peters River	II	"	"
Exploits River			
-(except main stem from Stoney Bk. to Exploits Bay)		"	"
Campbellton River	II	"	"
Dog Bay River	II	"	"
Gander River	I		
-(except main stem from Glenwood to Gander Bay)		"	"
Ragged Harbour River	II	"	"
Anchor Brook	II	"	"
Deadman's Bay River	II	"	"
Windmill Brook	II	"	"
SFA 5 June 15 - September 7			
Northwest Brook (Indian Bay)	II	July 31 - August 13	Low water levels & high water temperatures
Indian Bay Brook	II	"	"
Northwest River (Trinity)	II	"	"
Traverse Brook	II	"	"
Middle Brook	II	"	"
Gambo River	II	"	"
Northwest Brook (Alexander Bay)	II	"	"
Terra Nova River	II	"	"
SFA 6 June 15 - September 7			
Salmon Cover River	III	July 30 - August 13	Low water levels & high water temperatures
SFA 7 June 15 - September 7			
SFA 8 June 15 - September 7			

Table 1 cont'd

River	Class	Close dates	Reason for closure
SFA 9 June 6 - September 7			
Salmonier River (Morayns Pool only)	II	July 16 - Sept. 7	Low water levels & high water temperatures
SFA 10 June 6 - September 7			
Cape Roger River	III	Aug. 2 - 8, Aug. 21 - 26	Low water levels & high water temperatures
Nonsuch Brook	III	"	"
Bay De L'Eau River	III	"	"
Red Harbour River	III	"	"
West Brook	III	"	"
Tides Brook	III	"	"
Salmonier River (Burin)	III	"	"
Little St. Lawrence River	III	"	"
Lawn River	III	"	"
Taylors Bay River	III	July 19-23,Aug. 2-8, Aug. 21-26	"
Salmonier River (Lamaline)	III	"	"
Piercey's Brook	III	"	"
Rushoon River (non-scheduled)		Aug. 2 - 8, Aug. 21 - 26	"
SFA 11 June 6 - September 7			
Grand Bank Brook	III	August 2 - 8	Low water levels & high water temperatures
Long Harbour River	II	"	"
Garnish River	III	"	"
Conne River	III	June 28 - July 3	In- season review
Conne River	III	July 4 - Sept. 7	remained closed after review
Devils Brook (non-scheduled)		August 2 - 8	Low water levels & high water temperatures
SFA 1 June 6 - September 7			
SFA 1 June 1 - September 7			
SFA 14A June 15 - September 7			
SFA 14B June 15 - September 15			

Table 2. Atlantic salmon smolt-to-adult suvival (back to the river) for Campbellton River (SFA 4), Northeast Brook, Trepassey, and Rocky River (SFA 9), Conne River (SFA 11), Highlands River (SFA 13), and Western Arm Brook (SFA 14A). Repeat spawners are included in counts. Adjusted smolt counts for Rocky River are bold.

	Campbellton River			Northeast Brook			Rocky River			Conne River[1]			Highlands River			Western Arm Brook		
Year	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%
(i)	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.
1971																5735	406	7.1
1972																11905	797	6.7
1973																8484	506	6.0
1974																11854	639	5.4
1975																9600	552	5.8
1976																6232	373	6.0
1977																9899	315	3.2
1978																13071	1578	12.1
1979																8349	465	5.6
1980													15028	127	0.8	15665	492	3.1
1981													15839	100	0.6	13981	467	3.3
1982																12477	1141	9.1
1983																10552	235	2.2
1984																20653	467	2.3
1985																13417	527	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				65692	4968	7.6				15321	455	3.0
1989				1708	71	4.2				73724	5368	7.3				11407	444	3.9
1990				1902	99	5.2	8287	211	2.5	56943	2411	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	9986	145	1.5	13435	954	7.1
1994	41663	3035	7.3	944	80	8.5	9781	385	3.9	60762	3502	5.8	10503	172	1.6	9283	823	8.9
1995	39715	3208	8.1	792	73	9.2	7577	356	4.7	57733 *	4154	7.2	12160	199	1.6	15144	1230	8.1
1996	58369	1975	3.4	1749	50	2.9	14261	435	3.1	94088	3200	3.4	12383	398	3.2	14502	509	3.5
1997	62050	3275	5.3	1829	91	5.0	16900	423	2.5	100983	2931	2.9	6776	96	1.4	23845	1718	7.2
1998	50441	3076	6.1	1727	95	5.5	12163	327	2.7	69841	2358	3.4	5922	146	2.5	17139	1046	6.1
1999	47256	1798	3.8	1419	83	5.8	8625	277	3.2	63658	5177	8.1	9634	58	0.6	13500	1492	11.1
2000	35596	2151	6.0	1740	56	3.2	7616	233	3.1	60777	1503	2.5	13120	75	0.6	12706	563	4.4
2001	37170	1974	5.3	916	65	7.1	9392	276	2.9	86898	2573	3.0	-	169	-	16013	1465	9.1
2002	32630			2076			10144			81806			-		-	14999		

[1]Includes Native food fishery.

* 57733 excludes 5016 removed to Roti Bay.

4154 small salmon for Conne River 1996 excludes 286 fish from the wild smolt aquaculture experiment.

Table 3. Counts of small salmon from fishways and counting fences in insular Newfoundland 1974-2002 by Salmon Fishing Area (SFA). Also shown are means, coefficients of variation, 95% confidence limits (LCL and UCL), and percentage change for 2002 in relation to 2001, and the 1984-1989, 1986-1991, and 1992-2001 means. Partial counts are in parentheses and are not included in statistical calculations. Adusted counts are bold.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A			
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1974		2538		857			770		162				223							41	38	382
1975		9218					1119		778				186							1	191	631
1976		3991							335				294							132	341	520
1977		6148							371											192	789	362
1978		3790		755			1403	810	436				390							117	971	293
1979		6715		404			1350	569	455				454							195	1984	1578
1980				997			1712	843	420				433			82				301	792	435
1981		8114		2459			2414	1115	619				334			127				110	2101	451
1982		7605		1425			1281	963	625				86			100				275	2112	394
1983				978			1195	1210	853				233							220	2007	1141
1984		17219		1081			1379	1233	904		89		419							440	1805	120
1985		16652		1663			904	1557	960		124		384							190	1553	416
1986		9697		1064			1036	1051	726		158		725		7515					354	2815	525
1987		9014		493			914	974	570		91	80	325	64	9687					355	2505	378
1988		8974		1562			772	1737	795		97	313	543	65	7118					437	2075	251
1989		7192		596	7743		496	1138	668		62	168	706	102	4469						1369	455
1990		6629		345	7520		745	1149	410		71	401	551	158	4321			12216			2296	444
1991		5245		245	6445		562	873	311		99	211	353	55	2086			5724			1441	233
1992		12538		1168	18179		1182	1443	886		49	237	921	104	1973		222	17571		435	2347	480
1993		21319	4001	1560	25905		1959	2713	962		79	292	847	169	2355	137	576	18477		526	4009	947
1994		16168	2857	968	18080		1513	1571	1179		99	158	677	73	1533	145	562	7995		701	3592	954
1995		15691	3035	1600	22002		1139	2258	1298	442	80	385	663	118	3498	172	753	27898		1003	5800	823
1996	579	29726	3208	946	23665		1751	2005	1285	593	73	356	1225	674	4436	199	601	30445		601	6923	1230
1997	338	13552	1975	465	10476	1375	1221	1577	979	408	50	435	641	399	2678	398	613	14866		783	3659	509
1998	351	26333	3275	1295	18742	2636	2405	1780	1332	540	91	423	756	264	2931	96	593	13016		542	4999	1718
1999	432	28252	3076	1105	18461	2219	1802	1836	1198	314	95	327	336	307	2357	146	608	27585		829	4008	1046
2000	-	11817	1798	742	-	-	1660	-	833	272	83	277	520	564	4708	58	441	-		658	3763	1486
2001	-	18978	2151	663	-	-	1188	2151	1512	102	56	233	265	125	1359	75	200	-	36	333	2216	559
2002	-	15147	1974	714	-	-	823	1374	-	441	65	276	414	487	2352	169	593	-	35	548	3965	1463
$\bar{X}$ 1984-1989		11458		1077			917	1282	771		104	187	517	77	7197					355	2020	358
CV		38		45			32	24	19		32	63	33	28	30					29	28	41
95% UCL		16000		1580			1223	1598	924		138	479	695	131	10603					481	2606	513
95% LCL		6916		573			610	965	617		69	-105	339	23	3791					229	1434	202
N		6		6			6	6	6		6	3	6	3	4					5	6	6
$\bar{X}$ 1986-1991		7792		718	7236		754	1154	690		96	235	534	89	5866					382	2084	381
CV		22		70	10		27	26	14		35	53	32	48	47					12	28	31
95% UCL		9593		1244	8960		969	1473	841		132	390	711	142	8741					500	2692	504
95% LCL		5991		191	5512		540	835	538		61	79	356	36	2991					264	1475	258
N		6		6	3		6	6	4		6	5	6	5	6					3	6	6
$\bar{X}$ 1992-2001		19437	2820	1051	19439		1582	1828	1146	377	76	312	685	280	2783	158	517	19732		641	4132	975
CV		34	25	35	24		26	16	19	49	24	29	41	74	41	63	34	41		31	35	42
95% UCL		24205	3368	1317	23328		1879	2072	1305	570	89	376	886	428	3595	236	644	26480		783	5167	1271
95% LCL		14669	2271	785	15549		1285	1583	988	185	62	248	485	131	1971	81	390	12984		500	3096	679
N		10	9	10	8		10	8	10	6	10	10	10	10	10	9	10	8		10	10	10
% change 2002 vs.																						
2001		-20	-8	8			-31	-36		332	16	18	56	290	73	125	197		-3	65	79	162
1984-1989 mean		32		-34			-10	7			-37	48	-20	532	-67					54	96	309
1986-1991 mean		94		0			9	19			-33	18	-22	448	-60					43	90	284
1992-2001 mean		-22	-30	-32			-48	-25		17	-14	-12	-40	74	-15	7	15			-15	-4	50

1. Main River (Sop's Arm)
2. Exploits River (Bishop's Falls)
3. Campbellton River
4. Salmon Brook (Gander River)
5. Gander River
6. Indian Bay Brook
7. Middle Brook
8. Terra Nova River (Lower)
9. Terra Nova River (Upper)
10. Northwest River, Port Blandford
11. Northeast Brook, Trepassey
12. Rocky River
13. Northeast River, Placentia
14. Little River
15. Conne River
16. Highlands River
17. Pinchgut Brook
18. Humber River
19. Trout River
20. Lomond River
21. Torrent River
22. Western Arm Brook

Table 4. Counts of large salmon from fishways and counting fences in insular Newfoundland 1974-2002 by Salmon Fishing Area (SFA). Also shown are means, coefficients of variation, 95% confidence limits (LCL and UCL), and percentage change for 2002 in relation to 2001, and the 1984-1989, 1986-1991, and 1992-2001 means. Partial counts are in parentheses and are not included in statistical calculations. Adusted counts are bold.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A			
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1974		411		9			77		121				9							33	3	4
1975		1439					9		52				36							0	25	1
1976		460							37				56							11	47	0
1977		581							262											11	33	3
1978		303		52			16	20	89				32							12	21	1
1979		277		6			54	170	30				37							1	39	0
1980				15			91	39	17				34			55				19	63	3
1981		1695		33			39	90	28				62			29				50	97	1
1982		181		18			20	19	8				36			56				16	523	3
1983				12			75	57	76				22							7	442	4
1984		529		38			57	107	98		33		44							47	288	0
1985		183		26			27	112	60		41		0							14	30	1
1986		355		12			15	140	58		30		39		397					32	92	0
1987		310		9			19	56	38		30	1	16	3	498					11	68	1
1988		147		24			14	206	45		19	6	11	3	418					21	44	1
1989		89		24	473		19	142	51		18	9	15	5	319						60	0
1990		122		8	508		13	144	34		9	17	25	15	361			855			82	0
1991		99		2	670		14	114	26		13	16	8	6	87			401			71	1
1992		314		101	4162		43	270	224		10	46	46	21	154		5	2945		80	169	8
1993		627	145	87	1734		87	470	173		17	72	65	11	98	78	43	636		34	222	8
1994		916	191	83	1072		90	242	172		15	19	70	11	100	148	47	1030		50	331	31
1995		941	218	125	1121		168	634	260	135	12	39	74	17	107	120	28	2064		95	611	33
1996	49	2053	560	112	1753		161	464	185	203	15	45	123	127	179	142	38	2679		93	507	50
1997	65	886	321	119	1883	352	262	527	173	115	9	89	185	79	182	157	68	2595		72	666	55
1998	31	1953	402	141	3649	336	196	390	143	104	11	130	287	49	294	117	63	4865		126	757	128
1999	34	2235	493	138	4815	365	130	343	76	93	18	77	167	49	241	82	63	4433		113	399	22
2000	-	683	208	61	-	-	189	-	90	106	14	104	258	52	216	67	15	-		81	587	120
2001	-	1346	119	93	-	-	62	330	181	50	8	60	65	35	140	65	3	-	15	72	437	28
2002	-	889	123	95	-	-	69	271	-	113	2	78	40	41	167	87	23	-	12	62	397	47
$\bar{X}$ 1984-1989		269		22			25	127	58		29	5	21	4	408					25	97	1
CV		60		47			65	39	36		31	76	82	31	18					59	99	110
95% UCL		439		33			42	179	80		38	15	39	7	525					43	198	1
95% LCL		99		11			8	75	36		19	-5	3	1	291					7	-4	0
N		6		6			6	6	6		6	3	6	3	4					5	6	6
$\bar{X}$ 1986-1991		187		13	550		16	134	48		20	10	19	6	347					21	70	1
CV		62		68	19		17	36	18		44	69	60	78	41					49	24	110
95% UCL		308		23	811		18	185	62		29	18	31	13	494					47	87	1
95% LCL		66		4	289		13	83	34		11	1	7	0	199					-5	52	0
N		6		6	3		6	6	4		6	5	6	5	6					3	6	6
$\bar{X}$ 1992-2001		1195	295	106	2524		139	400	168	115	13	68	134	45	171	108	37	2656		82	469	48
CV		56	53	24	58		50	33	33	44	26	49	65	80	38	33	64	55		33	41	88
95% UCL		1673	417	124	3744		188	512	207	169	15	92	196	71	218	136	54	3888		101	606	79
95% LCL		718	174	88	1304		90	288	128	62	10	44	72	19	125	81	20	1424		62	331	18
N		10	9	10	8		10	8	10	6	10	10	10	10	10	9	10	8		10	10	10
% change 2002 vs.																						
2001		-34	3	2			11	-18		126	-75	30	-38	17	19	34	667		-20	-14	-9	68
1984-1989 mean		231		329			174	113			-93	1363	92	1018	-59					148	309	9300
1986-1991 mean		375		622			340	103			-90	696	111	541	-52					191	471	9300
1992-2001 mean		-26	-58	-10			-50	-32		-2	-84	15	-70	-9	-2	-20	-38			-24	-15	-3

1. Main River (Sop's Arm)
2. Exploits River (Bishop's Falls)
3. Campbellton River
4. Salmon Brook (Gander River)
5. Gander River
6. Indian Bay Brook
7. Middle Brook
8. Terra Nova River (Lower)
9. Terra Nova River (Upper)
10. Northwest River, Port Blandford
11. Northeast Brook, Trepassey
12. Rocky River
13. Northeast River, Placentia
14. Little River
15. Conne River
16. Highlands River
17. Pinchgut Brook
18. Humber River
19. Trout River
20. Lomond River
21. Torrent River
22. Western Arm Brook

Table 5. Total returns of small salmon to rivers in insular Newfoundland 1984-2002 by Salmon Fishing Area (SFA). Also shown are means and standard deviations for 1984-1989, 1986-1991, and 1992-2001.

	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13							SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1984	19028			1675	1534		89		459										986	1805	235
1985	17555			1283	2012		124		519										393	1623	467
1986	10343			1547	1459		158		879		8302								725	3155	527
1987	9481			1053	1404		91	80	350	64	10155								652	2670	437
1988	9496			1337	2114		97	313	637	65	7627								841	2388	422
1989	7577		7743	626	1377		62	168	809	102	4968								652	1512	455
1990	6995		7740	1070	1518		71	401	699	158	5368								777	2518	444
1991	5659		6745	763	1127		99	211	368	55	2411								731	1591	233
1992	13508		18179	1563	1780		49	237	956	104	2523							832	794	2832	480
1993	22253	4001	26205	2247	3050		79	292	980	169	2703	137						1663	816	4215	947
1994	17603	2857	18273	1844	2035		99	158	710	73	1533	145						1650	1038	3827	954
1995	16226	3035	22266	1448	2638	498	80	385	774	118	3502	172						2016	1365	6168	823
1996	30425	3208	23946	2112	2575	593	73	356	1420	674	4440	199	870	819	882		1051	1995	982	7371	1230
1997	15263	1975	10599	1287	1800	465	50	435	723	399	3200	398	1168	1056	1107	863	1320	1747	1300	4033	509
1998	27093	3275	18805	2549	1815	540	91	423	885	264	2931	96	494			205		1659	766	5329	1718
1999	28802	3076	18491	1950	1892	314	95	327	363	307	2358	146	717	562	1452	1264	2276	1713	1179	4545	1046
2000	12291	1798	14074	1749	1707	272	83	277	622	564	5177	58	1027	1142	1501	1800	2397	1271	1072	4154	1492
2001	19665	2151	12517	1525	2261	102	56	233	312	125	1503	75	688	937	1909	248	1150	1028	572	2637	563
2002	15908	1974	13183	890	1437	443	65	276	443	487	2573	169	630	575	998	414	1560	1640	895	4750	1465
$\bar{X}$ 1984-1989	12247			1254	1650		104	187	609	77	7763								708	2192	424
SD	4792			376	326		33	118	206	22	2148								200	653	99
$\bar{X}$ 1986-1991	8259		7409	1066	1500		96	235	624	89	6472								730	2306	420
SD	1799		575	344	329		34	125	222	43	2765								73	640	99
$\bar{X}$ 1992-2001	20313	2820	18336	1827	2155	398	76	312	775	280	2987	158	827	903	1370	876	1639	1557	988	4511	976
SD	6538	713	4955	394	458	175	18	90	319	207	1166	101	245	226	394	680	646	392	253	1447	414

1. Exploits River (Bishop's Falls)
2. Campbellton River
3. Gander River
4. Middle Brook
5. Terra Nova River (Lower)
6. Northwest River, Port Blandford
7. Northeast Brook, Trepassey
8. Rocky River
9. Northeast River, Placentia
10. Little River
11. Conne River
12. Highlands River
13. Crabbes River
14. M. Barachois River
15. Robinsons River
16. Fischells River
17. Flat Bay Brook
18. Harry's River
19. Lomond River
20. Torrent River
21. Western Arm Brook

Table 6. Total returns of large salmon to rivers in insular Newfoundland 1984-2002 by Salmon Fishing Area (SFA). Also shown are means and standard deviations for 1984-1989, 1986-1991, and 1992-2001.

	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13							SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1984	529			57	107		33		44										75	288	0
1985	183			27	112		41		0										14	30	1
1986	355			15	140		30		39		412								37	93	0
1987	310			19	56		30	1	16	3	516								12	68	1
1988	147			14	206		19	6	11	3	420								24	44	1
1989	89		473	19	142		18	9	15	5	320								22	60	0
1990	122		508	13	144		9	17	25	15	372								19	82	0
1991	99		670	14	114		13	16	8	6	89								21	71	1
1992	314		4162	43	270		10	46	46	21	159							15	86	170	8
1993	627	145	1734	88	472		17	72	65	11	100	78						104	38	224	8
1994	917	191	1072	90	246		15	19	70	11	100	148						116	56	332	31
1995	945	218	1121	168	638	135	12	39	74	17	110	120						72	101	615	33
1996	2057	560	1753	161	472	203	15	45	123	127	179	142	249	38	138		112	138	98	509	50
1997	881	321	1883	262	528	183	9	89	185	79	185	157	361	189	195	89	174	201	77	674	55
1998	1959	402	3649	196	390	104	11	130	287	49	295	117	239			72		191	128	766	128
1999	2236	493	4822	130	344	93	18	77	167	49	241	82	265	66	204	246	235	176	123	416	22
2000	684	208	1942	190	236	106	14	104	258	52	216	67	156	155	320	276	494	49	90	596	120
2001	1347	119	1682	62	330	50	8	60	65	35	140	65	180	142	232	45	176	132	75	443	28
2002	893	123	1835	69	272	114	2	78	40	41	167	87	136	165	206	42	202	285	66	433	48
$\bar{X}$ 1984-1989	269			25	127		29	5	21	4	417								31	97	1
SD	162			16	50		9	4	17	1	80								23	96	1
$\bar{X}$ 1986-1991	187		550	16	134		20	10	19	6	355								23	70	1
SD	115		105	3	49		9	7	11	5	145								8	17	1
$\bar{X}$ 1992-2001	1197	295	2382	139	393	125	13	68	134	45	173	108	242	118	218	146	238	119	87	475	48
SD	669	158	1324	69	133	53	3	33	87	36	65	36	72	63	67	107	149	61	28	195	43

1. Exploits River (Bishop's Falls)
2. Campbellton River
3. Gander River
4. Middle Brook
5. Terra Nova River (Lower)
6. Northwest River, Port Blandford
7. Northeast Brook, Trepassey
8. Rocky River
9. Northeast River, Placentia
10. Little River
11. Conne River
12. Highlands River
13. Crabbes River
14. M. Barachois River
15. Robinsons River
16. Fischells River
17. Flat Bay Brook
18. Harry's River
19. Lomond River
20. Torrent River
21. Western Arm Brook

Table 7. Percentage change in total returns of small salmon in 2002 in relation to 2001, the 1984-1989, 1986-1991 and 1992-2001 means.

Counting Facility	Total Returns Small Salmon 2002*	Percent Change from			
		2001	1984-1989 mean	1986-1991 mean	1992-2001 mean
SFA 4					
Exploits River	15908	-19	30	93	-22
Campbellton River	1974	-8			-30
Gander River	13183	5		78	-28
SFA 5					
Middle Brook	890	-42	-29	-17	-51
Terra Nova River (Lower)	1437	-36	-13	-4	-33
Northwest River (TNNP)	443	334			11
SFA 9					
Northeast Bk. (Trep.)	65	16	-37	-33	-14
Rocky River	276	18		18	-12
SFA 10					
Northeast River (Plac.)	443	42	-27	-29	-43
SFA 11					
Little River	487	290	532	448	74
Conne River	2573	71		-60	-14
SFA 13					
Highlands River	169	125			7
Crabbes River	630	-8			-24
M. Barachois River	575	-39			-36
Robinsons River	998	-48			-27
Fischells River	414	67			-53
Flat Bay Brook	1560	36			-5
Harry's River	1640	60			5
SFA 14A					
Lomond River	895	56	26	23	-9
Torrent River	4750	80	117	106	5
Western Arm Brook	1465	160	246	249	50

*preliminary

Table 8. Percentage change in total returns of large salmon in 2002 in relation to 2001, the 1984-1989, 1986-1991 and 1992-2001 means.

Counting Facility	Total Returns Large Salmon 2002*	Percent Change from			
		2001	1984-1989 mean	1986-1991 mean	1992-2001 mean
SFA 4					
Exploits River	893	-34	232	378	-25
Campbellton River	123	3			-58
Gander River	1835	9		233	-23
SFA 5					
Middle Brook	69	11	174	340	-50
Terra Nova River (Lower)	272	-18	114	103	-31
Northwest River (TNNP)	114	128			-9
SFA 9					
Northeast Bk. (Trep.)	2	-75	-93	-90	-84
Rocky River	78	30		696	15
SFA 10					
Northeast River (Plac.)	40	-38	92	111	-70
SFA 11					
Little River	41	17	1018	541	-9
Conne River	167	19		-53	-3
SFA 13					
Highlands River	87	34			-20
Crabbes River	136	-24			-44
M. Barachois River	165	16			40
Robinsons River	206	-11			-5
Fischells River	42	-7			-71
Flat Bay Brook	202	15			-15
Harry's River	285	116			139
SFA 14A					
Lomond River	66	-12	115	193	-24
Torrent River	433	-2	346	522	-9
Western Arm Brook	48	71	7100	9500	-1

*preliminary

Table 9. Proportions of large salmon in total returns to rivers in insular Newfoundland during 1992-2002 and mean proportions for 1984-1989, 1986-1991, and 1992-2001.

	Proportion of large salmon													
River Name	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	1984-1989 mean	1986-1991 mean	1992-2001 mean
SFA 4														
Explotis River (Bishop's Falls)	0.023	0.027	0.049	0.055	0.063	0.055	0.067	0.072	0.053	0.064	0.053	0.021	0.022	0.056
Campbellton River	-	0.035	0.063	0.067	0.149	0.140	0.109	0.138	0.104	0.052	0.059	-	-	0.095
Gander River	0.186	0.062	0.055	0.048	0.068	0.151	0.163	0.207	0.121	0.118	0.122	-	0.069	0.115
SFA 5														
Middle Brook	0.027	0.038	0.047	0.104	0.071	0.169	0.071	0.063	0.098	0.039	0.072	0.020	0.014	0.071
Terra Nova River (Lower)	0.132	0.134	0.108	0.195	0.155	0.227	0.177	0.154	0.121	0.127	0.159	0.072	0.082	0.154
Northwest River (Port Blandford)	-	-	-	0.213	0.255	0.281	0.161	0.229	0.280	0.329	0.205	-	-	0.239
SFA 9														
Northeast Brook (Trepassey)	0.169	0.177	0.132	0.130	0.170	0.153	0.108	0.159	0.144	0.125	0.030	0.216	0.171	0.146
Rocky River	0.163	0.198	0.107	0.092	0.112	0.170	0.235	0.191	0.273	0.205	0.220	0.028	0.040	0.179
SFA 10														
Northeast River (Placentia)	0.046	0.062	0.090	0.087	0.080	0.204	0.245	0.315	0.293	0.172	0.083	0.033	0.030	0.147
SFA 11														
Little River	0.168	0.061	0.131	0.126	0.159	0.165	0.157	0.138	0.084	0.219	0.078	0.045	0.067	0.139
Conne River	0.059	0.036	0.061	0.030	0.039	0.055	0.091	0.093	0.040	0.085	0.061	0.051	0.052	0.055
SFA 13														
Highlands River	-	0.363	0.505	0.411	0.416	0.283	0.549	0.360	0.536	0.464	0.340	-	-	0.406
Crabbes River	-	-	-	-	0.223	0.236	0.326	0.270	0.132	0.207	0.178	-	-	0.226
M. Barachois River	-	-	-	-	0.044	0.152	-	0.105	0.120	0.132	0.223	-	-	0.116
Robinsons River	-	-	-	-	0.135	0.150	-	0.123	0.176	0.108	0.171	-	-	0.137
Fischells River	-	-	-	-	-	0.093	0.260	0.163	0.133	0.154	0.092	-	-	0.143
Flat Bay Brook	-	-	-	-	0.096	0.116	-	0.094	0.171	0.133	0.115	-	-	0.127
Harry's River	0.018	0.059	0.066	0.034	0.065	0.103	0.103	0.093	0.037	0.114	0.148	-	-	0.071
SFA 14A														
Lomond River	0.098	0.044	0.051	0.069	0.091	0.056	0.143	0.094	0.077	0.116	0.069	0.042	0.030	0.081
Torrent River	0.057	0.050	0.080	0.091	0.065	0.143	0.126	0.084	0.125	0.144	0.084	0.042	0.029	0.095
Western Arm Brook	0.016	0.008	0.031	0.039	0.039	0.098	0.069	0.021	0.074	0.047	0.032	0.002	0.001	0.047

Table 10. Newfoundland Region summary of the conservation egg requirement attained for various rivers for years prior to the commercial salmon fishing moratorium (1984-1991) and years during the moratorium (1992-2002). Also shown are the means for 1984-1991 and 1992-2002.

		Percentage conservation level met																			% Conservation met	% Conservation met
SFA	River	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	1984-1991	1992-2002
4	Exploits River	39	37	32	33	37	36	26	16	31	43	31	39	69	24	47	44	22	34	27	32.0	37.4
	Lower	123	100	66	62	59	46	45	34	101	157	103	121	210	72	146	134	64	98	65	66.9	115.5
	Middle	20	17	8	9	12	14	12	16	20	23	18	24	43	15	35	35	16	27	25	13.5	25.5
	Upper	29	53	72	97	125	119	88	0	2	6	7	12	26	10	6	7	2	5	3	72.9	7.8
	Campbellton River										311	239	277	329	187	311	326	152	148	133	-	241.3
	Gander River						44	38	36	118	128	91	95	124	62	110	119	86	81	75	39.3	99.0
5	Indian Bay Brook														113	183	161				-	152.3
	Middle Brook	131	84	89	90	55	49	74	51	148	238	174	114	250	196	301	222	217	132	102	77.9	190.4
	Terra Nova River	18	23	17	14	28	19	19	15	28	53	26	45	36	32	32	33	28	36	28	19.1	34.3
	Northwest Brook (TNNP)												37	55	46	42	28	27	11	37	-	35.4
9	Biscay Bay River	156	126	230	119	117	87	122	38	141	97	143	77	117							124.4	115.0
	Northeast Brook (Trepassey)	229	312	368	227	213	173	156	249	126	193	239	194	196	135	256	248	216	143	156	240.9	191.1
	Rocky River	64	29	59	22	30	17	40	22	28	34	25	56	34	56	54	39	34	33	40	35.4	39.4
10	Northeast River (Placentia)	204	152	352	166	247	302	269	175	555	527	434	422	736	486	484	260	449	166	253	233.4	433.8
11	Conne River - Conservation			262	394	285	185	201	93	87	110	72	147	204	125	150	122	210	67	114	236.7	128.0
	Management			146	219	159	103	112	51	48	61	40	82	114	70	84	68	117	37	64	131.7	71.4
13	Highlands River										46	77	67	79	105	59	49	34	34.8	53	-	60.4
	Crabbes River									34	13	41		68	95	53	66	63	53	43	-	52.9
	Middle Barachois Brook									53	48	74		52	95		43	95	80	61	-	66.8
	Robinsons River									57	23	65		67	91		118	135	142	82	-	86.7
	Fischells River									14	24	71			44	23	110	142	18	28	-	52.7
	Flat Bay Brook									18	14	19	45	85	89		149	167	71	97	-	75.4
	Harry's River									12	37	46	48	52	50	49	49	29	33	60	-	42.3
	Pinchgut Brook									36	117	145	150	130	140	136	138	82	36	116	-	111.5
	Humber River							60	27	117	96	40	128	186	115	120	201				43.5	125.4
14A	Trout River																		25	25	-	-
	Lomond River	74	31	59	56	70	61	62	64	121	118	142	187	143	161	151	181	140	88	111	59.6	140.3
	Torrent River	270	161	360	199	266	225	221	178	313	538	530	1033	1279	797	924	680	657	400	597	235.0	704.4
	Western Arm Brook	30	80	156	103	67	142	157	68	151	288	292	286	415	200	625	370	567	193	510	100.4	354.3

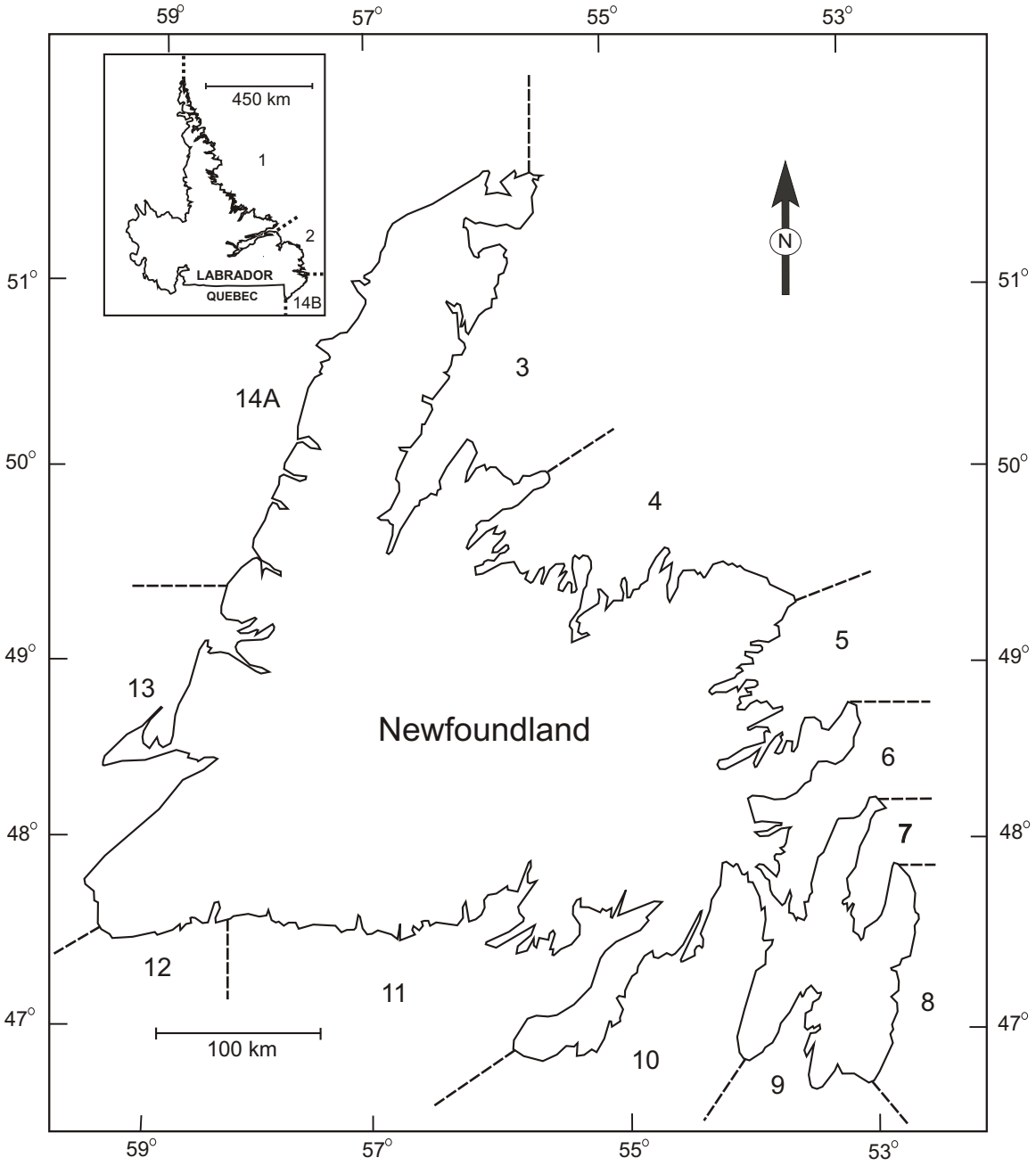

Fig. 1. Map showing the 14 Salmon Fishing Areas of the Newfoundland Region.

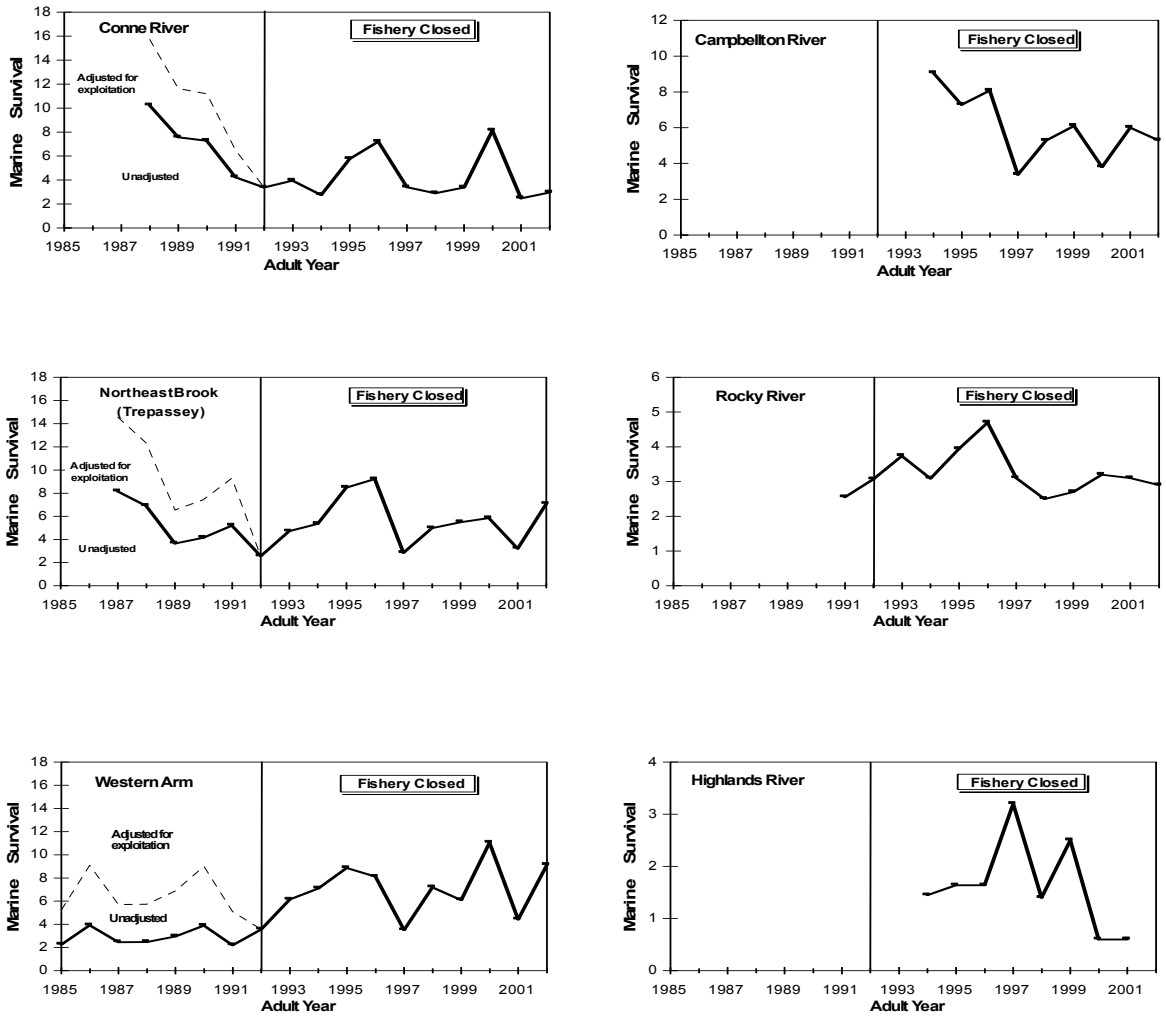

Fig. 2. Estimates of marine survival from smolts in year i to adult small salmon in year i+1. Dashed line represents marine survival adjusted for average marine exploitation rate (from Dempson et al. MS 1998).

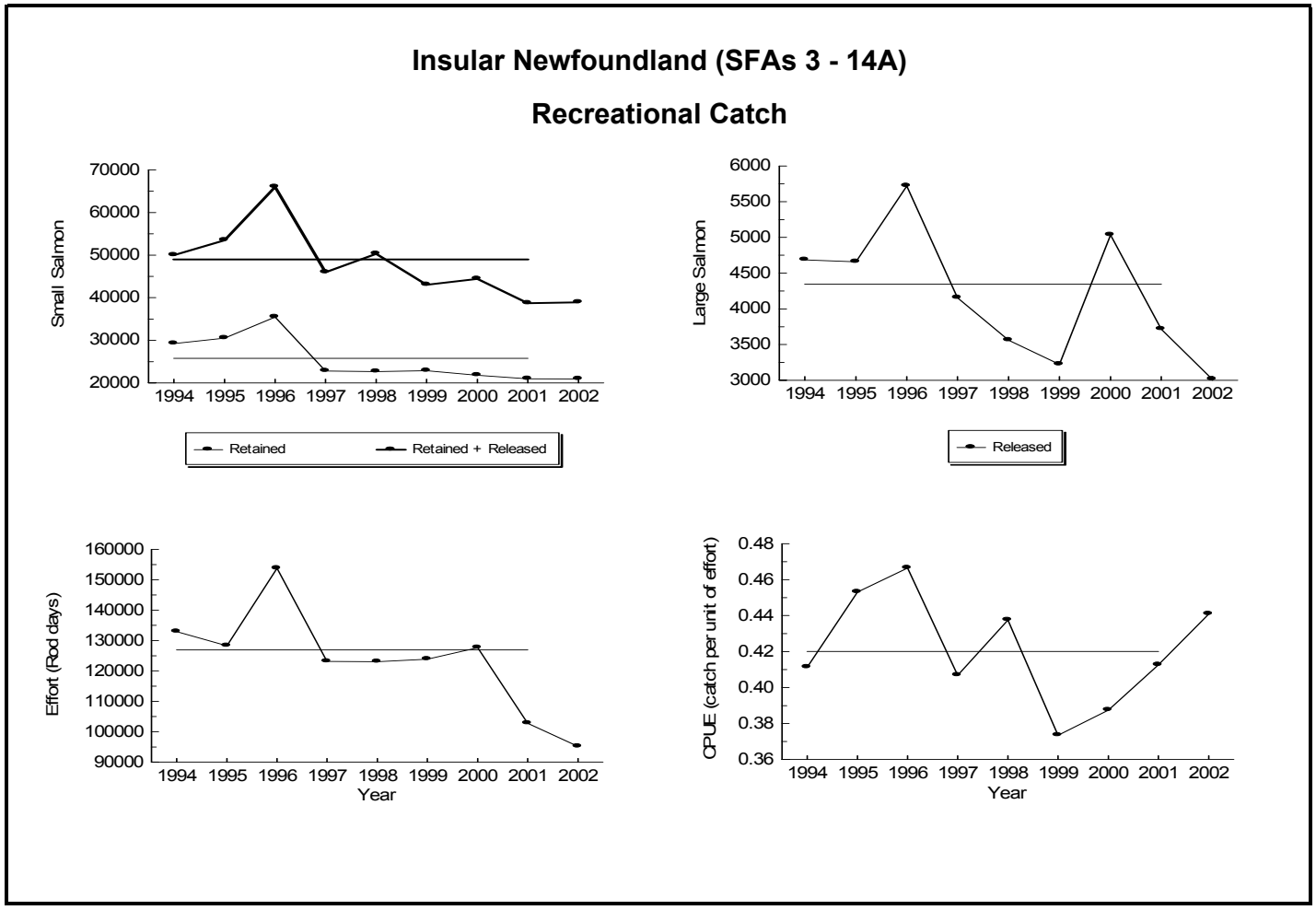

Fig. 3. Recreational catch of small salmon (retained and retained plus released), large salmon released, effort, and CPUE, 1994 - 2002, for Insular Newfoundland (SFAs 3-14A). The thin horizontal line represents the 1994-2001 mean for small retained, large released, effort and CPUE, and the thick horizontal line the 1994-2001 mean for retained and released small salmon combined.

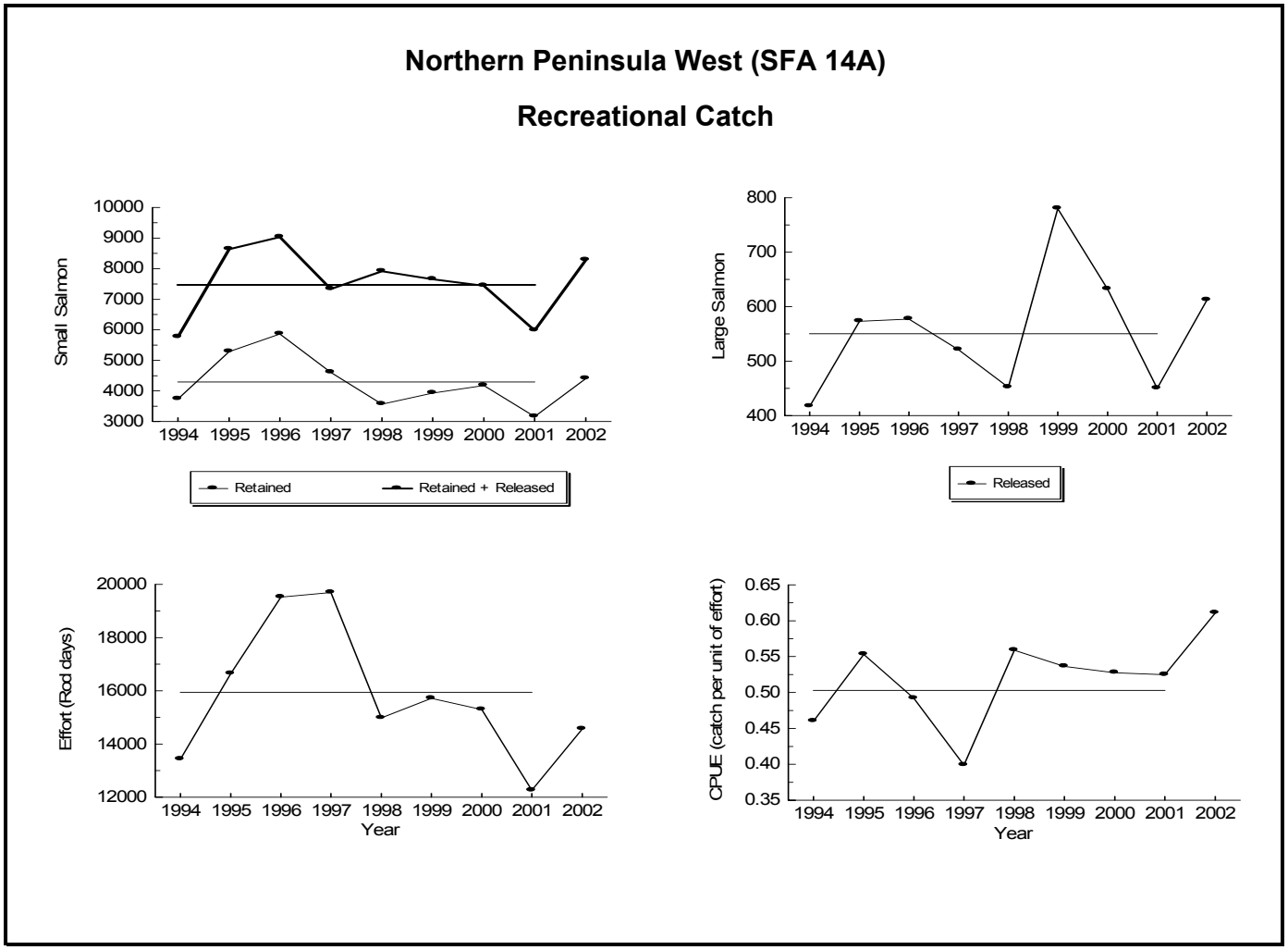

Fig. 7. Recreational catch of small salmon (retained and retained plus released), large salmon released, effort, and CPUE, 1994 - 2002, for Northern Peninsula West (SFA 14A). The thin horizontal line represents the 1994-2001 mean for small retained, large released, effort and CPUE, and the thick horizontal line the 1994-2001 mean for retained and released small salmon combined.

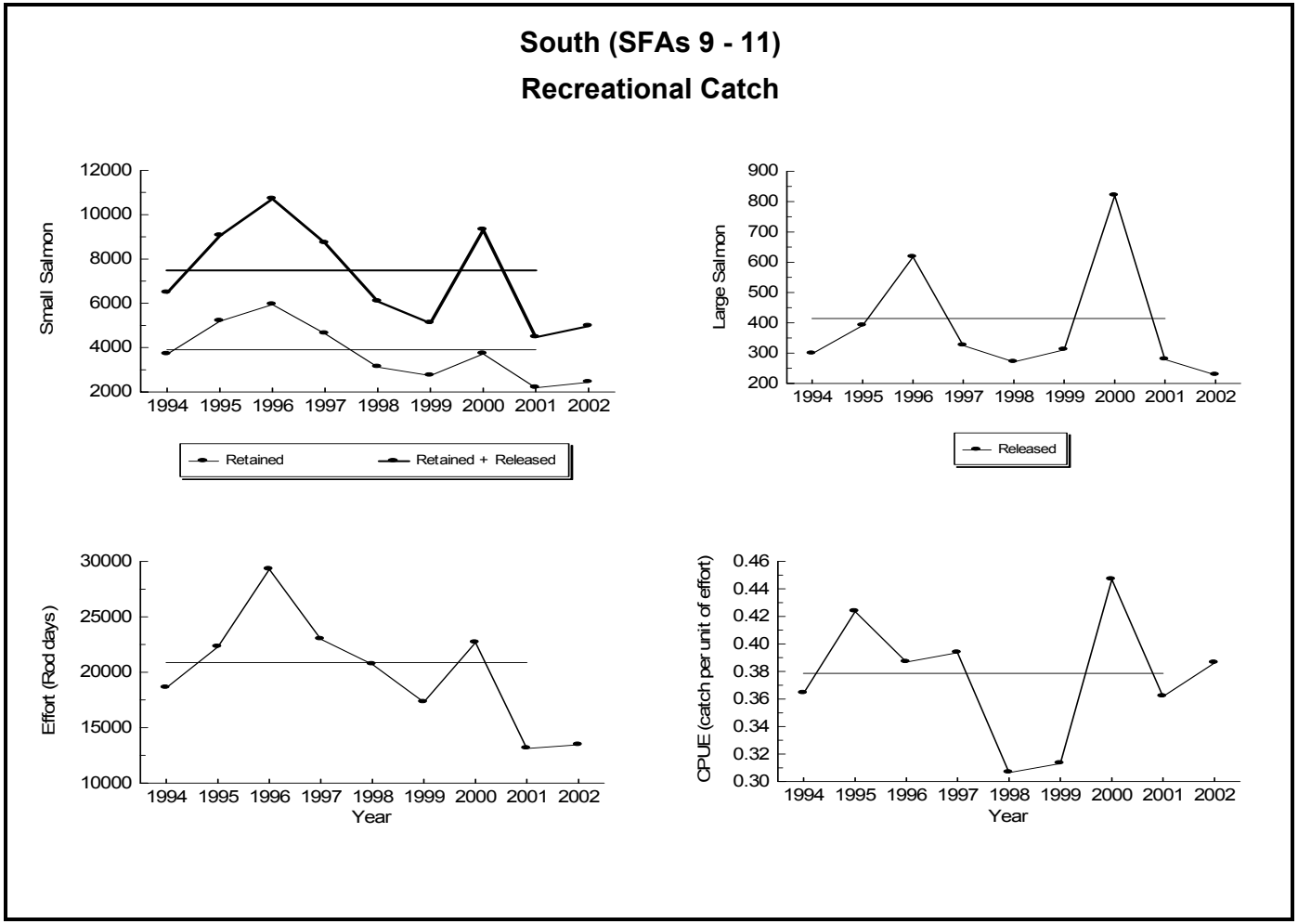

Fig. 5. Recreational catch of small salmon (retained and retained plus released), large salmon released, effort, and CPUE, 1994 - 2002, for South (SFAs 9-11). The thin horizontal line represents the 1994-2001 mean for small retained, large released, effort and CPUE, and the thick horizontal line the 1994-2001 mean for retained and released small salmon combined.

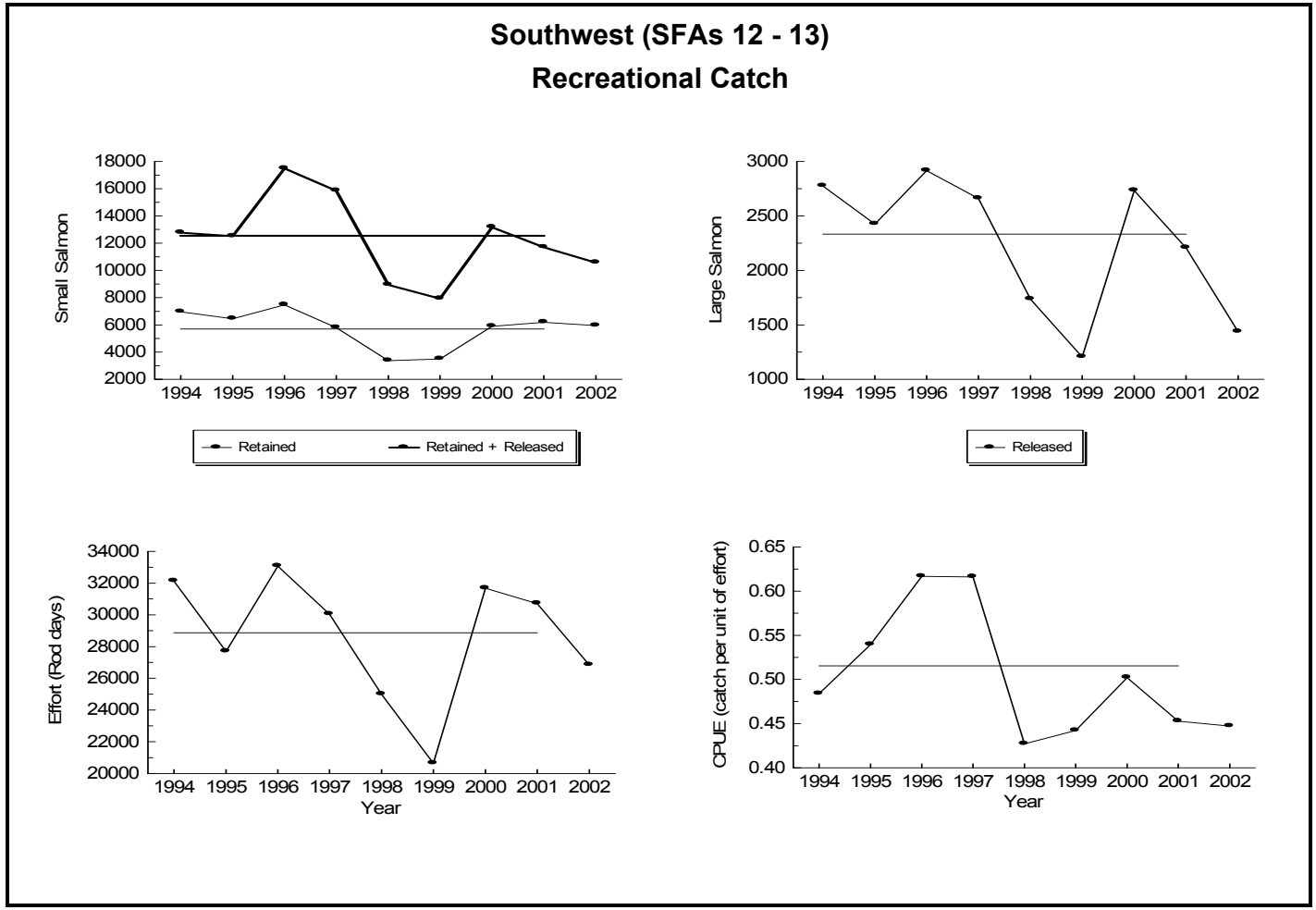

Fig. 6. Recreational catch of small salmon (retained and retained plus released), large salmon released, effort, and CPUE, 1994 - 2002, for Southwest (SFAs 12-13). The thin horizontal line represents the 1994-2001 mean for small retained, large released, effort and CPUE, and the thick horizontal line the 1994-2001 mean for retained and released small salmon combined.

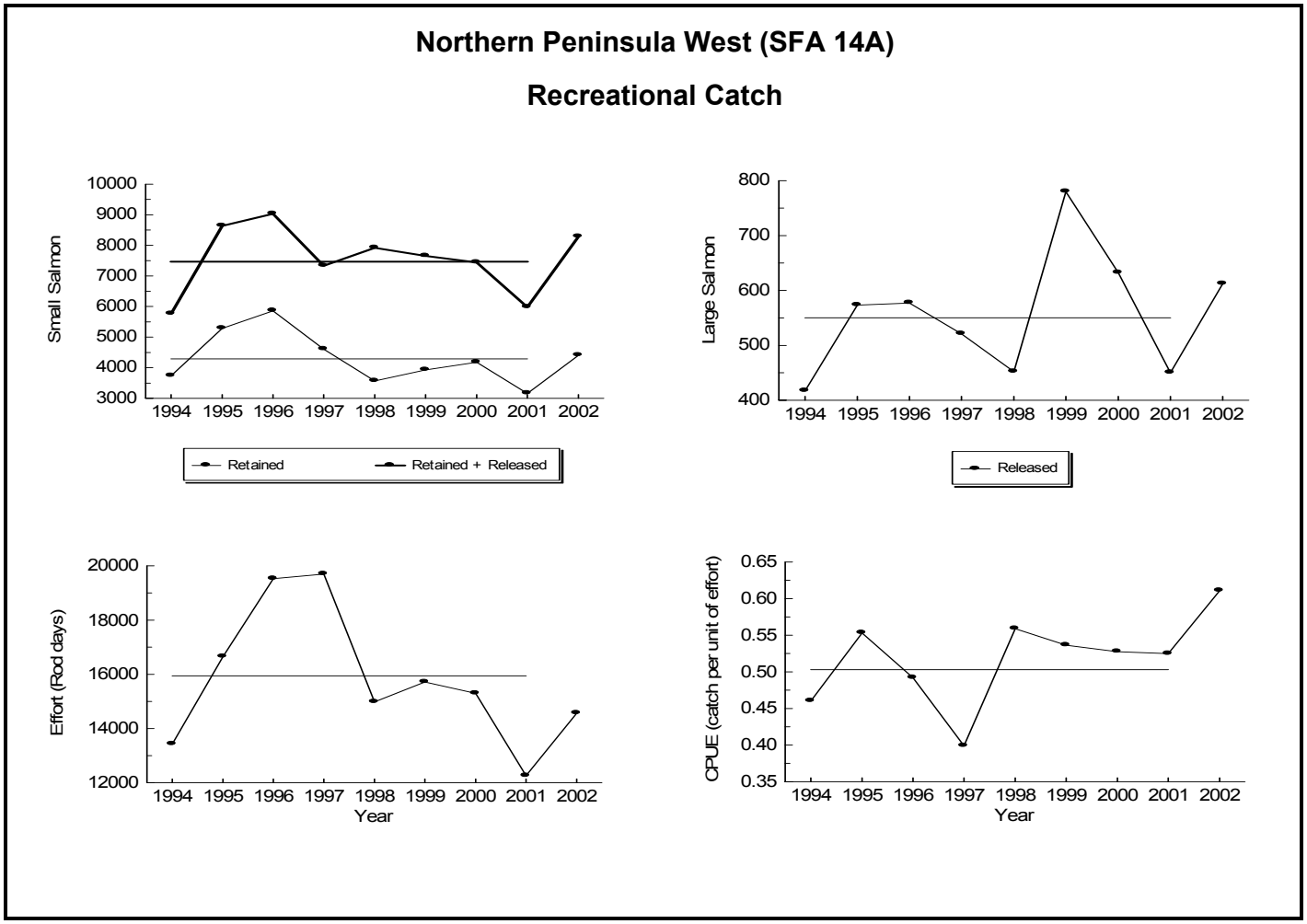

Fig. 7. Recreational catch of small salmon (retained and retained plus released), large salmon released, effort, and CPUE, 1994 - 2002, for Northern Peninsula West (SFA 14A). The thin horizontal line represents the 1994-2001 mean for small retained, large released, effort and CPUE, and the thick horizontal line the 1994-2001 mean for retained and released small salmon combined.

NORTHEAST COAST

Total Returns

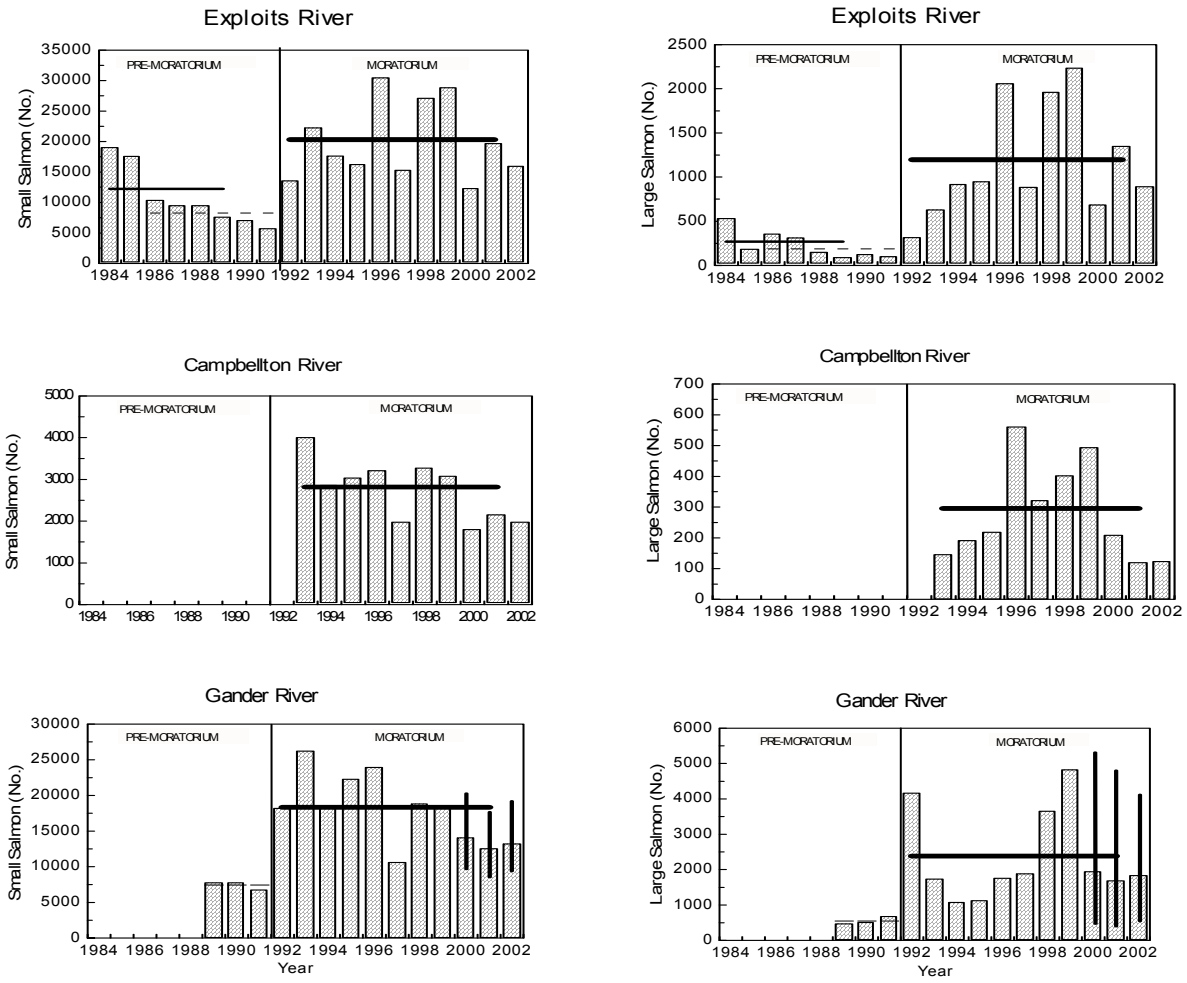

Fig. 8. Total returns of small and large salmon to Exploits River, Campbellton River and Gander River (northeast coast), 1984-2002. The thin solid horizontal line represents the 1984-1989 mean, the broken line the 1986-1991 mean, and the thick solid line the 1992-2001 mean. Vertical lines are estimates of the 5th to 95th percentiles.

Northeast Coast

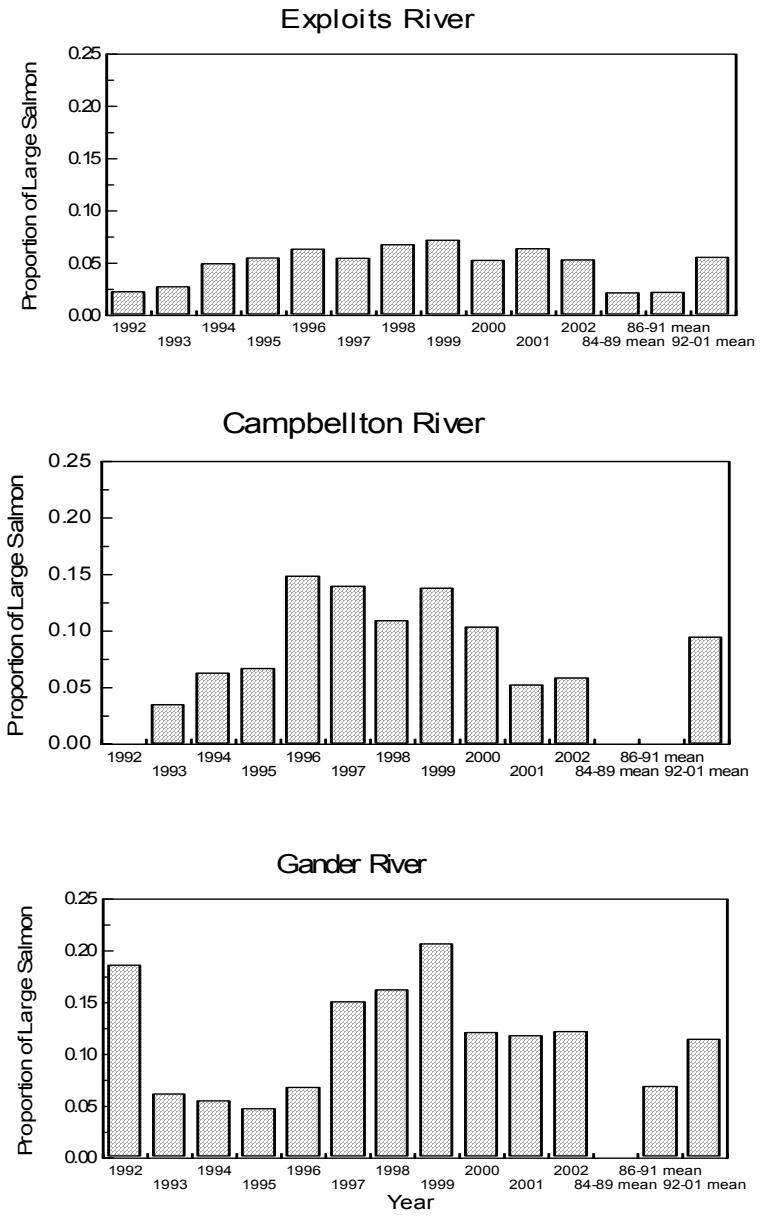

Fig. 9. Proportion of large salmon in total returns to Exploits River, Campbellton River and Gander River, (northeast coast), 1992-2002, and the 1984-1989, 1986-1991 and 1992-2001 means.

EAST COAST
Total Returns

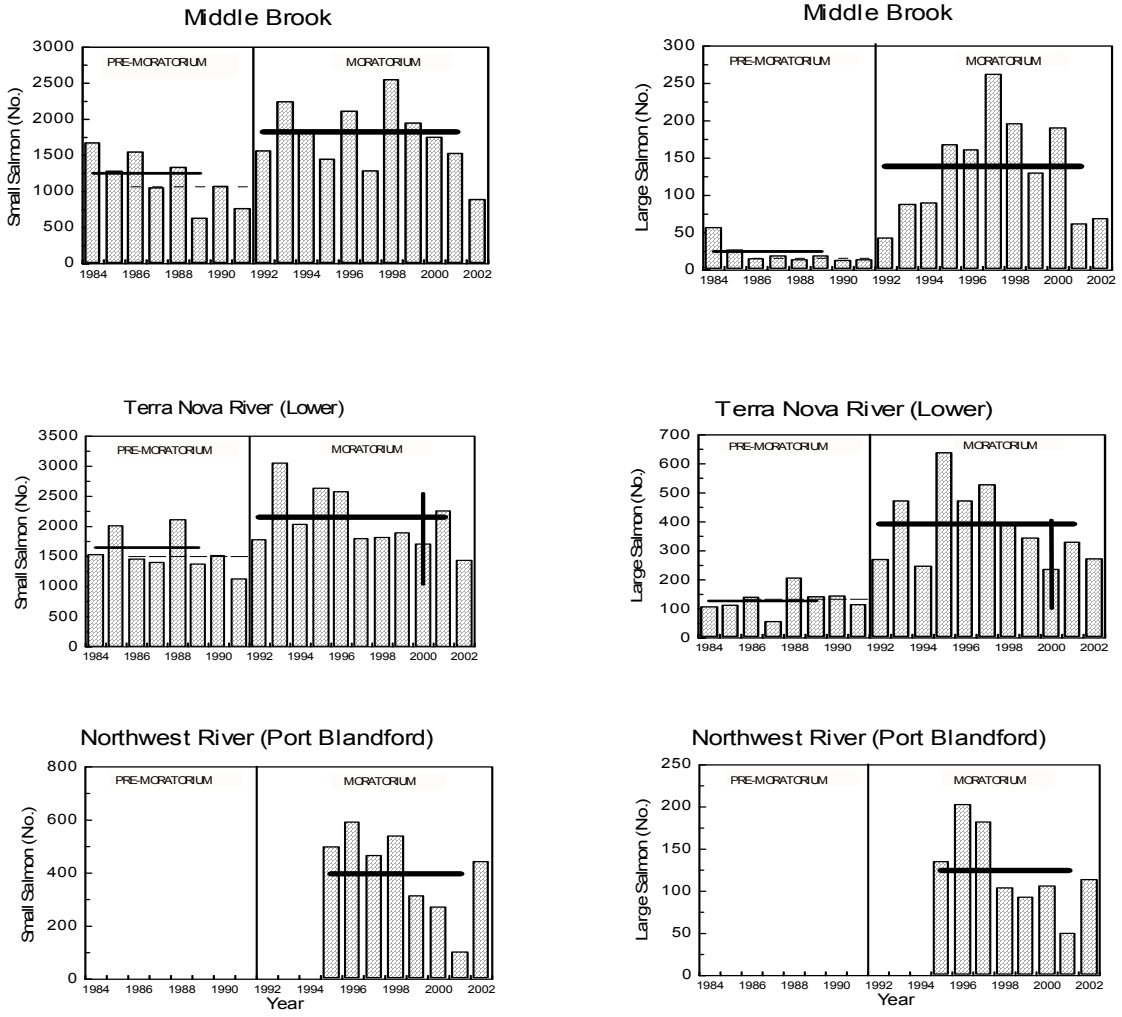

Fig. 10. Total returns of small and large salmon to Middle Brook, Terra Nova River and Northwest River, Port Blandford (east coast), 1984-2002. The thin solid horizontal line represents the 1984-1989 mean, the broken line the 1986-1991 mean, and the thick solid line the 1992-2001 mean. Vertical lines are estimates of the 5th to 95th percentiles.

East Coast

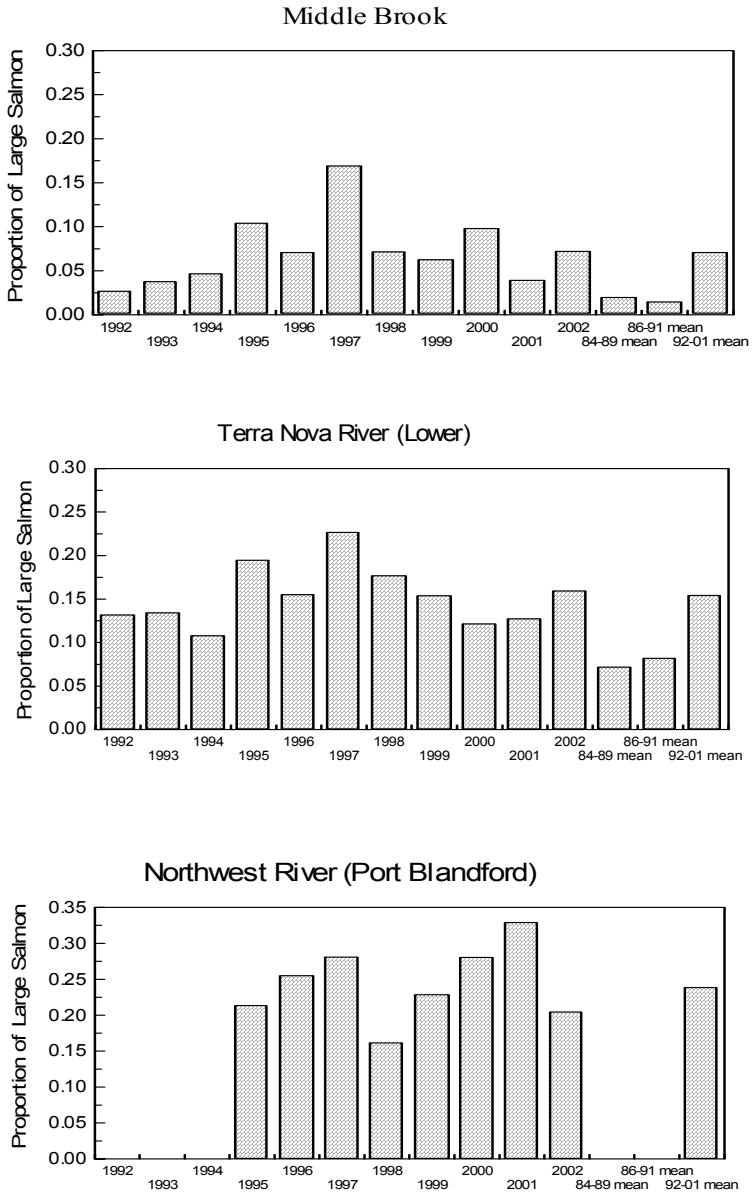

Fig. 11. Proportion of large salmon in total returns to Middle Brook, Terra Nova River, and Northwest River (Port Blandford), (east coast), 1992-2002, and the 1984-1989, 1986-1991 and 1992-2001 means.

SOUTH COAST
Total Returns

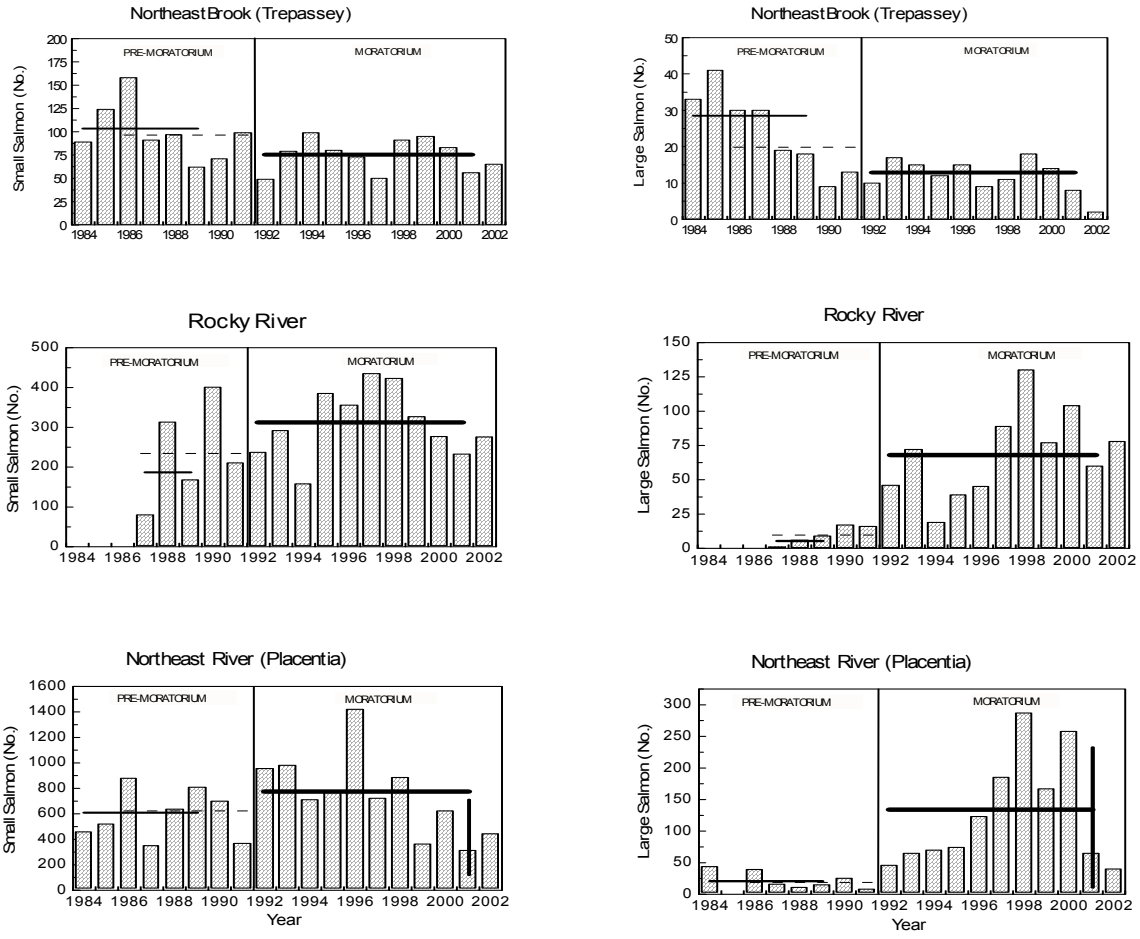

Fig. 12. Total returns of small and large salmon to Northeast Brook (Trepassey), Rocky River, Northeast River (Placentia), Little River, and Conne River, (south coast), 1984-2002. The thin solid horizontal line represents the 1984-1889 mean, the broken line the 1986-1991 mean, and the thick solid line the 1992-2001 mean. Vertical lines are estimates of the 5th to 95th percentiles.

SOUTH COAST
Total Returns

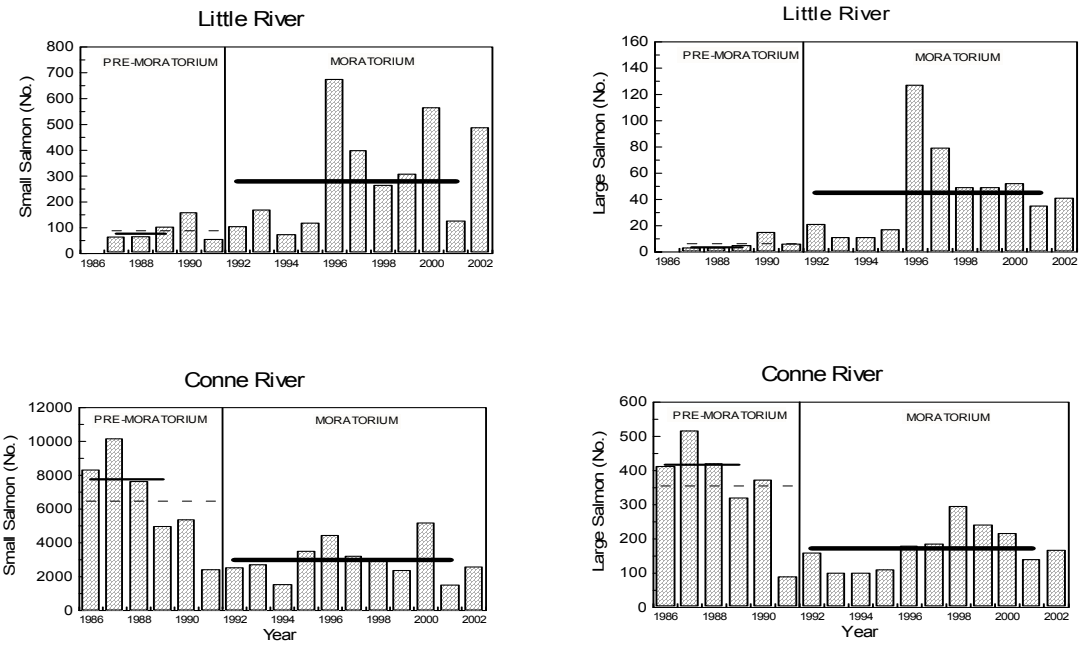

Fig. 12 cont'd

South Coast

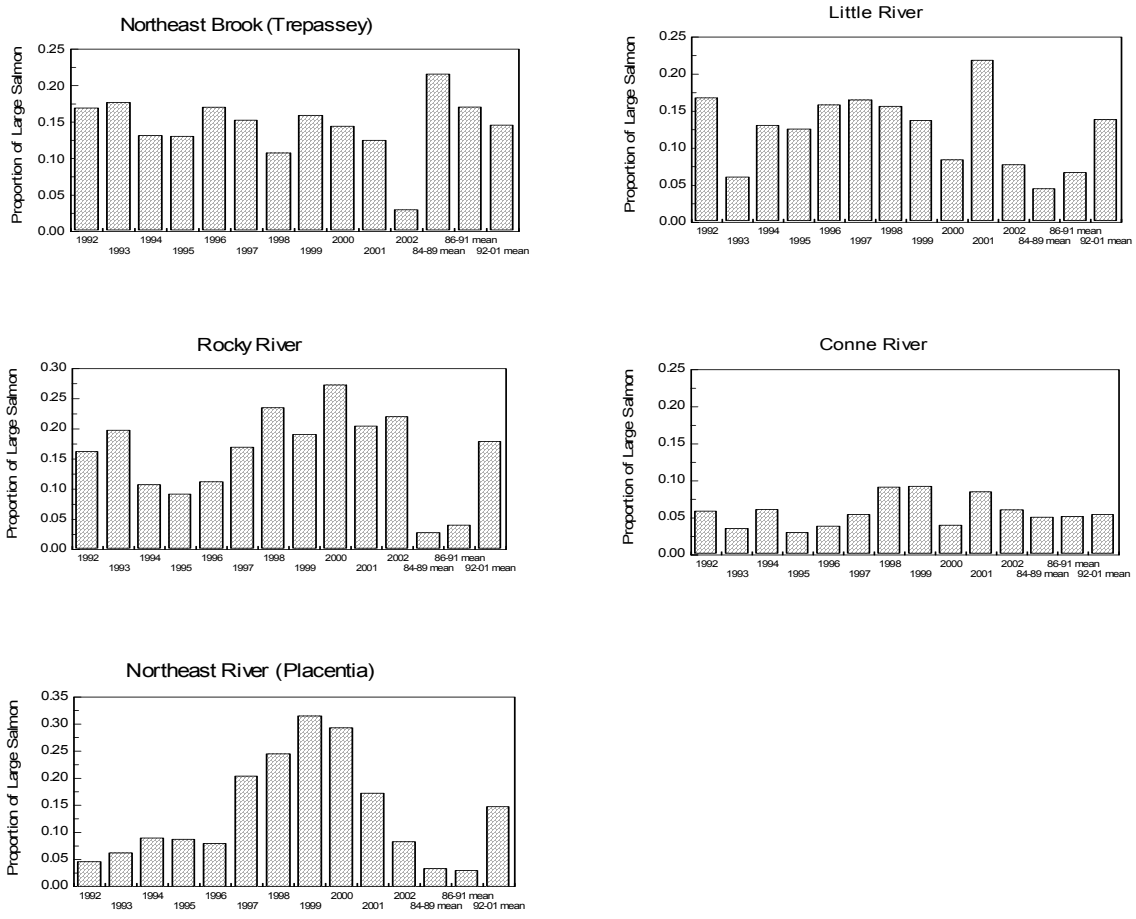

Fig. 13. Proportion of large salmon in total returns to Northeast Brook (Trepassey), Rocky River, Northeast River (Placentia), Little River and Conne River, (south coast), 1992-2002, and the 1984-1989, 1986-1991 and 1992-2001 means.

Southwest Coast
Total Returns

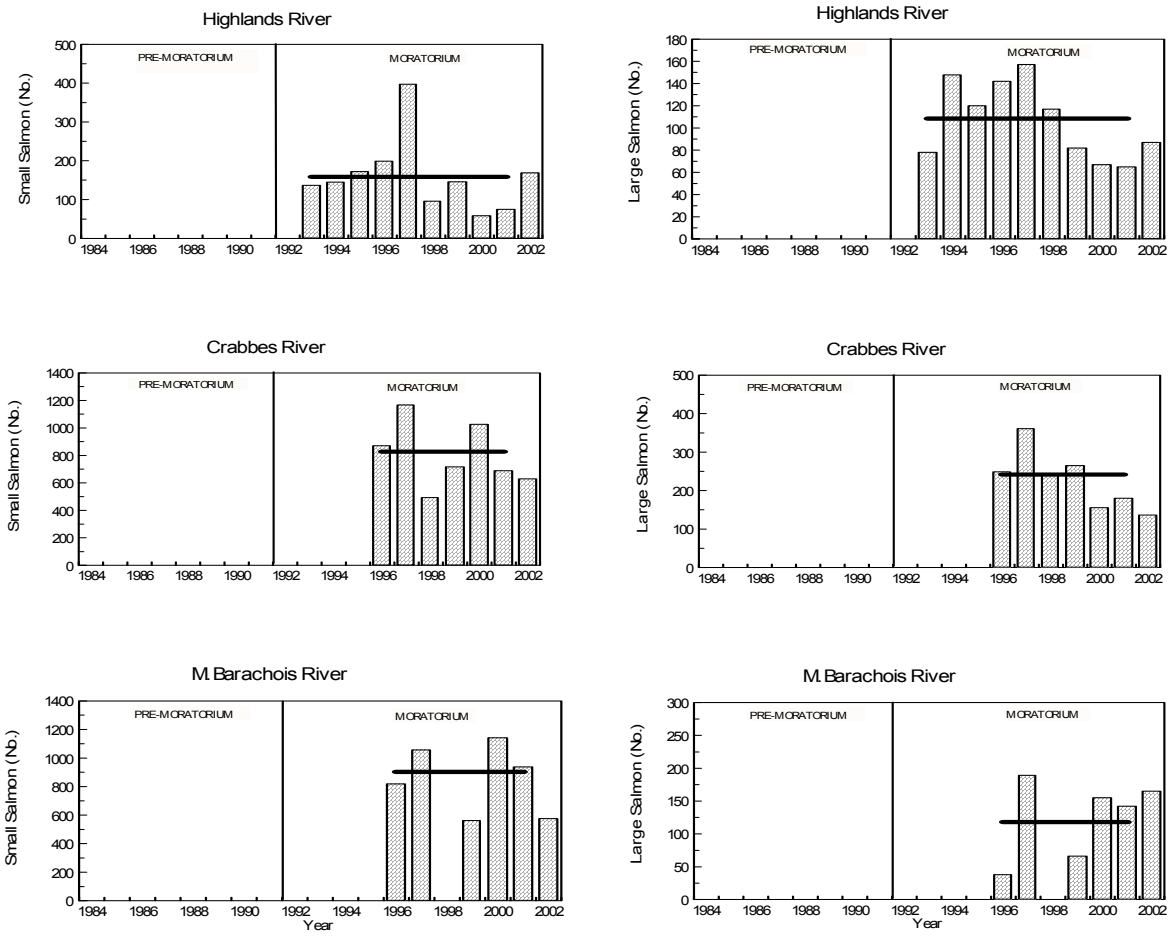

Fig. 14. Total returns of small and large salmon to Highlands River, Crabbes River, M. Barachois River, Robinsons River, Fishcells River, Flat Bay Brook, and Harry's River, (southwest coast), 1984-2002. The thick solid horizontal line represents the 1992-2001 mean.

Southwest Coast
Total Returns

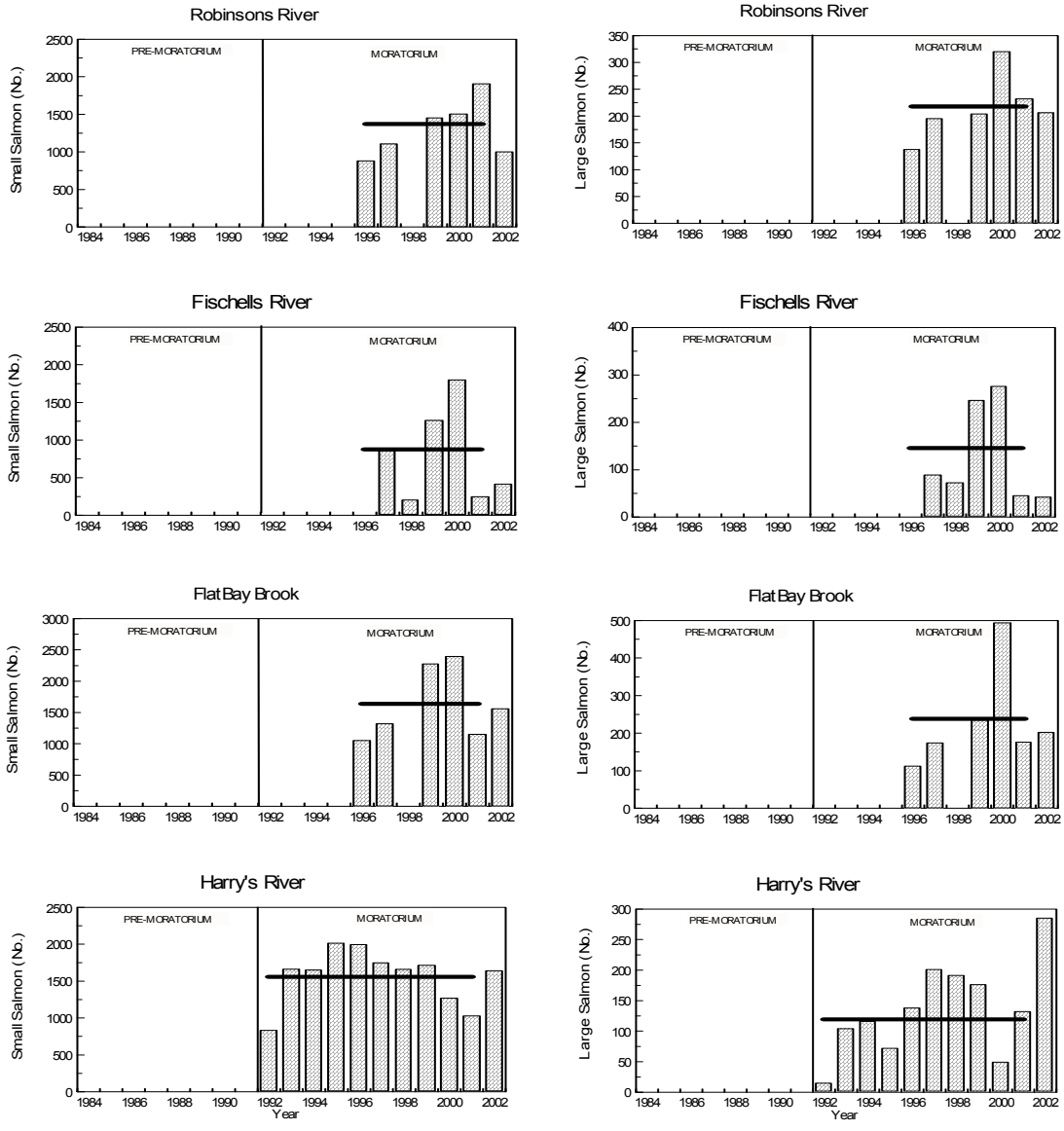

Fig. 14 cont'd

Southwest Coast

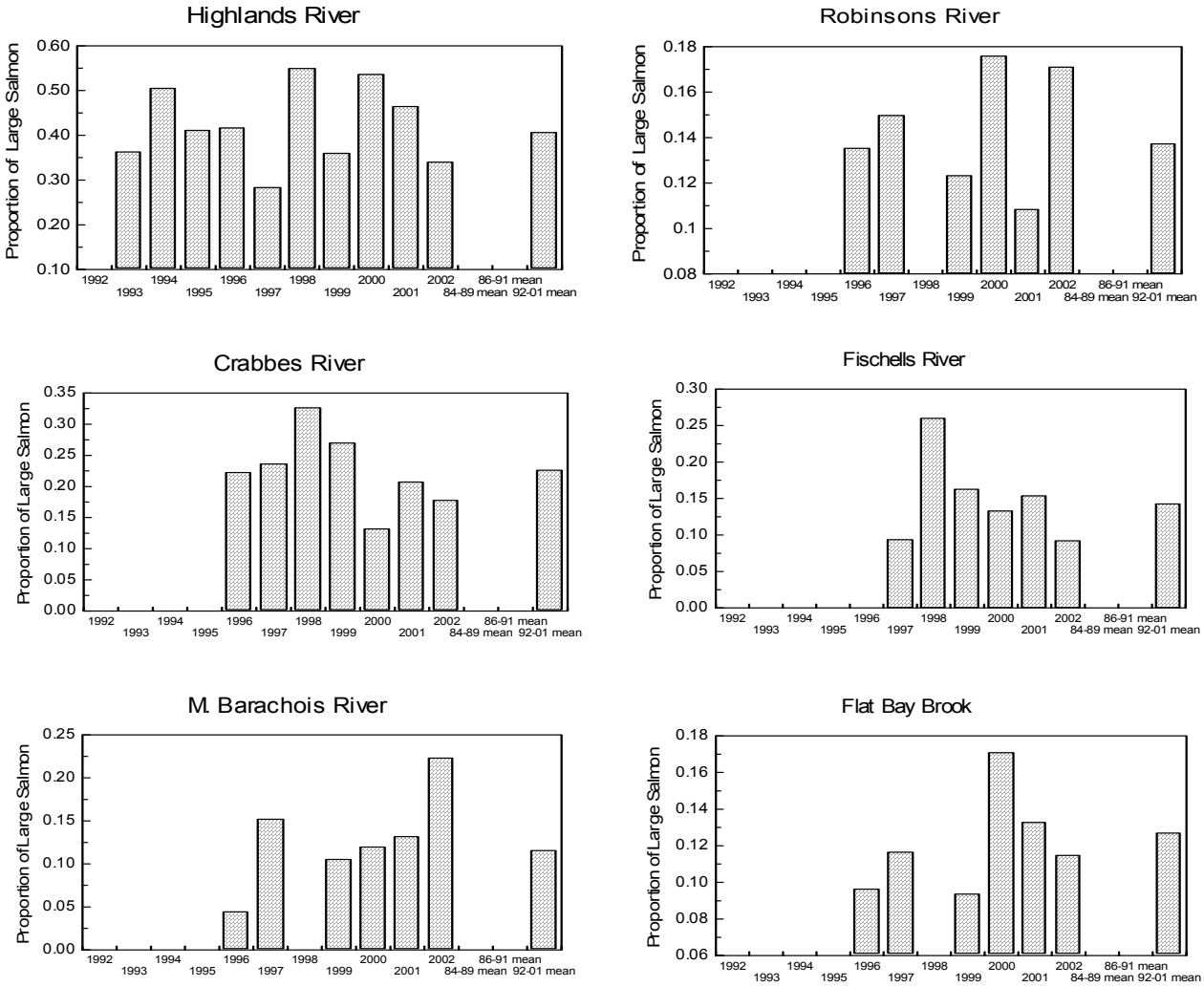

Fig. 15. Proportion of large salmon in total returns to Highlands River, Crabbes River, M. Barachois River, Robinsons River, Fischells River, Flat Bay Brook, and Harry's River, (southwest coast), 1992-2002, and the 1984-1989, 1986-1991 and 1992-2001 means.

Southwest Coast

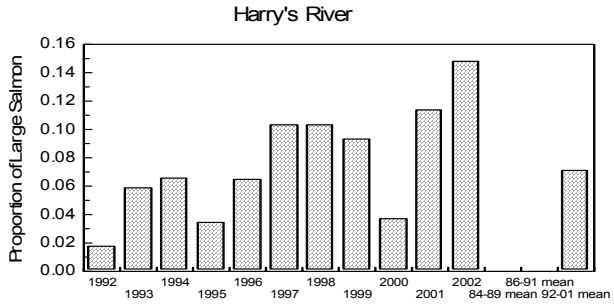

Fig. 15 cont'd

NORTHWEST COAST
Total Returns

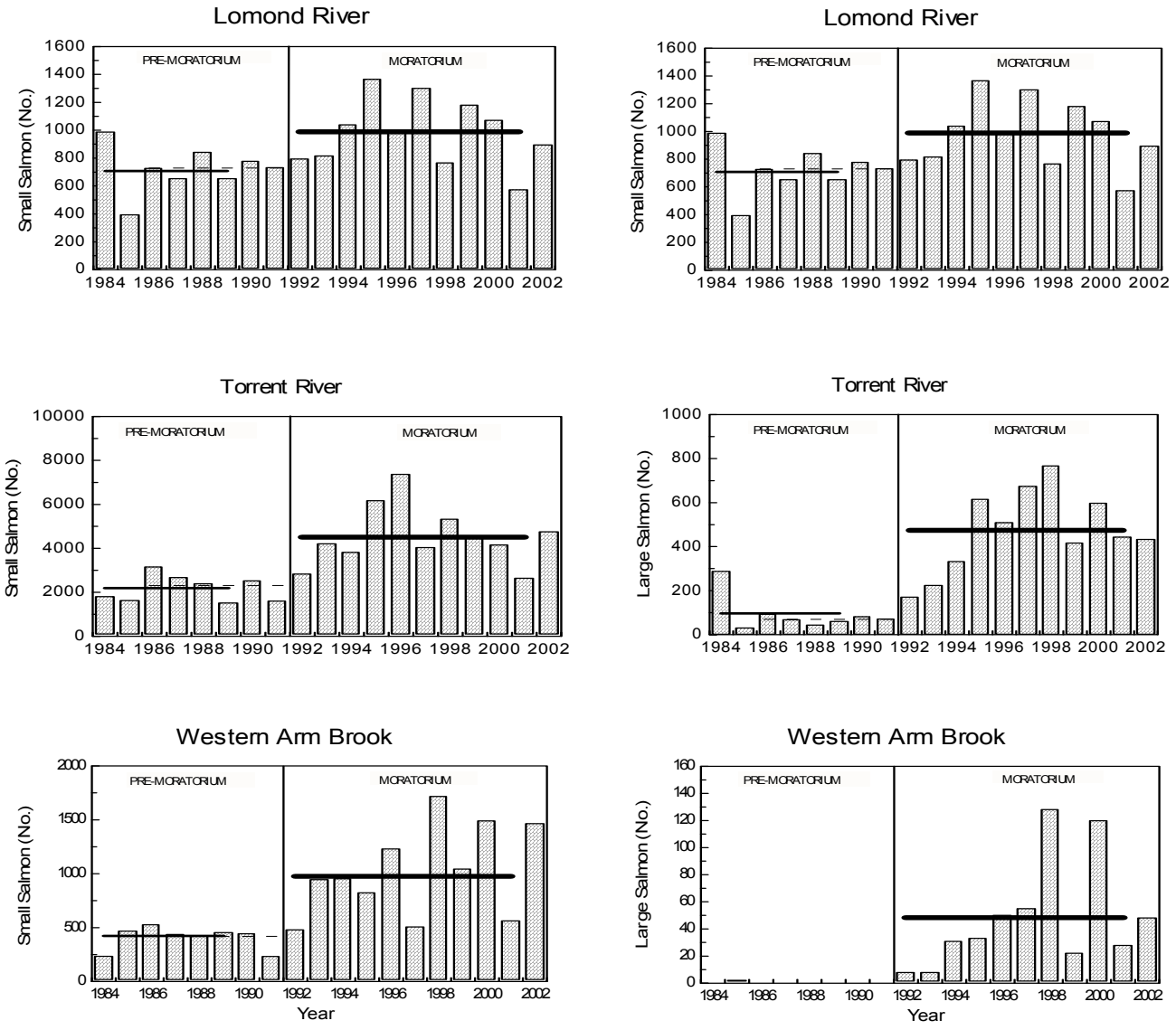

Fig. 16. Total returns of small and large salmon to Lomond River, Torrent River and Western Arm Brook, (northwest coast), 1984-2002. The thin solid horizontal line represents the 1984-1989 mean, the broken line the 1986-1991 mean, and the thick solid line the 1992-2001 mean.

Northwest Coast

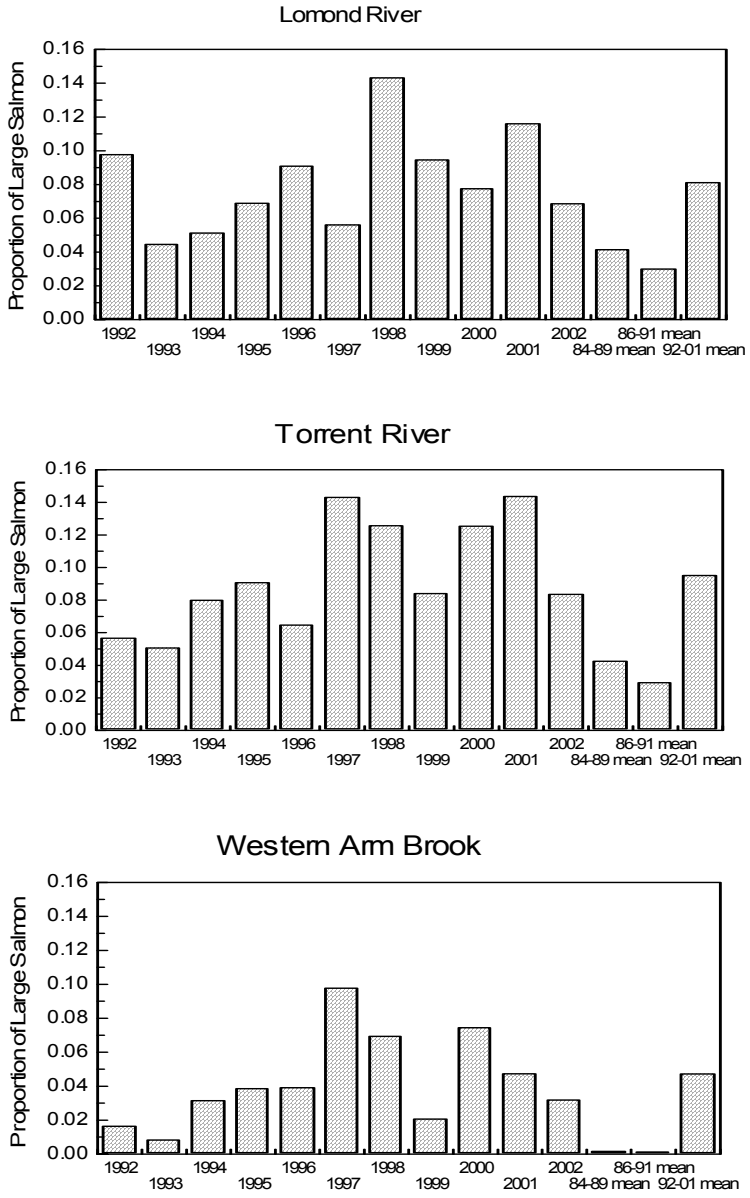

Fig. 17. Proportion of large salmon in total returns to Lomond River, Torrent River and Western Arm Brook, (northwest coast), 1992-2002, and the 1984-1989, 1986-1991 and 1992-2001 means.

Appendix 1a. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3 - 14A), 1994-2002. 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
1994	132935	29225	20761	49986	*	4685	4685	29225	25446	54671	0.41
1995	128309	30512	22971	53483	*	4658	4658	30512	27629	58141	0.45
1996	153759	35440	30566	66006	*	5720	5720	35440	36286	71726	0.47
1997	123165	22819	23129	45948	*	4154	4154	22819	27283	50102	0.41
1998	123041	22668	27610	50278	*	3561	3561	22668	31171	53839	0.44
1999	123840	22870	20160	43030	*	3222	3222	22870	23382	46252	0.37
2000	127639	21808	22610	44418	*	5033	5033	21808	27643	49451	0.39
2001	102768	20977	17708	38685	*	3716	3716	20977	21424	42401	0.41
2002	110607	21764	18936	40700	*	3490	3490	21764	22426	44190	0.40
1994-2001 mean	126932.0	25789.9	23189.4	48979.3	.	4343.6	4343.6	25789.9	27533.0	53322.9	0.42
95% CL	11744.1	4394.4	3454.3	6954.6	.	698.5	698.5	4394.4	3855.6	7469.6	0.03
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1b. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1994-2002. 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
1994	68793	14838	10145	24983	*	1196	1196	14838	11341	26179	0.38
1995	61670	13587	9693	23280	*	1269	1269	13587	10962	24549	0.40
1996	71876	16179	12604	28783	*	1611	1611	16179	14215	30394	0.42
1997	50451	7790	6253	14043	*	648	648	7790	6901	14691	0.29
1998	62367	12606	14742	27348	*	1103	1103	12606	15845	28451	0.46
1999	70198	12708	9651	22359	*	925	925	12708	10576	23284	0.33
2000	57989	8021	6480	14501	*	848	848	8021	7328	15349	0.26
2001	46684	9441	7096	16537	*	780	780	9441	7876	17317	0.37
2002	45751	8496	6123	14619	*	679	679	8496	6802	15298	0.33
1994-2001 mean	61253.5	11896.3	9583.0	21479.3	.	1047.5	1047.5	11896.3	10630.5	22526.8	0.37
95% CL	7681.2	2623.8	2508.0	4818.9	.	260.2	260.2	2623.8	2701.3	5047.2	0.05
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1c. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9 - 11), 1994-2002. 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
1994	18587	3700	2772	6472	*	298	298	3700	3070	6770	0.36
1995	22293	5188	3863	9051	*	391	391	5188	4254	9442	0.42
1996	29290	5939	4772	10711	*	617	617	5939	5389	11328	0.39
1997	22978	4630	4088	8718	*	325	325	4630	4413	9043	0.39
1998	20708	3120	2957	6077	*	271	271	3120	3228	6348	0.31
1999	17294	2735	2368	5103	*	311	311	2735	2679	5414	0.31
2000	22674	3717	5592	9309	*	820	820	3717	6412	10129	0.45
2001	13118	2186	2282	4468	*	279	279	2186	2561	4747	0.36
2002	14971	2361	2877	5238	*	315	315	2361	3192	5553	0.37
1994-2001 mean	20867.8	3901.9	3586.8	7488.6	.	414.0	414.0	3901.9	4000.8	7902.6	0.38
95% CL	3981.8	1063.6	999.5	1882.8	.	166.4	166.4	1063.6	1150.8	2004.1	0.04
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1d. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 & 13), 1994-2002. Ret. = retained f ish; 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
1994	32127	6953	5816	12769	*	2774	2774	6953	8590	15543	0.48
1995	27696	6450	6066	12516	*	2425	2425	6450	8491	14941	0.54
1996	33068	7461	10022	17483	*	2915	2915	7461	12937	20398	0.62
1997	30041	5790	10063	15853	*	2660	2660	5790	12723	18513	0.62
1998	24986	3374	5560	8934	*	1735	1735	3374	7295	10669	0.43
1999	20635	3499	4419	7918	*	1206	1206	3499	5625	9124	0.44
2000	31679	5891	7278	13169	*	2733	2733	5891	10011	15902	0.50
2001	30709	6188	5509	11697	*	2207	2207	6188	7716	13904	0.45
2002	32582	6201	6053	12254	*	1838	1838	6201	7891	14092	0.43
1994-2001 mean	28867.6	5700.8	6841.6	12542.4	.	2331.9	2331.9	5700.8	9173.5	14874.3	0.52
95% CL	3535.6	1255.1	1777.2	2661.7	.	494.9	494.9	1255.1	2155.4	3111.8	0.06
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1e. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1994-2002. 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
1994	13428	3734	2028	5762	*	417	417	3734	2445	6179	0.46
1995	16650	5287	3349	8636	*	573	573	5287	3922	9209	0.55
1996	19525	5861	3168	9029	*	577	577	5861	3745	9606	0.49
1997	19695	4609	2725	7334	*	521	521	4609	3246	7855	0.40
1998	14980	3568	4351	7919	*	452	452	3568	4803	8371	0.56
1999	15713	3928	3722	7650	*	780	780	3928	4502	8430	0.54
2000	15297	4179	3260	7439	*	632	632	4179	3892	8071	0.53
2001	12257	3162	2821	5983	*	450	450	3162	3271	6433	0.52
2002	17303	4706	3883	8589	*	658	658	4706	4541	9247	0.53
1994-2001 mean	15943.1	4291.0	3178.0	7469.0	.	550.3	550.3	4291.0	3728.3	8019.3	0.50
95% CL	2205.9	761.8	579.6	957.1	.	99.4	99.4	761.8	624.7	1007.3	0.05
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1f. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1994-2002. 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
1994	11809	3667	2690	6357	*	201	201	3667	2891	6558	0.56
1995	8920	2589	2069	4658	*	293	293	2589	2362	4951	0.56
1996	10947	3492	2981	6473	*	267	267	3492	3248	6740	0.62
1997	7925	2148	1938	4086	*	164	164	2148	2102	4250	0.54
1998	10152	2917	3092	6009	*	229	229	2917	3321	6238	0.61
1999	8557	2037	1393	3430	*	75	75	2037	1468	3505	0.41
2000	9772	2192	1179	3371	*	168	168	2192	1347	3539	0.36
2001	7591	1789	1043	2832	*	151	151	1789	1194	2983	0.39
2002	7098	1936	1979	3915	*	164	164	1936	2143	4079	0.57
1994-2001 mean	9459.1	2603.9	2048.1	4652.0	.	193.5	193.5	2603.9	2241.6	4845.5	0.51
95% CL	1234.6	581.0	676.3	1217.1	.	58.3	58.3	581.0	715.8	1256.2	0.09
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1g. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1994-2002. 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
1994	39900	8241	5837	14078	*	847	847	8241	6684	14925	0.37
1995	36736	7976	5904	13880	*	755	755	7976	6659	14635	0.40
1996	44128	9395	7746	17141	*	1138	1138	9395	8884	18279	0.41
1997	31462	4396	3697	8093	*	420	420	4396	4117	8513	0.27
1998	40632	7784	10040	17824	*	588	588	7784	10628	18412	0.45
1999	50159	9054	6975	16029	*	674	674	9054	7649	16703	0.33
2000	35213	4262	4097	8359	*	474	474	4262	4571	8833	0.25
2001	28090	6073	4637	10710	*	571	571	6073	5208	11281	0.40
2002	31463	5858	3555	9413	*	478	478	5858	4033	9891	0.31
1994-2001 mean	38290.0	7147.6	6116.6	13264.3	.	683.4	683.4	7147.6	6800.0	13947.6	0.36
95% CL	5875.0	1673.0	1760.5	3189.2	.	193.2	193.2	1673.0	1855.0	3322.4	0.06
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1994-2002. 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
1994	14727	2730	1547	4277	*	131	131	2730	1678	4408	0.30
1995	13557	2818	1672	4490	*	210	210	2818	1882	4700	0.35
1996	14328	3110	1786	4896	*	185	185	3110	1971	5081	0.35
1997	9690	1181	589	1770	*	58	58	1181	647	1828	0.19
1998	9683	1764	1556	3320	*	276	276	1764	1832	3596	0.37
1999	9591	1526	1156	2682	*	170	170	1526	1326	2852	0.30
2000	9581	1409	1080	2489	*	191	191	1409	1271	2680	0.28
2001	10257	1523	1392	2915	*	54	54	1523	1446	2969	0.29
2002	5829	648	490	1138	*	29	29	648	519	1167	0.20
1994-2001 mean	11426.8	2007.6	1347.3	3354.9	.	159.4	159.4	2007.6	1506.6	3514.3	0.31
95% CL	1949.4	629.0	326.4	917.2	.	63.3	63.3	629.0	363.5	945.0	0.04
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1994-2002. 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
1994	1772	151	63	214	*	15	15	151	78	229	0.13
1995	1505	98	14	112	*	5	5	98	19	117	0.08
1996	1561	115	59	174	*	16	16	115	75	190	0.12
1997	923	43	21	64	*	2	2	43	23	66	0.07
1998	947	80	33	113	*	4	4	80	37	117	0.12
1999	1382	59	28	87	*	4	4	59	32	91	0.07
2000	2744	128	63	191	*	11	11	128	74	202	0.07
2001	550	45	3	48	*	2	2	45	5	50	0.09
2002	775	41	20	61	*	6	6	41	26	67	0.09
1994-2001 mean	1423.0	89.9	35.5	125.4	.	7.4	7.4	89.9	42.9	132.8	0.09
95% CL	559.4	33.4	19.6	51.0	.	4.8	4.8	33.4	24.0	55.5	0.02
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1994-2002. 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
1994	290	18	6	24	*	0	0	18	6	24	0.08
1995	624	59	6	65	*	3	3	59	9	68	0.11
1996	543	27	0	27	*	0	0	27	0	27	0.05
1997	179	11	0	11	*	4	4	11	4	15	0.08
1998	661	37	0	37	*	2	2	37	2	39	0.06
1999	166	10	3	13	*	0	0	10	3	13	0.08
2000	199	18	6	24	*	0	0	18	6	24	0.12
2001	179	8	21	29	*	2	2	8	23	31	0.17
2002	232	0	11	11	*	0	0	0	11	11	0.05
1994-2001 mean	355.1	23.5	5.3	28.8	.	1.4	1.4	23.5	6.6	30.1	0.08
95% CL	180.9	14.5	5.8	14.1	.	1.3	1.3	14.5	6.0	14.6	0.03
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1994-2002. 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
1994	295	31	2	33	*	2	2	31	4	35	0.12
1995	328	47	28	75	*	3	3	47	31	78	0.24
1996	369	40	32	72	*	5	5	40	37	77	0.21
1997	272	11	8	19	*	0	0	11	8	19	0.07
1998	292	24	21	45	*	4	4	24	25	49	0.17
1999	343	22	96	118	*	2	2	22	98	120	0.35
2000	480	12	55	67	*	4	4	12	59	71	0.15
2001	17	3	0	3	*	0	0	3	0	3	0.18
2002	354	13	68	81	*	2	2	13	70	83	0.23
1994-2001 mean	299.5	23.8	30.3	54.0	.	2.5	2.5	23.8	32.8	56.5	0.19
95% CL	109.8	12.6	26.9	30.6	.	1.5	1.5	12.6	27.4	31.5	0.08
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1l. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1994-2002. 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
1994	5708	843	403	1246	*	48	48	843	451	1294	0.23
1995	7194	1350	843	2193	*	138	138	1350	981	2331	0.32
1996	7701	1076	704	1780	*	123	123	1076	827	1903	0.25
1997	5928	664	452	1116	*	65	65	664	517	1181	0.20
1998	5104	698	592	1290	*	100	100	698	692	1390	0.27
1999	5034	585	291	876	*	103	103	585	394	979	0.19
2000	6611	891	458	1349	*	147	147	891	605	1496	0.23
2001	3161	311	237	548	*	64	64	311	301	612	0.19
2002	3425	291	432	723	*	67	67	291	499	790	0.23
1994-2001 mean	5805.1	802.3	497.5	1299.8	.	98.5	98.5	802.3	596.0	1398.3	0.24
95% CL	1194.1	265.0	171.4	425.5	.	30.6	30.6	265.0	191.2	445.4	0.04
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1994-2002. 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
1994	4872	713	270	983	*	56	56	713	326	1039	0.21
1995	5921	1109	446	1555	*	82	82	1109	528	1637	0.28
1996	10641	1475	825	2300	*	161	161	1475	986	2461	0.23
1997	6723	926	588	1514	*	95	95	926	683	1609	0.24
1998	9425	1163	525	1688	*	88	88	1163	613	1776	0.19
1999	5903	745	552	1297	*	151	151	745	703	1448	0.25
2000	7434	867	1077	1944	*	454	454	867	1531	2398	0.32
2001	3731	445	432	877	*	104	104	445	536	981	0.26
2002	4954	536	645	1181	*	167	167	536	812	1348	0.27
1994-2001 mean	6831.3	930.4	589.4	1519.8	.	148.9	148.9	930.4	738.3	1668.6	0.24
95% CL	1916.1	265.1	211.1	395.9	.	107.2	107.2	265.1	310.4	457.3	0.04
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1994-2002. 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
1994	8007	2144	2099	4243	*	194	194	2144	2293	4437	0.55
1995	9178	2729	2574	5303	*	171	171	2729	2745	5474	0.60
1996	10948	3388	3243	6631	*	333	333	3388	3576	6964	0.64
1997	10327	3040	3048	6088	*	165	165	3040	3213	6253	0.61
1998	6179	1259	1840	3099	*	83	83	1259	1923	3182	0.51
1999	6357	1405	1525	2930	*	57	57	1405	1582	2987	0.47
2000	8629	1959	4057	6016	*	219	219	1959	4276	6235	0.72
2001	6226	1430	1613	3043	*	111	111	1430	1724	3154	0.51
2002	6592	1534	1800	3334	*	81	81	1534	1881	3415	0.52
1994-2001 mean	8231.4	2169.3	2499.9	4669.1	.	166.6	166.6	2169.3	2666.5	4835.8	0.59
95% CL	1568.2	674.9	748.9	1279.6	.	73.0	73.0	674.9	804.5	1342.4	0.06
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1994-2002. 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
1994	2665	774	385	1159	*	88	88	774	473	1247	0.47
1995	2119	582	232	814	*	67	67	582	299	881	0.42
1996	2750	899	439	1338	*	119	119	899	558	1457	0.53
1997	3199	832	699	1531	*	110	110	832	809	1641	0.51
1998	2456	351	415	766	*	108	108	351	523	874	0.36
1999	1304	166	151	317	*	26	26	166	177	343	0.26
2000	1859	299	440	739	*	45	45	299	485	784	0.42
2001	2062	335	485	820	*	80	80	335	565	900	0.44
2002	2172	420	482	902	*	46	46	420	528	948	0.44
1994-2001 mean	2301.8	529.8	405.8	935.5	.	80.4	80.4	529.8	486.1	1015.9	0.44
95% CL	494.1	233.4	137.8	323.0	.	27.5	27.5	233.4	157.3	345.8	0.06
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1994-2002. 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
1994	29462	6179	5431	11610	*	2686	2686	6179	8117	14296	0.49
1995	25577	5868	5834	11702	*	2358	2358	5868	8192	14060	0.55
1996	30318	6562	9583	16145	*	2796	2796	6562	12379	18941	0.62
1997	26842	4958	9364	14322	*	2550	2550	4958	11914	16872	0.63
1998	22530	3023	5145	8168	*	1627	1627	3023	6772	9795	0.43
1999	19331	3333	4268	7601	*	1180	1180	3333	5448	8781	0.45
2000	29820	5592	6838	12430	*	2688	2688	5592	9526	15118	0.51
2001	28647	5853	5024	10877	*	2127	2127	5853	7151	13004	0.45
2002	30410	5781	5571	11352	*	1792	1792	5781	7363	13144	0.43
1994-2001 mean	26565.9	5171.0	6435.9	11606.9	.	2251.5	2251.5	5171.0	8687.4	13858.4	0.52
95% CL	3270.2	1100.1	1683.4	2387.3	.	482.4	482.4	1100.1	2044.1	2822.4	0.06
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1994-2002. 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
1994	13428	3734	2028	5762	*	417	417	3734	2445	6179	0.46
1995	16650	5287	3349	8636	*	573	573	5287	3922	9209	0.55
1996	19525	5861	3168	9029	*	577	577	5861	3745	9606	0.49
1997	19695	4609	2725	7334	*	521	521	4609	3246	7855	0.40
1998	14980	3568	4351	7919	*	452	452	3568	4803	8371	0.56
1999	15713	3928	3722	7650	*	780	780	3928	4502	8430	0.54
2000	15297	4179	3260	7439	*	632	632	4179	3892	8071	0.53
2001	12257	3162	2821	5983	*	450	450	3162	3271	6433	0.52
2002	17303	4706	3883	8589	*	658	658	4706	4541	9247	0.53
1994-2001 mean	15943.1	4291.0	3178.0	7469.0	.	550.3	550.3	4291.0	3728.3	8019.3	0.50
95% CL	2205.9	761.8	579.6	957.1	.	99.4	99.4	761.8	624.7	1007.3	0.05
N	8	8	8	8	.	8	8	8	8	8	8

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS IN TERMS OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.