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**Status of Atlantic Salmon (*Salmo salar* L.) Stocks of Insular Newfoundland (SFAs 3-14A), 2009**

**État des stocks de saumon atlantique (*Salmo salar* L.) de l'île de Terre-Neuve (ZPS 3-14A) en 2009**

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**ABSTRACT**

2009 marks the 18<sup>th</sup> year of the commercial Atlantic salmon fishery moratorium in insular Newfoundland. Returns of small salmon in 2009 declined relative to 2008 in 85% of assessed rivers (11 of 13) and increased in Exploits River (SFA 4) and Little River (SFA 11). Large salmon returns also declined in 2009 in 69% of assessed rivers (9 of 13). Overall abundance of small salmon in insular Newfoundland (SFA 3-14A) reached record low levels in 2001 and 2007. Peaks in small salmon abundance, approaching pre-moratorium levels, occurred in 2004 and 2008. These large variations in small salmon abundance have resulted in a long term moratorium mean (1997-2008) that is similar to the initial five year moratorium mean (1992-96) and below pre-moratorium levels (1984-91). As was expected, overall abundance of large salmon returns increased steadily following the commercial moratorium from 1992 to 1998. However, as with small salmon, returns of large salmon experienced low levels in 2001 and 2007 but increased little in 2008. Large salmon returns declined in 2009, reaching the lowest level since 1993. The proportion of large salmon in total returns increased in 2009 in the three west coast rivers (SFA 13 and 14A), Exploits River (SFA 4), and Northwest River (SFA 5) but declined elsewhere (8 of 13 assessed rivers: 62%). Conservation requirements in 2009 were met or exceeded in only 46% of assessed rivers (6 of 13). Marine survival of smolts varied widely from 2006 to 2009. Mean marine survival rates decreased from 7.2% in 2006 to 3.3% in 2007, increased to 7.6% in 2008 and declined again to 4.8% in 2009. During the 2009 angling season, 40 (25%) of the 158 scheduled rivers (or tributaries of major rivers) in insular Newfoundland were closed for varying periods of time for environmental reasons.

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## RÉSUMÉ

L'année 2009 a marqué le 18<sup>e</sup> anniversaire de l'imposition d'un moratoire sur la pêche commerciale au saumon atlantique dans l'île de Terre-Neuve. Les remontes de petits saumons observées en 2009 ont diminué par rapport à celles de 2008 dans 85 % des cours d'eau évalués (11 sur 13) et ont augmenté dans la rivière Exploits (ZPS 4) et la rivière Little (ZPS 11). Les remontes de grands saumons ont également diminué en 2009 dans 69 % des cours d'eau évalués (9 sur 13). L'abondance globale des petits saumons dans l'île de Terre-Neuve (ZPS 3-14A) a atteint des creux records en 2001 et en 2007. Des crêtes dans l'abondance des petits saumons avoisinant les niveaux observés avant l'imposition du moratoire sont survenues en 2004 et en 2008. Or, ces grandes variations de l'abondance des petits saumons font en sorte que la moyenne à long terme pendant tout le moratoire (1997-2008) est semblable à la moyenne des cinq premières années d'imposition du moratoire (1992-1996) et inférieure aux niveaux antérieurs au moratoire (1984-1991). Comme on s'y attendait, l'abondance globale des remontes de grands saumons s'est accrue de façon constante de 1992 à 1998, après l'entrée en vigueur du moratoire sur la pêche commerciale. Cependant, comme dans le cas des petits saumons, les remontes de grands saumons ont été faibles en 2001 et en 2007, mais ont augmenté légèrement en 2008. Les remontes de grands saumons ont diminué en 2009, atteignant leur niveau le plus bas depuis 1993. La proportion de grands saumons dans les remontes totales a augmenté en 2009 dans les trois cours d'eau de la côte ouest (ZPS 13 et 14A), la rivière Exploits (ZPS 4) et la rivière Northwest (ZPS 5), mais a décliné ailleurs (8 des cours d'eau évalués sur 13, ou 62 %). Les exigences en matière de conservation pour 2009 n'ont été respectées ou dépassées que dans 46 % des cours d'eau évalués (6 sur 13). La survie des saumoneaux en mer a varié considérablement de 2006 à 2009. Les taux moyens de survie en mer sont passés de 7,2 % en 2006 à 3,3 % en 2007, puis ont augmenté jusqu'à 7,6 % en 2008, avant de diminuer de nouveau à 4,8 % en 2009. Au cours de la saison de pêche à la ligne 2009, 40 (25 %) des 158 cours d'eau réglementés (ou tributaires de cours d'eau principaux) de l'île de Terre-Neuve ont été fermés à la pêche pendant des périodes variables pour des raisons environnementales.

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## INTRODUCTION

A five year Atlantic Salmon Management Plan was introduced in 1984 to rebuild depressed stocks in mainland Canada and southwestern Newfoundland. The main focus of the 1984 plan was to reduce fishing mortality of large salmon (mainly virgin multi-sea-winter salmon) through season changes in the commercial fishery, catch restrictions in the recreational fishery (e.g. grilse-only retention) and a commercial licence retirement program (O'Connell et al. 1992a; May 1993). In an effort to further reduce commercial catches, a quota management system was used in 1990 and 1991 (O'Connell et al. 1992b; May 1993). In general, restrictions in the commercial fishery did not result in increased numbers of Atlantic salmon spawners (grilse and large salmon) in Newfoundland or Labrador (O'Connell et al. 1992a) and only 58% of the 1991 commercial quota was caught (O'Connell et al. 1992b). The failure of stocks to rebuild to expected levels resulted in a commercial fishery moratoria in 1992 for mainland Newfoundland, 1998 for Labrador and 2000 for all eastern Canada.

Since 1992, further restrictions have been implemented to manage the recreational Atlantic salmon fishery. A quota on the number of small salmon (< 63 cm fork length, FL) that could be retained in the recreational fishery was introduced in each Salmon Fishing Area (SFA) in 1992 and 1993. Once the quota had been reached only catch-and-release fishing was permitted. Quotas were eliminated in 1994 and the seasonal bag limit for the retention of small salmon was lowered from eight to six fish. In 1997, returns of small salmon to many rivers in insular Newfoundland were substantially lower than expected (Dempson et al. 1998; O'Connell et al. 1998a). As a result of this and uncertainties regarding levels of future returns, the 1998 management plan was much more conservative than for previous years. The seasonal bag limit for small salmon in insular Newfoundland was initially reduced to one and increased to an additional three following an in-season review. The use of barbless hooks for all angling on scheduled salmon waters was initiated in July 1998. The retention of large salmon ( $\geq 63$  cm FL) has remained prohibited in all of insular Newfoundland since 1985. Large salmon in insular Newfoundland are comprised mainly of repeat spawning grilse, with the exception of some rivers in SFA 13 (O'Connell et al. 2006a).

In 1999, a three year Atlantic salmon management plan introduced an Adaptive Management Strategy and a River Classification System. The classification system was used to develop retention levels based on the health of individual salmon stocks, without jeopardising conservation goals. This was a major departure from managing salmon on a more regional or SFA basis. Details of the three year plan and a description of the River Classification System are provided in DFO (1999). Five year management plans were introduced in 2002 (DFO 2002) and 2007 (DFO 2007), wherein the River Classification System, though variously modified, was retained. Management measures also included environmental protocols for closures and special management plans developed in consultation with local watershed and stewardship groups (DFO 2007).

The status of Atlantic salmon stocks of insular Newfoundland (SFAs 3-14A) (Figure 1) are assessed annually based on trends in abundance of various life stages relative to historical values and percent conservation requirement achieved. For the purpose of these assessments, Atlantic salmon stocks have been defined at the individual river level. A summary of the life history and ecology of Atlantic salmon in eastern Canada can be found in O'Connell et al. (2006a).

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## METHODS

In 2009, the status of Atlantic salmon stocks of insular Newfoundland (SFAs 3-14A) were assessed using recreational fishery data derived from the License Stub Return System (O'Connell et al. 1996a, 1998b) and data collected at monitoring facilities. Given that recreational fishery data have not been finalized for 2009, data are preliminary where appropriate.

Numbers of small (< 63 cm FL) and large ( $\geq$  63 cm FL) Atlantic salmon were reported as direct counts from monitoring facilities as well as total returns that included angling removals below the count location. Smolts were assessed at five rivers using counting fences or mark-recapture methods (Dempson and Stansbury 1991; Schwarz and Dempson 1994).

Conservation requirements for Atlantic salmon rivers were calculated based on accessible habitat area and threshold egg deposition rates (O'Connell and Dempson 1995; O'Connell et al. 1996b). Egg deposition rates for conservation were set at 2.4 eggs per m<sup>2</sup> of river rearing habitat and 368 eggs per hectare of lake habitat in SFAs 3-13. Lake habitat for SFA 14A was set at a lower rate of 105 eggs per hectare (O'Connell and Dempson 1995; O'Connell et al. 1997). Conservation requirements are considered to be a threshold reference point corresponding to a level at which populations should not be allowed to fall below. The consequence of egg depositions below conservation to the long-term sustainability of the stock are unknown but the likelihood of deleterious effects are greater when egg depositions are below conservation.

In most cases, 2009 data were compared to the pre-moratorium mean 1984-91, initial five year moratorium mean 1992-96, and previous five year mean 2004-08. Major management changes to the commercial fishery should be kept in mind when evaluating pre-moratorium means (O'Connell et al. 1992a; 1992b). The initial five year moratorium mean corresponds to the period when fish otherwise caught in the commercial fishery were expected to return to rivers thereby increasing the total number of spawners.

In addition to examining salmon stock abundance in individual rivers, stocks from all rivers were combined to derive a composite index of abundance. This index provides an overall perspective of trends in Atlantic salmon abundance for insular Newfoundland. Trends in abundance were analysed by fitting general linear models (GLM) separately to log<sub>e</sub> transformed total returns of small and large salmon. Data were transformed to provide a standardized metric of relative changes in individual stock sizes. Therefore the unit for the abundance index is not an absolute abundance but is related to a geometric mean of individual river abundances. Details of the methodology used for the composite index are summarized in Dempson et al. (2004). Index values for the pre-moratorium period 1984-91 were adjusted to account for marine exploitation. In all cases, marine exploitation rates used were the average of the median values obtained from nine rivers as described in Dempson et al. (2001) and were 45.3% for small salmon and 74.2% for large salmon.

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## RESULTS AND DISCUSSION

Special management measures were in effect for several rivers in 2009 and a number of rivers were closed for the season (DFO 2009). During the 2009 angling season, 40 (25%) of the 158 scheduled rivers (or tributaries of major rivers) in insular Newfoundland were closed for varying periods of time for environmental reasons (i.e. high water temperatures and low water levels) (Table 1). The most affected rivers were in SFA 7 and SFA 10 where 20% and 28%, respectively, of the potential fishing days were closed. As a result of the annual in-season review (July 5-8), Conne River remained closed for the season. The fall fishery on the Gander River (SFA 4), Exploits River (SFA 4) and Humber River (SFA 13) was permitted in 2009. This fall fishery was catch-and-release only, with the exception of the main stem of the Gander River that had a bag limit of 2 fish.

The most recent CSAS Research Document published for the status of Atlantic salmon stocks of insular Newfoundland was based on data to 2005 (O'Connell et al. 2006b). Therefore, much of the discussion in the current assessment summarized trends from 2006–09.

### RECREATIONAL FISHERY DATA

Recreational fishery data were reported for the period 1994-2009. Fishing effort was presented as rod days, defined as any day or part of a day on which each angler fishes. Catch and effort data in 2009 were compared to the long term mean (1994-2008) as well as the previous 5 year mean (2004-08). The number of angler days lost due to river closures varies from year to year. This variability must be kept in mind when comparing yearly catch and effort information and is why rivers without monitoring facility counts are not routinely assessed.

Catches of small and large salmon for insular Newfoundland (SFAs 3-14A) are presented in Appendix 1a. Catch data was also divided into four subdivisions and presented in Appendix 1b-e for (i) Northern Peninsula East and Eastern (SFAs 3-8), (ii) South (SFAs 9-11), (iii) Southwest (SFAs 12-13), and (iv) Northern Peninsula West (SFA 14A). Data for each individual SFA are shown in Appendix 1f-q. Catch per unit effort (CPUE) was calculated using all retained and released fish.

#### **Insular Newfoundland (SFAs 3-14A)**

Since 2005, the catch of small salmon (retained and released) and large salmon (released) declined to 2007, peaked above the long term mean in 2008 and declined again in 2009 (Figure 2). Effort (rod days) and CPUE followed similar trends (Figure 2).

#### **Subdivisions of Insular Newfoundland:**

The overall trend in the catch of small and large salmon observed in insular Newfoundland (Figure 2) was also reflected in each of the subdivisions (Figures 3-6).

##### **(i) Northern Peninsula East and Eastern (SFAs 3-8)**

Trends in Effort and CPUE for SFAs 3-8 (Figure 3) were similar to those observed for insular Newfoundland (Figure 2).

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(ii) South (SFAs 9-11)

The catch in SFAs 9-11 was only slightly above the long term mean for small salmon and slightly below the long term mean for large salmon (Figure 4). CPUE for SFAs 9-11 increased above the long term mean from 2008 to 2009 (Figure 4).

(iii) Southwest (SFAs 12-13)

Trends in Effort for SFAs 12-13 (Figure 5) were similar to those observed for insular Newfoundland (Figure 2). CPUE for SFAs 12-13 declined dramatically from 2006 to 2009 and remains well below the long term average (Figure 5).

(iv) Northern Peninsula West (SFA 14A)

The catch in SFA 14A has remained at or below the long term mean since 2003 (Figure 6). Trends in Effort for SFA 14A (Figure 6) were similar to those observed for insular Newfoundland (Figure 2). CPUE for SFA 14A declined dramatically from 2006 to 2009 and remains well below the long term average (Figure 6).

### **Recreational Salmon Fishery Licences**

The average number of recreational salmon fishery licences sold in Newfoundland and Labrador was 24,493 for the five year period preceding the commercial moratorium (1987-91) and 19,058 for the moratorium years (1992-2009) (Figure 7).

## **MONITORING FACILITY DATA**

### **Smolt Production**

In 2009, smolts were assessed on five rivers: Campbellton River (SFA 4), Northeast Brook (Trepassey) (SFA 9), Rocky River (SFA 9), Conne River (SFA 11), and Western Arm Brook (SFA 14A). Counting fences were used at all sites except Conne River where a mark-recapture method was used (Dempson and Stansbury 1991; Schwarz and Dempson 1994). Smolt production for Rocky River and Northeast Brook (Trepassey) increased, on average, between 2006 and 2009, over that of 1997-2005 (34% and 9% respectively). A similar comparison for the same time periods in Conne River and Campbellton River showed declines in smolt production (21% and 9% respectively) (Table 2).

### **Smolt to Adult Survival (Small Salmon)**

Smolt to adult survival (small salmon) varied widely from 2006 to 2009 (Table 2, Figure 8). Mean marine survival rates decreased from 7.2% in 2006 to 3.3% in 2007, increased to 7.6% in 2008 and declined again to 4.8% in 2009. Survival rates experienced during this time period included a record high of 15% in Western Arm Brook (SFA 14A) in 2006 and a record low of 1.3% in Rocky River (SFA 9) in 2007 (Table 2, Figure 8). Given that the number of small salmon would include a small portion of repeat spawners, marine smolt survival would be slightly underestimated.

Smolt to adult survival rates adjusted for commercial harvest (Dempson et al. 1998) were also included in Figure 8 for Conne River, Northeast Brook (Trepassey), and Western Arm Brook. Pre-moratorium marine survival rates approached 15% for Conne River and Northeast Brook



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(Trepassey). Marine 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, survival rates for Conne River (2.7%) and Northeast Brook (Trepassey) (2.6%) remain low.

## **MONITORING FACILITY ADULT COUNTS, TOTAL RETURNS, AND CONSERVATION REQUIREMENT**

Counts of small salmon (Table 3) and large salmon (Table 4) at monitoring facilities in 2009 are compared to the pre-moratorium mean (1984-91), initial five year moratorium mean (1992-96), and moratorium mean (1997-2008). Similar comparisons are made for total returns of small salmon (Table 5) and large salmon (Table 6). Figures for total returns include a comparison to the previous 5 year mean.

Percent conservation requirement achieved was compared to the pre-moratorium mean (1984-91), initial five year moratorium mean (1992-96), and moratorium mean (1997-2008).

### **Insular Newfoundland (SFAs 3-14A)**

*Abundance Index:* Figure 9 illustrates the collective index of small and large salmon abundance for all of insular Newfoundland. When adjusted for marine exploitation, the highest abundances of small salmon occurred during pre-moratorium years (1984-91). Since then, overall abundance has declined. The index value for 2005 reversed a trend of steady increase that approached pre-moratorium levels in 2004. For small salmon, the abundance index continued to decline to a record low in 2007, peaked dramatically and returned to 2004 levels in 2008, and declined in 2009. Large variations in small salmon abundance from 1997-2008 resulted in a similar mean to that of 1992-96 and below pre-moratorium levels. As with small salmon, large salmon abundance declined from 2004 to 2007, but increased only slightly in 2008. Large salmon declined in 2009, reaching the lowest level since 1993. Large salmon abundance in 2009 was similar to the 1992-96 mean and below both the pre-moratorium and 1997-2008 means.

### **Subdivisions of Insular Newfoundland:**

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

Northeast Coast (SFA 4)

*Total returns:* Information on total returns of small (Table 5, Figure 10) and large (Table 6, Figure 10) salmon in 2009 was available for Exploits River (Bishop's Falls), Gander River and Campbellton River. Total returns to Gander River have been estimated from counts at Salmon Brook tributary since 2000. The confidence limits for the Gander estimates were included in Figure 10 (O'Connell et al 2001; O'Connell 2003). Returns of small salmon to these SFA 4 rivers experienced declines in the few years prior to 2007 (Exploits 2003-2007, Campbellton 2005-07, Gander River 2004-07) and then increased above the previous 5 year mean in 2008 and 2009 (Table 7, Figure 10). Small salmon returns to Exploits River and Campbellton River approached or exceeded record highs in 2008 and 2009 and remained greater than the pre-moratorium and 1992-1996 means (Tables 5 and 7). However, returns of small salmon to Gander River in 2009 were less than the 1992-1996 mean (Tables 5 and 7). Returns of large salmon to the Exploits River and Campbellton River have generally increased since the early 2000s and are above the pre-moratorium (1984-91 series available for Exploits only) and 1992-

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96 mean (Tables 6 and 8, Figure 10). However, returns of large salmon to the Gander River have declined since 2004 and are well below the 1992-96 mean (Tables 6 and 8, Figure 10).

The proportion of large salmon in total returns (Table 9, Figure 11) reflects changes in both the small and large salmon counts. For the Exploits River and Campbellton River, the proportion of large salmon increased from 2005 to 2007 and declined in 2008. In 2009, the proportion of large salmon in total return increased on the Exploits River and remained relatively unchanged on Campbellton River. The proportion of large salmon in Gander River has steadily declined since 2006.

*Conservation Requirement (Table 10):* The percent conservation requirement on Exploits River declined from 49% in 2005 to 44% in 2007, and increased in both 2008 (60%) and 2009 (65%). The Exploits River was also assessed in three sections. The Lower section has exceeded conservation requirement since 2006 and was 172% in 2009, which was the second highest on record following 210% in 1996. The Middle section declined to 27% in 2007 and increased to the highest levels on record in 2008 (60%) and 2009 (53%). The Upper section only achieved 1-5% conservation requirement during the period 2006-09. Values for the Upper Exploits River pre-moratorium mean (1984-91) were the result of artificial stocking. Since 1991, spawning adults were moved through the Red Indian Lake fishway. The Exploits River was the site of major Atlantic salmon enhancement program that were conducted between the late 1950s and early 1990s (O'Connell et al. 1983; O'Connell and Bourgeois 1987; Bourgeois et al. 2001). Egg deposition on Campbellton River has exceeded conservation requirement in all years and reached record levels of 360% in 2008 and 371% in 2009. Conservation requirement on Gander River were not met in 2006 (87%) or 2007 (72%), but attained in 2008 (112%) and 2009 (101%).

East Coast (SFA 5) Total returns: Information on total returns of small (Table 5, Figure 12) and large (Table 6, Figure 12) salmon in 2009 was available for Middle Brook, Terra Nova River (Lower), and Northwest River (Port Blandford, Terra Nova National Park). Returns of small salmon to these SFA 5 rivers generally declined from 2004 to 2007, increased above the previous 5 year mean in 2008 and declined in 2009 (Table 7, Figure 12). In Middle Brook, small salmon returns in 2009 remained above the previous 5 year mean, whereas, Terra Nova River and Northwest River fell below the previous 5 year mean (Figure 12). Returns of small salmon to Northwest River in 2009 were the lowest recorded since 2001. Small salmon returns to Middle Brook and Terra Nova in 2009 were greater than the pre-moratorium mean (1984-1991) and similar to the 1992-96 mean (Table 7). Large salmon returns to the three SFA 5 rivers increased in 2008 over 2007 but declined in 2009 below the 1992-1996 and previous 5 year mean (Table 8, Figure 12).

The proportion of large salmon in total returns to Middle Brook and Terra Nova River declined from 2007 to 2009 (Figure 13), but increased in Northwest Brook over the same time period. The proportion of large salmon for the three SFA 5 rivers are below the 1992-96 mean (Table 9, Figure 13).

*Conservation Requirement (Table 10):* Middle Brook achieved conservation requirement in all years of the moratorium. The percent achieved declined from 2008 (232%) to 2009 (195%). Terra Nova River has never attained egg requirement and the percent achieved declined from 2008 (61%) to 2009 (40%). It should be noted that accessible habitat for anadromous Atlantic salmon in Terra Nova River more than doubled with the establishment of fish passage at Mollyguajack Falls in 1985 (O'Connell et al. 2000). Initial enhancement activity on Terra Nova River started in 1952 with the construction of a fishway around impassable falls in the upper

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segment (O'Connell et al. 2000; Mullins et al. 2003). Northwest River has never attained egg requirement and the percent achieved declined from 2008 (92%, second highest on record) to 2009 (37%). Enhancement activities have also taken place on Northwest River. In 1948, the area above Northwest Falls (3.2 km from the river mouth) was made accessible to anadromous salmon with the blasting of a fish passage (Cote et al. 2001).

(ii) South (SFAs 9-11)

SFA 9

*Total returns:* Information on total returns of small (Table 5, Figure 14) and large (Table 6, Figure 14) salmon to SFA 9 in 2009 was available for Northeast Brook (Trepassey) and Rocky River. As with the East Coast SFA 5 rivers, total returns of small salmon to Northeast Brook and Rocky River declined well below the previous 5 year mean in 2007, peaked in 2008 and declined again in 2009 (Table 7, Figure 14). Small salmon returns to Northeast Brook in 2009 were below the pre-moratorium and 1992-96 means. A record high return of small salmon to Rocky River was recorded in 2008 and returns remained above the 1992-96 mean in 2009 (Table 7, Figure 14). Returns of large salmon followed a similar pattern from 2007 to 2009, however, the previous 5 year mean has declined since 2005 and numbers are currently below the 1992-96 mean (Table 6 and 8). The lowest return of large salmon to Northeast Brook was recorded in 2009 and the numbers have declined steadily since pre-moratorium years (Figure 14).

The proportion of large salmon in total returns to Northeast Brook and Rocky River declined from 2007 to 2009 and are below the 1992-96 mean (Table 9, Figure 15).

*Conservation Requirement (Table 10):* Northeast Brook (Trepassey) has achieved conservation requirement in all years. The percent achieved declined from 2008 (232%) to 2009 (114%). Atlantic salmon enhancement initiatives occurred on Rocky River during the period 1984-96. A fishway was constructed to allow access beyond the impassable waterfall at the river mouth (Bourgeois 1998; Mullins et al. 2003). The percent conservation requirement achieved for Rocky River reached a record high of 76% in 2008 and declined to 54% in 2009.

SFA 11

*Total returns:* Information on total returns of small (Table 5 and Figure 14) and large (Table 6 and Figure 14) salmon is available for Conne River and Little River. As with the SFA 9 rivers, total returns of small and large salmon to Conne River declined below the previous 5 year mean in 2007, increased in 2008 and declined again in 2009 (Table 7 and 8, Figure 14). Numbers of small and large salmon in Conne River remain below the pre-moratorium and 1992-96 means. Returns of small salmon to Little River declined in 2007 and increased in both 2008 and 2009. Large salmon have declined in Little River since 2006 and the lowest count was recorded in 2009 (Figure 14).

The proportion of large salmon in total returns to Conne River and Little River declined in 2009 and are below the pre-moratorium and 1992-96 means (Table 9, Figure 15).

*Conservation Requirement (Table 10):* Percent conservation requirement achieved for Little River increased from 31% in 2008 to 98% in 2009. Little River has not met conservation requirement since 2004. This system was stocked with swim-up fry in the 1980s and 1990s (Bourgeois et al. 1997) and currently undergoes spawner enhancement activities. Percent

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conservation requirement achieved for Conne River declined from 117% in 2008 to 72% in 2009.

(iii) Southwest (SFAs 12-13)

SFA 13

*Total returns:* Information on total returns of small (Table 5 and Figure 16) and large (Table 6 and Figure 16) salmon is available for Harry's River (Gallants Fence). Returns to Harry's River were estimated using a counting fence on the mouth of Pinchgut Brook (a tributary located 48 km upstream) and various spawner surveys from 1992-2002 (Mullins et al. 1996; 1997; 2001; Mullins and Caines 2000). A fence located near the mouth of Harry's River was used from 2003 to 2005. Since 2006, counts on Harry's River have been conducted 25 km upstream near the community of Gallants. A spawner survey (snorkel method) was conducted in the lower reaches of the river below Gallants in 2006, 2007 and 2008. The spawner survey was not conducted in 2009 due poor environmental conditions. The number of spawners below Gallants in 2009 was estimated from the previous three year mean. As with many insular Newfoundland rivers, returns of small salmon to Harry's River declined well below the previous 5 year mean in 2007, peaked in 2008 and declined in 2009 (Table 7, Figure 16). Returns of small and large salmon are currently above the 1992-96 mean (Table 7 and 8, Figure 16).

The proportion of large salmon in total returns to Harry's River increased in 2009 and is above the 1992-96 mean (Table 9, Figure 17).

*Conservation Requirement (Table 10):* Harry's River met conservation requirement for the first time on record in 2006 (116%) and again in 2008 (108%), but declined below conservation in 2009 (72%).

(iv) Northern Peninsula West (SFA 14A)

*Total returns:* Information on total returns of small (Table 5 and Figure 16) and large (Table 6 and Figure 16) salmon is available for Torrent River and Western Arm Brook. As with many insular Newfoundland rivers, returns of small salmon to these two SFA 14A rivers declined well below the previous 5 year mean in 2007, peaked in 2008 and declined in 2009 (Table 7, Figure 14). Returns of small salmon to Torrent River are currently below the 1992-96 mean and similar to the pre-moratorium mean (Table 7, Figure 14). The five year mean for small salmon returns has generally increased on Western Arm Brook since 1997 and total returns were above the pre-moratorium and 1992-96 means in 2009 (Table 7, Figure 14). Returns of large salmon to Torrent River were the highest on record in 2006, declined dramatically in 2007, and approached record high levels in 2008 and 2009 (Table 8, Figure 14). Returns of large salmon to Western Arm Brook declined from 2006 to 2008 and increased slightly in 2009. Large salmon in Western Arm Brook are currently below the 1992-96 mean (Table 8, Figure 14).

The proportion of large salmon in total returns to Torrent River increased from 2007 to 2009 and is above the pre-moratorium and 1992-96 means (Table 9 and Figure 17). Conversely, the proportion of large salmon in Western Arm Brook remains below the 1992-96 mean, decreasing from 2007 to 2008, and increasing slightly in 2009 (Table 9 and Figure 17).

*Conservation Requirement (Table 10):* Torrent River and Western Arm Brook have achieved conservation requirement in all moratorium years. Percent achieved declined on both rivers from 2008 to 2009 (Torrent River: 1203% to 750%, Western Arm Brook: 611% to 341%).

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Enhancement program were carried out on Torrent River from 1965 to 1976, which included the construction of a fishway around an impassable waterfall located 2 km from the river mouth (Mullins et al. 2003).

## SUMMARY AND CONCLUSIONS

Smolt to adult survival in 2009 ranged from 9.8% for Campbellton River to 2.6% for Northeast Brook (Trepassey). Smolt production in 2009 decreased from 2008 in three of the five assessed rivers (Campbellton River, Northeast Brook and Rocky River).

Returns of small salmon in 2009 declined relative to 2008 in 85% of assessed rivers (11 of 13) and increased on Exploits River (SFA 4) and Little River (SFA 11). Returns of large salmon in 2009 declined from 2008 in 69% of assessed rivers (9 of 13). Overall abundance of small salmon in insular Newfoundland (SFA 3-14A) declined dramatically from 2004 to 2007 (reaching record low levels), peaked dramatically and returned to 2004 levels in 2008, and declined in 2009. Small salmon abundance in 2009 was similar to the 1992-96 and 1997-2008 means. As with small salmon, large salmon abundance declined from 2004 to 2007, but increased little in 2008. Large salmon declined in 2009, reaching the lowest level since 1993. Large salmon abundance in 2009 was similar to the 1992-96 mean and below both the pre-moratorium and 1997-2008 means.

Conservation requirements in 2009 were only met in 46% of assessed rivers (6 of 13). The percent conservation requirement achieved in 2009 declined from 2008 in 10 rivers (77%).

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Table 1. Opening and closure dates of the Atlantic salmon recreational fishery in 2009. The class number refers to the fisheries management measures (i.e. retention limits, catch-and-release) applied to the river (DFO 2009-10).

Insular Newfoundland (SFAs 3-14A) Recreational Fishery Season: June 1 - September 7				
River	Class	Close Dates	Reason for Closure	
SFA 6: Salmon Cove River, Trinity Bay	III	July 23 - 29	Environmental conditions	
Bellevue River	III	July 23 - 29	"	
SFA 7: Salmon Cove River	III	July 23 - August 11	Environmental conditions	
North River	III	July 23 - August 11	"	
South River	III	July 23 - August 11	"	
North Arm River Holyrood	III	July 23 - July 31	"	
SFA 8: Renews River	III	July 23 - 29	Environmental conditions	
SFA 9: Biscay Bay River	III	July 23 - 29	Environmental conditions	
Northwest River	III	July 23 - 29	"	
Peter's River	III	July 23 - 29	"	
Salmonier River	III	July 23 - 29	"	
Colinet River	III	July 23 - 29	"	
Rocky River	IV	July 23 - 29	"	
North Hr. River	III	July 23 - 29	"	
Little Salmonier River	III	July 23 - 29	"	
Big Barachois River	III	July 23 - 29	"	
Branch River	III	July 23 - 29	"	
SFA 10: Great Barasway Brook	III	July 23 - 29	Environmental conditions	
Southeast River Placentia	III	July 23 - 29	"	
Northeast River Placentia	III	July 23 - 29	"	
Come-By-Chance River	III	July 23 - August 19	"	
Watsons River	III	July 23 - August 19	"	
North Harbour River	III	July 23 - August 19	"	
Black River	III	July 23 - August 19	"	
Pipers Hole River	III	July 23 - 31	"	
Nonsuch Brook	III	July 23 - 29	"	
Cape Roger River	III	July 23 - 29	"	
Bay De L'Eau River	III	July 23 - 29	"	
Red Harbour River	III	July 23 - 29	"	
West Brook	III	July 23 - 29	"	
Tides Brook	III	July 23 - 29	"	
Salmonier River (Burin)	III	July 23 - 29	"	
Little St. Lawrence River	III	July 23 - 29	"	
Lawn River	III	July 23 - 29	"	
Taylor's Bay Brook	III	July 23 - 29	"	
Salmonier River (Lamaline)	III	July 23 - 29	"	
Piercey's Brook	III	July 23 - 29	"	
SFA 11: Grand Bank Brook	III	July 23 - 29	Environmental conditions	
Garnish River	III	July 23 - 29	"	
Conne River	III	July 5-8; remained closed	In-season review	

Table 2. Atlantic salmon smolt to adult survival for Campbellton River (SFA 4), Northeast Brook (Trepassey) (SFA 9), 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.

Year (i)	Campbellton River			Northeast Brook			Rocky River			Conne River <sup>1</sup>			Highlands River			Western Arm Brook		
	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.	Smolts year i	Sm. sal. 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	<b>14261</b>	435	3.1	94088	3200	3.4	12383	398	3.2	14502	509	3.5
1997	62050	3275	5.3	1829	91	5.0	<b>16900</b>	423	2.5	100983	2931	2.9	6776	96	1.4	23845	1718	7.2
1998	50441	3076	6.1	1727	95	5.5	<b>12163</b>	327	2.7	69841	2358	3.4	5922	146	2.5	17139	1046	6.1
1999	47256	1798	3.8	1419	83	5.8	<b>8625</b>	277	3.2	63658	5177	8.1	9634	58	0.6	13500	1492	11.1
2000	35596	2151	6.0	1740	56	3.2	<b>7616</b>	233	3.1	60777	1503	2.5	13120	75	0.6	12706	563	4.4
2001	37170	1974	5.3	916	65	7.1	<b>9392</b>	276	2.9	86898	2573	3.0				16013	1465	9.1
2002	32630	2219	6.8	2076	115	5.5	<b>10144</b>	402	4.0	81806	1953	2.4				14999	1406	9.4
2003	35089	2726	7.8	1064	70	6.6	<b>4440</b>	169	3.8	71479	3818	5.3				12086	1151	9.5
2004	32780	3746	11.4	1571	69	4.4	13047	427	3.3	79667	1978	2.5				17323	1019	5.9
2005	30123	2768	9.2	1384	76	5.5	15847	352	2.2	66196	2623	4.0				8607	1300	15.1
2006	33304	1850	5.6	1385	37	2.7	13200	174	1.3	35146	1173	3.3				20826	793	3.8
2007	35742	3998	11.2	1777	97	5.5	12355	695	5.6	63738	2823	4.4				16621	1920	11.6
2008	40390	3955	9.8	1868	49	2.6	18338	498	2.7	68242	1828	2.7				17444	1063	6.1
2009	36722			1600			14041			71085						18492		

<sup>1</sup>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 to rivers in insular Newfoundland 1974-2009 by Salmon Fishing Area (SFA). Table includes means and 95% confidence intervals (1984-91, 1992-96, and 1997-2008), and percentage change from previous year and means. Partial counts are in parentheses and are not included in statistical calculations. Adjusted counts are bold.

Year	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13						SFA 14A				
	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)					223											41	38	382
1975	9218			(1119)					(186)											1	191	631
1976	3991								294											132	341	520
1977	6148																			192	789	362
1978	3790		755	1403	810				390										117	971	293	
1979	6715		(404)	(1350)	569				454										195	1984	1578	
1980			997	1712	843				433										301	792	435	
1981	(8114)		2459	2414	1115				334										110	2101	451	
1982	(7605)		1425	1281	963				86										275	2112	394	
1983			978	1195	1210				233										220	2007	1141	
1984	17219		1081	1379	1233			89	419										440	1805	120	
1985	16652		1663	904	1557			124	384										190	1553	<b>416</b>	
1986	9697		1064	1036	1051			158	725										354	2815	<b>525</b>	
1987	9014		493	914	974			91	80		64	9687							355	2505	378	
1988	8974		1562	772	1737			97	313	543	65	7118							437	2075	<b>251</b>	
1989	7192		596	496	1138			62	168	706	102	4469								1369	<b>455</b>	
1990	6629		<b>345</b>	745	1149			71	401	551	158	4321								2296	<b>444</b>	
1991	5245		245	562	873			99	211	353	55	2086								1441	233	
1992	12538		1168	1182	1443			49	237	921	104	1973							435	2347	480	
1993	21319	4001	1560	1959	(2713)			79	292	847	169	2355	137						526	4009	947	
1994	16168	2857	968	1513	1571			99	158	677	73	1533	145						701	3592	954	
1995	15691	3035	1600	1139	2258	442		80	385	663	118	3498	172						1003	5800	823	
1996	29726	3208	946	1751	2005	593		73	356	1225	674	4436	199	<b>844</b>	<b>805</b>	<b>768</b>		<b>1051</b>	601	6923	1230	
1997	13552	1975	465	1221	1577	(408)		50	435	641	399	2678	398	<b>1121</b>	<b>1044</b>	<b>1017</b>	<b>599</b>	<b>1282</b>	783	3659	509	
1998	26333	3275	1295	2405	1780	540		91	423	756	264	2931	96	<b>482</b>			<b>194</b>		542	4999	1718	
1999	28252	3076	1105	1802	1836	314		95	327	336	307	2357	146	<b>709</b>	<b>560</b>	<b>1399</b>	<b>1264</b>	<b>2237</b>	829	4008	1046	
2000	11817	1798	742	1660		272		83	277	520	564	4708	58	<b>1024</b>	<b>1142</b>	<b>1293</b>	<b>1800</b>	<b>2134</b>	658	3763	1486	
2001	18978	2151	663	1188	2151	102		56	233	<b>265</b>	125	1359	75	<b>683</b>	<b>934</b>	<b>1776</b>	<b>214</b>	<b>952</b>	333	2216	559	
2002	15147	1974	714	823	1374	441		65	276	414	487	2352	169	<b>614</b>	<b>515</b>	<b>758</b>	<b>399</b>	<b>1373</b>	522	3909	1465	
2003	28626	2219	722	1105	2225	999	115	402			322	1867	294	<b>1098</b>	<b>733</b>	<b>1066</b>	<b>1046</b>	<b>1425</b>	2334	589	3297	1406
2004	26678	2726	983	1370	2945	1157	70	169			656	3641	507	<b>2128</b>	<b>1078</b>	<b>1811</b>	<b>1254</b>	<b>1919</b>	<b>2828</b>	551	4351	1151
2005	27419	3746	940	1421	2322	1196	<b>69</b>	427			216	1952	101	<b>844</b>	<b>590</b>	<b>1114</b>	<b>1387</b>	<b>2356</b>	2495	1012	3653	1019
2006	24311	2768	741	1049	2481	759	75	352			136	2575	233						2256	3384	1300	
2007	21318	1849	576	936	1593	664	37	(174)			39	1173							1176	2539	793	
2008	31233	3997	1416	1981	3519	1197	97	(695)			71	2823			<b>446</b>	<b>1650</b>	<b>1627</b>	<b>2082</b>	2248	5215	1920	
2009	31741	3952	1120	1704	2431	429	49	(498)			231	1784							1407	2122	1063	
mean 1984-1991	10078		881	851	1214			99	235	501	89	5866							355	1982	353	
95% CI	3743		455	234	245			25	155	130	53	2875							85	442	115	
N	8		8	8	8			8	5	8	5	6							8	8	8	
mean 1992-1996	19088	3275	1248	1509	1819	518		76	286	867	228	2759	163						653	4534	887	
95% CI	8354	803	391	441	602	959		22	114	284	313	1474	45						271	2260	337	
N	5	4	5	5	4	2		5	5	5	5	5	4						5	5	5	
mean 1997-2008	22805	2630	864	1413	2164	695		75	332	489	299	2535	208	967	825	1279	906	1710	601	3749	1198	
95% CI	4142	482	184	297	408	267		14	66	196	125	615	107	376	213	309	441	432	131	553	278	
N	12	12	12	12	12	11		12	10	6	12	12	10	9	8	8	9	8	8	12	12	
<u>% change 2009 vs.</u>																						
2008	2	-1	-21	-14	-31	-64		-49	-28		225	-37							-37		-59	-45
1984-1991 mean	215		27	100	100			-50	112		160	-70								7	201	
1992-1996 mean	66	21	-10	13	34	-17		-36	74		1	-35	-100							-53	20	
1997-2008 mean	39	50	30	21	12	-38		-35	50		-23	-30	-100							-43	-11	

- |                                    |                                   |                              |                     |                        |                           |                               |
|------------------------------------|-----------------------------------|------------------------------|---------------------|------------------------|---------------------------|-------------------------------|
| 1. Exploits River (Bishop's Falls) | 4. Middle Brook                   | 7. Northeast Brook-Trepassey | 10. Little River    | 13. Crabbes River      | 16. Fischells River       | 19. Harry's River (Gallant's) |
| 2. Campbellton River               | 5. Terra Nova River (Lower)       | 8. Rocky River               | 11. Conne River     | 14. M. Barachois River | 17. Flat Bay Brook        | 20. Lomond River              |
| 3. Salmon Brook                    | 6. Northwest River-Port Blandford | 9. Northeast River-Placentia | 12. Highlands River | 15. Robinsons River    | 18. Harry's River (Lower) | 21. Torrent River             |
|                                    |                                   |                              |                     |                        |                           | 22. Western Arm Brook         |

Table 4\*. Counts of large salmon to rivers in insular Newfoundland 1974-2009 by Salmon Fishing Area (SFA). Table includes means and 95% confidence intervals (1984-91, 1992-96, and 1997-2008), and percentage change from previous year and means. Partial counts are in parentheses and are not included in statistical calculations. Adjusted counts are bold.

Year	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13						SFA 14A					
	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)					9											33	3	4	
1975	1439			(9)					(36)											0	25	1	
1976	460								56											11	47	0	
1977	581																			11	33	3	
1978	303		52	16	20				32											12	21	1	
1979	277		(6)	(54)	170				37											1	39	0	
1980			15	91	39				34				55							19	63	3	
1981	(1695)		33	39	90				62				29							50	97	1	
1982	(181)		18	20	19				36				56							16	523	3	
1983			12	75	57				22											7	442	4	
1984	529		38	57	107			33	44											47	288	0	
1985	183		26	27	112			41	0											14	30	1	
1986	355		12	15	140			30	39			397								32	92	0	
1987	310		9	19	56			30	1	16		3	498							11	68	1	
1988	147		24	14	206			19	6	11		3	418							21	44	1	
1989	89		24	19	142			18	9	15		5	319								60	0	
1990	122		8	13	144			9	17	25		15	361								82	0	
1991	99		2	14	114			13	16	8		6	87								71	1	
1992	314		101	43	270			10	46	46		21	154							80	169	8	
1993	627	145	87	87	(470)			17	72	65		11	98							34	222	8	
1994	916	191	83	90	242			15	19	70		11	100							50	331	31	
1995	941	218	125	168	634	135		12	39	74		17	107							95	611	33	
1996	2053	560	112	161	464	203		15	45	123		127	179	142	<b>239</b>	<b>36</b>	<b>120</b>		<b>112</b>	93	507	50	
1997	886	321	119	262	527	(115)		9	89	185		79	182	157	<b>346</b>	<b>182</b>	<b>172</b>		<b>73</b>	<b>167</b>	72	666	55
1998	1953	402	141	196	390	104		11	130	287		49	294	117	<b>234</b>				<b>72</b>	126	757	128	
1999	2235	493	138	130	343	93		18	77	167		49	241	82	<b>263</b>	<b>66</b>	<b>200</b>	<b>246</b>	<b>231</b>	113	399	22	
2000	683	208	61	189		106		14	104	258		52	216	67	<b>152</b>	<b>155</b>	<b>316</b>	<b>276</b>	<b>466</b>	81	587	120	
2001	1346	119	93	62	330	50		8	60	<b>65</b>		35	140	65	<b>176</b>	<b>141</b>	<b>219</b>	<b>44</b>	<b>173</b>	72	437	28	
2002	889	123	95	69	271	113		2	78	40		41	167	87	<b>129</b>	<b>160</b>	<b>198</b>	<b>42</b>	<b>195</b>	62	421	48	
2003	1335	152	139	74	329	273		11	73			13	51	166	<b>260</b>	<b>101</b>	<b>173</b>	<b>180</b>	<b>187</b>	422	77	330	23
2004	948	161	72	88	397	253		11	235			31	175	252	<b>268</b>	<b>96</b>	<b>159</b>	<b>190</b>	<b>183</b>	<b>498</b>	96	536	74
2005	1965	276	138	62	313	305		5	95			15	105	153	<b>306</b>	<b>97</b>	<b>98</b>	<b>167</b>	<b>299</b>	453	<b>175</b>	771	43
2006	3328	328	102	115	426	197		5	56			26	170	114						562	1419	44	
2007	3945	487	62	141	239	93		3	(35)			8	49							222	500	17	
2008	4574	433	98	143	428	229		4	(56)			3	144			<b>18</b>	<b>96</b>	<b>92</b>	<b>122</b>	265	1293	15	
2009	5578	433	52	85	224	121		1	(34)			1	67							257	1388	21	
mean 1984-1991	229		18	22	128			24	10	20		6	347							25	92	1	
95% CI	130		10	12	36			9	8	13		6	148							12	68	0	
N	8		8	8	8			8	5	8		5	6							8	8	8	
mean 1992-1996	970	279	102	110	403	169		14	44	76		37	128	122						70	368	26	
95% CI	815	302	22	66	291	432		3	24	35		62	46	50						34	233	22	
N	5	4	5	5	4	2		5	5	5		5	5	4						5	5	5	
mean 1997-2008	2007	292	105	128	363	165		8	100	167		33	161	126	237	125	192	143	238	87	676	51	
95% CI	822	89	19	40	52	59		3	37	104		14	45	41	55	34	52	68	85	19	221	24	
N	12	12	12	12	12	11		12	10	6		12	12	10	9	8	8	9	8	8	12	12	
% change 2009 vs. 2008	22	0	-47	-41	-48	-47		-75	-39			-67	-53							-3	6	40	
1984-1991 mean	2333		191	282	76			-96	247			-84	-81							1389	4100		
1992-1996 mean	475	55	-49	-23	-44	-28		-93	-23			-97	-47	-100						272	-19		
1997-2008 mean	178	48	-50	-33	-38	-27		-88	-66			-97	-58	-100						102	-59		

- |                                    |                                   |                              |                     |                        |                           |                               |
|------------------------------------|-----------------------------------|------------------------------|---------------------|------------------------|---------------------------|-------------------------------|
| 1. Exploits River (Bishop's Falls) | 4. Middle Brook                   | 7. Northeast Brook-Trepassey | 10. Little River    | 13. Crabbes River      | 16. Fischells River       | 19. Harry's River (Gallant's) |
| 2. Campbellton River               | 5. Terra Nova River (Lower)       | 8. Rocky River               | 11. Conne River     | 14. M. Barachois River | 17. Flat Bay Brook        | 20. Lomond River              |
| 3. Salmon Brook                    | 6. Northwest River-Port Blandford | 9. Northeast River-Placentia | 12. Highlands River | 15. Robinsons River    | 18. Harry's River (Lower) | 21. Torrent River             |
|                                    |                                   |                              |                     |                        |                           | 22. Western Arm Brook         |

\*Erratum: August 2011, data for Table 4 corrected.

Table 5. Total returns of small salmon to rivers in insular Newfoundland 1984-2009 by Salmon Fishing Area (SFA). Table includes means and 95% confidence intervals for 1984-91, 1992-96, and 1997-2008.

Year	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13						SFA 14A				
	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	1621	470	
1986	10343			1547	1459		158		879		8302								725	3155	528	
1987	9481			1053	1404		91	80	350	64	10155								652	2647	437	
1988	9496			1337	2114		97	313	637	65	7627								841	2388	422	
1989	7577		7743	626	1377		62	168	809	102	4968								652	1510	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	1590	233	
1992	13508		18179	1563	1780		49	237	956	104	2523						888		794	2829	480	
1993	22253	4001	26205	2247	3050		79	292	980	169	2703	137						1808	816	4215	947	
1994	17603	2857	18494	1751	1809		99	158	737	73	1533	145						1791	1292	3737	954	
1995	16226	3035	22432	1390	2515	498	80	385	811	118	3502	172						2213	1529	6346	823	
1996	30425	3208	24191	2044	2251	593	73	356	1532	674	4440	199	870	818	882		1233	1798	1242	7475	1230	
1997	15263	1975	10637	1352	1732	466	50	435	749	399	3200	398	1168	1056	1107	863	1320	1747	1468	4158	509	
1998	27093	3275	19060	2625	1868	540	91	423	1075	264	2931	96	494			205		1659	787	5388	1718	
1999	28802	3076	18742	1948	1892	314	95	327	401	307	2358	146	717	563	1452	1264	2276	1713	1212	4857	1046	
2000	12063	1798	14074	1749	1629	272	83	277	622	564	5177	58	1027	1142	1501	1800	2397	1271	1072	4154	1492	
2001	19370	2151	12517	1525	2261	102	56	233	313	125	1503	75	688	937	1909	248	1150	1028	572	2637	563	
2002	15589	1974	13444	916	1435	443	65	276	534	487	2573	169	627	569	909	414	1612	1640	815	4861	1465	
2003	29198	2219	13657	1183	2271	1012	115	402		322	1953	294	1104	743	1211	1071	1540	2334	840	3955	1406	
2004	27195	2726	18521	1520	3006	1207	70	169		656	3818	507	2149	1087	1989	1254	2004	2828	836	5110	1151	
2005	28050	3746	17828	1538	2417	1210	69	427		216	1978	101	920	593	1372	1390	2591	2495		4342	1019	
2006	24924	2768	13959	1173	2546	783	76	352		136	2623	233						3004		4030	1300	
2007	21713	1850	11571	1050	1674	675	37	174		39	1174							1394		2979	793	
2008	31990	3998	22442	2328	3586	1257	97	695		71	2823			455	1786	1681	2288	3614		5886	1920	
2009	32296	3955	18883	1902	2496	448	49	498		231	1828							2172		2522	1063	
mean 1984-1991	10767		7409	1169	1568		99	235	590	89	6472								720	2154	403	
95% CI	4100		1429	304	277		25	155	166	53	2902								143	507	91	
N	8		3	8	8		8	5	8	5	6								8	8	8	
mean 1992-1996	20003	3275	21900	1799	2281	546	76	286	1003	228	2940	163						1700	1135	4920	887	
95% CI	8232	803	4368	433	657	604	22	114	388	313	1356	45						606	397	2390	337	
N	5	4	5	5	5	2	5	5	5	5	5	4						5	5	5	5	
mean 1997-2008	23438	2630	15538	1576	2193	690	75	349	616	299	2676	208	988	836	1431	945	1861	2061	950	4363	1199	
95% CI	4124	482	2314	327	400	255	14	92	287	125	682	107	439	205	336	473	399	501	237	596	278	
N	12	12	12	12	12	12	12	12	6	12	12	11	8	9	9	9	9	12	8	12	12	
1. Exploits River (Bishop's Falls)	4. Middle Brook						7. Northeast Brook-Trepassey				10. Little River			13. Crabbes River			16. Fischells River			19. Lomond River		
2. Campbellton River	5. Terra Nova River (Lower)						8. Rocky River				11. Conne River			14. M. Barachois River			17. Flat Bay Brook			20. Torrent River		
3. Gander River	6. Northwest River-Port Blandford						9. Northeast River-Placentia				12. Highlands River			15. Robinsons River			18. Harry's River			21. Western Arm Brook		

Table 6. Total returns of large salmon to rivers in insular Newfoundland 1984-2009 by Salmon Fishing Area (SFA). Table includes means and 95% confidence intervals for 1984-91, 1992-96, and 1997-2008.

Year	SFA 4			SFA 5			SFA 9		SFA 10	SFA 11		SFA 13						SFA 14A			
	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						16		86	170	8
1993	627	145	1734	88	472		17	72	65	11	100	78						115	38	224	8
1994	916	191	1072	91	243		15	19	70	11	100	148						128	64	334	31
1995	945	218	1121	169	637	135	12	39	74	17	110	120						80	103	617	33
1996	2057	560	1753	161	467	203	15	45	123	127	179	142	249	38	138		132	126	101	517	50
1997	881	321	1883	262	528	182	9	89	185	79	185	157	361	189	195	89	174	201	78	676	55
1998	1959	402	3649	196	394	104	11	130	287	49	294	117	239			72		191	128	761	128
1999	2236	493	4815	130	344	93	18	77	167	49	241	82	265	66	204	246	235	176	120	421	22
2000	684	208	1942	190	232	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	36	140	65	180	142	232	45	176	132	75	443	28
2002	890	123	1898	69	271	114	2	78	40	41	167	87	134	164	201	42	198	285	66	432	48
2003	1336	152	1853	74	330	273	11	73		13	51	166	265	107	188	180	193	422	83	341	23
2004	949	161	2668	88	397	265	11	235		31	175	252	275	100	164	190	184	498	99	549	74
2005	1967	276	2461	62	316	305	5	95		15	105	153	307	97	118	169	307	453		780	43
2006	3365	328	1927	115	438	197	5	56		26	170	114						680		1431	44
2007	3956	487	1243	141	241	94	3	35		8	49							289		519	17
2008	4577	432	1560	143	429	229	4	56		3	144			20	102	98	130	414		1309	15
2009	5579	433	869	85	225	121	1	34		1	67							363		1400	21
mean 1984-1991	229		550	22	128		24	10	20	6	355								28	92	1
95% CI	130		261	12	36		9	8	13	6	153								17	68	0
N	8		3	8	8		8	5	8	5	6								8	8	8
mean 1992-1996	972	279	1968	110	418	169	14	44	76	37	130	122						93	78	372	26
95% CI	817	302	1575	66	202	432	3	24	35	62	46	50						59	34	237	22
N	5	4	5	5	5	2	5	5	5	5	5	4						5	5	5	5
mean 1997-2008	2012	292	2298	128	354	168	8	91	167	34	161	126	242	128	203	145	245	316	92	688	51
95% CI	826	89	640	40	55	54	3	33	104	14	46	41	62	36	42	77	97	115	18	221	24
N	12	12	12	12	12	12	12	12	6	12	12	11	8	9	9	9	9	12	8	12	12

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

Table 7. Percentage change in total returns of small salmon in 2009 in relation to 2008 and the means for 1984-91, 1992-96 and 1997-2008.

Counting Facility	Total Returns Small Salmon 2009*	Percent Change from:			
		2008	1984-1991 mean	1992-1996 mean	1997-2008 mean
SFA 4					
Exploits River	32296	1	200	61	38
Campbellton River	3955	-1		21	50
Gander River	18883	-16	155	-14	22
SFA 5					
Middle Brook	1902	-18	63	6	21
Terra Nova River (Lower)	2496	-30	59	9	14
Northwest River (TNNP)	448	-64		-18	-35
SFA 9					
Northeast Brook (Trepassey)	49	-49	-50	-36	-35
Rocky River	498	-28	112	74	43
SFA 11					
Little River	231	225	160	1	-23
Conne River	1828	-35	-72	-38	-32
SFA 13					
Harry's River	2172	-40		28	5
SFA 14A					
Torrent River	2522	-57	17	-49	-42
Western Arm Brook	1063	-45	164	20	-11

\*preliminary

Table 8. Percentage change in total returns of large salmon in 2009 in relation to 2008 and the means for 1984-91, 1992-96 and 1997-2008.

Counting Facility	Total Returns Large Salmon 2009*	Percent Change from:			
		2008	1984-1991 mean	1992-1996 mean	1997-2008 mean
SFA 4					
Exploits River	5579	22	2334	474	177
Campbellton River	433	0		55	48
Gander River	869	-44	58	-56	-62
SFA 5					
Middle Brook	85	-41	282	-23	-33
Terra Nova River (Lower)	225	-48	76	-46	-36
Northwest River (TNNP)	121	-47		-28	-28
SFA 9					
Northeast Brook (Trepassey)	1	-75	-96	-93	-88
Rocky River	34	-39	247	-23	-63
SFA 11					
Little River	1	-67	-84	-97	-97
Conne River	67	-53	-81	-48	-58
SFA 13					
Harry's River	363	-12		290	15
SFA 14A					
Torrent River	1400	7	1422	276	103
Western Arm Brook	21	40	4100	-19	-59

\*preliminary



Table 9. Proportions of large salmon in total returns to rivers in insular Newfoundland during 1992-2009 and mean proportions for 1984-91, 1992-96, and 1997-2008.

River Name	Proportion of Large Salmon																		Mean	Mean	Mean
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	1984-1991	1992-1996	1997-2009
<b>SFA 4</b>																					
Exploits River (Bishop's Falls)	0.023	0.027	0.049	0.055	0.063	0.055	0.067	0.072	0.054	0.065	0.054	0.044	0.034	0.066	0.119	0.154	0.125	0.147	0.021	0.046	0.079
Campbellton River		0.035	0.063	0.067	0.149	0.140	0.109	0.138	0.104	0.052	0.059	0.064	0.056	0.069	0.106	0.208	0.098	0.099		0.078	0.100
Gander River	0.186	0.062	0.055	0.048	0.068	0.150	0.161	0.204	0.121	0.118	0.124	0.119	0.126	0.121	0.121	0.097	0.065	0.044	0.069	0.082	0.152
<b>SFA 5</b>																					
Middle Brook	0.027	0.038	0.049	0.108	0.073	0.162	0.069	0.063	0.098	0.039	0.070	0.059	0.055	0.039	0.089	0.118	0.058	0.043	0.019	0.058	0.075
Terra Nova River	0.132	0.134	0.118	0.202	0.172	0.234	0.174	0.154	0.125	0.127	0.159	0.127	0.117	0.116	0.147	0.126	0.107	0.083	0.075	0.155	0.139
Northwest River (Port Blandford)				0.213	0.255	0.281	0.161	0.229	0.280	0.329	0.205	0.212	0.180	0.201	0.201	0.122	0.154	0.213		0.237	0.195
<b>SFA 9</b>																					
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	0.087	0.136	0.068	0.062	0.075	0.040	0.020	0.196	0.154	0.100
Rocky River	0.163	0.198	0.107	0.092	0.112	0.170	0.235	0.191	0.273	0.205	0.220	0.154	0.582	0.182	0.137	0.167	0.075	0.064	0.040	0.134	0.206
<b>SFA 10</b>																					
Northeast River (Placentia)	0.046	0.062	0.087	0.084	0.074	0.198	0.211	0.294	0.293	0.172	0.070								0.032	0.070	0.213
<b>SFA 11</b>																					
Little River	0.168	0.061	0.131	0.126	0.159	0.165	0.157	0.138	0.084	0.224	0.078	0.039	0.045	0.065	0.160	0.170	0.041	0.004	0.067	0.141	0.101
Conne River	0.059	0.036	0.061	0.030	0.039	0.055	0.091	0.093	0.040	0.085	0.061	0.025	0.044	0.050	0.061	0.040	0.049	0.035	0.052	0.042	0.057
<b>SFA 13</b>																					
Highlands River		0.363	0.505	0.411	0.416	0.283	0.549	0.360	0.536	0.464	0.340	0.361	0.332	0.602	0.329					0.428	0.378
Crabbes River					0.223	0.236	0.326	0.270	0.132	0.207	0.176	0.194	0.113	0.250							0.197
M. Barachois River					0.044	0.152		0.105	0.120	0.132	0.224	0.126	0.084	0.141							0.132
Robinsons River					0.135	0.150		0.123	0.176	0.108	0.181	0.134	0.076	0.079							0.124
Fischells River						0.093	0.260	0.163	0.133	0.154	0.092	0.144	0.132	0.108							0.133
Flat Bay Brook					0.097	0.116		0.094	0.171	0.133	0.109	0.111	0.084	0.106							0.116
Harry's River	0.018	0.060	0.067	0.035	0.065	0.103	0.103	0.093	0.037	0.114	0.148	0.153	0.150	0.154	0.185	0.172	0.103	0.143		0.052	0.133
<b>SFA 14A</b>																					
Lomond River	0.098	0.044	0.047	0.063	0.075	0.050	0.140	0.090	0.077	0.116	0.075	0.090	0.106						0.037	0.065	0.089
Torrent River	0.057	0.050	0.082	0.089	0.065	0.140	0.124	0.080	0.125	0.144	0.082	0.079	0.097	0.152	0.262	0.148	0.182	0.357	0.041	0.070	0.136
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	0.016	0.060	0.040	0.033	0.021	0.008	0.019	0.001	0.028	0.041

Table 10. Summary of the percentage conservation requirement achieved for various rivers including the means for 1984-91, 1992-96, and 1997-2008.

SFA	River	Percentage Conservation Egg Requirement Achieved																									Mean 1984-1991	Mean 1992-1996	Mean 1997-2008		
		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008				2009	
4	Exploits River	39	37	32	33	37	36	26	16	31	43	31	39	69	24	47	44	21	34	25	51	47	49	48	44	60	65	32	43	41	
	Lower	123	100	66	62	59	46	45	34	101	157	103	121	210	72	134	116	56	91	56	141	130	83	125	150	111	172	67	138	105	
	Middle	20	17	8	9	12	14	12	16	20	23	18	24	43	15	35	35	16	27	23	39	37	51	40	27	60	53	14	26	34	
	Upper	29	53	72	97	125	119	88	0	2	6	7	12	26	10	6	7	2	5	3	7	2	4	1	2	5	2	73	11	5	
	Campbellton River											311	216	264	316	180	315	312	152	148	138	191	212	328	273	208	360	371		277	235
	Gander River						44	38	36	118	128	84	89	115	61	110	121	86	84	91	96	144	120	87	72	112	101	39	107	99	
5	Indian Bay Brook																			113	183	161									152
	Middle Brook	131	84	89	90	55	49	74	51	148	238	176	116	258	193	301	222	217	132	101	134	162	163	133	126	232	195	78	187	176	
	Terra Nova River	18	23	17	14	28	19	19	15	28	53	25	44	35	31	33	33	27	36	28	42	54	42	47	29	61	40	19	37	39	
	Northwest River (TNPN)												37	55	46	42	28	27	11	37	81	92	93	58	50	92	37		46	55	
9	Biscay Bay River	156	126	230	119	117	87	122	38	141	97	143	77	117															124	115	
	Northeast Brook (Trepassey)	229	312	368	227	213	173	156	249	126	193	239	194	196	135	256	248	216	157	156	303	198	173	185	101	232	114	241	190	197	
	Rocky River	64	29	59	22	30	17	40	22	28	34	25	56	34	56	54	39	34	33	40	50	51	55	42	22	76	54	35	35	46	
10	Northeast River (Placentia)	204	152	352	166	247	302	269	175	555	527	430	412	766	482	489	276	449	168	243									233	538	351
11	Little River				29	30	60	106	47	44	80	37	56	288	200	231	38	263	69	224	144	295	99	69	20	31	98	54	101	140	
	Conne River - Conservation Management			262	393	288	186	201	97	90	110	67	145	206	135	151	122	188	77	110	76	174	92	110	55	117	72	238	124	117	
				146	219	160	103	112	54	50	61	37	81	115	75	84	68	104	43	61	42	97	51	61	31	65	40	132	69	65	
13	Highlands River										46	77	67	79	105	59	49	34	35	53	99	155	75	71						67	73
	Crabbes River										34	13	41		68	95	53	66	63	53	43	81	123	78						39	73
	Middle Barachois Brook										53	48	74		52	95		43	95	80	61	61	79	52		28				57	71
	Robinsons River										57	23	65		67	91		118	135	142	82	94	132	81		109				53	109
	Fischells River										14	24	71			44	23	110	142	18	28	86	99	101		99				36	72
	Flat Bay Brook										18	14	19	45	85	89		149	167	71	97	99	126	162		125				36	120
	Harry's River										13	41	51	53	46	50	49	49	29	33	60	84	98	89	116	55	108	72		41	68
	Pinchgut Brook										36	117	145	150	130	140	136	138		82	36	116								116	108
	Humber River						60	27	117	96	40	128	186	115	120	201														44	113
14A	Trout River																			25	25										25
	Lomond River	74	31	59	56	70	61	62	64	121	118	142	187	143	161	151	181	140	88	112	129	134						60	142	137	
	Torrent River	270	161	360	199	266	225	221	178	313	538	530	1033	1279	797	924	680	657	400	597	496	686	675	844	458	1203	750	235	739	701	
	Western Arm Brook	30	80	156	103	67	142	157	68	151	288	292	286	415	200	625	370	567	193	510	466	425	355	446	258	611	341	100	286	419	

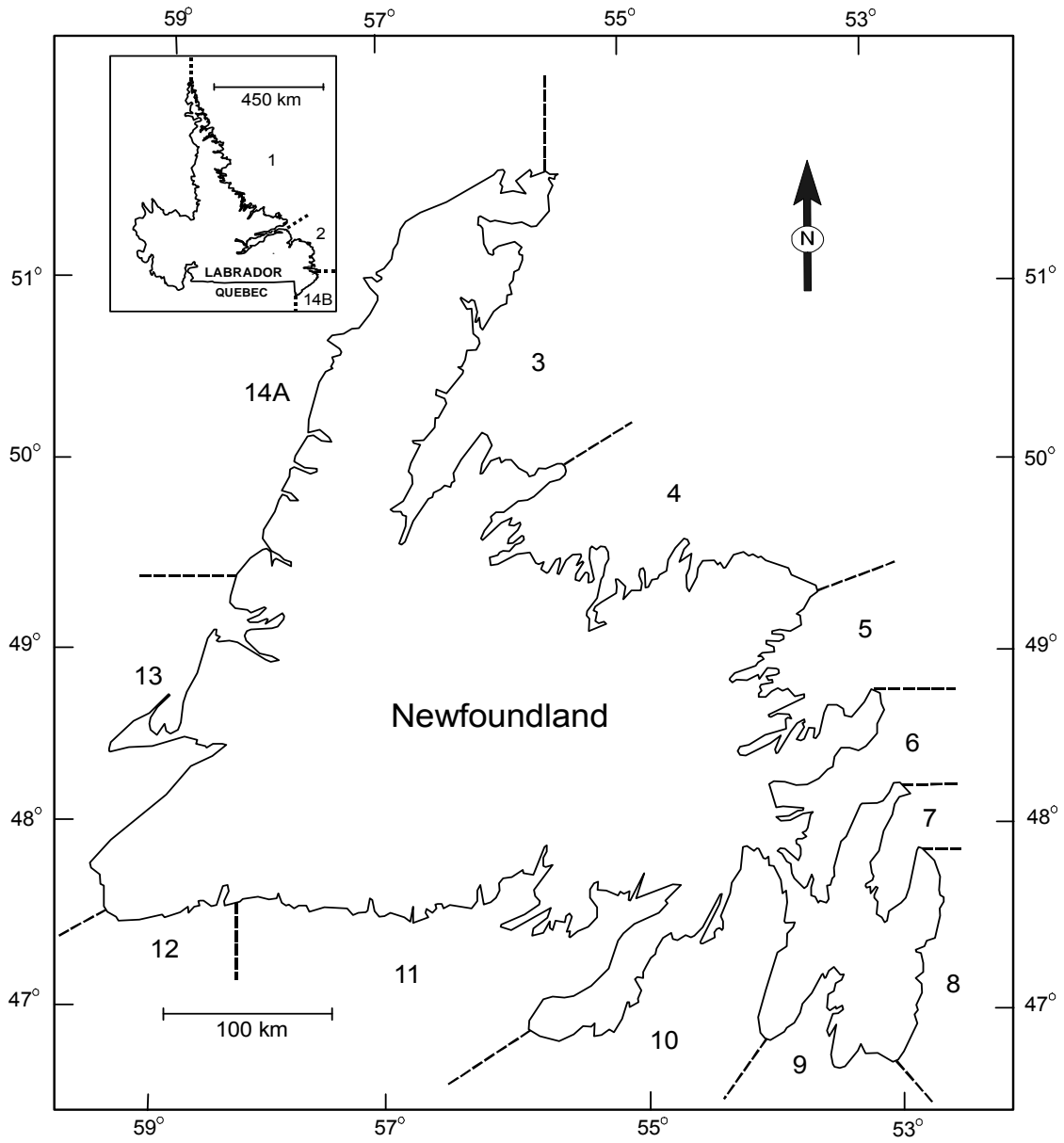


Figure 1. Map of Salmon Fishing Areas 3-14A (SFAs) of the Newfoundland and Labrador Region.

## Insular Newfoundland (SFAs 3 - 14A) Recreational Fishery

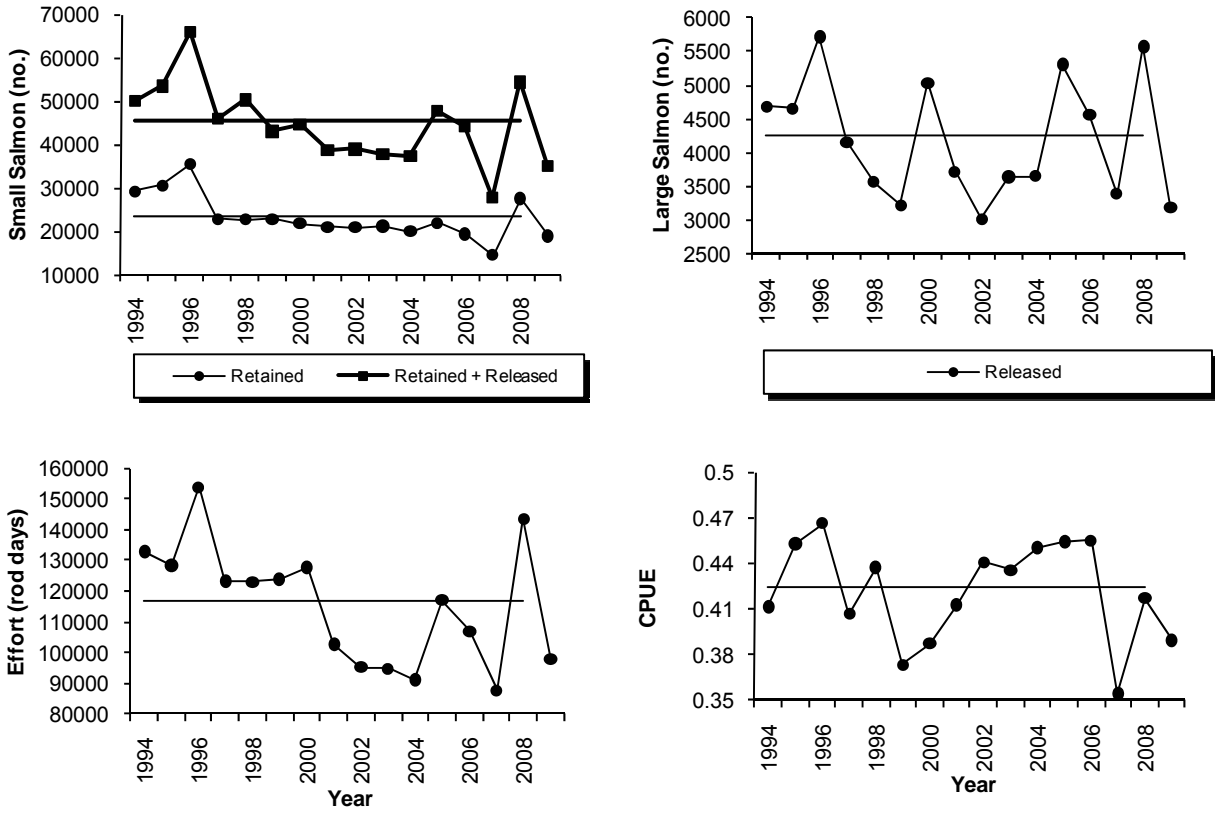


Figure 2. Recreational catch of small and large salmon, effort, and catch per unit effort (CPUE) (1994-2009) for insular Newfoundland (SFAs 3-14A). Horizontal lines represent the 1994-2008 mean.

## Northern Peninsula East & Eastern (SFAs 3 - 8)

### Recreational Fishery

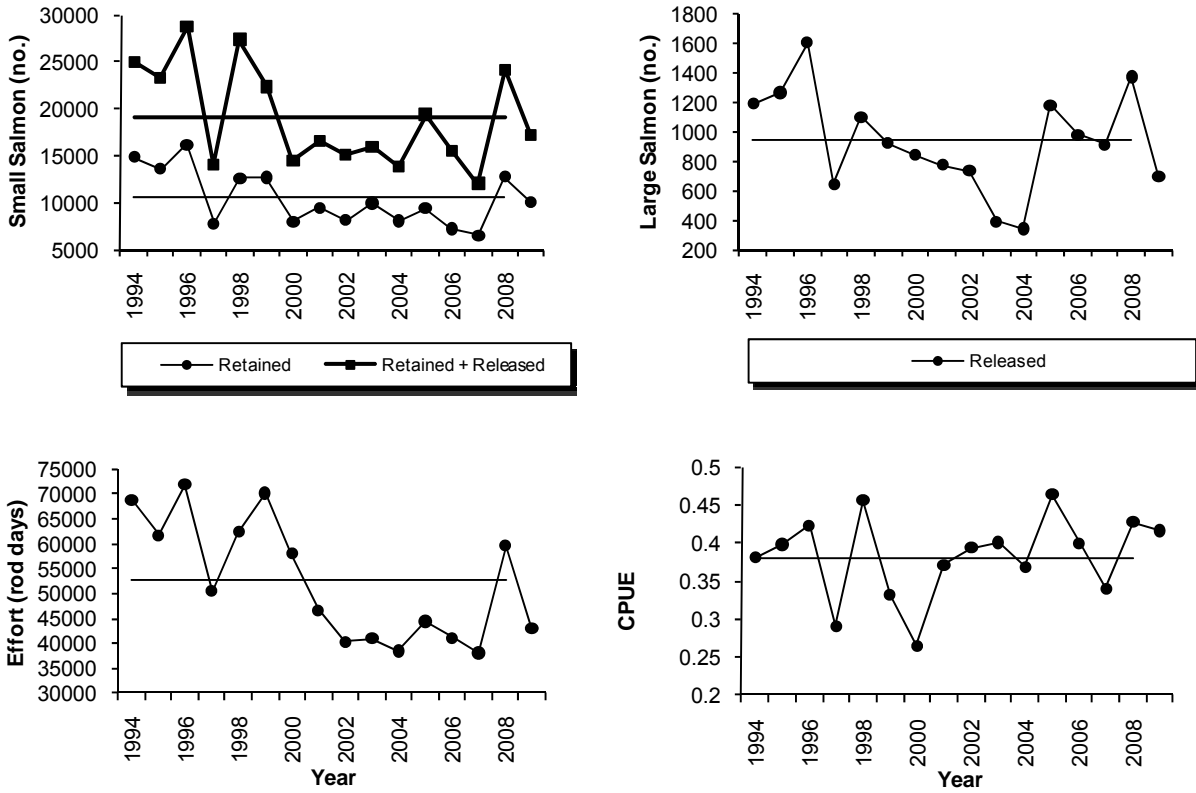


Figure 3. Recreational catch of small and large salmon, effort, and catch per unit effort (CPUE) (1994-2009) for Northern Peninsula East & Eastern (SFAs 3-8). Horizontal lines represent the 1994-2008 mean.

South (SFAs 9 - 11)

Recreational Fishery

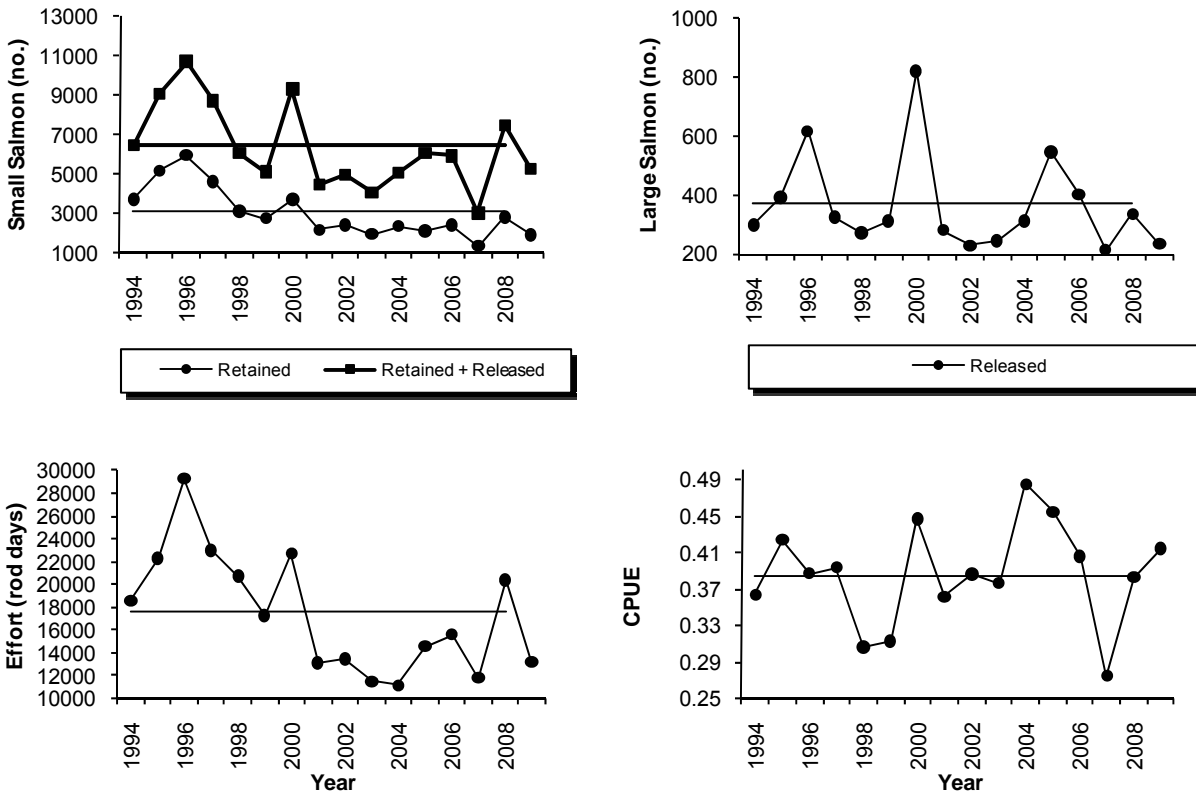


Figure 4. Recreational catch of small and large salmon, effort, and catch per unit effort (CPUE) (1994-2009) for South (SFAs 9-11). Horizontal lines represent the 1994-2008 mean.

## Southwest (SFAs 12 - 13)

### Recreational Fishery

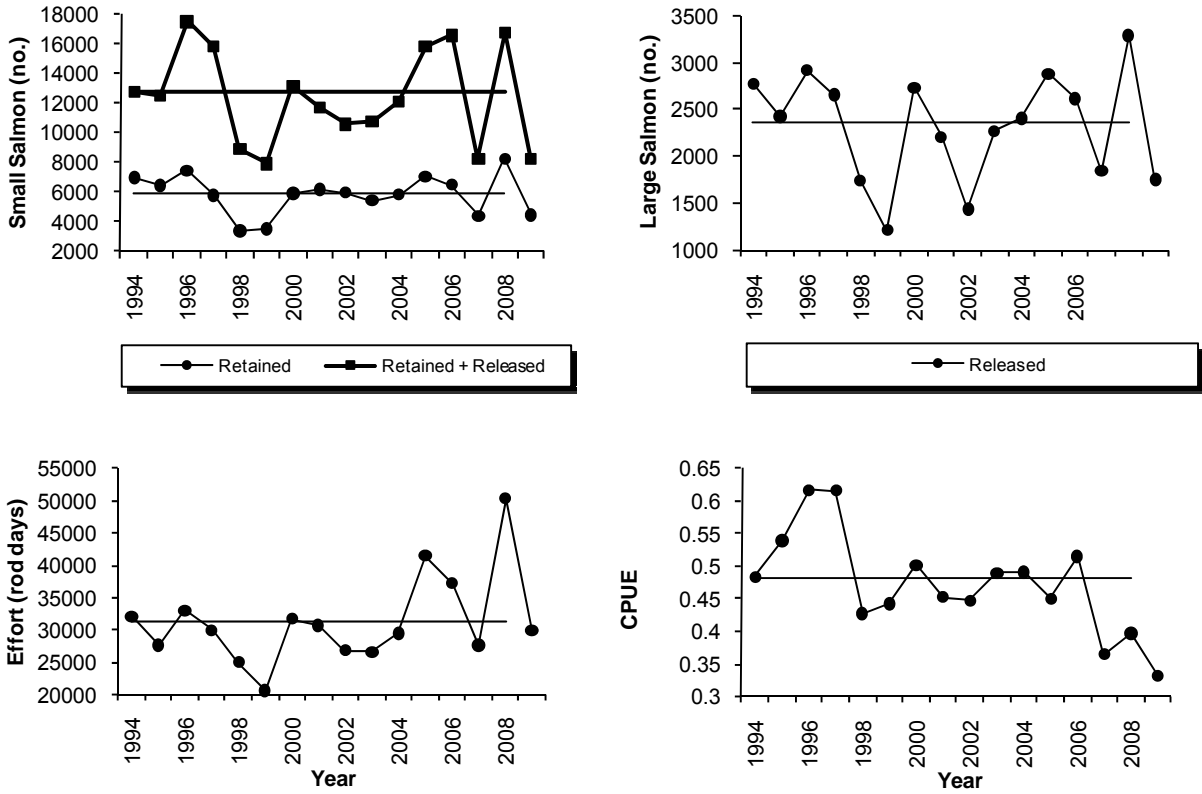


Figure 5. Recreational catch of small and large salmon, effort, and catch per unit effort (CPUE) (1994-2009) for Southwest (SFAs 12-13). Horizontal lines represent the 1994-2008 mean.

## Northern Peninsula West (SFA 14A)

### Recreational Fishery

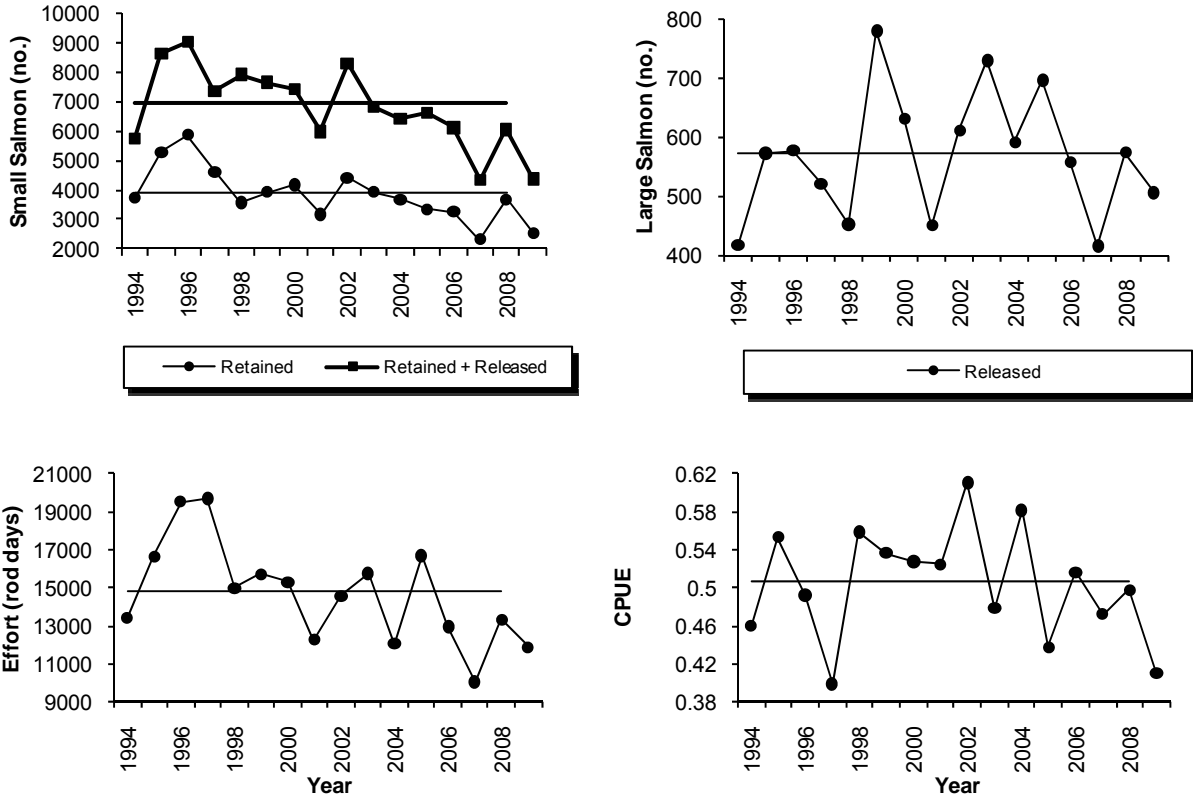


Figure 6. Recreational catch of small and large salmon, effort, and catch per unit effort (CPUE) (1994-2009) for Northern Peninsula West (SFA 14A). Horizontal lines represent the 1994-2008 mean.



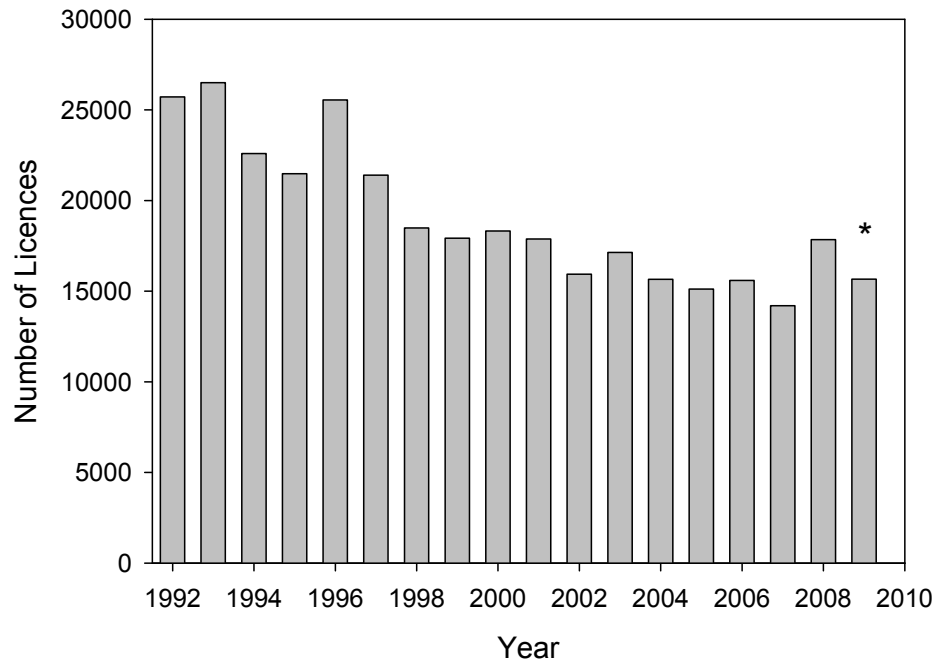


Figure 7. Number of recreational Atlantic salmon fishery licences sold from 1992 – 2009 (\* preliminary).

## Marine Survival - Smolt to Adult

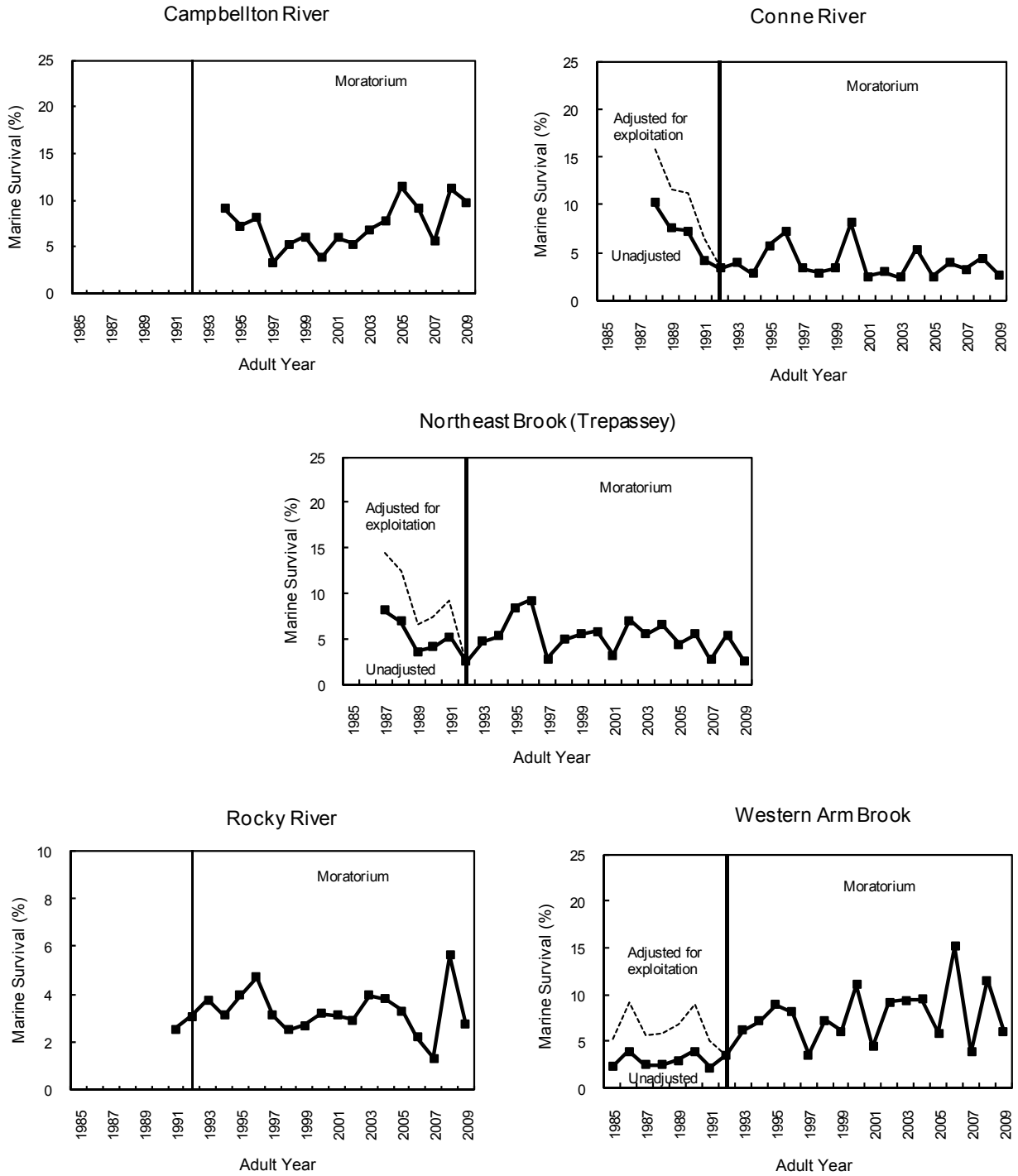


Figure 8. Marine survival (%) of smolts to adults (small salmon). Dashed line represents marine survival adjusted for average marine exploitation rate (Dempson et al. 1998).

## Insular Newfoundland (SFAs 3 - 14A)

### Trends in Abundance 1984-2009

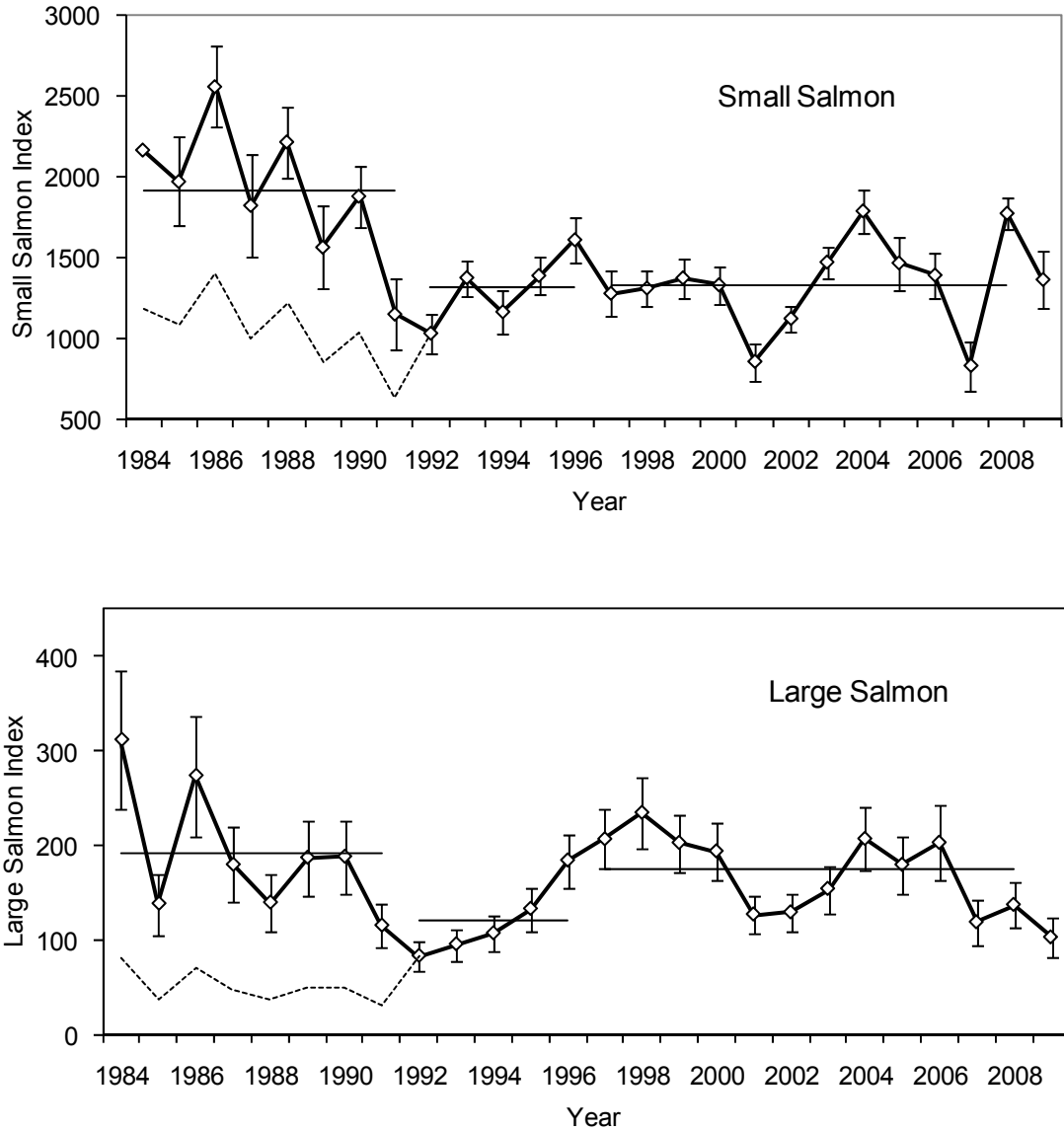


Figure 9. Trends in abundance of small and large salmon for insular Newfoundland (SFA 3-14A), all rivers combined, from 1984 to 2009. Horizontal lines illustrate the mean abundance index for the periods 1984-91, 1992-96, and 1997-2008. Vertical lines represent  $\pm 1$  standard error. Dashed line represents returns unadjusted for marine exploitation for the period 1984-91. (Note: The y-axis represents an abundance index that is related to the geographic mean of individual river abundances and not absolute abundance).

## Northeast Coast Total Return

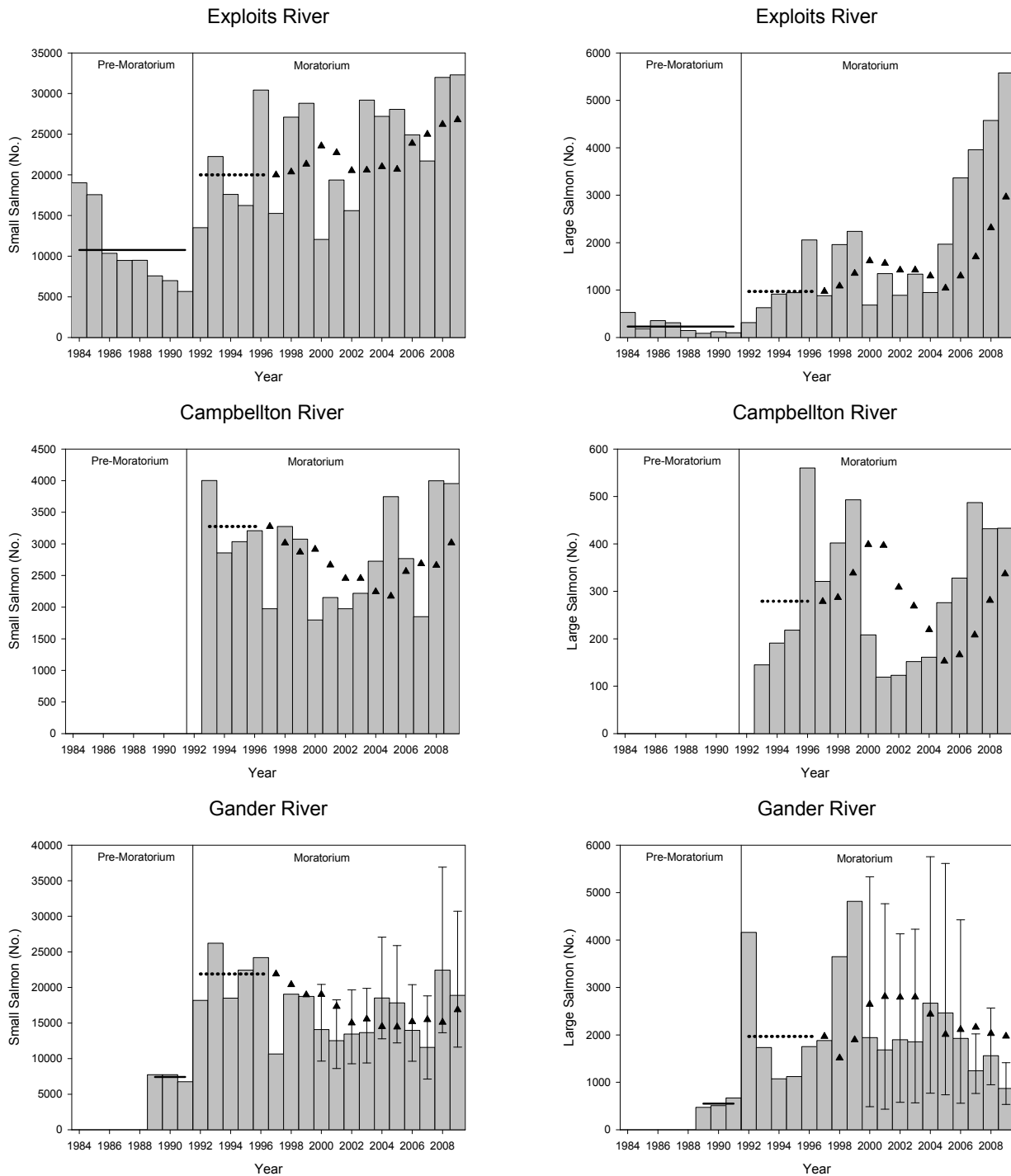


Figure 10: Total returns of small and large salmon to Exploits River, Campbellton River and Gander River (northeast coast), 1984-2009. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line represents the 5 year post-moratorium mean 1992-1996, and the triangles represent the 5 year mean previous to each year. Vertical lines are estimates of the 5<sup>th</sup> and 95<sup>th</sup> percentiles.

## Northeast Coast Proportion Large Salmon in Total Returns

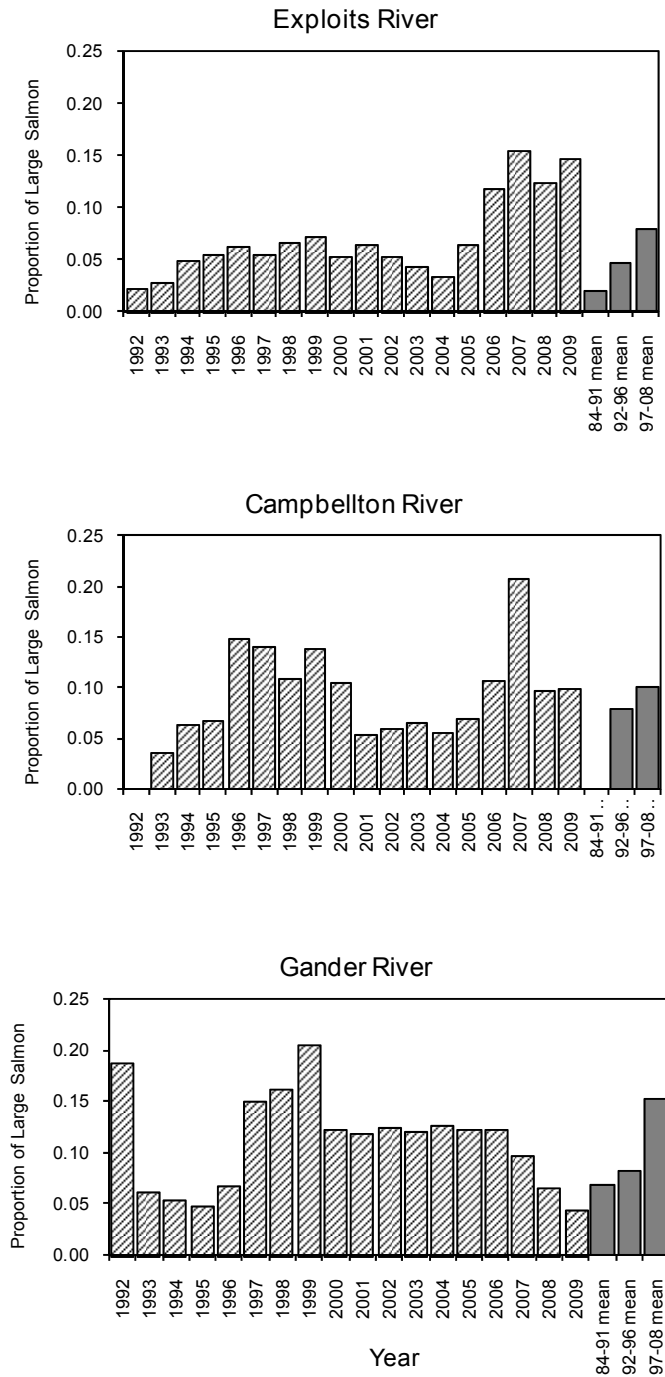


Figure 11. Proportion of large salmon in total returns to Exploits River, Campbellton River and Gander River (northeast coast), 1992-2009. Solid bars illustrate means from 1984 to 1991, 1992-96 and 1997-2008.

## East Coast Total Returns

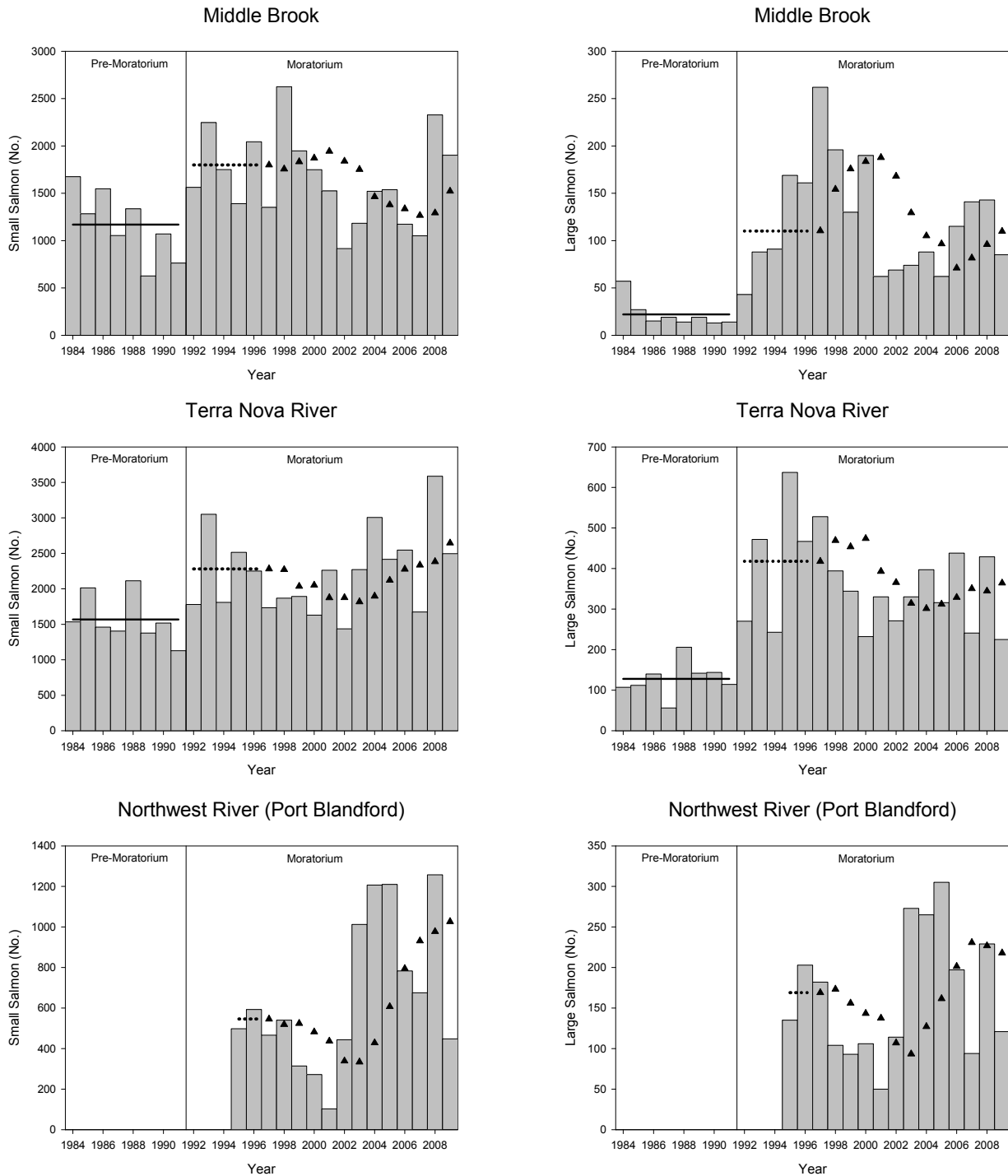


Figure 12. Total returns of small and large salmon to Middle Brook, Terra Nova River and Northeast River (Port Blandford) (east coast), 1984-2009. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line represents the 5 year post-moratorium mean 1992-96, and the triangles represent the 5 year mean previous to each year.

## East Coast Proportion Large Salmon in Total Returns

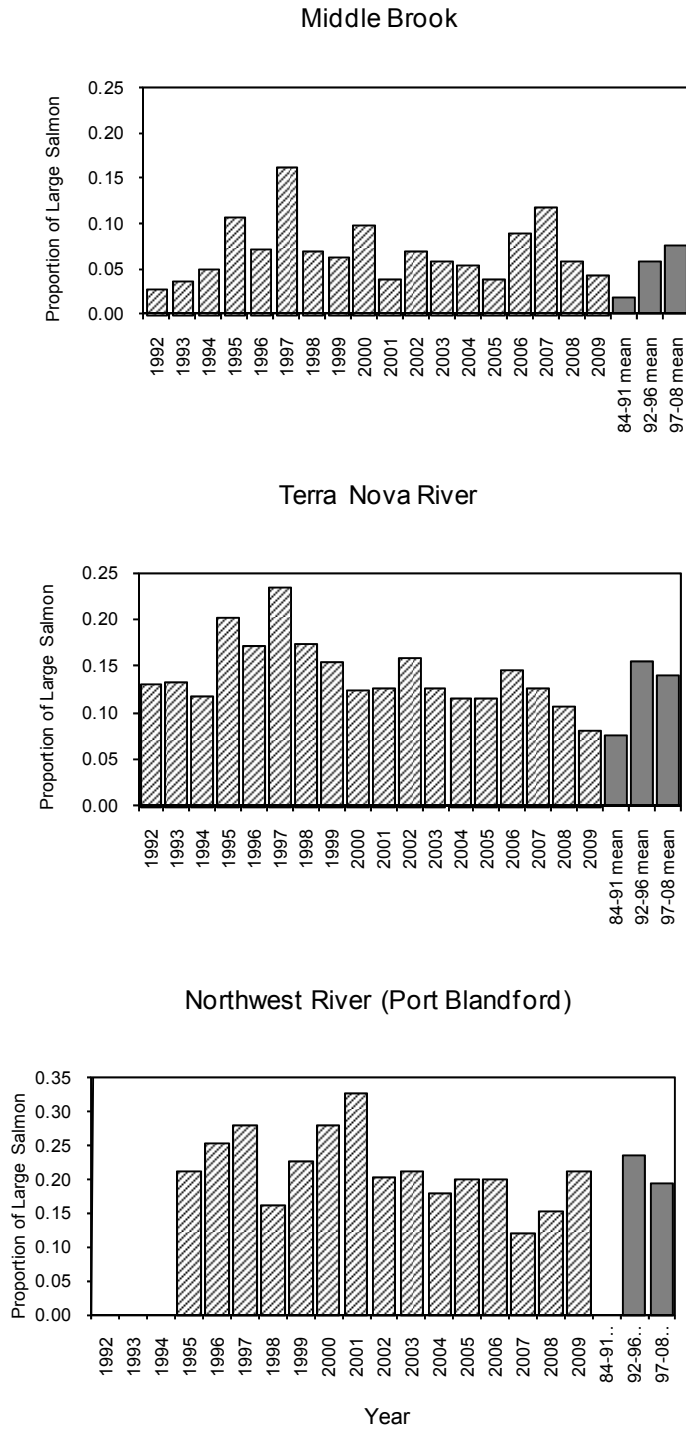


Figure 13. Proportion of large salmon in total returns to Middle Brook, Terra Nova River and Northwest River, (Port Blandford) (east coast), 1992-2009. Solid bars illustrate the 1984-91, 1992-96 and 1997-2008 means.

## South Coast Total Returns

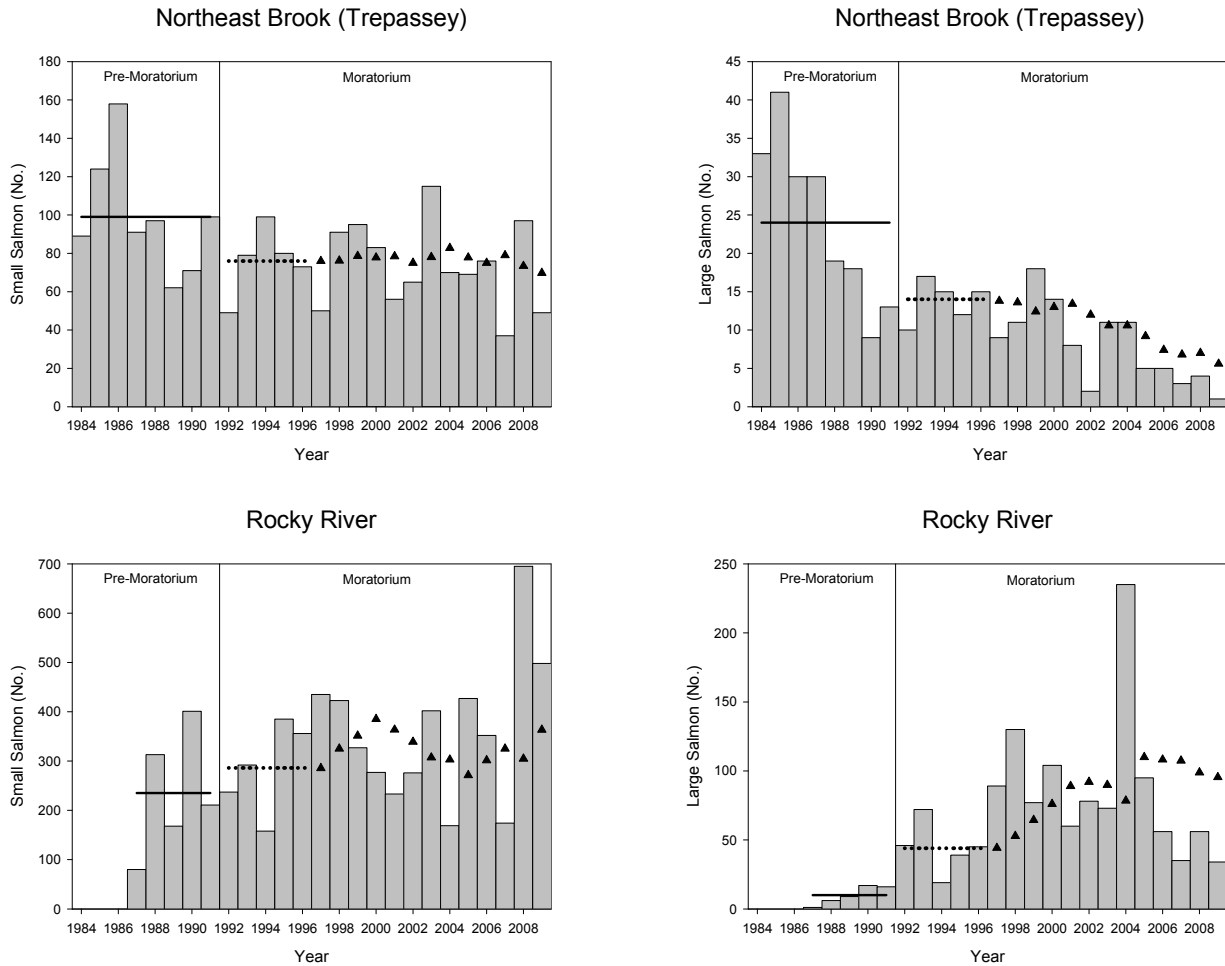


Figure 14. Total returns of small and large salmon to Northeast Brook (Trepassey), Rocky River, Little River and Conne River (south coast), 1984-2009. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line represents the 5 year post-moratorium mean 1992-96, and the triangles represent the 5 year mean previous to each year.



## South Coast Total Returns

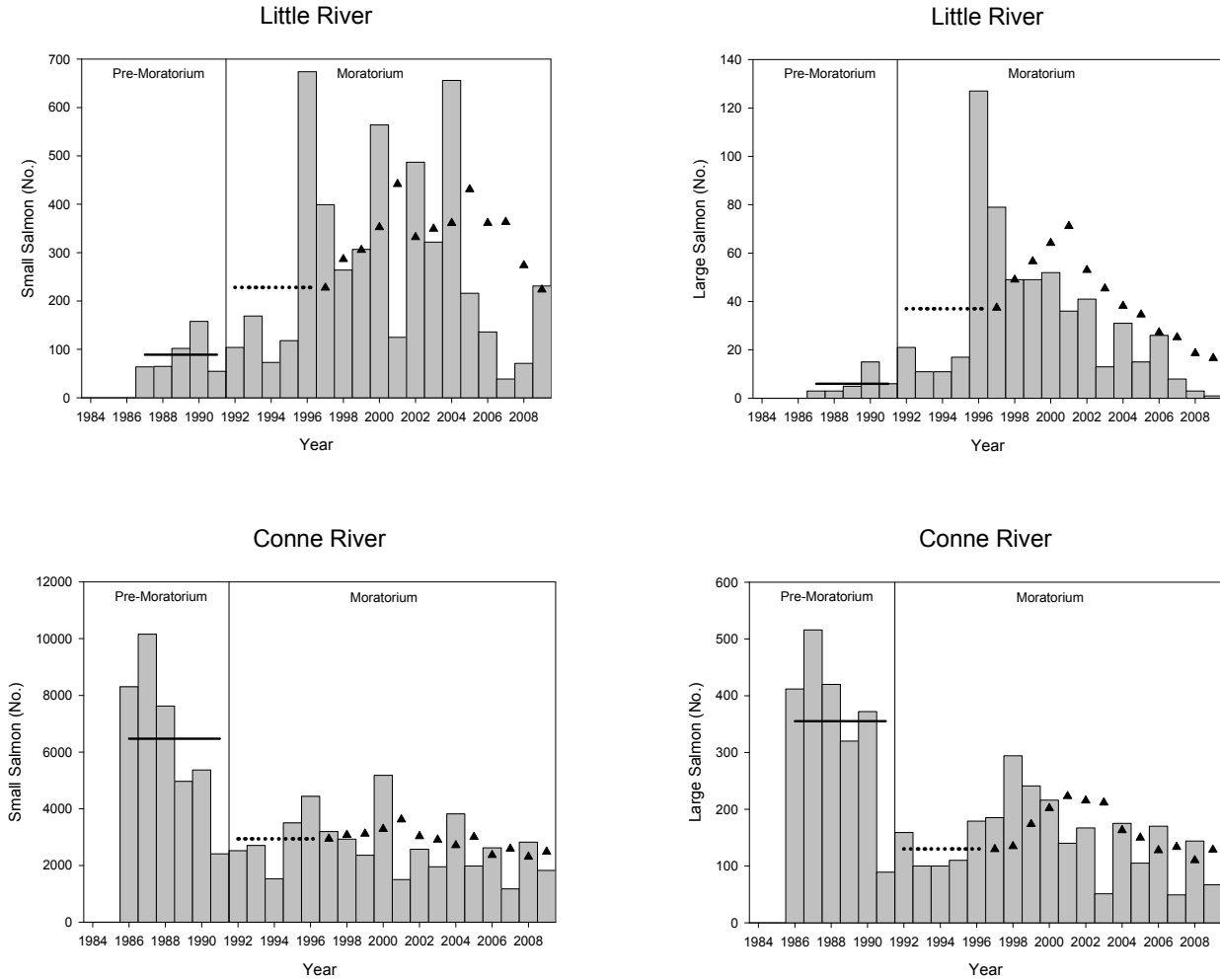


Figure 14 (cont'd). Total returns of small and large salmon to Northeast Brook (Trepassey), Rocky River, Little River and Conne River (south coast), 1984-2009. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line represents the 5 year post-moratorium mean 1992-96, and the triangles represent the 5 year mean previous to each year.

## South Coast Proportion Large Salmon in Total Returns

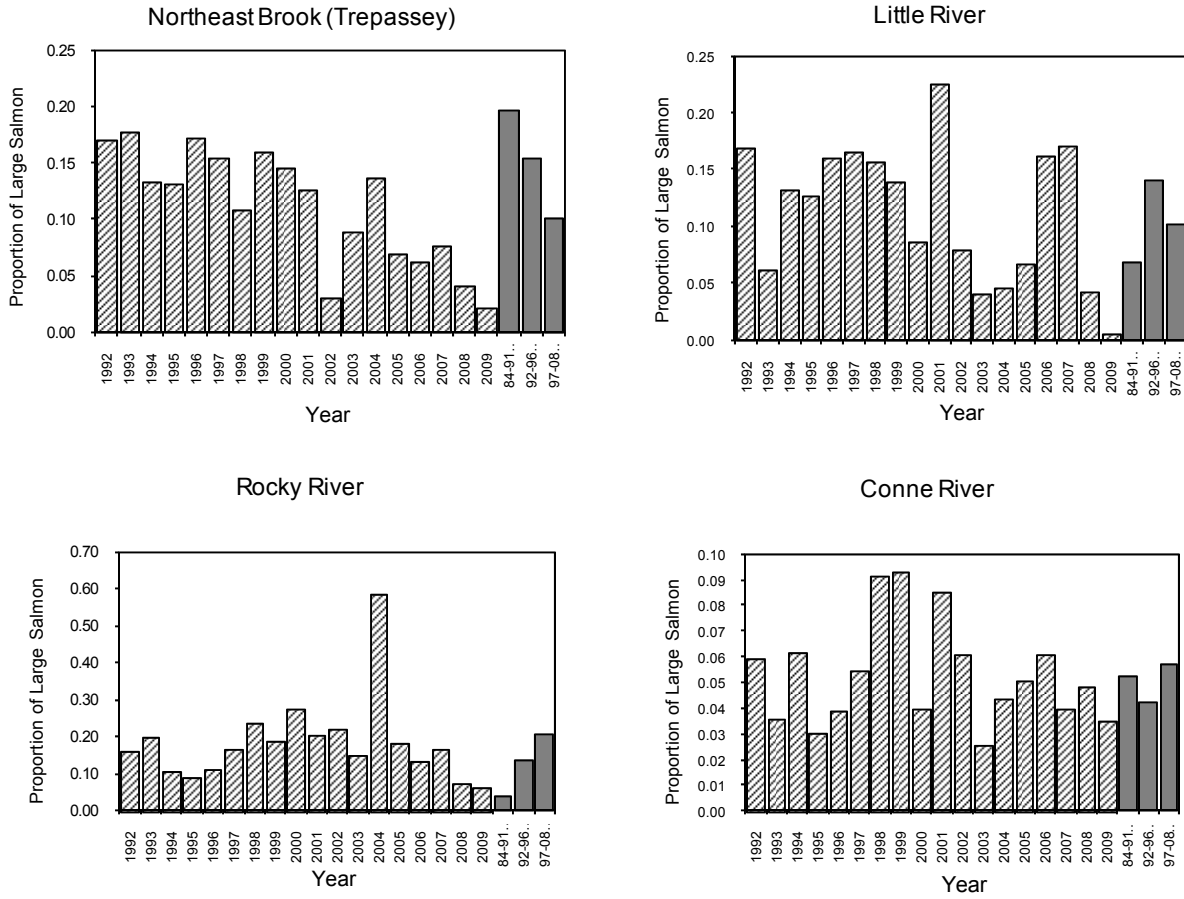


Figure 15. Proportion of large salmon in total returns to Northeast Brook (Trepassey), Rocky River, Little River and Conne River (south coast), 1992-2009. Solid bars illustrate the 1984-91, 1992-96 and 1997-2008 means.

## Southwest and Northwest Coasts Total Returns

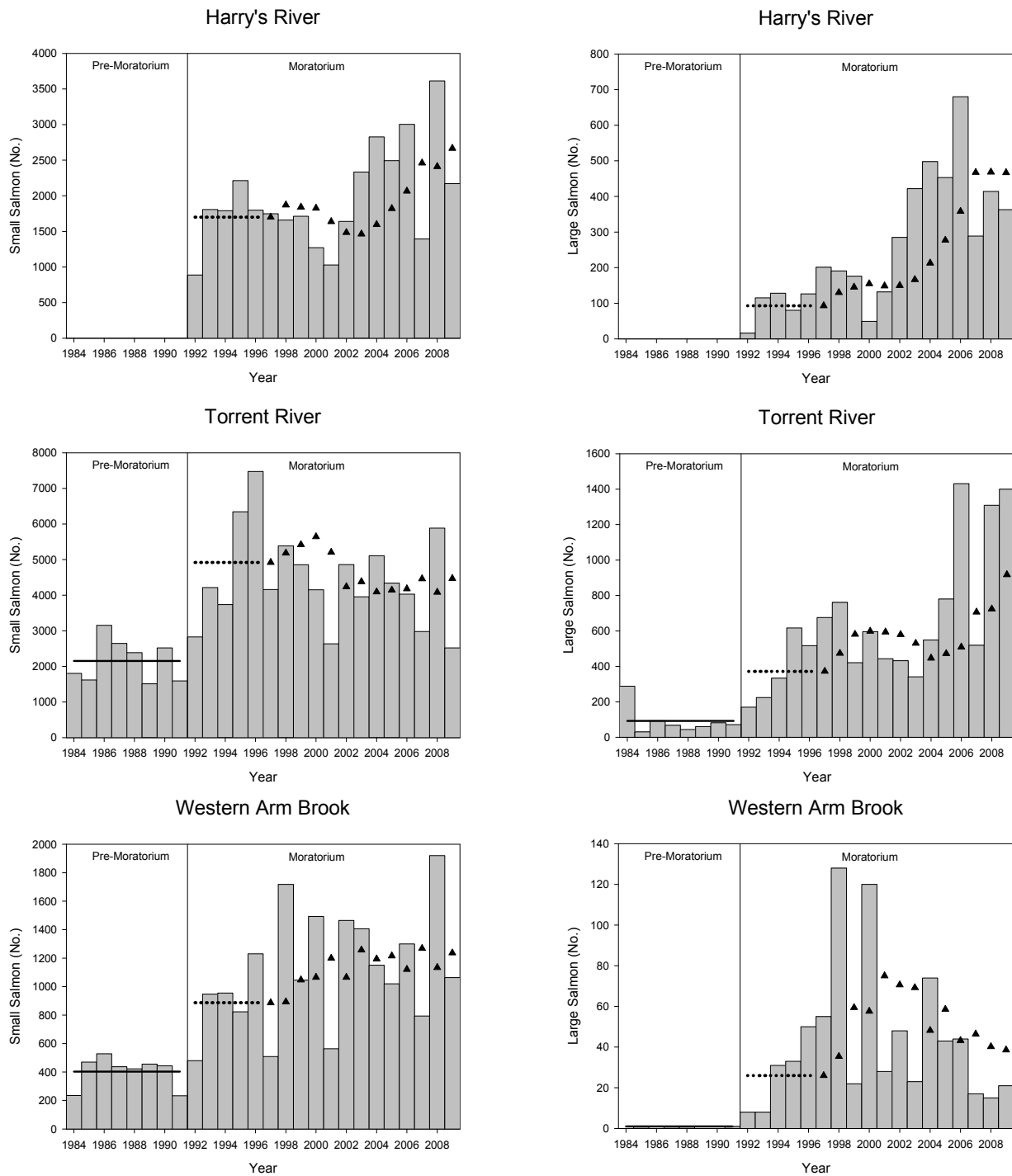


Figure 16. Total returns of small and large salmon to Harry's River (southwest coast), Torrent River, and Western Arm Brook (northwest coast), 1984-2009. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line represents the 5 year post-moratorium mean 1992-96, and the triangles represent the 5 year mean previous to each year.

**Southwest and Northwest Coasts  
Proportion Large Salmon in Total Returns**

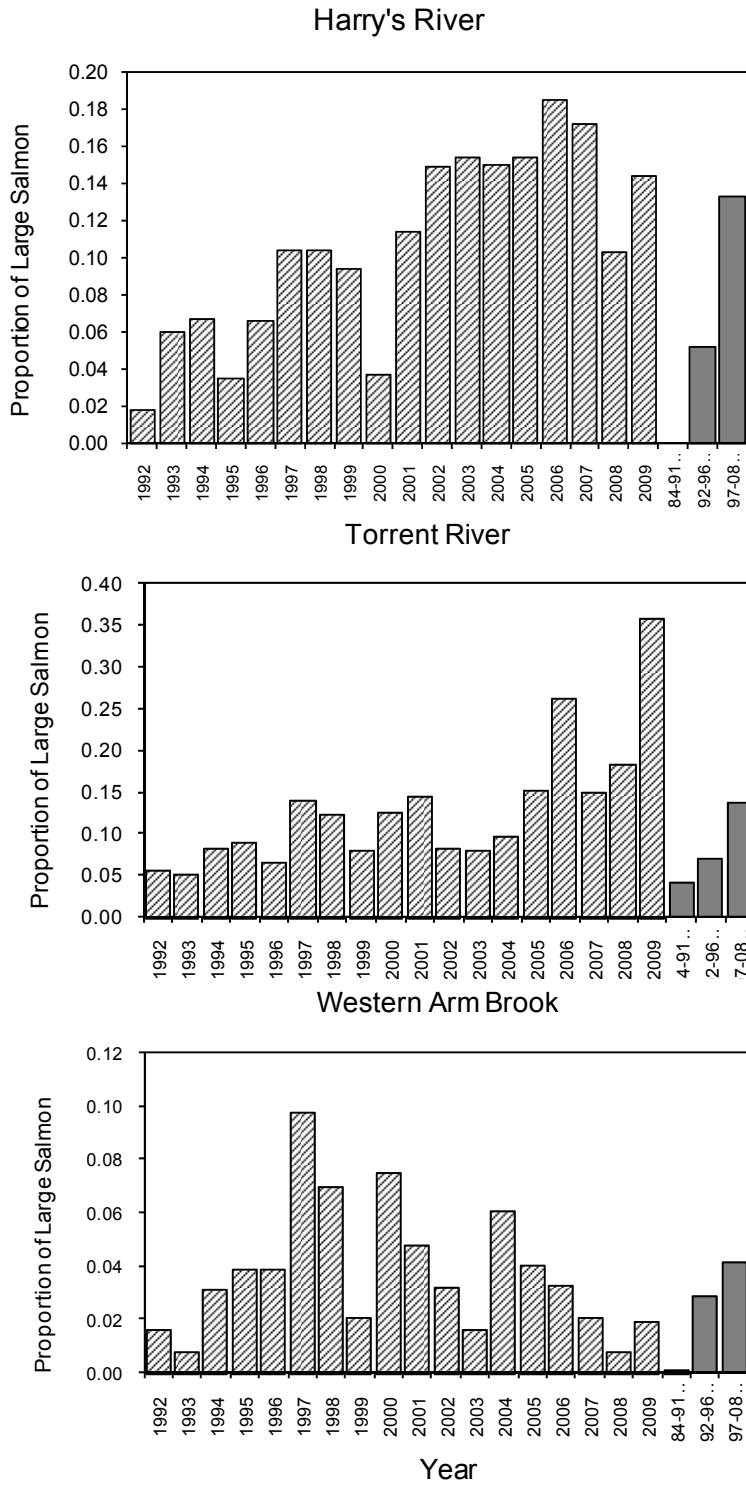


Figure 17. Proportion of large salmon in total returns to Harry's River (southwest coast), Torrent River and Western Arm Brook (northwest coast), 1992-2009. Solid bars illustrate the 1984-91, 1992-96 and 1997-2008 means.

# Insular Newfoundland

## Conservation Requirement 1984-2009

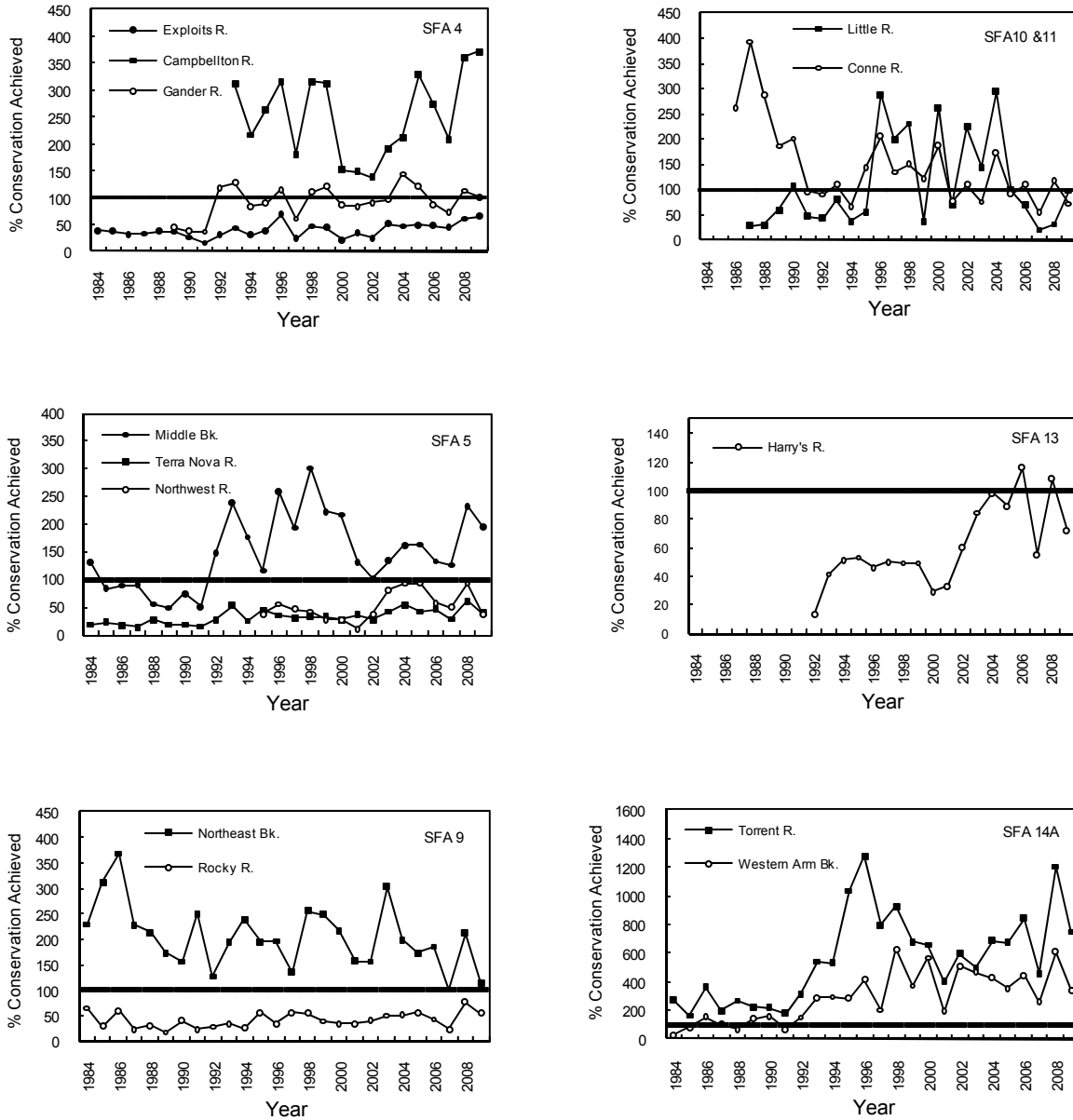


Figure 18. Percentage of conservation requirement achieved from 1984 to 2009 for rivers in insular Newfoundland by SFA. Horizontal line represents 100% conservation requirement.

Appendix 1a. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3-14A), 1994-2009. Ret. = retained fish; Rel. = released

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	95143	20913	18019	38932	*	3014	3014	20913	21033	41946	0.44
2003	94862	21226	16455	37681	*	3639	3639	21226	20094	41320	0.44
2004	91151	19946	17462	37408	*	3649	3649	19946	21111	41057	0.45
2005	117114	21869	26009	47878	*	5308	5308	21869	31317	53186	0.45
2006	106900	19394	24676	44070	*	4561	4561	19394	29237	48631	0.45
2007	87655	14577	13088	27665	*	3385	3385	14577	16473	31050	0.35
2008	143674	27497	26870	54367	*	5573	5573	27497	32443	59940	0.42
2009	98101	18929	16101	35030	*	3185	3185	18929	19286	38215	0.39
1994-2008 mean	116797	23449	21873	45322	.	4259	4259	23449	26131	49581	0.42
95% CL	10958	2866	2665	5030	.	489	489	2866	3040	5407	0.02
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	109299	20657	21621	42278	.	4495	4495	20657	26116	46773	0.43
95% CL	28079	5800	7507	12690	.	1206	1206	5800	8665	13850	0.05
N	5	5	5	5	.	5	5	5	5	5	5

. NO DATA

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1b. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	40296	8128	6992	15120	*	737	737	8128	7729	15857	0.39
2003	40957	9929	6075	16004	*	397	397	9929	6472	16401	0.40
2004	38454	8076	5743	13819	*	345	345	8076	6088	14164	0.37
2005	44349	9360	10021	19381	*	1184	1184	9360	11205	20565	0.46
2006	41161	7241	8238	15479	*	983	983	7241	9221	16462	0.40
2007	38113	6538	5497	12035	*	917	917	6538	6414	12952	0.34
2008	59648	12747	11388	24135	*	1376	1376	12747	12764	25511	0.43
2009	43017	10025	7200	17225	*	698	698	10025	7898	17923	0.42
1994-2008 mean	52867	10479	8708	19187	.	955	955	10479	9662	20142	0.38
95% CL	6838	1681	1533	3031	.	194	194	1681	1688	3185	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	44345	8792	8177	16970	.	961	961	8792	9138	17931	0.40
95% CL	11067	3039	3215	6007	.	482	482	3039	3627	6377	0.06
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1c. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9-11), 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	13447	2429	2536	4965	*	228	228	2429	2764	5193	0.39
2003	11526	1940	2152	4092	*	244	244	1940	2396	4336	0.38
2004	11139	2365	2731	5096	*	310	310	2365	3041	5406	0.49
2005	14570	2115	3969	6084	*	545	545	2115	4514	6629	0.45
2006	15576	2409	3509	5918	*	403	403	2409	3912	6321	0.41
2007	11809	1338	1692	3030	*	212	212	1338	1904	3242	0.27
2008	20371	2831	4636	7467	*	335	335	2831	4971	7802	0.38
2009	13198	1919	3322	5241	*	232	232	1919	3554	5473	0.41
1994-2008 mean	17692	3109	3328	6437	.	373	373	3109	3701	6810	0.38
95% CL	2940	716	623	1210	.	92	92	716	703	1277	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	14693	2212	3307	5519	.	361	361	2212	3668	5880	0.40
95% CL	4561	685	1413	2025	.	153	153	685	1518	2117	0.08
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1d. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 and 13), 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	26834	5950	4613	10563	*	1437	1437	5950	6050	12000	0.45
2003	26630	5440	5343	10783	*	2268	2268	5440	7611	13051	0.49
2004	29523	5838	6247	12085	*	2402	2402	5838	8649	14487	0.49
2005	41517	7056	8761	15817	*	2882	2882	7056	11643	18699	0.45
2006	37218	6481	10069	16550	*	2617	2617	6481	12686	19167	0.51
2007	27686	4383	3886	8269	*	1840	1840	4383	5726	10109	0.37
2008	50338	8242	8467	16709	*	3288	3288	8242	11755	19997	0.40
2009	30003	4453	3745	8198	*	1749	1749	4453	5494	9947	0.33
1994-2008 mean	31379	5933	6808	12741	.	2359	2359	5933	9167	15100	0.48
95% CL	4005	751	1190	1751	.	324	324	751	1450	2040	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	37256	6400	7486	13886	.	2606	2606	6400	10092	16492	0.44
95% CL	11457	1779	3025	4544	.	671	671	1779	3568	5159	0.07
N	5	5	5	5	.	5	5	5	5	5	5

· NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1e. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	14566	4406	3878	8284	*	612	612	4406	4490	8896	0.61
2003	15749	3917	2885	6802	*	730	730	3917	3615	7532	0.48
2004	12035	3667	2741	6408	*	592	592	3667	3333	7000	0.58
2005	16678	3338	3258	6596	*	697	697	3338	3955	7293	0.44
2006	12945	3263	2860	6123	*	558	558	3263	3418	6681	0.52
2007	10047	2318	2013	4331	*	416	416	2318	2429	4747	0.47
2008	13317	3677	2379	6056	*	574	574	3677	2953	6630	0.50
2009	11883	2532	1834	4366	*	506	506	2532	2340	4872	0.41
1994-2008 mean	14859	3928	3029	6957	.	572	572	3928	3601	7529	0.51
95% CL	1476	482	360	693	.	61	61	482	387	718	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	13004	3253	2650	5903	.	567	567	3253	3218	6470	0.50
95% CL	2995	689	589	1124	.	125	125	689	705	1241	0.07
N	5	5	5	5	.	5	5	5	5	5	5

· NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.



Appendix 1f. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	5036	1742	1386	3128	*	125	125	1742	1511	3253	0.65
2003	7235	2075	1536	3611	*	70	70	2075	1606	3681	0.51
2004	3766	975	747	1722	*	57	57	975	804	1779	0.47
2005	4814	1236	1290	2526	*	141	141	1236	1431	2667	0.55
2006	4626	1250	1054	2304	*	230	230	1250	1284	2534	0.55
2007	4289	1210	652	1862	*	104	104	1210	756	1966	0.46
2008	6289	1981	1209	3190	*	174	174	1981	1383	3364	0.53
2009	5621	1668	1436	3104	*	63	63	1668	1499	3167	0.56
1994-2008 mean	7449	2087	1617	3704	.	163	163	2087	1781	3867	0.52
95% CL	1429	446	429	854	.	40	40	446	455	880	0.05
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	4757	1330	990	2321	.	141	141	1330	1132	2462	0.52
95% CL	1173	473	349	726	.	82	82	473	404	779	0.05
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1g. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	28340	5692	5186	10878	*	581	581	5692	5767	11459	0.40
2003	29042	7163	4258	11421	*	305	305	7163	4563	11726	0.40
2004	28128	6051	4437	10488	*	255	255	6051	4692	10743	0.38
2005	31193	7075	7825	14900	*	942	942	7075	8767	15842	0.51
2006	29411	4967	6227	11194	*	464	464	4967	6691	11658	0.40
2007	25987	4288	4028	8316	*	660	660	4288	4688	8976	0.35
2008	41443	9046	8393	17439	*	1062	1062	9046	9455	18501	0.45
2009	28131	6739	4368	11107	*	504	504	6739	4872	11611	0.41
1994-2008 mean	34658	6764	5952	12717	.	649	649	6764	6602	13366	0.39
95% CL	3988	1000	1049	1890	.	144	144	1000	1144	1992	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	31232	6285	6182	12467	.	677	677	6285	6859	13144	0.42
95% CL	7468	2325	2426	4536	.	413	413	2325	2763	4861	0.07
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			Total CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	5799	642	338	980	*	23	23	642	361	1003	0.17
2003	4019	632	255	887	*	18	18	632	273	905	0.23
2004	5943	1023	551	1574	*	31	31	1023	582	1605	0.27
2005	7232	1022	872	1894	*	91	91	1022	963	1985	0.27
2006	6552	996	809	1805	*	275	275	996	1084	2080	0.32
2007	6998	1014	790	1804	*	126	126	1014	916	1930	0.28
2008	9854	1633	1571	3204	*	88	88	1633	1659	3292	0.33
2009	8245	1537	1350	2887	*	117	117	1537	1467	3004	0.36
1994-2008 mean	9187	1535	1064	2599	.	128	128	1535	1193	2728	0.30
95% CL	1769	430	280	690	.	48	48	430	310	716	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	7316	1138	919	2056	.	122	122	1138	1041	2178	0.30
95% CL	1864	344	477	810	.	114	114	344	487	804	0.04
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			Total CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	648	40	19	59	*	6	6	40	25	65	0.10
2003	533	44	24	68	*	4	4	44	28	72	0.14
2004	529	22	0	22	*	2	2	22	2	24	0.05
2005	510	22	0	22	*	3	3	22	3	25	0.05
2006	275	8	0	8	*	3	3	8	3	11	0.04
2007	428	9	3	12	*	3	3	9	6	15	0.04
2008	1104	47	85	132	*	30	30	47	115	162	0.15
2009	734	63	13	76	*	3	3	63	16	79	0.11
1994-2008 mean	1027	61	28	88	.	7	7	61	35	96	0.09
95% CL	369	24	15	37	.	4	4	24	19	40	0.02
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	569	22	18	39	.	8	8	22	26	47	0.08
95% CL	391	20	47	65	.	15	15	20	62	80	0.09
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			Total CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	187	0	9	9	*	0	0	0	9	9	0.05
2003	104	10	2	12	*	0	0	10	2	12	0.12
2004	26	0	0	0	*	0	0	0	0	0	0.00
2005	562	0	7	7	*	7	7	0	14	14	0.02
2006	70	0	40	40	*	11	11	0	51	51	0.73
2007	317	15	21	36	*	24	24	15	45	60	0.19
2008	755	12	36	48	*	22	22	12	58	70	0.09
2009	140	0	0	0	*	0	0	0	0	0	0.00
1994-2008 mean	324	15	10	25	.	5	5	15	15	30	0.09
95% CL	132	9	7	10	.	4	4	9	11	12	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	346	5	21	26	.	13	13	5	34	39	0.11
95% CL	389	9	22	26	.	13	13	9	31	38	0.13
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			Total CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	286	12	54	66	*	2	2	12	56	68	0.24
2003	24	5	0	5	*	0	0	5	0	5	0.21
2004	62	5	8	13	*	0	0	5	8	13	0.21
2005	38	5	27	32	*	0	0	5	27	32	0.84
2006	227	20	108	128	*	0	0	20	108	128	0.56
2007	94	2	3	5	*	0	0	2	3	5	0.05
2008	203	28	94	122	*	0	0	28	94	122	0.60
2009	146	18	33	51	*	11	11	18	44	62	0.42
1994-2008 mean	222	18	36	54	.	1	1	18	37	55	0.25
95% CL	79	8	21	24	.	1	1	8	21	24	0.09
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	125	12	48	60	.	0	0	12	48	60	0.48
95% CL	106	14	61	75	.	0	0	14	61	75	0.27
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1l. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	
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	2751	318	364	682	*	63	63	318	427	745	0.27
2003	2112	214	306	520	*	40	40	214	346	560	0.27
2004	1520	235	172	407	*	40	40	235	212	447	0.29
2005	3612	375	954	1329	*	182	182	375	1136	1511	0.42
2006	5271	506	575	1081	*	89	89	506	664	1170	0.22
2007	3248	276	386	662	*	61	61	276	447	723	0.22
2008	6116	562	962	1524	*	85	85	562	1047	1609	0.26
2009	3984	367	753	1120	*	84	84	367	837	1204	0.30
1994-2008 mean	4738	594	513	1107	.	90	90	594	603	1197	0.25
95% CL	1049	185	140	279	.	23	23	185	157	295	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	3953	391	610	1001	.	91	91	391	701	1092	0.28
95% CL	2234	176	433	574	.	67	67	176	486	621	0.10
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	5172	616	477	1093	*	105	105	616	582	1198	0.23
2003	3552	362	411	773	*	54	54	362	465	827	0.23
2004	3200	451	359	810	*	56	56	451	415	866	0.27
2005	5132	535	734	1269	*	167	167	535	901	1436	0.28
2006	5280	621	965	1586	*	196	196	621	1161	1782	0.34
2007	4533	406	437	843	*	100	100	406	537	943	0.21
2008	7415	682	1325	2007	*	152	152	682	1477	2159	0.29
2009	4365	605	870	1475	*	106	106	605	976	1581	0.36
1994-2008 mean	5929	741	628	1369	.	135	135	741	763	1504	0.25
95% CL	1167	176	165	266	.	55	55	176	207	300	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	5112	539	764	1303	.	134	134	539	898	1437	0.28
95% CL	1895	142	492	630	.	69	69	142	544	683	0.05
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	5524	1495	1695	3190	*	60	60	1495	1755	3250	0.59
2003	5862	1364	1435	2799	*	150	150	1364	1585	2949	0.50
2004	6419	1679	2200	3879	*	214	214	1679	2414	4093	0.64
2005	5826	1205	2281	3486	*	196	196	1205	2477	3682	0.63
2006	5025	1282	1969	3251	*	118	118	1282	2087	3369	0.67
2007	4028	656	869	1525	*	51	51	656	920	1576	0.39
2008	6840	1587	2349	3936	*	98	98	1587	2447	4034	0.59
2009	4849	947	1699	2646	*	42	42	947	1741	2688	0.55
1994-2008 mean	7025	1775	2186	3961	.	148	148	1775	2334	4109	0.58
95% CL	1095	416	445	797	.	43	43	416	476	831	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	5628	1282	1934	3215	.	135	135	1282	2069	3351	0.60
95% CL	1396	500	760	1225	.	85	85	500	821	1284	0.11
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	1803	385	395	780	*	42	42	385	437	822	0.46
2003	2773	568	666	1234	*	110	110	568	776	1344	0.48
2004	1666	382	450	832	*	58	58	382	508	890	0.53
2005	3030	517	1065	1582	*	133	133	517	1198	1715	0.57
2006	2176	402	716	1118	*	101	101	402	817	1219	0.56
2007	1521	326	400	726	*	49	49	326	449	775	0.51
2008	2193	372	603	975	*	69	69	372	672	1044	0.48
2009	1161	221	327	548	*	47	47	221	374	595	0.51
1994-2008 mean	2238	479	503	982	.	80	80	479	583	1062	0.47
95% CL	311	118	123	189	.	18	18	118	136	205	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	2117	400	647	1047	.	82	82	400	729	1129	0.53
95% CL	735	88	329	414	.	43	43	88	372	457	0.05
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Total	Ret.	Rel.	Total	Ret.	Rel.	Total	
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	25031	5565	4218	9783	*	1395	1395	5565	5613	11178	0.45
2003	23857	4872	4677	9549	*	2158	2158	4872	6835	11707	0.49
2004	27857	5456	5797	11253	*	2344	2344	5456	8141	13597	0.49
2005	38487	6539	7696	14235	*	2749	2749	6539	10445	16984	0.44
2006	35042	6079	9353	15432	*	2516	2516	6079	11869	17948	0.51
2007	26165	4057	3486	7543	*	1791	1791	4057	5277	9334	0.36
2008	48145	7870	7864	15734	*	3219	3219	7870	11083	18953	0.39
2009	28842	4232	3418	7650	*	1702	1702	4232	5120	9352	0.32
1994-2008 mean	29141	5454	6305	11759	.	2279	2279	5454	8584	14038	0.48
95% CL	3913	702	1121	1618	.	315	315	702	1368	1896	0.04
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	35139	6000	6839	12839	.	2524	2524	6000	9363	15363	0.44
95% CL	10998	1741	2806	4283	.	652	652	1741	3319	4874	0.07
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1994-2009. Ret. = retained fish; Rel. = released fish.

Year	Effort Rod Days	Small (<63 cm)			Large (≥63 cm)			Total (Small + Large)			CPUE
		Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	
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	14566	4406	3878	8284	*	612	612	4406	4490	8896	0.61
2003	15749	3917	2885	6802	*	730	730	3917	3615	7532	0.48
2004	12035	3667	2741	6408	*	592	592	3667	3333	7000	0.58
2005	16678	3338	3258	6596	*	697	697	3338	3955	7293	0.44
2006	12945	3263	2860	6123	*	558	558	3263	3418	6681	0.52
2007	10047	2318	2013	4331	*	416	416	2318	2429	4747	0.47
2008	13317	3677	2379	6056	*	574	574	3677	2953	6630	0.50
2009	11883	2532	1834	4366	*	506	506	2532	2340	4872	0.41
1994-2008 mean	14859	3928	3029	6957	.	572	572	3928	3601	7529	0.51
95% CL	1476	482	360	693	.	61	61	482	387	718	0.03
N	15	15	15	15	.	15	15	15	15	15	15
2004-2008 mean	13004	3253	2650	5903	.	567	567	3253	3218	6470	0.50
95% CL	2995	689	589	1124	.	125	125	689	705	1241	0.07
N	5	5	5	5	.	5	5	5	5	5	5

\* NO DATA.

CPUE OF SMALL AND LARGE SALMON COMBINED (RETAINED + RELEASED FISH).

\* NO RETENTION OF LARGE SALMON IN INSULAR NEWFOUNDLAND.