**DFO Atlantic Fisheries
Research Document 93/ 33**

**MPO Document de recherche sur
les pêches dans l'Atlantique
93/33**

THE STATUS OF ATLANTIC SALMON STOCKS IN GULF OF ST. LAWRENCE, WESTERN NEWFOUNDLAND AND SOUTHERN LABRADOR, 1992

by

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ABSTRACT

Recreational quotas introduced in 1992, reduced the potential for increased angling catches as a result of commercial fishery closures. Quotas were reached in all Salmon Fishing Areas before the end of the season. Recreational catches of small salmon were above those in 1991 in all areas, except southern Labrador whereas, catches of large salmon were above those in 1991 and above 95% confidence limits for the 1984-1989 mean in all areas, including southern Labrador. The proportion of large salmon in western Newfoundland and southern Labrador recreational catches in 1992 was greater than in any previous year.

Returns of small and large salmon to eight index counting facilities were consistent with increased catches in the recreational fishery and the increase in the proportion of large salmon. The distribution of returns to counting facilities by standardized week was also similar to the distribution of catches in the recreational fishery.

Commercial landings of small and large salmon in southern Labrador in 1992 were below 1984-1989 mean cumulative landings to the 1992 closing date. However, only landings of small salmon were below the 95% confidence limits.

RÉSUMÉ

Les quotas de pêche récréatives imposés en 1992 ont diminué le risque d'un accroissement des prises des pêcheurs à la ligne par suite de la fermeture de la pêche commerciale. Les quotas ont été atteints dans toutes les zones de pêche du saumon avant la fin de la saison. Les prises récréatives de petit saumon étaient supérieures à celles de 1991 dans toutes les zones, sauf dans le sud du Labrador. Quant aux prises de gros saumon, elles étaient aussi supérieures à celles de 1991 et se situaient au-dessus des limites de confiance de 95% de la moyenne de 1984-1989 dans la totalité des zones, y compris le sud du Labrador. La proportion de gros saumon parmi les prises récréatives de l'ouest de Terre-Neuve et du sud du Labrador était plus grande en 1992 que toutes les années précédents.

Les montaisons de petit et de gros saumon dans huit installations de dénombrement repères étaient conformes à l'augmentation des prises de la pêche récréative et à la plus forte proportion de gros saumon. La répartition des montaisons aux installations de dénombrement par semaine normalisée correspondait aussi à la répartition des prises de la pêche récréative.

À la date de fermeture de la pêche en 1992, les débarquements commerciaux de saumon, gros et petit, dans le sud du Labrador étaient inférieurs aux débarquements moyens cumulés de 1984-1989. Toutefois, seuls les débarquements de petit saumon se situaient en dessous des limites de confiance de 95 %.

INTRODUCTION

The western Newfoundland and southern Labrador, Gulf of St. Lawrence fisheries management area is comprised of seven Statistical Areas (J2, K, L, M, N, O(50), A(01)) and four Salmon Fishing Areas (12, 13, 14(A) and 14(B)) (Figure 1). Salmon Fishing Area (SFA) 14(A) (Northern Peninsula) and 14(B) (southern Labrador) are sub-areas of Salmon Fishing Area 14. These sub-areas were established in 1991 and reflect the difference in run-timing of Atlantic salmon between to the two areas (Mullins and Jones, 1992).

The status of Atlantic salmon stocks in western Newfoundland and southern Labrador in 1992 is assessed by: 1) comparing commercial and recreational harvests and fishing effort in 1992 with historical harvests and effort in relation to management restrictions; 2) comparing counts of adult salmon returning to index counting facilities with returns in previous years; and 3) examining the effect of management restrictions on fisheries harvests and counting facility returns.

Commercial Fishery

Major management changes were introduced in 1992 to regulate commercial Atlantic salmon fisheries harvests and permit declining stocks to rebuild. A five year moratorium on commercial fishing was introduced in insular Newfoundland. Commercial fisheries in SFA's 13 and 14(A), as well as in other areas of insular Newfoundland were closed in 1992.

The only commercial fishery for salmon which remained open in 1992 was in southern Labrador, SFA 14(B). The quota for this fishery was set at 13 t, a reduction of 2 t from the 1991 quota (Table 1). The quota monitoring of the southern Labrador fishery was similar to 1991 (Mullins and Jones, 1992). Landings from only the communities in Section 50(a) (Figure 2) applied to the 1992 southern Labrador quota of 13 t. The fishery in Section 50(b) was controlled by the quota for northern Labrador (SFA 2, north of Cape Charles; Figure 1), as in 1991.

The total number of licensed salmon fishermen in the southern Labrador area in 1992 was reduced to 79 from 84 in the previous year. This was the result of a voluntary surrender of some licenses for financial compensation. Fifty-four of the active licenses in 1992 were in Section 50(a), down from 58 in the 1991 season and 25 were in Section 50(b), down from 26 in 1991. Fishermen in Section 50(b) were licensed by the Newfoundland Region.

Commercial gear restrictions in southern Labrador for 1992 were unchanged from those in previous years (Mullins and Jones 1991).

Recreational Fishery

Major management changes were also introduced in the recreational salmon fishery in 1992. First, Salmon Fishing Area (zonal) angling quotas, in addition to individual river quotas, were introduced in order to achieve maximum spawning potential from salmon not taken in commercial fisheries. These quotas were equivalent to the previous three year (1989-1991) average catch. Second, when either an individual river quota or the Salmon Fishing Area (zonal) quota was reached anglers were permitted to continue to catch and release salmon until the end of the season. Catch and release was permitted primarily to maintain the presence of anglers on the rivers for protection but also to prevent a disruption in the season for outfitters who had booked clients in anticipation of a longer season.

The zonal quotas in western Newfoundland were for small (<63 cm; one-sea-winter) salmon but in southern Labrador, SFA 14(B), the quota was for the total catch of large and small salmon. Large (>=63 cm; multi-sea-winter) salmon as well as small, were permitted to be retained in SFA 14(B). The 1992 quotas and seasons for each SFA as well as river specific quotas and seasons are given in Table 2.

The individual river quotas which were in effect for 1991, remained in place during the 1992 season. One new addition to the list was a 100 fish quota for the Adies Lake segment of the Humber River. This brought to ten, the number of rivers managed by river quota in western Newfoundland. A number of other rivers managed on an individual basis in western Newfoundland, were closed for the entire season as in previous years.

Recreational fishing seasons in western Newfoundland rivers in 1992, were essentially unchanged from seasons since 1985 (Table 1). Season opening and closing dates (Table 2) were changed only to accommodate a Saturday opening and Sunday closing. These seasons, as in previous years, were subject to within-season closures due to low water levels and quota restrictions.

In southern Labrador the 1992 angling season was extended by two weeks from the season in 1991 and one week from seasons since 1974 (Table 1).

The recreational season bag limit of **15 fish**, introduced in 1986, and reduced to **10 fish** in 1991, was reduced to **8 fish** in 1992. The 1992 possession limit of two days catch and the daily bag limit of two fish retained were the same as introduced in 1986. The catch and release limit of **4 fish** per day was in effect for the entire season.

MATERIALS AND METHODS

Atlantic salmon commercial and recreational harvest statistics have been updated from previous reports, therefore, summary tables may differ slightly from those in Mullins and Jones (1992). This difference is most relevant to 1989-1991 commercial harvests because of a delay in receiving purchase slips from some buyers.

Commercial harvests in southern Labrador, as in previous years, were compiled from fish plant sales slips and from Supplementary 'B' slip records of local sales. Supplementary 'B' slips were compiled by Inspection and Conservation and Protection Branch personnel. In 1992, as in 1991 and 1990 (Mullins and Jones 1991), because of weekly quota monitoring, local sales were first compiled weekly, then monthly totals were entered on Supplementary 'B' slips. Previous to 1990, local sales had simply been reported monthly, by community, directly onto Supplementary 'B' slips (Jones and Mullins, 1992; Claytor et. al. 1991; Ash and O'Connell 1986).

Commercial landings in the communities of Carroll's Cove, Camp Islands and Cape Charles in Section 50(b) (Figure 2), were deducted from the quota for northern Labrador (SFA 2, north of Cape Charles) in 1992, as in 1991. These landings were compiled as part of the SFA 14(B) catch statistics, as in previous years.

Recreational harvest (retained and released fish) statistics in 1992 were compiled from weekly salmon angling reports completed by river guardians throughout the angling season, as in previous years (Mullins and Claytor 1989).

Commercial and recreational fisheries harvests of Atlantic salmon in 1992 were compared with average historical harvests for years in which salmon management plans were similar. Years with similar salmon management were chosen as 1974-1977, 1978-1983 and 1984-1989 (Table 1). Management plans introduced in 1978-1983 were different than those in 1974-1977 because they targetted conservation of large salmon stocks by reducing commercial and recreational seasons. Management plans in 1984-1989 were similar because of similar seasons and because they included closure of the SFA 12 commercial fishery to reduce interception of non-Newfoundland origin salmon. In 1990, to achieve conservation targets in western Newfoundland and southern Labrador rivers, commercial quotas were introduced in SFA's 13 and 14. These quotas were reduced in 1991 (Mullins and Jones, 1992) and again in 1992. Therefore, harvests in the last three years are not comparable with regard to salmon fisheries management restrictions.

Comparisons were also made between 1992 recreational harvests and the previous five year mean.

Counts of migrating salmon at index counting facilities on Pinchgut Brook, North Brook, Hughes Brook, Lomond River, Bound Brook, Torrent River and Western Arm Brook were made by DFO personnel or DFO supervised personnel in 1992. All data were compiled by DFO personnel. The periods of operation of these facilities were similar to previous years:

SFA	Counting Facility	Date of Operation
13	Pinchgut Brook counting fence	4-July to 23-September
13	Hughes Brook counting fence	26-June to 8-October
13	North Brook counting fence	18-June to 8-October
14(A)	Lomond River fishway	15-June to 2-November
14(A)	Bound Brook counting fence	1-June to 26-October
14(A)	Torrent River fishway	1-July to 23-September
14(A)	Western Arm Brook counting fence	28-May to 19-October

RESULTS AND DISCUSSION

HARVEST SUMMARIES

Western Newfoundland and Southern Labrador

Not all Atlantic salmon harvests in western Newfoundland and southern Labrador in 1992 were made by licensed fishermen. An estimated 10.3 t of small and large salmon (Table 3) were taken by illegal fishing gear. The largest of these harvests was from cod-traps and illegally set gillnets in Salmon Fishing Area 13. These catches outweighed conservation efforts by anglers in 1992. Assuming and average small and large salmon weight of 2.3 kg, illegal salmon harvests in western Newfoundland and southern Labrador represented approximately 23% of all recreational (Table 4) and commercial fishing mortality (16,9 t) in the area. By comparison, the number of small salmon which would otherwise have been killed but were caught and released (H&R) by anglers in 1992 represented only 15% of the total (Retained + H&R) fishing mortality.

Recreational salmon quotas were reached in all western Newfoundland and southern Labrador Salmon Fishing Areas (Table 2) and were followed by catch and release fisheries. Catch and release landings of small salmon (Table 4) comprised 12% of the total (Retained + H&R) catch os small salmon. The largest released catches were on the LaPoile River, SFA 12 and the largest number of retained small salmon was on the Humber River, SFA 13 (Table 5).

The catches of small salmon in the SFA 12, 13 and 14(A) quotas were above catches in 1991 but were no different than the 1984-1989 means for the same period (Figure 4). Had the overall abundance of small salmon increased in 1992 relative to 1984-1989, catches would be expected to be higher than the 1984-1989 means. The catch of small salmon in the SFA 14(B), southern Labrador, quota was below the 1984-1989 mean. However, the catch of large salmon was above the 1984-1989 mean, indicating an increase in large salmon abundance in southern Labrador (Figure 4).

Catches of small salmon dropped off quickly in all Salmon Fishing Areas after the zonal quotas were reached (Figure 5), indicating that catch and release fisheries were not prosecuted to the same extent as retention fisheries. Only in SFA 13, however, were the weekly catches of the catch and release fishery below the 1984-1991 weekly means for the same period (Figure 6).

The catch of large salmon in SFA 14(B), southern Labrador, had already declined before the zonal quota was reached (Figure 5), resulting in angling exploitation over the entire large salmon run. Only a portion of the small salmon run was exploited by the 1992 quota (Figure 5). The quota in southern Labrador did not result in a reduction in the angling exploitation rate on large salmon. The earlier run-timing of large salmon as well as their greater abundance in 1992 relative to small salmon, resulted in large salmon comprising a greater proportion of the recreational harvest in 1992 compared to previous years (Figure 4).

Angling effort declined after zonal quotas were reached in all Salmon Fishing Areas. Only in SFA 12 and 13, however, did angling effort decline below the 1984-1991 weekly means in the latter portion of the season (Figure 7). Decreased angling activity later in the season in these areas may have diminished the deterent to poaching derived from the presence of anglers on the rivers.

The total (Retained + H&R) catch of large salmon in western Newfoundland and southern Labrador in 1992 was the highest in the past 19 years (Figure 8) and was above the 95% confidence limits of the 1984-1989 and 1978-1983 means (Table 6). However, the total (Retained + H&R) catch of small salmon for the area, was not above the 1984-1989 or the 1978-1983 mean (Table 6; Figure 6). The resultant increase in the proportion of large salmon angled in 1992 was 235% above the previous five year mean.

Western Newfoundland

In the insular Newfoundland portion of the area, the increase in recreational catches of small salmon from those in 1991 and the increase in catches of large salmon from 1991 and long-term means was similar to the whole area (Table 7; Figure 9).

Salmon Fishing Area 12, Southwest Coast

The SFA 12 recreational quota of 600 small salmon was reached on July 6 (Table 2), nine weeks before the end of the season and four weeks before the zonal quota was caught in any other SFA. Released catches following the quota indicate that had the quota been set at the previous five year (1987-1991) mean of 860 fish (Table 8), the 1992 season would have been one week longer (Table 4).

In SFA 12, 39% of the angling effort and 42% of the total catch of small salmon occurred after the zonal quota was reached (Table 4).

The largest catches of small and large salmon in the area were from LaPoile River but the largest amount of angling effort was on Burnt Island River (Table 5).

Recreational catches in 1992 produced the fourth largest angling catch (Retained + H&R) of small salmon and the largest catch (H&R) of large salmon in SFA 12 in the past 19 years (Table 8; Figure 10). This increase in numbers of small and large salmon suggests a positive impact on stocks in this area as a result of the commercial salmon fishery moratorium in other areas.

Catches (Retained + H&R) of small salmon were 72% above those in 1991, however, were only 2% above the 1984-1989 mean (Figure 10) and within 95% confidence limits (Table 8), suggesting that the abundance of small salmon did not increase significantly in 1992 relative to most years since 1984.

Recreational catch statistics indicate that only large salmon increased in abundance in 1992 relative to the 1984-1989 mean. Catches (H&R) of large salmon were 144% above mean catches in 1984-1989 (Figure 10) and above 95% confidence limits (Table 8). Large salmon also comprised a greater proportion of the SFA 12 total recreational catch in 1992 than in any year since 1977 (Figure 10). Increased large salmon abundance in this area was, no doubt, influenced by the elimination of the commercial gillnet fisheries in other areas which selectively harvested larger salmon.

Management measures introduced in 1992 produced an increase in total recreational catches relative to 1991, however, angling effort did not increase (Figure 10). As a result, the catch-per-unit-effort (CPUE) in 1992 was 75% above that in 1991 (Table 8). The CPUE, however, was only 17% above the 1984-1989 mean (Table 8).

Salmon Fishing Area 13, Bay St. George / Bay of Islands

The SFA 13 recreational quota of 5,000 small salmon was taken six weeks before the end of the season (Table 2). Had the quota been set at the previous five year mean of 5,850 fish (Table 9), instead of the previous three year mean, the SFA 13 fishery might have been lengthened by approximately two weeks based on released catch rates in the two weeks after the quota was taken (Table 4).

River quotas were taken on only two of the seven rivers under river quota management prior to the zonal quota being reached(Table 2). Had all rivers been managed under an individual quota the season in which salmon could be retained would have been longer, as a result of quotas being reached later on some rivers.

The largest catches and effort in the area were from the Grand Codroy River in Statistical Area K and the Humber River in Statistical Area L (Table 5). The Humber River had the largest effort and the largest catch of small salmon, however, the Grand Codroy produced the largest number of large salmon.

Catches (Retained + H&R) of small salmon in 1992 were 15% above those in 1991 but 5% below the 1984-1989 mean (Figure 11), suggesting that the number of small salmon angled in 1992 was similar to previous years. In the Statistical Area K portion of SFA 13, however, catches were 9% below those in 1991 as well as below the 1984-1989 mean (Table 10). The increase in catches of small salmon for SFA 13 was primarily due to the 63% increase in catches in Statistical Area L (Table 11).

Catches (H&R) of large salmon in the area, in contrast to small salmon, were 364% above catches in 1991 and above the 1984-1989 mean (Figure 11) and 95% confidence limits (Table 9), suggesting an increase in large salmon abundance in 1992. This increase, as well as being influenced by the closure of the commercial salmon fishery, also follows an increase in small salmon catches in Statistical Area K in 1991 (Mullins and Jones, 1992), suggesting possible increased sea-survival of this year-class.

The increase in CPUE in 1992 relative to 1991 (Table 9) was the result of increased catches and stable effort in 1992 relative to 1991 (Figure 11).

Salmon Fishing Area 14(A), Northern Peninsula

The SFA 14(A) recreational quota of 3,900 small salmon was reached on August 12, four weeks before the end of the season (Table 2). Of the three individual river quotas on the Northern Peninsula only the Lomond River quota was caught (Table 2).

The largest angling catches in the area were from River of Ponds and Portland Creek (Table 5). River of Ponds produced the largest catch of small salmon and Portland Creek produced the largest catch of large salmon. The large salmon catch on Portland Creek was 71% above the 1991 catch, and 364% above the 1984-1989 mean (Table 5). Salmon angling did not begin on Torrent River until August 3, just nine days before the SFA 14(A) recreational quota was reached. In nine days, 477 small salmon were angled and retained on Torrent River (Table 5). The 558 total (Retained + H&R) catch for the season on Torrent River was approximately 200% above the 1984-1989 mean.

Angling catches (Retained + H&R) of small salmon in SFA 14(A) in 1992 suggest an increase in small abundance from 1991, but there was no change relative to historical levels. Catches were 49% above those in 1991 (Figure 12), but only 15% above the 1984-1989 mean (Figure 12) and within 95% confidence limits (Table 12). The largest catches were in the Statistical Area M (Table 13) portion of the area but the largest increases relative to catches in 1991, were in Statistical Areas N and A(01) (Tables 14, 15).

Catches (H&R) of large salmon in the area, were 367% above the 1984-1989 mean (Figure 12) and above the 95% confidence limits (Table 12). This increase was due entirely to increased catches of large salmon in Statistical Area M (Table 13). Statistical Area N (Table 14) produced only minimal large salmon catches for the area and no large salmon were angled in Statistical Area A(01) (Table 14).

The large increase in angling catches of large salmon in 1992 relative to 1991 and the 1984-1989 mean, suggests an increase in large salmon abundance relative to those years. The increase in catches of large compared to small salmon also suggests a more positive impact on the abundance of large salmon, as a result of management measures implemented in 1992.

Salmon Fishing Area 14(B), Southern Labrador

The SFA 14(B) recreational fishery quota of 1,100 small and large salmon was reached on August 12. The fishery was then permitted to remain open until September 20 for catch and release angling (Table 2).

The early closure did not result in a decrease in angling effort in southern Labrador rivers in 1992 (Figure 13). Total (Retained + H&R) angling effort was 15% above the effort in 1991 and equal to the average effort for the 1984-1989 angling seasons, continuing the trend of increasing effort since 1984. Beginning in 1984, angling of large salmon was restricted to catch and release only in insular Newfoundland, but these fish could be retained in southern Labrador.

Catches (Retained + H&R) of small salmon in 1992 suggest that the abundance of small salmon was below historical levels in southern Labrador rivers. The catch of small salmon was 20% below the catch in 1991 and approximately 30% below the 1984-1989 mean (Table 16; Figure 13). Fifty percent of the cumulative catch was taken one week later ($p<.01$) in 1992 than in 1984-1991 (Mullins and Jones, 1992), indicating that returns to the rivers had decreased. If stocks had increased in 1992 relative to previous years, 50% of the catch would be expected to have occurred earlier due to the quota being reached.

Anglers retained (no releases of large salmon were observed) 238 large salmon in southern Labrador in 1992 (Table 4). This was 386% above the catch in 1991 (Table 16; Figure 13) and 44% above the 1984-1989 mean, suggesting that the abundance of large salmon improved relative to historic levels.

It is possible, in southern Labrador, that the increase in numbers of large salmon retained relative to small salmon in 1992 was due wholly or partly to 'high-grading'. This practice of releasing small salmon in order to save tags for larger ones has been reported by river guardians on numerous occasions. Increased abundance of large salmon due to commercial quotas in SFA 14(B) and the closure of commercial fisheries in other areas are also possible influences.

The largest angling catch of small and large salmon in southern Labrador was taken on the Pinware River (Table 5) as in previous years. This river produced 229 of the 238 large salmon angled in 1992.

The commercial salmon harvest in 1992 was the lowest on record (Table 17; Figure 14). The 16.8 t of salmon landed was 50% below the 1991 landings and 61% below the 1984-1989 mean (Table 14).

The low commercial harvest was influenced by the 13 t quota in Section 50(a) which was caught on July 6 (standardized week 29). However, because the northern Labrador quota of 120 t was not caught, fishermen in Section 50(b) continued to fish until the end of the season (October 15). Therefore, the total commercial harvest was expected to be higher than the actual landings. In spite of the longer season in Section 50(b), no salmon landings were reported after week 31 (Figure 15). Section 50(b) produced only 25% of the total landings in 1992 (Table 18), compared to 49% in 1991 (Mullins and Jones, 1992).

The total commercial harvest would not have been greatly influenced by the 6% reduction in the number of salmon licenses available to be fished in the area in 1992.

The cumulative harvest of small salmon up to week 29, when both the Section 50(a) and Section 50(b) fisheries were open, was 81% below the 1984-1989 mean and below the 95% confidence limits (Figure 16). The cumulative harvest of large salmon was 43% below the 1984-1989 mean up to week 29 but was within the 95% confidence limits, indicating that the reduction in catches of large salmon was not as severe as for small salmon. Compared to landings since 1984, there was an increase in the proportion of large salmon in the 1992 commercial harvests (Figure 14). Increased abundance of large salmon could have been the result of a reduction in natural or fishing mortality at sea.

The total cumulative harvest of small and large salmon up to week 29, was approximately 22% below the cumulative harvests for the same period in 1991 and below all years since 1984 (Figure 16).

INDEX RIVERS

Statistical Area K

Pinchgut Brook

An adult salmon counting fence was operated for the first time in 1992 on Pinchgut Brook, a tributary of Harry's River (Table 2). The fence was located near the mouth of the river, at the point of discharge into a lake flowing into Harry's River. A total of 222 small and 5 large salmon were counted (Table 19). Fifty percent of small salmon were counted prior to the SFA 13 recreational quota being reached on August 1 (Figure 17) and were available to anglers on Pinchgut Brook. The angling catch above the counting fence was 10 small salmon retained and two large salmon released, approximately 10% of the count at the fence.

Angling catches on this segment of Harry's River averaged 17 small and zero large salmon in 1986-1989 (Mullins et al., 1989; Mullins and Claytor, 1989; Mullins and Jones, prep). Lower catches of small salmon relative to previous years and higher released catches of large salmon on Pinchgut Brook were consistent with the recreational catch for all of Harry's River in 1992 (Table 5).

Statistical Area L

Hughes Brook

Returns of small and large salmon to the counting fence near the mouth of Hughes Brook in 1992 were above the 1984-1989 mean (Table 19). Returns of large salmon were more than three times the 1984-1989 mean.

The 1992 smolt count at Hughes Brook was higher than in any previous year (Table 19), suggesting the potential for higher adult returns in 1993.

North Brook

Returns of small and large salmon to the counting fence at the mouth of North Brook, a tributary of the Humber River, Deer Lake, in 1992 were above those in 1991. The count of small salmon in 1992 was 152% greater than in 1991 and the count of large salmon totalled 12 fish in 1992 compared to only one fish in 1991 (Table 19).

Returns of small salmon were 49% above the 1986-1989 mean and returns of large salmon were 200% above the 1986-1989 mean. This counting fence did not begin operation until 1986.

Statistical Area M

Lomond River

Total returns of adult salmon to the fishway on Lomond River in 1992 were the highest ever recorded (Table 20). Compared to mean counts during the last five years (1984-1988) of operation of the fishway, 1992 returns were up 36%. Returns of small salmon were 23% above the 1984-1988 mean but large salmon returns were 220% above the 1984-1988 mean.

Bound Brook

Returns of small salmon to the counting fence on Bound Brook in 1992 were 122% above those in 1991 and 18% above the 1984-1989 mean. No large salmon returned to the fence in 1992 (Table 20). The fence did not begin operation until 1986.

Torrent River

Total returns of adult salmon to the fishway on Torrent River in 1992 were the highest since 1987 (Table 20). Returns of small salmon were 66% above those in 1991 and 16% above the 1984-1989 mean. Returns of large salmon, however, were 132% above returns in 1991 and 74% above the 1984-1989 mean.

The run-timing of small salmon returns to the fishway was similar to the timing of recreational catches in the SFA 14(A) fishery. Counts of small salmon had begun to decline by August 12 (Figure 18), which was consistent with the timing of the decline in angling catches after the zonal quota was reached (Figure 5). The week in which 50% of the small salmon were counted at the fishway in 1992 (standardized week 30) was the same as the run-timing to the fishway since 1984 (Mullins and Jones, 1992).

Statistical Area N

Western Arm Brook

Returns of small salmon to the counting fence on Western Arm Brook in 1992, were 34% above the 1984-1989 mean (Table 20). Large salmon returns were 700% above the 1984-1989 mean. An average of only one large salmon per year had been counted since 1984. Eight large salmon were counted in 1992. This was the largest return of large salmon since 1973 when 30 were counted.

The majority (60%) of small and large salmon returns to the counting fence occurred prior to the recreational quota in SFA 14(A) being reached (Figure 19) which is consistent with returns to Torrent River fishway in Statistical Area M. The majority of salmon returning to SFA 14(A) in 1992 would have been available to the recreational fishery.

The sea-survival of the salmon smolts counted at Western Arm Brook in 1991 was 3.6%. The 1992 smolt count at Western Arm Brook (Table 20) was 15% above the 1991 count; assuming a similar sea-survival to the previous year, returns of adult salmon to the river in 1993 should be about 15% greater than in 1992.

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Table 1. Atlantic salmon commercial and recreational fishery seasons, 1974-1992.

Salmon Fishing Area	Management Plan Years	Quota (t)	Season (Standardized Weeks)
Commercial Fishery (seasons for SFA 12 & 13 may be found in Mullins and Jones, 1992)			
14	1974-1977		20-52
14	1978-1983		20-52
14	1984-1985		23-52
14	1986-1989		23-42
14(A+B)	1990	50	23-28
14(B)	1990	10 (supp.)	29-31
14(B)	1991	15	23-42
14(B)	1992	13	23-29
Recreational Fishery			
12	1974-1977		21-37
12	1978-1983		25-35
12	1984-1989		24-36
12	1990		24-36
12	1991		23-35
12	1992	600	23-36
13	1974-1977		21-37
13	1978-1983		25-35
13	1984-1989		23-35
13	1990		23-35
13	1991		22-35
13	1992	5,000	22-36
14(A)	1974-1977		21-37
14(A)	1978-1983		25-35
14(A)	1984-1989		25-35
14(A)	1990		25-35
14(A)	1991		24-35
14(A)	1992	3,900	24-36
14(B)	1974-1977		21-37
14(B)	1978-1983		22-37
14(B)	1984-1989		23-37
14(B)	1990		23-37
14(B)	1991		23-36
14(B)	1992	1,100	23-38

Note: 1. 1985, anglers required to release salmon >=63 cm in all areas except southern Labrador.
2. 1986, recreational bag limit of 15 fish.
3. 1991, recreational bag limit of 10 fish.
4. 1992, recreational bag limit of 8 fish.

Table 2. Recreational salmon retention and catch and release fishery seasons for western Newfoundland and southern Labrador in 1992. Names in parentheses refer to river segments.

Map Code	River Name	Quotas[1]	Recreational Seasons Retention	Catch & Release
	SFA 12	**600**	**June 6 - July 6**	**July 7 - Sept. 7**
	SFA 13	**5,000**	**June 6 - Aug. 1**	**Aug. 2 - Sept. 7**
12	Little Codroy River	.	June 20 - Aug. 1	Aug. 2 - Sept. 7
14	Highlands River	.	**Closed**	
16	Barachois River	175	June 6 - Aug. 1	Aug. 2 - Sept. 7
18	Fischell's Brook	200	June 6 - Aug. 1	Aug. 2 - Sept. 7
19	Flat Bay Brook	250	June 6 - Aug. 1	Aug. 2 - Sept. 7
20	Little Barachois Brook	.	June 20 - Aug. 1	Aug. 2 - Sept. 7
22	Harry's River	350	June 20 - Aug. 1	Aug. 2 - Sept. 7
23	Fox Island River[2]	50	June 6 - Jul. 19	July 20 - Sept. 7
24	Serpentine River (Lower)[2]	150	June 6 - Jul. 19	July 20 - Sept. 7
24	Serpentine River (Lake)	.	June 6 - Aug. 4	Aug. 5 - Sept. 7
25	Cook's Brook	.	Aug. 1 - Aug. 1	Aug. 2 - Sept. 7
26	Humber River (Deer Lake)[3]	.	June 6 - Aug. 4	Aug. 5 - Sept. 7
26	Humber River (Adies Lake)	100	June 6 - Aug. 1	Aug. 2 - Sept. 7
27	Hughes Brook	.	**Closed**	
	SFA 14(A)	**3,900**	**June 13 - Aug. 12**	**Aug. 13 - Sept. 7**
30	Lomond River[2]	350	June 13 - July 24	July 26 - Sept. 7
32	Western Brook	.	**Closed**	
	Bound Brook	.	**Closed**	
37	Torrent River[4]	.	Aug. 3 - Aug. 12	Aug. 13 - Sept. 7
40	St. Genevieve River[5]	.	June 6 - Aug. 12	Aug. 13 - Sept. 7
41	Western Arm Brook	.	**Closed**	
45	Watson's Brook	50	June 13 - Aug. 12	Aug. 13 - Sept. 7
46	Pincent's Brook	10	June 13 - Aug. 12	Aug. 13 - Sept. 7
47	Parker River	.	July 25 - Aug. 12	Aug. 13 - Sept. 7
	SFA 14(B)	**1,100**	**June 6 - Aug. 12**	**Aug. 13 - Sept. 20**
53	Pinware River (Trout River)[6]	.	June 6 - July 27	

Footnotes:
1. Quotas apply to the total catch of retained salmon.
2. River quota was reached in 1992.
3. North Brook closed for salmon stock restoration work.
4. River open to angling after 1000 salmon had passed through the fishway.
5. Ten-Mile Feeder Brook closed for conservation.
6. Closed due to low water levels.

Table 3. Estimates of unreported catches of Atlantic salmon in western Newfoundland and southern Labrador in 1992. Estimates were provided by DFO Conservation and Protection field staff.

SFA	Gear Type	Weight (kg)
12(J2)	Coastal Gillnets	650
	Inland Poaching	499
13	Coastal Gillnets and Cod–traps	3,880
	Inland Poaching	4,150
14(A)	Cod–traps	325
	Inland Poaching	736
14(B)	Cod–traps	65
	Total	10,305

Table 4. 1992 Recreational salmon catches and effort by standardized week.
Large salmon were retained only in Statistical Area O(50), southern Labrador.

WESTERN NEWFOUNDLAND AND SOUTHERN LABRADOR

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	1,025	.	1,025	95	.	95	0	108	108
24	H	1,759	.	1,759	283	.	283	0	93	93
25	M	3,899	.	3,899	1,309	.	1,309	1	249	250
26	M	4,580	.	4,580	1,205	.	1,205	29	233	262
27	M	5,462	60	5,522	1,365	73	1,438	45	155	200
28	M	5,415	265	5,680	1,416	142	1,558	45	129	174
29	M	5,601	242	5,843	1,672	114	1,786	43	91	134
30	M	5,289	303	5,592	1,548	92	1,640	47	88	135
31	M	3,860	503	4,363	1,470	143	1,613	22	98	120
32	M	3,074	723	3,797	1,349	155	1,504	6	63	69
33	M	.	1,246	1,246	.	321	321	.	22	22
34	M	.	1,255	1,255	.	275	275	.	36	36
35	M	.	951	951	.	151	151	.	14	14
36	M	.	621	621	.	126	126	.	15	15
37	M	.	60	60	.	0	0	.	0	0
38	M	.	14	14	.	0	0	.	0	0
Total	M	39,964	6,243	46,207	11,712	1,592	13,304	238	1,394	1,632

WESTERN NEWFOUNDLAND

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	881	.	881	94	.	94	.	108	108
24	H	1,630	.	1,630	283	.	283	.	93	93
25	M	3,722	.	3,722	1,309	.	1,309	.	249	249
26	M	4,346	.	4,346	1,188	.	1,188	.	233	233
27	M	5,005	60	5,065	1,311	73	1,384	.	155	155
28	M	4,828	265	5,093	1,311	142	1,453	.	129	129
29	M	4,835	242	5,077	1,465	114	1,579	.	91	91
30	M	4,419	303	4,722	1,311	92	1,403	.	88	88
31	M	3,410	503	3,913	1,340	143	1,483	.	98	98
32	M	2,669	723	3,392	1,244	155	1,399	.	63	63
33	M	.	1,173	1,173	.	299	299	.	22	22
34	M	.	1,140	1,140	.	240	240	.	36	36
35	M	.	868	868	.	144	144	.	14	14
36	M	.	555	555	.	126	126	.	15	15
Total	M	35,745	5,832	41,577	10,856	1,528	12,384	.	1,394	1,394

SALMON FISHING AREA 12

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	79	.	79	8	.	8	.	4	4
24	H	220	.	220	39	.	39	.	6	6
25	M	488	.	488	212	.	212	.	24	24
26	M	532	.	532	212	.	212	.	18	18
27	M	397	60	457	168	73	241	.	10	10
28	M	.	265	265	.	142	142	.	7	7
29	M	.	196	196	.	100	100	.	3	3
30	L	.	156	156	.	58	58	.	5	5
31	M	.	123	123	.	55	55	.	1	1
32	M	.	132	132	.	28	28	.	0	0
33	L	.	90	90	.	9	9	.	0	0
34	M	.	76	76	.	1	1	.	0	0
35	M	.	17	17	.	0	0	.	0	0
36	M	.	0	0	.	0	0	.	0	0
Total	M	1,716	1,115	2,831	639	466	1,105	.	78	78

(continued next page)

Table 4 (Continued).

SALMON FISHING AREA 13

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	765	.	765	86	.	86	.	104	104
24	H	942	.	942	227	.	227	.	74	74
25	M	2,504	.	2,504	1,047	.	1,047	.	203	203
26	M	2,851	.	2,851	824	.	824	.	195	195
27	M	3,105	.	3,105	874	.	874	.	120	120
28	M	2,971	.	2,971	825	.	825	.	91	91
29	M	2,750	46	2,796	780	14	794	.	61	61
30	L	2,220	95	2,315	558	34	592	.	37	37
31	M	902	327	1,229	218	85	303	.	27	27
32	M	.	568	568	.	122	122	.	10	10
33	M	.	553	553	.	113	113	.	9	9
34	M	.	462	462	.	89	89	.	12	12
35	M	.	342	342	.	31	31	.	1	1
36	M	.	226	226	.	43	43	.	3	3
Total	M	19,010	2,619	21,629	5,439	531	5,970	.	947	947

SALMON FISHING AREA 14(A)

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	37	.	37	0	.	0	.	0	0
24	H	468	.	468	17	.	17	.	13	13
25	H	730	.	730	50	.	50	.	22	22
26	H	963	.	963	152	.	152	.	20	20
27	M	1,503	.	1,503	269	.	269	.	25	25
28	M	1,857	.	1,857	486	.	486	.	31	31
29	M	2,085	.	2,085	685	.	685	.	27	27
30	M	2,199	52	2,251	753	0	753	.	46	46
31	M	2,508	53	2,561	1,122	3	1,125	.	70	70
32	H	2,669	23	2,692	1,244	5	1,249	.	53	53
33	M	.	530	530	.	177	177	.	13	13
34	M	.	602	602	.	150	150	.	24	24
35	M	.	509	509	.	113	113	.	13	13
36	H	.	329	329	.	83	83	.	12	12
Total	M	15,019	2,098	17,117	4,778	531	5,309	.	369	369

SALMON FISHING AREA 14(B)

Week	Water Level	Effort Retained	Effort H&R	Total Effort	Small Retained	Small H&R	Total Small	Large Retained	Large H&R	Total Large
23	H	144	.	144	1	.	1	0	.	0
24	H	129	.	129	0	.	0	0	.	0
25	M	177	.	177	0	.	0	1	.	1
26	M	234	.	234	17	.	17	29	.	29
27	M	457	.	457	54	.	54	45	.	45
28	L	587	.	587	105	.	105	45	.	45
29	L	766	.	766	207	.	207	43	.	43
30	L	870	.	870	237	.	237	47	.	47
31	M	450	.	450	130	.	130	22	.	22
32	H	405	.	405	105	.	105	6	.	6
33	M	.	73	73	.	22	22	0	.	0
34	M	.	115	115	.	35	35	0	.	0
35	M	.	83	83	.	7	7	0	.	0
36	M	.	66	66	.	0	0	0	.	0
37	M	.	60	60	.	0	0	0	.	0
38	M	.	14	14	.	0	0	0	.	0
Total	M	4,219	411	4,630	856	64	920	238	.	238

Table 5. Percentage change in Atlantic salmon catch and effort (Retained + H&R) in western Newfoundland and southern Labrador rivers in 1992 from those in 1991 and from the 1984–1989 mean. '+' indicates an increase and '–' indicates decrease in 1992 catches. H&R refers to effort and catch after zonal quotas were reached.

			Effort (rod–days)				Small <63 cm				Large >=63 cm			
			1992		% Change		1992		% Change		1992		% Change	
SFA	AREA	RIVER	Retained	H&R	1991	'84–89	Retained	H&R	1991	'84–89	Retained	H&R	1991	'84–89
12	J2	La Poile River	257	455	–20	+30	194	258	+73	+177	0	40	+400	+1,900
		Farmers Arm River	119	81	+8	–27	38	24	+107	–48	0	0	0	0
		Garia River	140	108	+12	–2	116	83	+169	+76	0	15	+114	+650
		Northwest River	19	55	–22	–60	3	2	+	–88	0	0	0	0
		Burnt Island River	678	163	+52	–2	167	51	+137	–31	0	10	+	+43
		Isle aux Morts River	369	112	–2	–25	75	34	+25	–40	0	11	+	+175
		Grand Bay River	134	141	–14	–39	46	14	–39	–59	0	2	+	0
13	K	Bear Cove River	211	81	–7	–13	19	7	–54	–19	0	5	+25	+400
		Little Codroy River	317	99	+9	+26	52	15	–43	–24	0	14	+	+1,300
		Grand Codroy River	4421	214	–20	–10	938	52	–32	–25	0	344	+514	+455
		Crabbes River	790	32	+114	+23	263	26	+181	+38	0	88	+878	+1,366
		Barachois River	535	0	+83	+24	222	0	+226	+69	0	22	+267	+1,000
		Robinsons River	1484	68	+90	–6	386	24	+133	+33	0	75	+650	+971
		Fischells Brook	338	46	–7	+24	133	8	–10	+15	0	11	–31	+1,000
		Flat Bay Brook	617	49	–32	–14	211	12	–11	–4	0	20	+900	+900
		Little Barachois Bk.	273	56	–21	+60	80	12	–37	+35	0	8	+	+700
		Southwest & Bottom	1341	83	–20	–4	335	18	–38	–4	0	57	+43	+470
		Harrys River	1755	339	+44	0	311	35	–6	–14	0	28	+600	+600
	L	Fox Island River	490	150	–4	+107	52	18	+25	+56	0	8	+	+167
		Serpentine River	513	241	+69	+293	176	90	+102	+291	0	89	+93	+1,383
		Cooks Brook	0	69	–42	0	0	3	–75	–67	0	0	0	0
		Humber River	5493	579	+5	–19	2234	194	+70	–15	0	177	+1,509	+453
		Goose Arm River	432	513	–9	+180	27	17	–52	+132	0	1	+	+
14(A)	M	Trout River	266	70	–7	+45	9	8	–26	+467	0	0	0	0
		Lomond River	1450	162	+1	+18	357	24	+16	+9	0	56	+460	+460
		Parsons Pond River	366	80	+3	+49	33	11	–20	+69	0	0	0	0
		Portland Creek	2613	728	+6	–3	591	189	+4	+6	0	181	+71	+364
		River of Ponds	3304	330	+26	–4	1456	118	+19	+19	0	83	+	+8,200
		Little Brook Ponds	479	151	–1	–13	131	50	–11	+6	0	10	+	+
		Torrent River	727	106	+90	+69	477	75	+268	+221	0	6	+500	+
		Big East River	823	118	+148	+30	405	29	+208	+193	0	30	+	+
	N	Castor River	1046	38	+42	–15	433	17	+89	–26	0	0	0	–100
		Ste. Genevieve River	1805	68	+36	+4	627	10	+131	–14	0	3	+	+200
		Eastern Arm Brook	190	0	+555	+160	53	0	+1,667	+141	0	0	0	0
		Big Brook	515	53	+75	+57	43	0	+34	–55	0	0	0	0
		Watsons Brook	236	17	+136	+3	49	0	+717	+23	0	0	0	0
	A(01)	Pincents Brook	145	13	–52	+155	3	0	+	–40	0	0	0	0
		Parker River	442	65	+2	+231	64	0	+482	+967	0	0	0	0
		Bartletts Brook	240	46	+52	+138	32	0	+52	+45	0	0	0	0
		Upper Brook	264	33	+10	+99	4	0	+33	–81	0	0	0	0
		East River, Pistolet	108	20	+17	–46	11	0	+	–74	0	0	0	0
14(B)	O(50)	Forteau River	1102	169	+9	–10	219	23	+18	–42	9	0	+200	–47
		LAnse–Au–Loup R	413	78	–19	–27	9	3	–90	–90	0	0	–100	–100
		Pinware River	2704	164	+27	+12	628	38	–20	–13	229	0	+409	+57
GULF REGION TOTALS:			39,964	6,243			11,712	1,592			238	1,394		

Table 6. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon in western Newfoundland and southern Labrador, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total	Catch/ Effort	Percent* Small
Salmon Fishing Areas 12(J2), 13, 14(A), 14(B)								
1974	43,018	11,707	.	1,333	.	13,040	0.30	0.0
1975	44,896	18,400	.	1,150	.	19,550	0.44	91.1
1976	54,890	20,559	.	1,041	.	21,600	0.39	94.6
1977	46,697	14,639	.	2,162	.	16,801	0.36	90.5
1978	35,473	9,469	.	1,130	.	10,599	0.30	92.8
1979	34,528	14,221	.	301	.	14,522	0.42	96.9
1980	40,183	13,414	.	1,539	.	14,953	0.37	90.2
1981	47,948	17,940	.	1,037	.	18,977	0.40	92.8
1982	47,448	17,155	.	797	.	17,952	0.38	95.7
1983	47,670	12,804	.	817	.	13,621	0.29	95.5
1984	46,236	15,487	.	649	.	16,136	0.35	95.2
1985	40,930	11,169	.	416	316	11,585	0.28	97.4
1986	49,245	14,402	.	1,010	826	15,412	0.31	91.7
1987	43,153	13,354	.	625	410	13,979	0.32	95.8
1988	52,638	17,473	.	851	600	18,324	0.35	94.0
1989	42,319	8,110	.	236	183	8,346	0.20	98.7
1990	46,317	13,624	.	601	503	14,225	0.31	93.1
1991	41,656	10,549	.	385	336	10,934	0.26	97.3
1992	46,207	13,304	1,592	1,632	1,394	14,936	0.32	86.6
Means calculated the previous five years and for years with similar management plans.								
Mean (87–91)	45,217	12,622		540		13,162	0.29	96
95% CL= +/–	5,016	3,915		263		4,177	0.07	3
N	5	5		5		5	5	5
Mean (84–89)	45,754	13,333		631		13,964	0.30	95.5
95% CL= +/–	4,320	3,175		269		3,402	0.05	2.4
N	6	6		6		6	6	6
Mean (78–83)	42,208	14,167		937		15,104	0.36	94.0
95% CL= +/–	6,040	2,958		395		2,905	0.05	2.4
N	6	6		6		6	6	6
Mean (74–77)	47,375	16,326		1,422		17,748	0.37	92.1
95% CL= +/–	7,206	5,419		700		5,103	0.08	4.5
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 7. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon in western Newfoundland, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Salmon Fishing Areas 12(J2), 13, 14(A)								
1974	40,305	10,967	.	1,042	.	12,009	0.30	0.0
1975	42,716	17,331	.	996	.	18,327	0.43	91.7
1976	50,994	18,061	.	731	.	18,792	0.37	96.0
1977	42,779	12,977	.	1,569	.	14,546	0.34	92.0
1978	33,060	8,896	.	947	.	9,843	0.30	93.2
1979	32,379	13,320	.	182	.	13,502	0.42	98.0
1980	37,707	12,476	.	1,202	.	13,678	0.36	91.7
1981	44,595	16,242	.	817	.	17,059	0.38	93.9
1982	44,169	15,884	.	717	.	16,601	0.38	95.8
1983	44,141	10,804	.	687	.	11,491	0.26	95.9
1984	42,239	14,500	.	464	.	14,964	0.35	95.9
1985	37,266	10,077	.	316	316	10,393	0.28	97.9
1986	44,602	13,331	.	826	826	14,157	0.32	92.4
1987	38,160	11,467	.	410	410	11,877	0.31	97.0
1988	46,931	15,881	.	600	600	16,481	0.35	95.0
1989	37,424	6,937	.	183	183	7,120	0.19	98.9
1990	41,242	12,558	.	503	503	13,061	0.32	93.2
1991	37,639	9,397	.	336	336	9,733	0.26	97.4
1992	41,577	12,384	1,528	1,394	1,394	13,778	0.33	87.1
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	40,279	11,248		406		11,654	0.29	96
95% CL= +/–	4,469	3,734		177		3,909	0.07	2
N	5	5		5		5	5	5
Mean (84–89)	41,104	12,032		467		12,499	0.30	96.2
95% CL= +/–	3,937	3,110		216		3,276	0.06	2.2
N	6	6		6		6	6	6
Mean (78–83)	39,342	12,937		759		13,696	0.35	94.8
95% CL= +/–	5,497	2,739		325		2,693	0.06	2.2
N	6	6		6		6	6	6
Mean (74–77)	44,199	14,834		1,085		15,919	0.36	93.2
95% CL= +/–	6,441	4,710		483		4,445	0.08	4.8
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 8. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon in southwestern Newfoundland, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Salmon Fishing Area 12 (Statistical Area J2)								
1974	1,423	658	.	13	.	671	0.47	0.0
1975	1,204	510	.	20	.	530	0.44	97.1
1976	926	297	.	5	.	302	0.33	99.0
1977	1,238	558	.	48	.	606	0.49	86.1
1978	1,305	366	.	20	.	386	0.30	96.5
1979	1,711	733	.	10	.	743	0.43	97.3
1980	2,175	820	.	29	.	849	0.39	96.2
1981	2,038	1,060	.	17	.	1,077	0.53	98.0
1982	2,810	1,555	.	15	.	1,570	0.56	98.6
1983	2,648	667	.	8	.	675	0.25	99.5
1984	3,590	1,922	.	68	.	1,990	0.55	90.7
1985	3,722	1,097	.	30	30	1,127	0.30	98.5
1986	3,430	938	.	33	33	971	0.28	97.1
1987	2,212	829	.	27	27	856	0.39	97.2
1988	3,607	1,413	.	23	23	1,436	0.40	97.3
1989	2,657	560	.	10	10	570	0.21	99.3
1990	3,060	856	.	30	30	886	0.29	94.9
1991	2,761	644	.	15	15	659	0.24	98.3
1992	2,831	1,105	466	78	78	1,183	0.42	89.2
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	2,859	860		21		881	0.31	97
95% CL= +/–	574	370		9		374	0.10	2
N	5	5		5		5	5	5
Mean (84–89)	3,203	1,127		32		1,158	0.36	96.7
95% CL= +/–	593	462		19		478	0.11	2.9
N	6	6		6		6	6	6
Mean (78–83)	2,115	867		17		883	0.41	97.7
95% CL= +/–	541	388		7		388	0.12	1.2
N	6	6		6		6	6	6
Mean (74–77)	1,198	506		22		527	0.43	94.1
95% CL= +/–	283	210		26		222	0.10	14.1
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 9. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Bay St. George / Bay of Islands, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Salmon Fishing Area 13								
1974	29,313	7,189	.	916	.	8,105	0.28	0.0
1975	32,253	12,003	.	886	.	12,889	0.40	89.0
1976	32,922	10,383	.	626	.	11,009	0.33	95.0
1977	24,474	6,712	.	1,049	.	7,761	0.32	90.8
1978	19,686	5,289	.	855	.	6,144	0.31	88.7
1979	16,383	6,009	.	113	.	6,122	0.37	97.9
1980	21,313	7,913	.	993	.	8,906	0.42	85.8
1981	23,839	9,300	.	663	.	9,963	0.42	92.3
1982	25,246	9,566	.	595	.	10,161	0.40	94.0
1983	25,473	6,337	.	610	.	6,947	0.27	94.0
1984	22,152	7,771	.	309	.	8,080	0.36	95.4
1985	20,137	5,302	.	257	257	5,559	0.28	96.8
1986	25,707	7,346	.	691	691	8,037	0.31	88.5
1987	20,887	6,018	.	342	342	6,360	0.30	95.6
1988	24,356	8,217	.	406	406	8,623	0.35	93.7
1989	18,544	3,174	.	129	129	3,303	0.18	98.5
1990	21,769	6,652	.	337	337	6,989	0.32	90.4
1991	21,028	5,188	.	204	204	5,392	0.26	97.0
1992	21,629	5,970	531	947	947	6,917	0.32	84.6
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	21,317	5,850		284		6,133	0.28	95
95% CL= +/–	2,316	2,068		126		2,189	0.07	3
N	5	5		5		5	5	5
Mean (84–89)	21,964	6,305		356		6,660	0.30	94.8
95% CL= +/–	2,570	1,807		181		1,932	0.06	3.3
N	6	6		6		6	6	6
Mean (78–83)	21,990	7,402		638		8,041	0.37	92.1
95% CL= +/–	3,411	1,719		288		1,788	0.06	4.1
N	6	6		6		6	6	6
Mean (74–77)	29,741	9,072		869		9,941	0.33	91.6
95% CL= +/–	5,298	3,506		244		3,371	0.07	6.3
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 10. Total recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Statistical Area K, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Statistical Area K								
1974	18,946	4,322	.	744	.	5,066	0.27	0.0
1975	21,678	5,771	.	756	.	6,527	0.30	85.1
1976	20,964	5,121	.	554	.	5,675	0.27	91.2
1977	17,209	4,355	.	994	.	5,349	0.31	83.7
1978	11,084	2,327	.	597	.	2,924	0.26	87.9
1979	7,751	2,572	.	84	.	2,656	0.34	96.5
1980	12,316	4,213	.	673	.	4,886	0.40	79.3
1981	14,311	4,911	.	500	.	5,411	0.38	89.4
1982	15,417	5,045	.	469	.	5,514	0.36	91.3
1983	16,480	3,075	.	554	.	3,629	0.22	90.1
1984	14,783	4,847	.	262	.	5,109	0.35	92.1
1985	12,779	2,871	.	246	246	3,117	0.24	95.2
1986	16,588	3,819	.	430	430	4,249	0.26	87.0
1987	12,346	2,807	.	216	216	3,023	0.24	94.6
1988	14,393	3,834	.	230	230	4,064	0.28	92.4
1989	10,366	1,717	.	103	103	1,820	0.18	97.4
1990	13,062	3,357	.	248	248	3,605	0.28	87.4
1991	12,985	3,465	.	147	147	3,612	0.28	95.8
1992	13,149	3,159	209	672	672	3,831	0.29	83.8
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	12,630	3,036		189		3,225	0.25	94
95% CL= +/–	1,631	915		68		964	0.05	4
N	5	5		5		5	5	5
Mean (84–89)	13,543	3,316		248		3,564	0.26	93.1
95% CL= +/–	2,083	1,039		101		1,104	0.05	3.4
N	6	6		6		6	6	6
Mean (78–83)	12,893	3,691		480		4,170	0.33	89.1
95% CL= +/–	3,069	1,141		198		1,212	0.07	5.4
N	6	6		6		6	6	6
Mean (74–77)	19,699	4,892		762		5,654	0.29	86.7
95% CL= +/–	2,788	954		248		872	0.03	8.1
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 11. Total recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Statistical Area L, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Statistical Area L								
1974	10,367	2,867	.	172	.	3,039	0.29	0.0
1975	10,575	6,232	.	130	.	6,362	0.60	95.7
1976	11,958	5,262	.	72	.	5,334	0.45	98.9
1977	7,265	2,357	.	55	.	2,412	0.33	99.0
1978	8,602	2,962	.	258	.	3,220	0.37	90.1
1979	8,632	3,437	.	29	.	3,466	0.40	99.0
1980	8,997	3,700	.	320	.	4,020	0.45	91.5
1981	9,528	4,389	.	163	.	4,552	0.48	95.8
1982	9,829	4,521	.	126	.	4,647	0.47	97.2
1983	8,993	3,262	.	56	.	3,318	0.37	98.8
1984	7,369	2,924	.	47	.	2,971	0.40	98.6
1985	7,358	2,431	.	11	11	2,442	0.33	99.6
1986	9,119	3,527	.	261	261	3,788	0.42	90.3
1987	8,541	3,211	.	126	126	3,337	0.39	96.6
1988	9,963	4,383	.	176	176	4,559	0.46	94.8
1989	8,178	1,457	.	26	26	1,483	0.18	99.4
1990	8,707	3,295	.	89	89	3,384	0.39	94.2
1991	8,043	1,723	.	57	57	1,780	0.22	98.3
1992	8,480	2,811	322	275	275	3,086	0.36	86.2
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	8,686	2,814		95		2,909	0.33	97
95% CL= +/–	846	1,347		65		1,409	0.13	2
N	5	5		5		5	5	5
Mean (84–89)	8,421	2,989		108		3,097	0.36	96.6
95% CL= +/–	975	953		94		1,025	0.10	3.4
N	6	6		6		6	6	6
Mean (78–83)	9,097	3,712		159		3,871	0.42	95.4
95% CL= +/–	470	599		109		603	0.05	3.6
N	6	6		6		6	6	6
Mean (74–77)	10,041	4,180		107		4,287	0.42	97.8
95% CL= +/–	2,729	2,569		74		2,575	0.19	3.8
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 12. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon on the Northern Peninsula, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Salmon Fishing Area 14(A)								
1974	9,569	3,120	.	113	.	3,233	0.34	0.0
1975	9,259	4,818	.	90	.	4,908	0.53	97.2
1976	17,146	7,381	.	100	.	7,481	0.44	98.0
1977	17,067	5,707	.	472	.	6,179	0.36	94.0
1978	12,069	3,241	.	72	.	3,313	0.27	98.8
1979	14,285	6,578	.	59	.	6,637	0.46	98.2
1980	14,219	3,743	.	180	.	3,923	0.28	97.3
1981	18,718	5,882	.	137	.	6,019	0.32	96.5
1982	16,113	4,763	.	107	.	4,870	0.30	98.2
1983	16,020	3,800	.	69	.	3,869	0.24	98.6
1984	16,497	4,807	.	87	.	4,894	0.30	97.8
1985	13,407	3,678	.	29	29	3,707	0.28	99.4
1986	15,465	5,047	.	102	102	5,149	0.33	97.3
1987	15,061	4,620	.	41	41	4,661	0.31	99.2
1988	18,968	6,251	.	171	171	6,422	0.34	96.4
1989	16,223	3,203	.	44	44	3,247	0.20	99.3
1990	16,413	5,050	.	136	136	5,186	0.32	95.9
1991	13,850	3,565	.	117	117	3,682	0.27	97.7
1992	17,117	5,309	531	369	369	5,678	0.33	90.6
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	16,103	4,538		102		4,640	0.29	98
95% CL= +/–	2,113	1,352		64		1,397	0.06	2
N	5	5		5		5	5	5
Mean (84–89)	15,937	4,601		79		4,680	0.29	98.2
95% CL= +/–	1,765	1,029		51		1,076	0.05	1.2
N	6	6		6		6	6	6
Mean (78–83)	15,237	4,668		104		4,772	0.31	97.9
95% CL= +/–	2,163	1,269		45		1,264	0.08	0.8
N	6	6		6		6	6	6
Mean (74–77)	13,260	5,257		194		5,450	0.42	96.4
95% CL= +/–	6,122	2,448		256		2,499	0.12	4.3
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 13. Total recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Statistical Area M, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Statistical Area M								
1974	5,672	1,330	.	98	.	1,398	0.25	0.0
1975	5,458	2,056	.	74	.	2,130	0.39	94.7
1976	12,781	4,275	.	66	.	4,341	0.34	96.9
1977	12,350	3,151	.	454	.	3,605	0.29	90.4
1978	8,718	1,800	.	59	.	1,859	0.21	98.2
1979	9,805	3,171	.	46	.	3,217	0.33	97.5
1980	10,202	2,016	.	148	.	2,164	0.21	95.5
1981	13,767	3,224	.	98	.	3,322	0.24	95.4
1982	11,267	2,554	.	53	.	2,607	0.23	98.4
1983	10,832	1,721	.	51	.	1,772	0.16	98.0
1984	11,483	2,996	.	84	.	3,080	0.27	95.3
1985	9,423	2,213	.	26	26	2,239	0.24	99.1
1986	11,022	3,263	.	98	98	3,361	0.30	95.8
1987	10,571	2,887	.	35	35	2,922	0.28	98.9
1988	12,811	3,945	.	168	168	4,113	0.32	94.5
1989	11,623	2,241	.	43	43	2,284	0.20	98.9
1990	12,037	3,929	.	135	135	4,064	0.34	94.3
1991	9,857	2,975	.	117	117	3,092	0.31	97.1
1992	11,773	3,963	504	366	366	4,329	0.37	89.0
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	11,380	3,195		100		3,295	0.29	97
95% CL= +/–	1,304	815		65		871	0.06	3
N	5	5		5		5	5	5
Mean (84–89)	11,156	2,924		76		3,000	0.27	97.1
95% CL= +/–	1,086	626		51		674	0.04	2.0
N	6	6		6		6	6	6
Mean (78–83)	10,765	2,414		76		2,490	0.23	97.2
95% CL= +/–	1,643	645		38		643	0.05	1.3
N	6	6		6		6	6	6
Mean (74–77)	9,065	2,703		173		2,869	0.32	94.0
95% CL= +/–	5,575	1,774		259		1,852	0.09	6.7
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 14. Total recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Statistical Area N, 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Statistical Area N								
1974	3,210	1,789	.	15	.	1,804	0.56	0.0
1975	3,344	2,716	.	16	.	2,732	0.82	99.1
1976	3,533	3,014	.	34	.	3,048	0.86	98.8
1977	3,376	2,413	.	18	.	2,431	0.72	99.4
1978	2,687	1,350	.	13	.	1,363	0.51	99.5
1979	3,818	3,281	.	13	.	3,294	0.86	99.0
1980	3,380	1,651	.	32	.	1,683	0.50	99.0
1981	4,324	2,511	.	31	.	2,542	0.59	98.2
1982	4,324	2,156	.	54	.	2,210	0.51	97.9
1983	4,320	1,947	.	16	.	1,963	0.45	99.3
1984	4,633	1,753	.	3	.	1,756	0.38	99.8
1985	3,463	1,377	.	3	3	1,380	0.40	99.8
1986	3,938	1,648	.	4	4	1,652	0.42	99.7
1987	3,839	1,656	.	6	6	1,662	0.43	99.6
1988	5,214	2,148	.	3	3	2,151	0.41	99.8
1989	3,176	886	.	1	1	887	0.28	100.0
1990	3,333	1,032	.	1	1	1,033	0.31	99.9
1991	2,602	555	.	0	0	555	0.21	100.0
1992	3,968	1,232	27	3	3	1,235	0.31	99.5
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	3,633	1,255		2		1,258	0.33	100
95% CL= +/–	1,097	710		3		712	0.10	0
N	5	5		5		5	5	5
Mean (84–89)	4,044	1,578		3		1,581	0.39	99.8
95% CL= +/–	725	403		2		404	0.05	0.1
N	6	6		6		6	6	6
Mean (78–83)	3,809	2,149		27		2,176	0.57	98.8
95% CL= +/–	641	655		15		655	0.14	0.6
N	6	6		6		6	6	6
Mean (74–77)	3,366	2,483		21		2,504	0.74	99.1
95% CL= +/–	183	722		12		730	0.18	0.6
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 15. Total recreational fishing effort and catch (estimated + observed) of Atlantic salmon in Statistical Area A(01), 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Statistical Area A(01)								
1974	687	31	.	0	.	31	0.05	0.0
1975	457	46	.	0	.	46	0.10	100.0
1976	832	92	.	0	.	92	0.11	100.0
1977	1,341	143	.	0	.	143	0.11	100.0
1978	664	91	.	0	.	91	0.14	100.0
1979	662	126	.	0	.	126	0.19	100.0
1980	637	76	.	0	.	76	0.12	100.0
1981	627	147	.	8	.	155	0.25	90.5
1982	522	53	.	0	.	53	0.10	100.0
1983	868	132	.	2	.	134	0.15	96.4
1984	381	58	.	0	.	58	0.15	100.0
1985	521	88	.	0	0	88	0.17	100.0
1986	505	136	.	0	0	136	0.27	100.0
1987	651	77	.	0	0	77	0.12	100.0
1988	943	158	.	0	0	158	0.17	100.0
1989	1,424	76	.	0	0	76	0.05	100.0
1990	1,043	89	.	0	0	89	0.09	100.0
1991	1,391	35	.	0	0	35	0.03	100.0
1992	1,376	114	0	0	0	114	0.08	100.0
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	1,090	87		0		87	0.09	100
95% CL= +/–	359	50		0		50	0.06	0
N	5	5		5		5	5	5
Mean (84–89)	738	99		0		99	0.16	100.0
95% CL= +/–	371	38		0		38	0.07	0.0
N	6	6		6		6	6	6
Mean (78–83)	663	104		2		106	0.16	97.8
95% CL= +/–	108	35		3		37	0.05	3.7
N	6	6		6		6	6	6
Mean (74–77)	829	78		0		78	0.09	100.0
95% CL= +/–	516	70		0		70	0.04	0.0
N	4	4		4		4	4	3

* Numbers of large salmon from 1985–92 refer to hooked and released fish.

** Percent small salmon is calculated by year of smolt migration.

Table 16. Recreational fishing effort and catch (estimated + observed) of Atlantic salmon in southern Labrador, (Statistical Area O(50)), 1974–1992.

Year	Effort (Rod Days)	Small <63 cm Total	Small <63 cm H&R	Large >63 cm Total	Large >63 cm H&R	Total Catch	Catch/ Effort	Percent* Small
Salmon Fishing Area 14(B)								
1974	2,713	740	.	291	.	1,031	0.38	0.0
1975	2,180	1,069	.	154	.	1,223	0.56	82.8
1976	3,896	2,498	.	310	.	2,808	0.72	77.5
1977	3,918	1,662	.	593	.	2,255	0.58	80.8
1978	2,413	573	.	183	.	756	0.31	90.1
1979	2,149	901	.	119	.	1,020	0.47	82.8
1980	2,476	938	.	337	.	1,275	0.51	72.8
1981	3,353	1,698	.	220	.	1,918	0.57	81.0
1982	3,279	1,271	.	80	.	1,351	0.41	95.5
1983	3,529	2,000	.	130	.	2,130	0.60	90.7
1984	3,997	987	.	185	.	1,172	0.29	91.5
1985	3,664	1,092	.	100	.	1,192	0.33	90.8
1986	4,643	1,071	.	184	.	1,255	0.27	85.6
1987	4,993	1,887	.	215	.	2,102	0.42	83.3
1988	5,707	1,592	.	251	.	1,843	0.32	88.3
1989	4,895	1,173	.	53	.	1,226	0.25	96.8
1990	5,075	1,066	.	98	.	1,164	0.23	92.3
1991	4,017	1,152	.	49	.	1,201	0.30	95.6
1992	4,630	920	64	238	0	1,158	0.25	82.9
Means calculated for the previous five and for years with similar management plans.								
Mean (87–91)	4,937	1,374		133		1,507	0.30	91
95% CL= +/–	672	391		104		483	0.08	6
N	5	5		5		5	5	5
Mean (84–89)	4,650	1,300		165		1,465	0.31	89.4
95% CL= +/–	703	343		71		386	0.06	4.6
N	6	6		6		6	6	6
Mean (78–83)	2,867	1,230		178		1,408	0.48	85.5
95% CL= +/–	562	514		88		503	0.10	7.9
N	6	6		6		6	6	6
Mean (74–77)	3,177	1,492		337		1,829	0.56	80.4
95% CL= +/–	1,200	1,063		254		1,165	0.19	5.4
N	4	4		4		4	4	3

* Percent small salmon is calculated by year of smolt migration.

Table 17. Commercial fishery landings of small and large Atlantic salmon in Southern Labrador (Statistical Area O(50)), 1974–1992. Weight is in kilograms.

Year	Small		Large		Total		Percent Small	
	Weight	Number	Weight	Number	Weight	Number	Weight	Number
Salmon Fishing Area 14 (B)								
1974	18,655	9,328	77,743	15,863	96,398	25,191	19.4	37.0
1975	36,670	19,294	63,414	14,752	100,084	34,046	36.6	56.7
1976	27,635	13,152	68,416	15,189	96,051	28,341	28.8	46.4
1977	22,521	11,267	91,433	18,664	113,954	29,931	19.8	37.6
1978	7,649	4,026	55,071	11,715	62,720	15,741	12.2	25.6
1979	15,096	7,194	17,032	3,874	32,128	11,068	47.0	65.0
1980	18,877	8,493	46,168	9,138	65,045	17,631	29.0	48.2
1981	13,681	6,658	38,485	7,606	52,166	14,264	26.2	46.7
1982	14,535	7,379	27,195	5,966	41,730	13,345	34.8	55.3
1983	6,580	3,292	33,265	7,489	39,845	10,781	16.5	30.5
1984	4,841	2,421	29,844	6,218	34,685	8,639	14.0	28.0
1985	11,099	7,460	15,916	3,954	27,015	11,414	41.1	65.4
1986	14,602	8,296	26,203	5,342	40,805	13,638	35.8	60.8
1987	22,987	11,389	58,170	11,114	81,157	22,503	28.3	50.6
1988	15,155	7,087	22,615	4,591	37,770	11,678	40.1	60.7
1989	19,291	9,053	22,036	4,646	41,327	13,699	46.7	66.1
1990	7,735	3,592	15,335	2,858	23,070	6,450	33.5	55.7
1991	11,391	5,303	22,616	4,417	34,007	9,720	33.5	54.6
1992	2,768	1,302	14,113	2,696	16,884	3,999	16.4	32.6
Means calculated for years with similar management plans.								
Mean (84–89)	14,663	7,618	29,131	5,978	43,793	13,595	34.3	55.3
95% CL= +/–	6,062	2,844	14,339	2,522	18,239	4,542	11.2	13.9
N	6	6	6	6	6	6	6	6
Mean (78–83)	12,736	6,174	36,203	7,631	48,939	13,805	27.6	45.2
95% CL= +/–	4,518	1,965	12,982	2,566	12,690	2,551	12.1	14.2
N	6	6	6	6	6	6	6	6
Mean (74–77)	26,370	13,260	75,252	16,117	101,622	29,377	26.2	44.4
95% CL= +/–	10,733	5,945	16,967	2,423	11,604	5,075	11.3	12.7
N	4	4	4	4	4	4	4	4

Table 18. Commercial harvests of small and large Atlantic salmon for Salmon Fishing Area 14(b), 1992. Section 50(b) catches were deducted from the Salmon Fishing Area 2 quota. Weight is in kilograms.

	Community	Map Codes	Small Weight	Number	Large Weight	Number	Total Weight	Number	% of Area Weight	Number
50(a)	L'anse Au Armour	99	58	27	373	71	431	99	3.0%	2.0%
	L'anse Au Loup	101	298	142	2200	424	2499	566	15.0%	14.0%
	Capstan Islands	102	8	4	10	2	18	6	0.0%	0.0%
	West St. Modeste	103	289	138	3180	612	3469	750	21.0%	19.0%
	Pinware	104	25	12	241	46	266	58	2.0%	1.0%
	Red Bay	106	249	118	1144	223	1393	340	8.0%	9.0%
	Henley Harbour	108	628	311	4018	775	4647	1086	28.0%	27.0%
	Sub-Total		1555	752	11166	2153	12723	2905	75.0%	73.0%
50(b)	Carrols Cove	105	114	50	556	97	670	148	4.0%	4.0%
	Camp Islands	109	401	173	845	168	1246	341	7.0%	9.0%
	Cape Charles	110	698	327	1546	278	2245	605	13.0%	15.0%
	Sub-Total		1213	550	2947	543	4161	1094	25.0%	27.0%
Total			2768	1302	14113	2696	16884	3999	100.0%	100.0%

Table 19. Counts of Atlantic salmon at counting facilities in Salmon Fishing Area 13, 1984–1992.

	Statistical Area K			Statistical Area L						
	Pinchgut Brook Fence			Hughes Brook Fence				North Brook Fence		
				Downstream	Upstream					
Year	Small <63cm	Large >63cm	Total	Smolt	Small <63cm	Large >63cm	Total	Small <63cm	Large >63cm	Total
1984	.	.	.	253	90	3	93	.	.	.
1985	.	.	.	60	13	0	13	.	.	.
1986	.	.	.	600	63	2	65	66	3	69
1987	.	.	.	648	37	6	43	74	1	75
1988	.	.	.	6	65	0	65	166	9	175
1989	.	.	.	517	54	1	55	46	2	48
1990	.	.	.	904	106	1	107	49	0	49
1991	.	.	.	512	175	0	175	52	1	53
1992	222	5	227	1,790	146	7	153	131	12	143
Mean(87–91)	.	.	.	517	87	2	89	77	3	80
95% CL= +/–	.	.	.	363	61	3	60	56	4	60
N	.	.	.	5	5	5	5	5	5	5
Mean(84–89)	.	.	.	347	54	2	56	88	4	92
95% CL= +/–	.	.	.	268	25	2	26	73	5	78
N	.	.	.	6	6	6	6	4	4	4

Footnotes:
1. Hughes Brook 1986, 10 small salmon used for broodstock.
2. Hughes Brook 1987, 16 small and 6 large below fence when removed plus 21 removed from below fence for broodstock
3. Hughes Brook 1988, 35 small through fence plus 30 small removed when fence relocated downstream.

Table 20. Fishway and counting fence counts of Atlantic salmon in Salmon Fishing Area 14(A), 1971–1992. Upstream counts in parentheses refer to salmon after broodstock removal.

	Statistical Area M									Statistical Area N			
	Lomond River Fishway			Bound Brook Fence			Torrent River Fishway			Western Arm Brook Fence			
										Downstream		Upstream	
	Small	Large		Small	Large		Small	Large					
Year	<63cm	>63cm	Total	<63cm	>63cm	Total	<63cm	>63cm	Total	Smolt	Kelt	Small <63cm	Large >63cm
1971	6	0	6	.	.	.	54	4	58	5,735	185	427	–
1972	30	15	45	.	.	.	64	3	67	11,905	211	309 (205)	9
1973	108	110	218	.	.	.	96	12	108	8,484	95	555 (351)	30
1974	41	33	74	.	.	.	38	3	41	11,854	302	399 (299)	4
1975	1	0	1	.	.	.	191	25	216	9,600	203	631 (393)	1
1976	132	11	143	.	.	.	341	47	388	6,232	201	520 (420)	0
1977	192	11	203	.	.	.	789	33	822	9,899	327	341	3
1978	117	12	129	.	.	.	971	21	992	13,071	210	285	1
1979	195	1	196	.	.	.	1,984	39	2,023	8,349	1	1,578	0
1980	301	19	320	.	.	.	792	63	855	15,665	899	430	3
1981	110	50	160	.	.	.	2,101	97	2,198	13,981	168	447	1
1982	275	16	291	.	.	.	2,112	523	2,635	12,477	300	387	3
1983	220	7	227	.	.	.	2,007	442	2,449	10,552	207	1,141	4
1984	440	47	487	.	.	.	1,805	288	2,093	20,653	719	120	0
1985	190	14	204	.	.	.	1,553	30	1,583	13,417	111	416	2
1986	354	32	386	9	2	11	2,815	92	2,907	17,719	170	525	0
1987	355	11	366	62	12	74	2,505	68	2,573	17,029	73	378	1
1988	437	21	458	47	3	50	2,075	44	2,119	15,321	355	251	1
1989	.	.	.	17	0	17	1,369	60	1,429	11,407	251	455	0
1990	.	.	.	32	1	33	2,296	82	2,378	10,563	146	322	0
1991	.	.	.	18	0	18	1,415	73	1,488	13,453	155	233	1
1992	435	80	515	40	0	40	2,347	169	2,516	15,405	89	480	8
Mean(87–91)	.	.	.	35	3	38	1,932	65	1,997	13,555	196	328	1
95% CL= +/–	.	.	.	21	6	27	573	16	575	2,978	121	102	1
N	.	.	.	5	5	5	5	5	5	5	5	5	5
Mean(84–89)	355*	25*	380*	34	4	38	2,020	97	2,117	15,924	280	358	1
95% CL= +/–	113	16	123	34	7	41	535	92	541	3,145	228	142	1
N	5	5	5	4	4	4	6	6	6	6	6	6	6
				.	.	.							
Mean(78–83)	203	18	221	.	.	.	1,661	198	1,859	12,349	298	711	2
95% CL= +/–	76	16	71	.	.	.	583	214	724	2,477	298	502	1
N	6	6	6	.	.	.	6	6	6	6	6	6	6

*** 1984–89 mean values for Lomond River are for 1984–1988.**

Footnotes:

1. 1985 and 1986 Western Arm Brook small salmon counts, due to low water conditions which delayed the upstream migration, are adjusted values based on the ratio of mark to unmarked at the counting fence (Claytor and Mullins, 1988). The actual for these years counts were 168 and 252, respectively.
2. 1988 Western Arm Brook upstream counts determined from kelt counts in 1986 and 1989.
3. 1989 Western Arm Brook upstream count based on recapture ratio of 1:0.1 marked to unmarked kelts in 1990.
4. 1990 Western Arm Brook upstream count based on recapture ratio of 1:2.6 marked to unmarked kelts in 1991.
5. 1991 Torrent River small and large in July was the 1991 total count multiplied by the % small and large for July in 1985–1990.

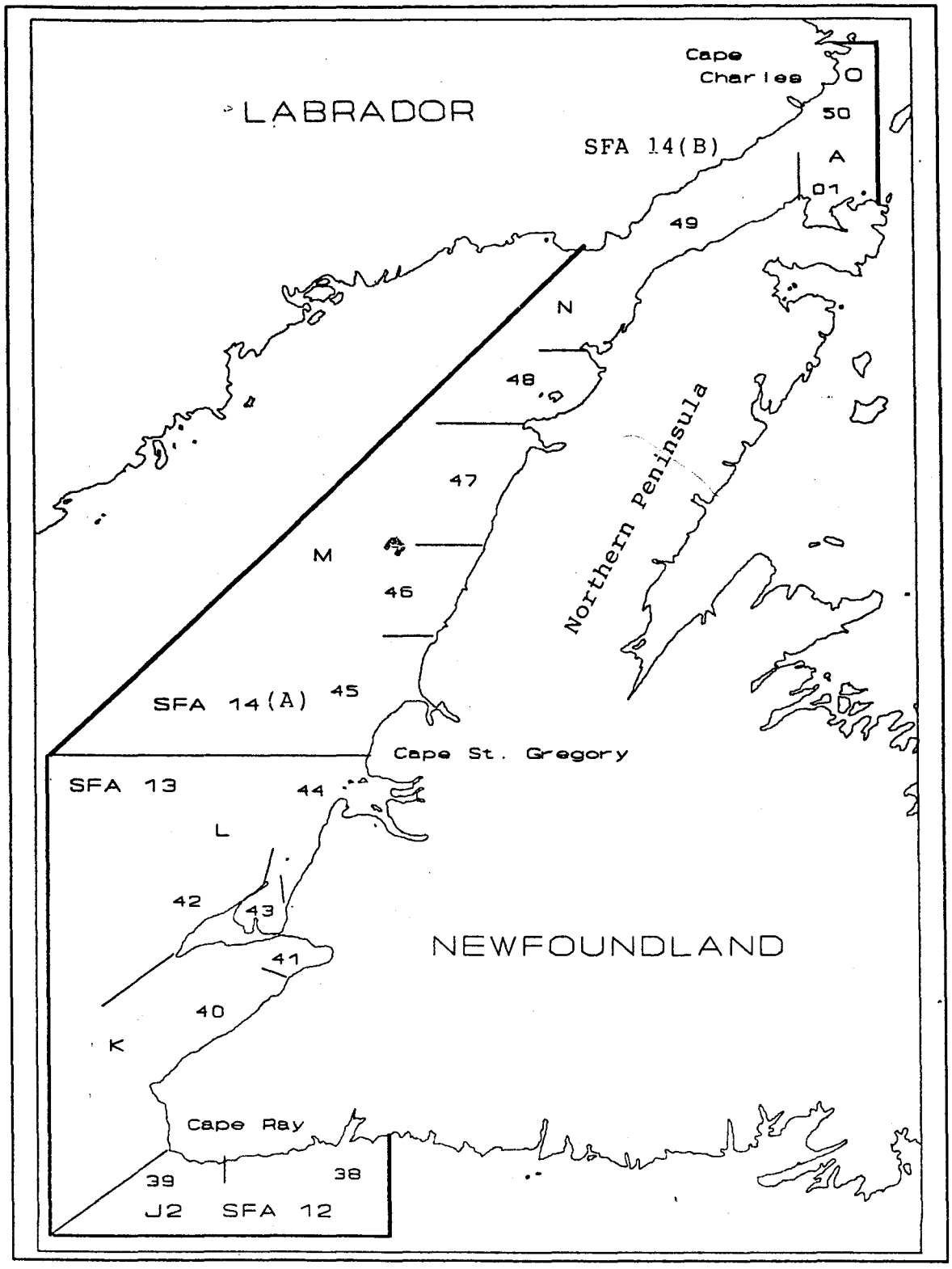


Figure 1. Boundaries of Salmon Fishing Areas (SFA), Statistical Areas (Capital Letters), Statistical Sections (Numbers), for Western Newfoundland and Southern Labrador, Gulf Region.

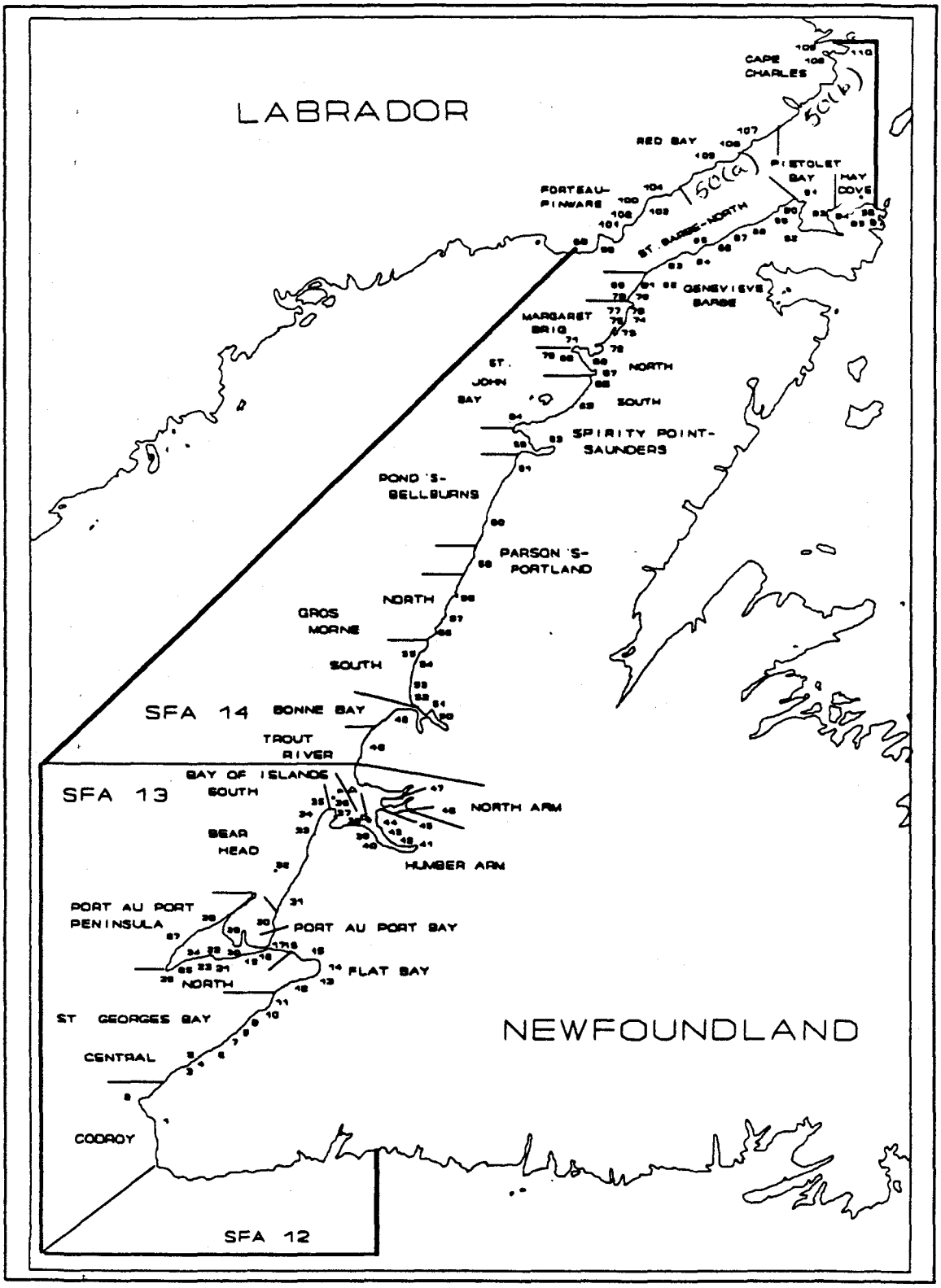


Figure 2. Location of communities within Coastal Areas in Western Newfoundland and Southern Labrador, Gulf Region. For community numbers see Table 2.

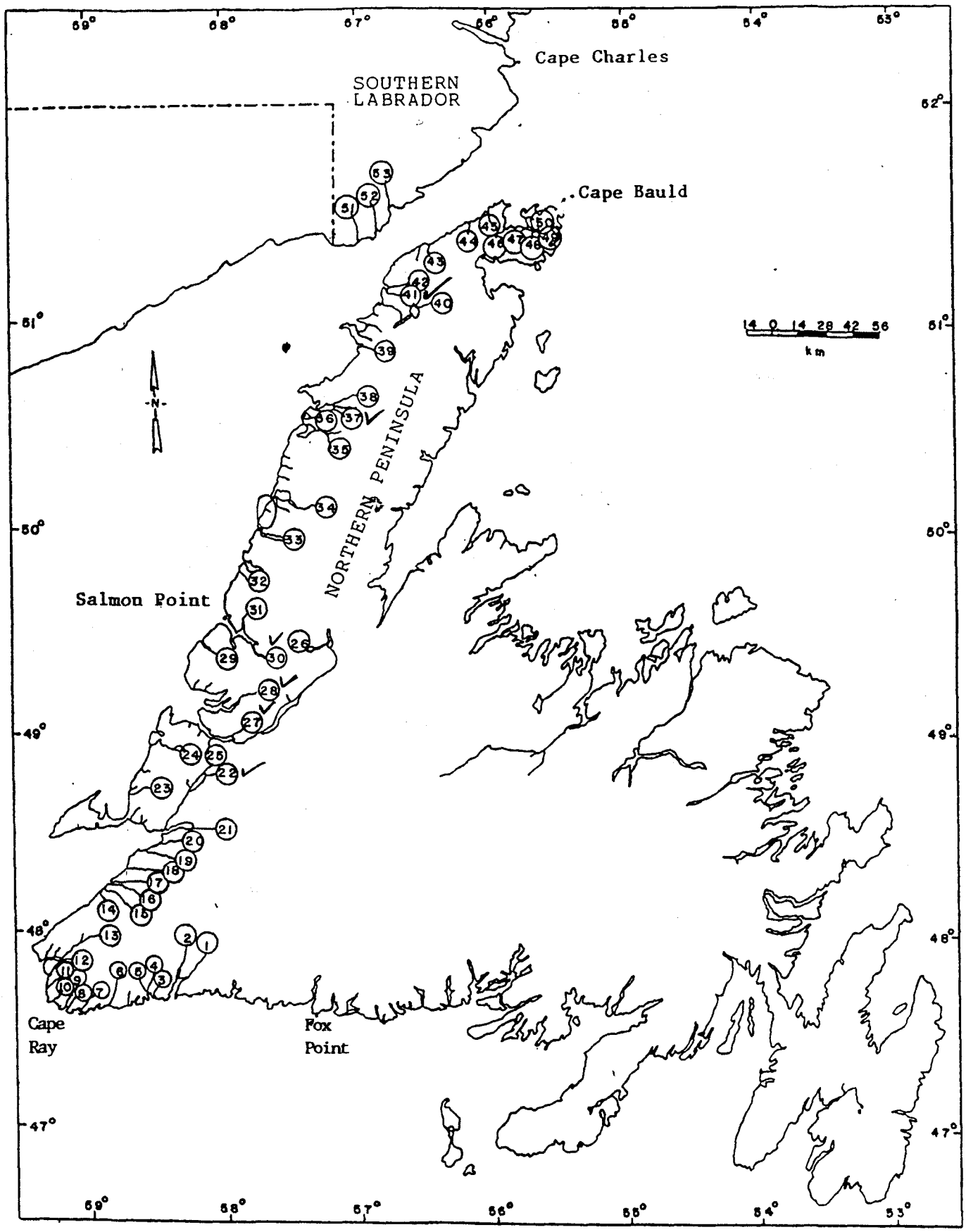


Fig. 3. Location of salmon rivers in Western Newfoundland and Labrador. Refer to Table 2 for map index.

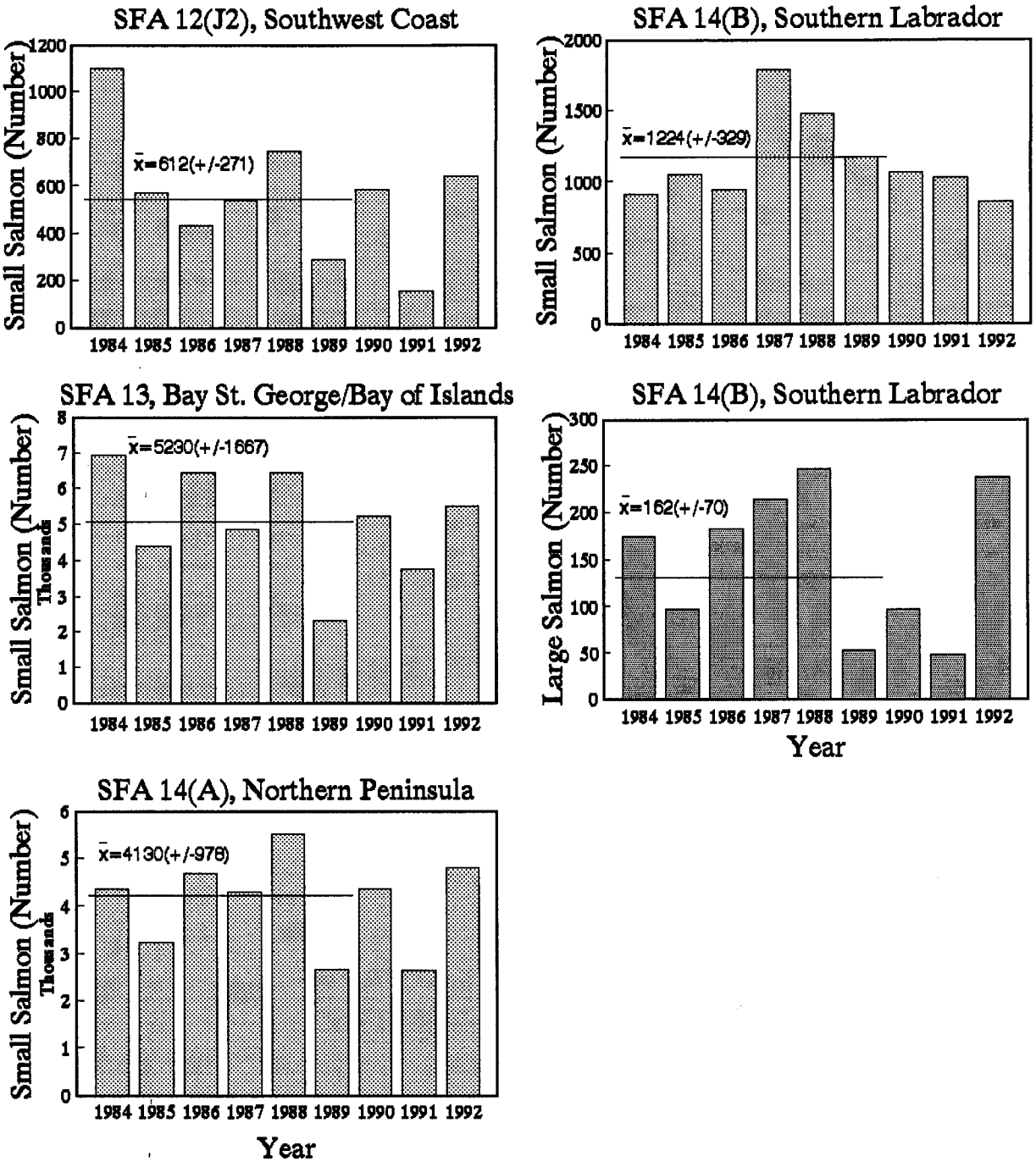


Figure 4. Cumulative recreational catch of small and large salmon in 1984-1992 up to the closing date in 1992. Horizontal lines represent the 1984-1989 means.

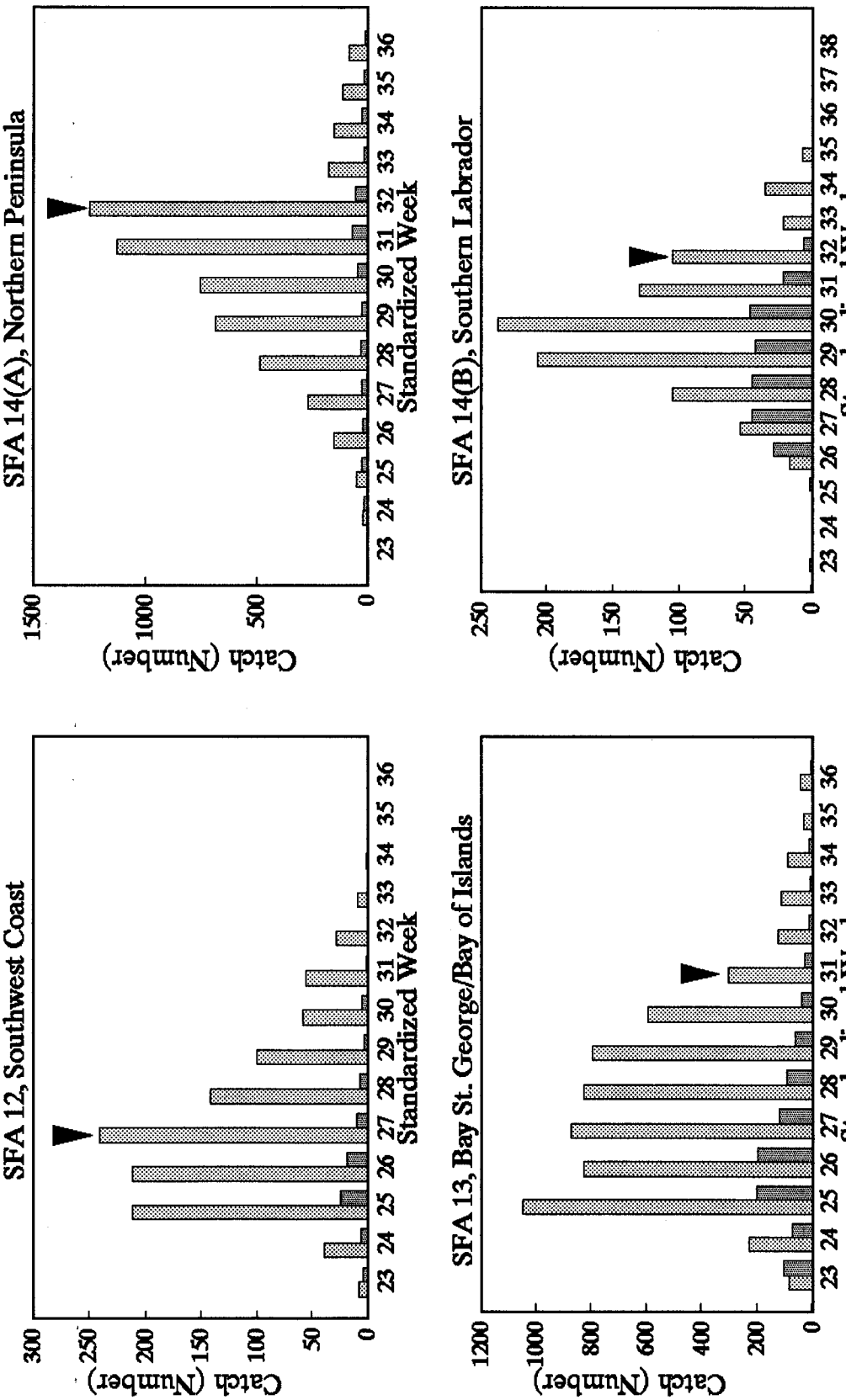


Figure 5. Recreational catches of small and large Atlantic salmon, 1992 by standardized week. Arrows indicate the week quota was reached.

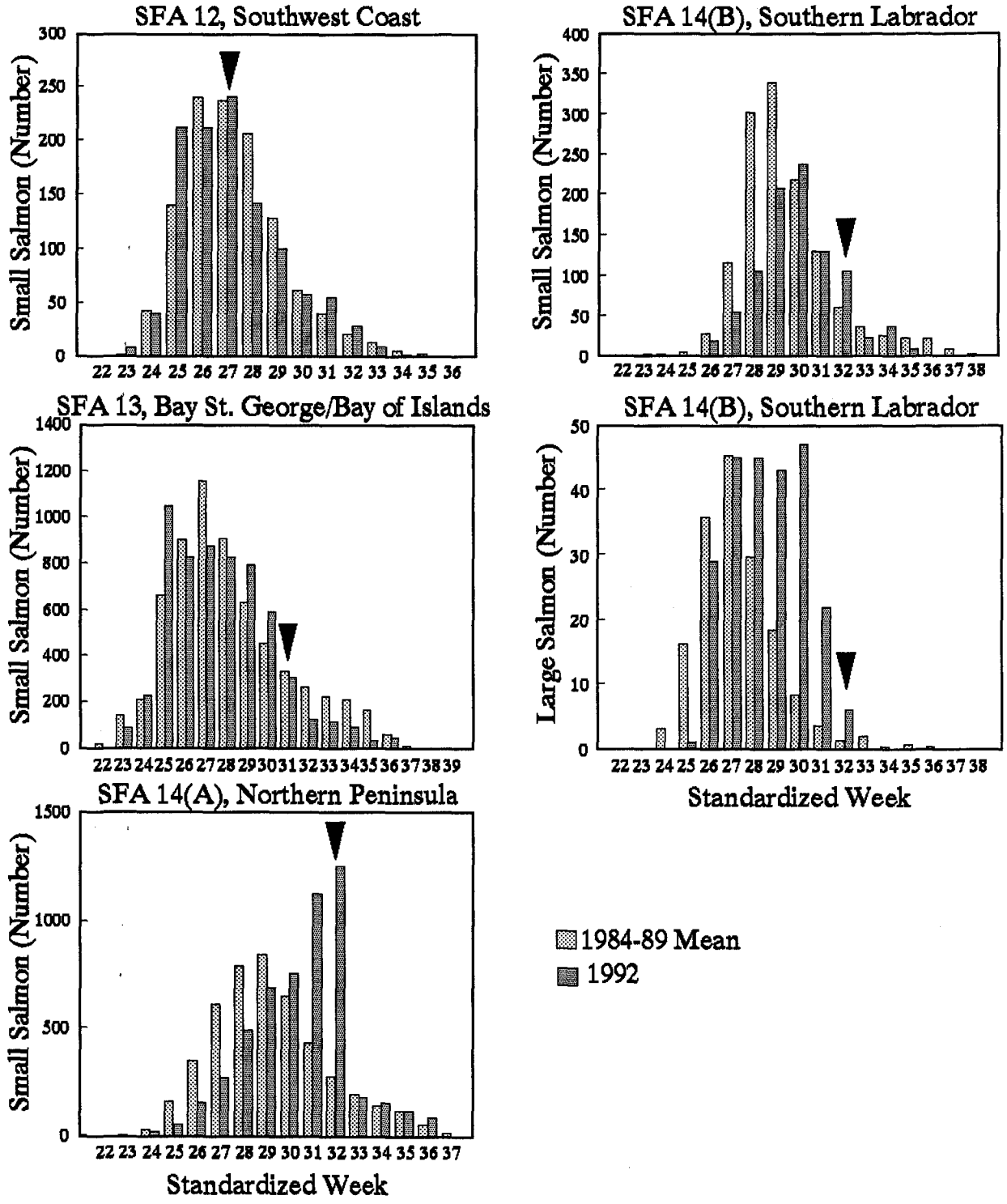


Figure 6. Comparison of weekly catches of small and large salmon in 1992 with the 1984-1989 weekly mean. Arrows indicate week quota was reached.

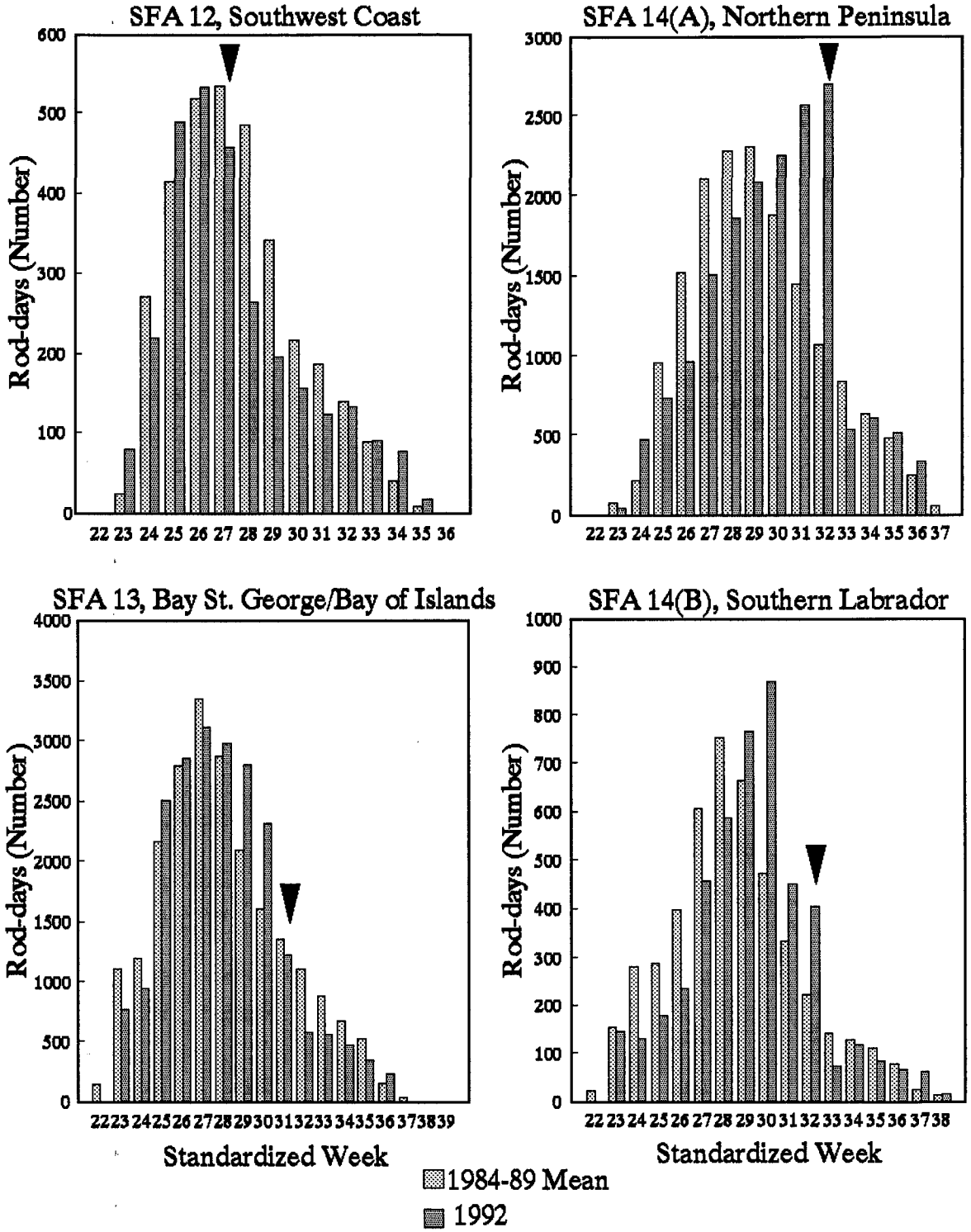


Figure 7. Comparison of angling effort in 1992 with the 1984-1989 mean by standardized week. Arrows indicate week quota was reached.

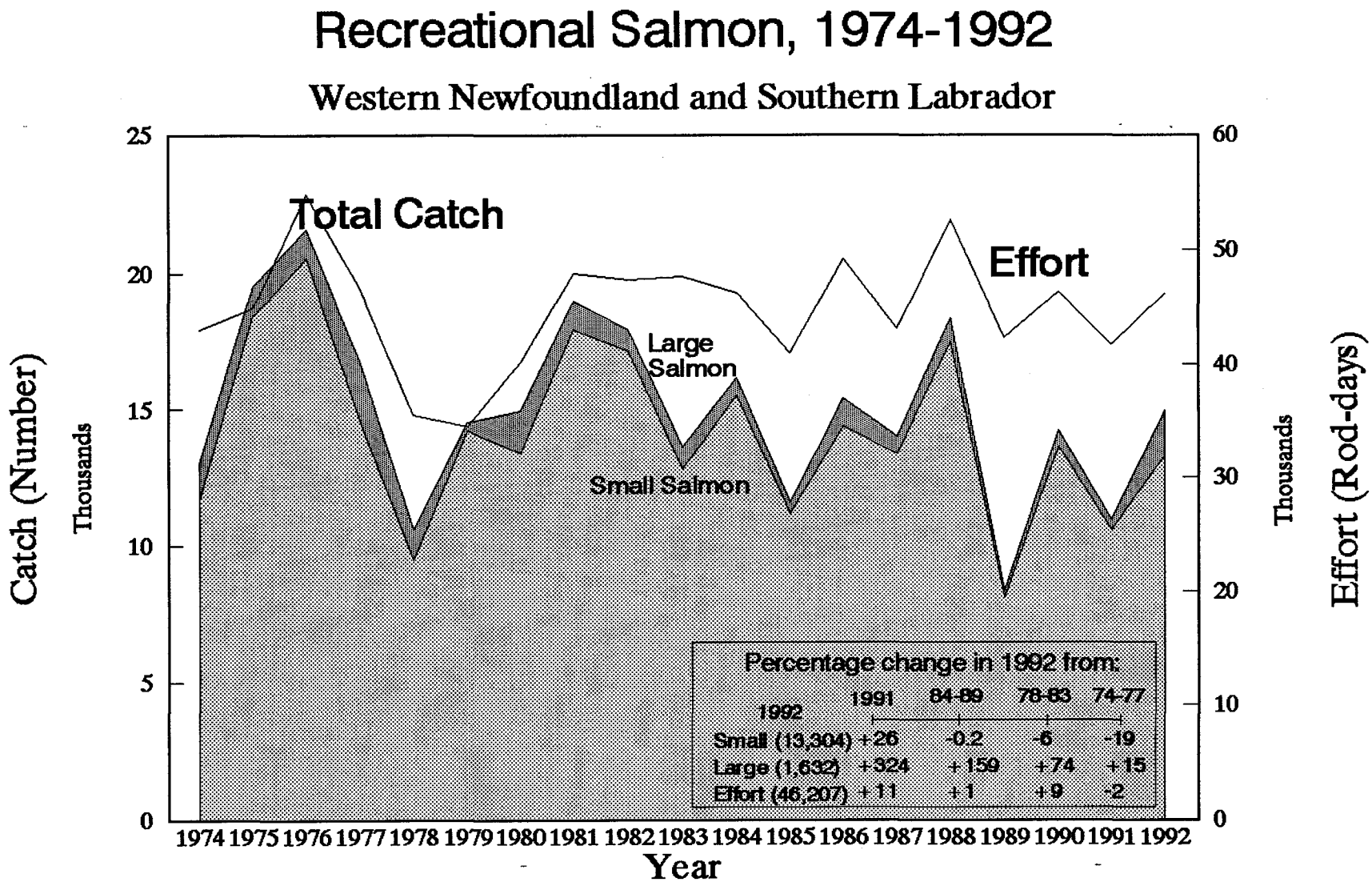


Figure 8. Recreational (retained + released) catch and effort, 1974-1992 and percentage change from long-term means.

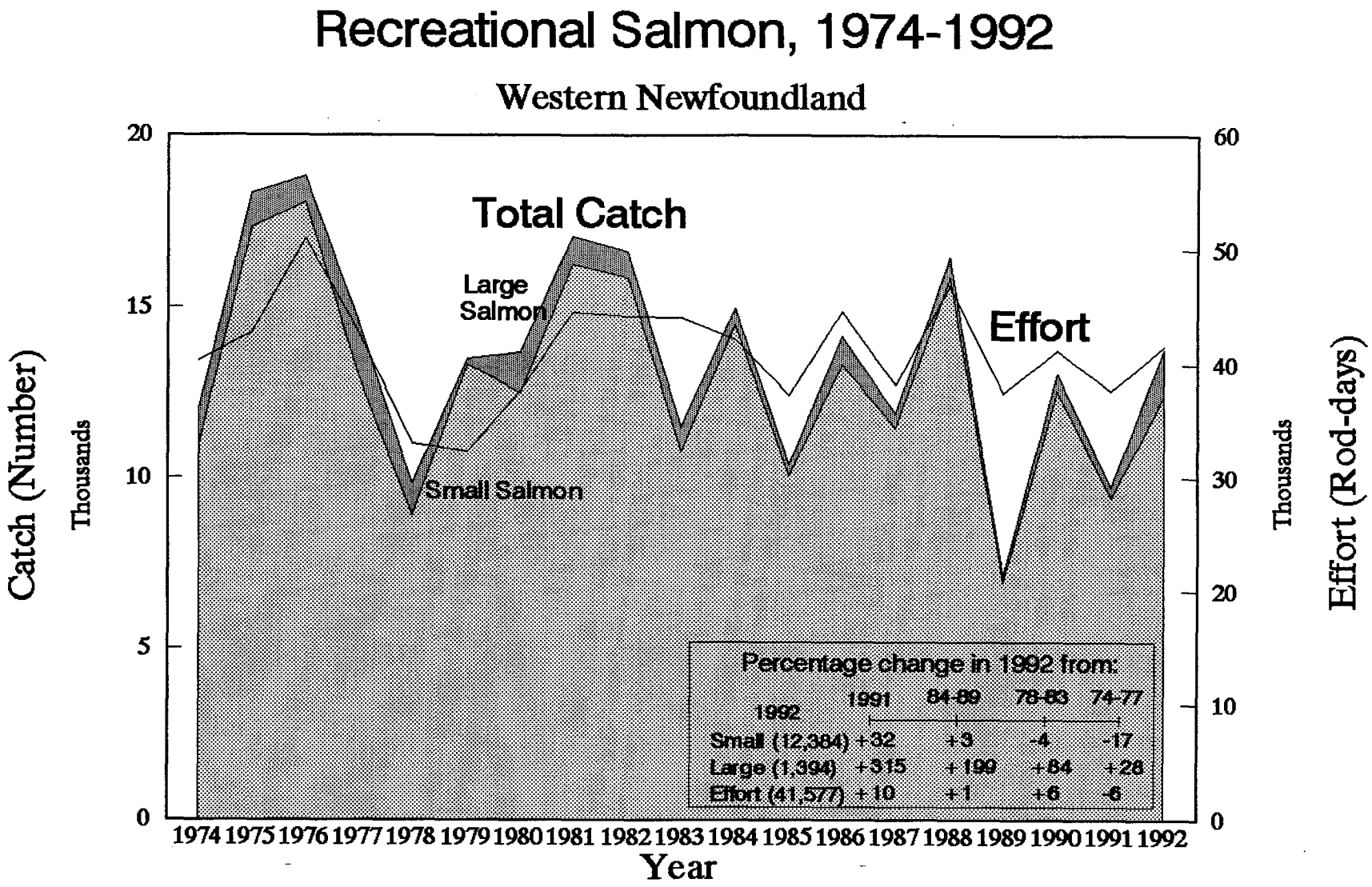


Figure 9. Recreational (retained + released) catch and effort, 1974-1992 and percentage change from long-term means.

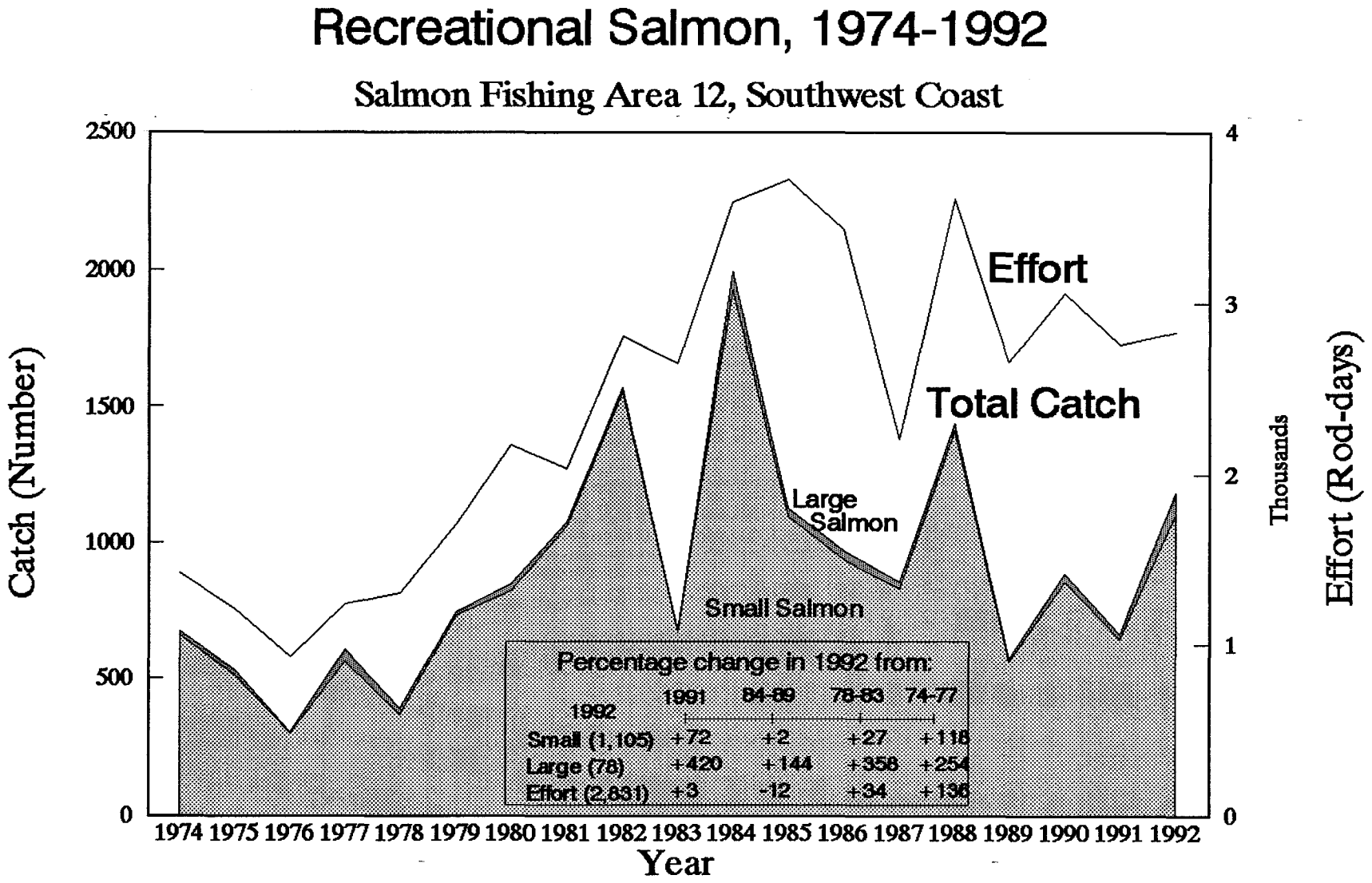


Figure 10. Recreational (retained + released) catch and effort, 1974-1992 andpercentage change from long-term means.

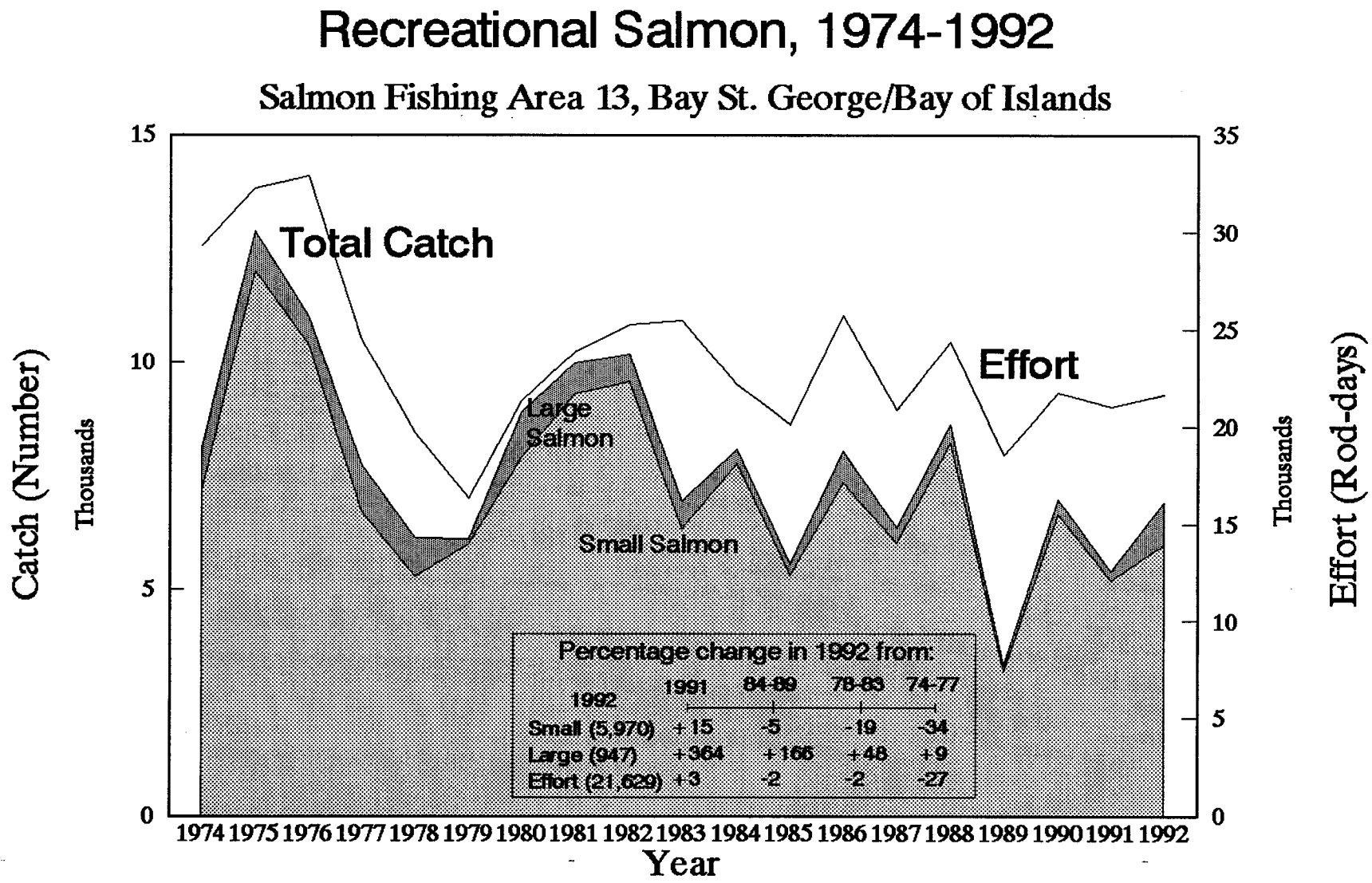


Figure 11. Recreational (retained + released) catch and effort, 1974-1992 and percentage change from long-term means.

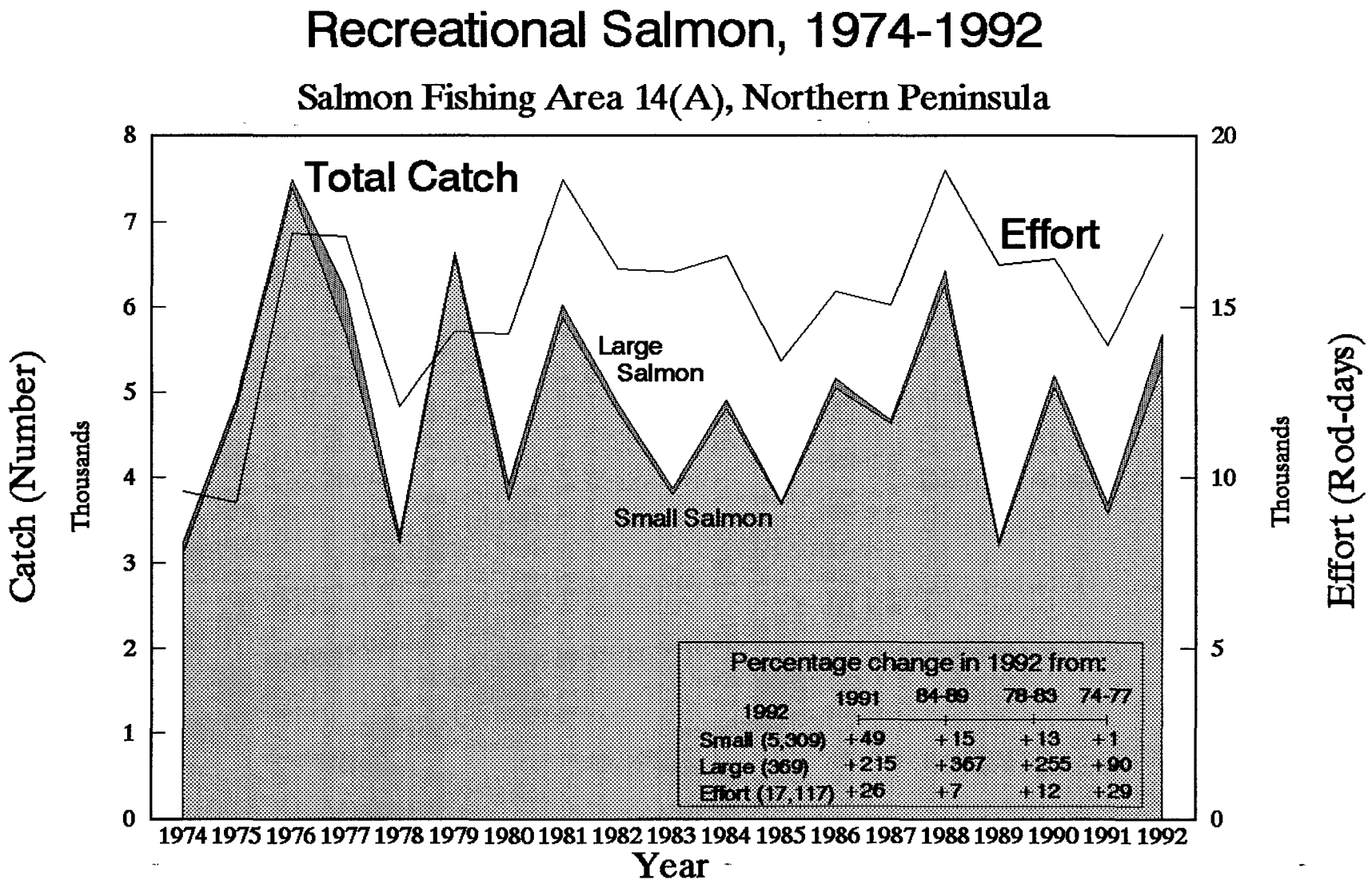


Figure 12. Recreational (retained + released) catch and effort, 1974-1992 and percentage change from long-term means.

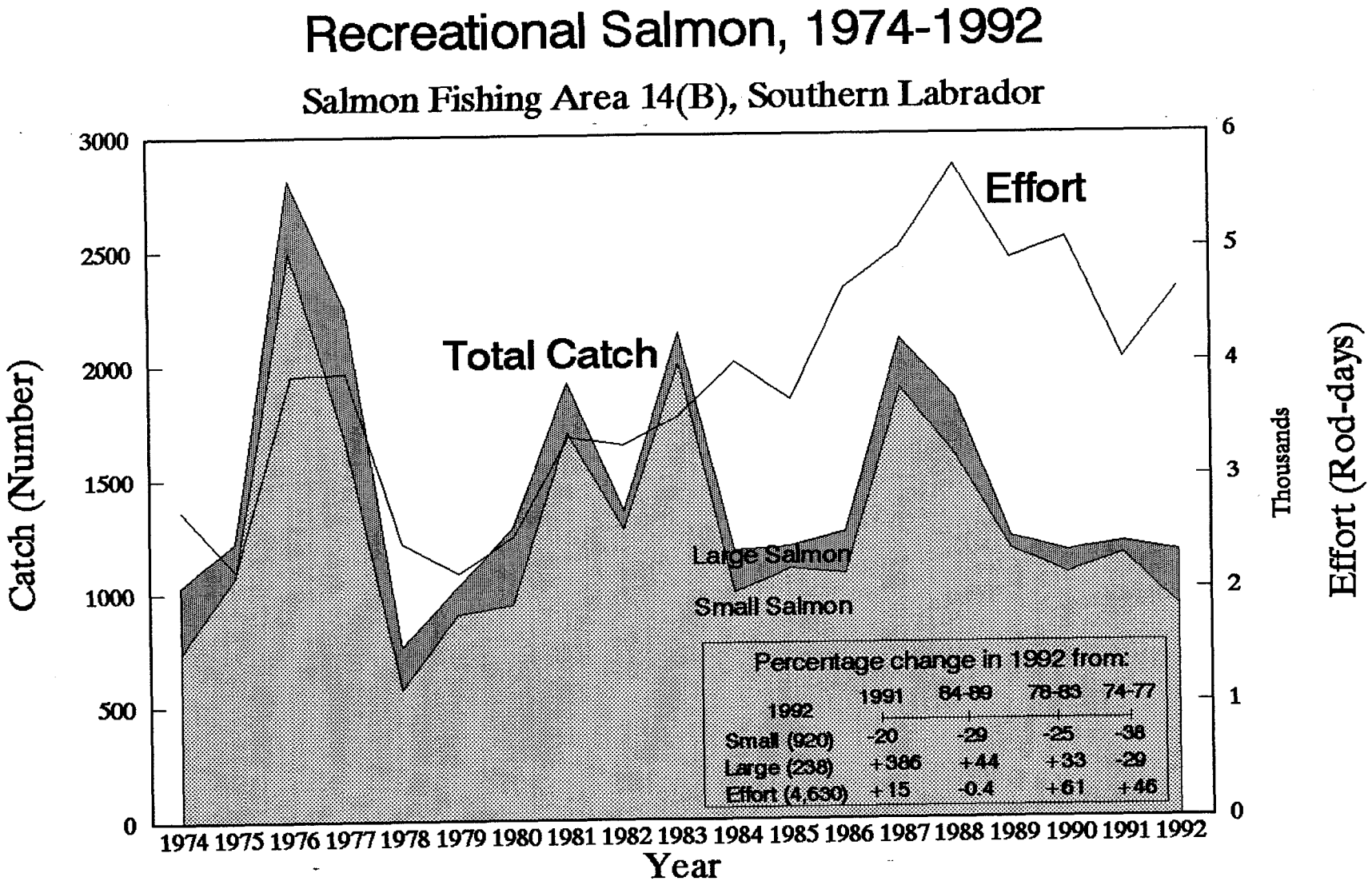


Figure 13. Recreational (retained + released) catch and effort, 1974-1992 and percentage change from long-term means.

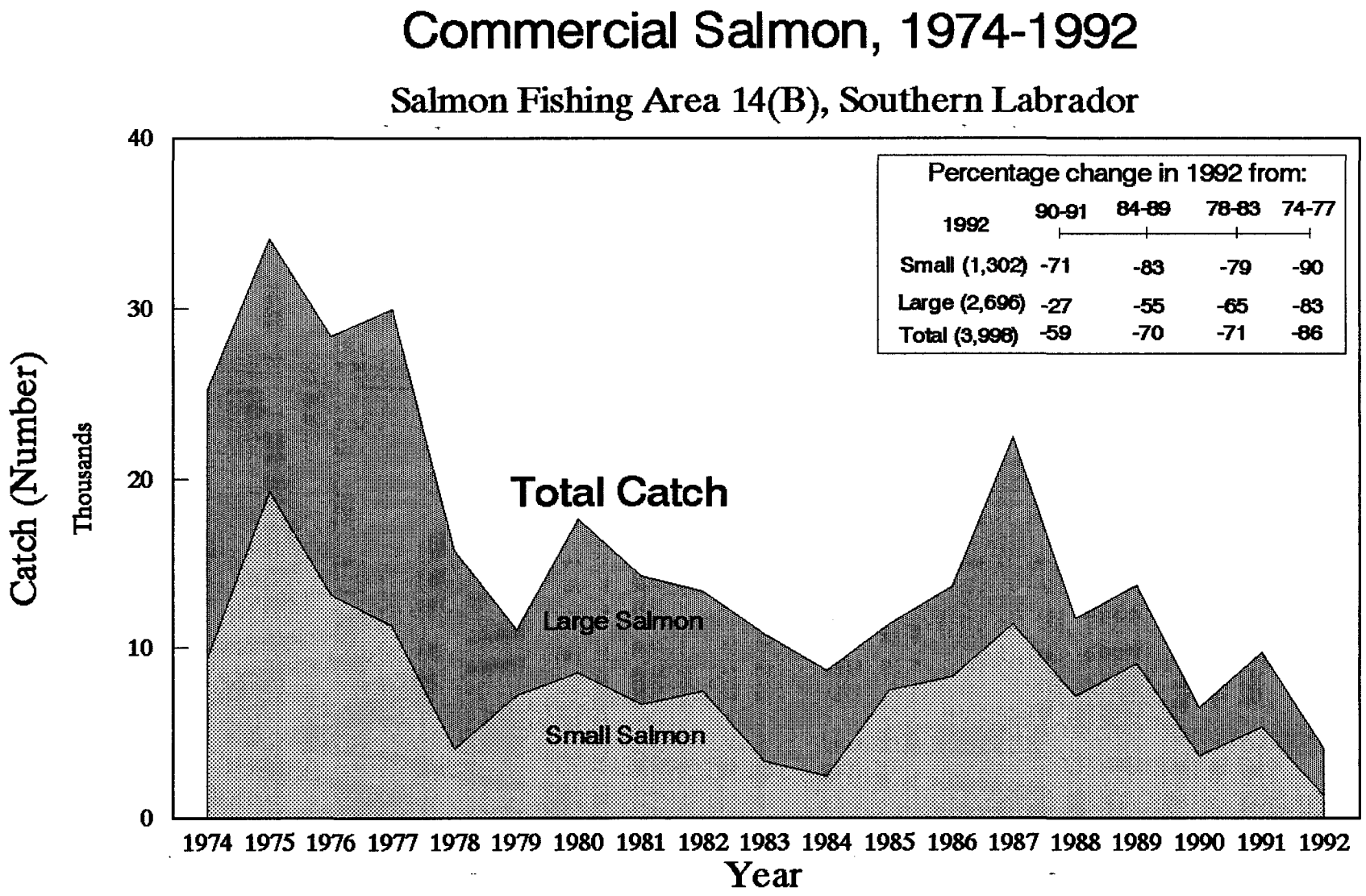


Figure 14. Commercial catches, 1974-1992 and percentage change from long-term means.

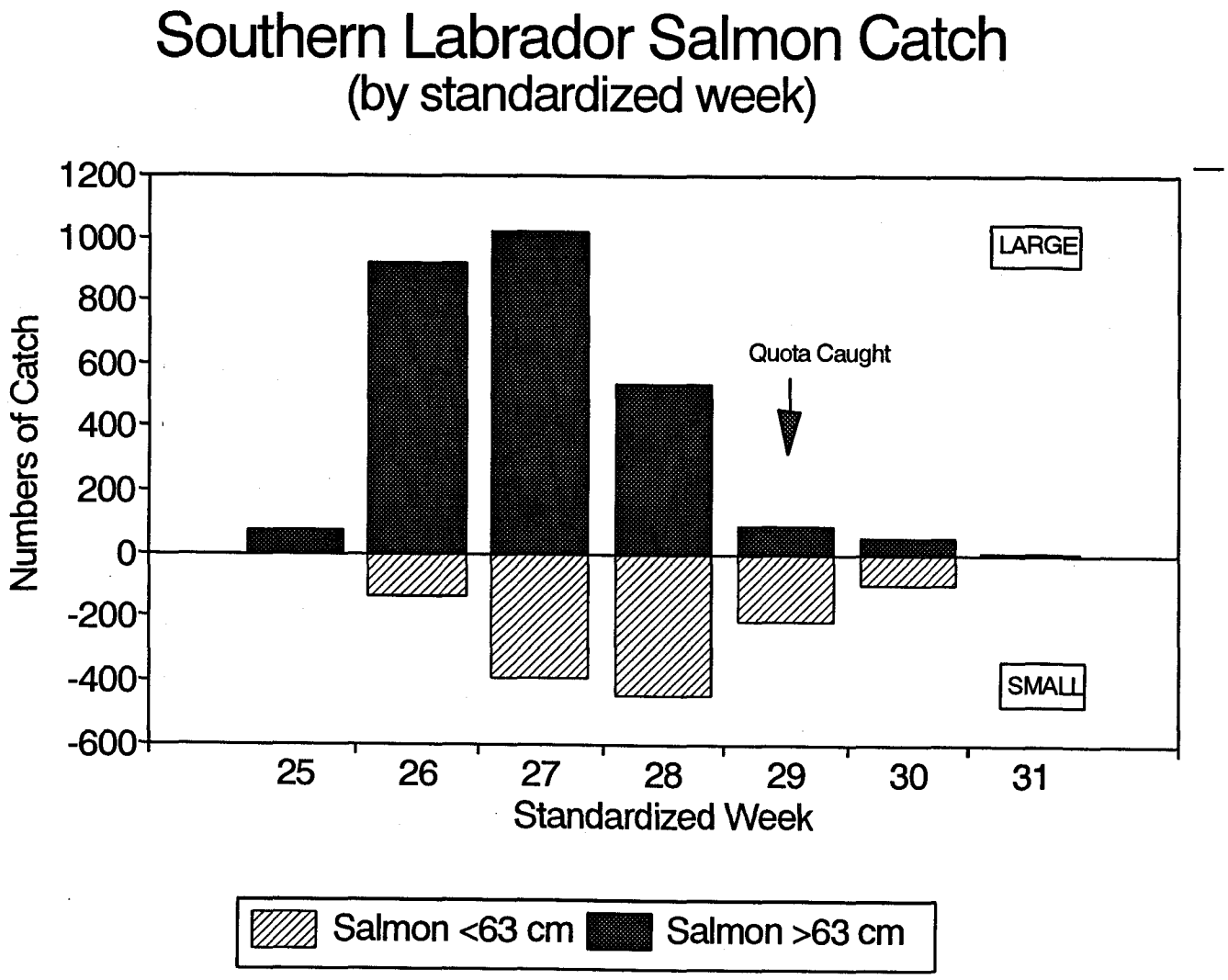
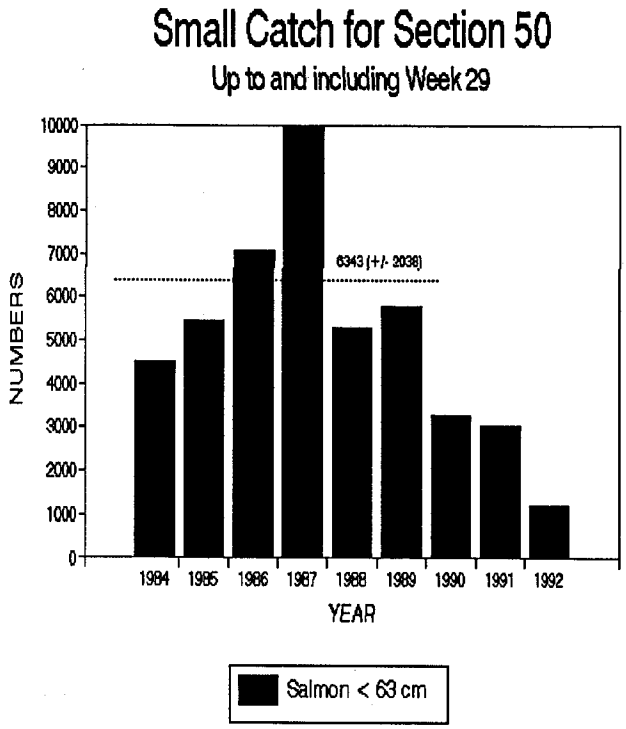
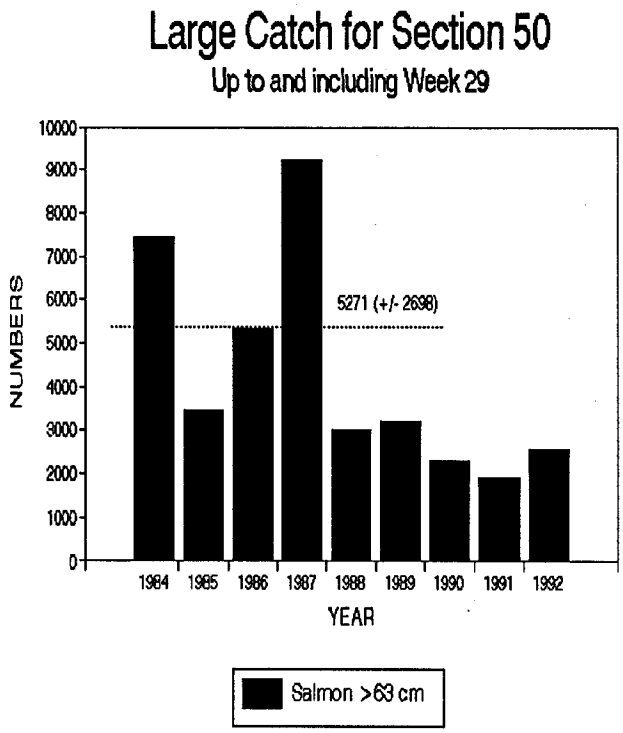


Figure 15. Distribution of 1992 Commercial catches of small and large Atlantic salmon in southern Labrador by standardized week. Arrow indicates week in which the commercial quota was reached.





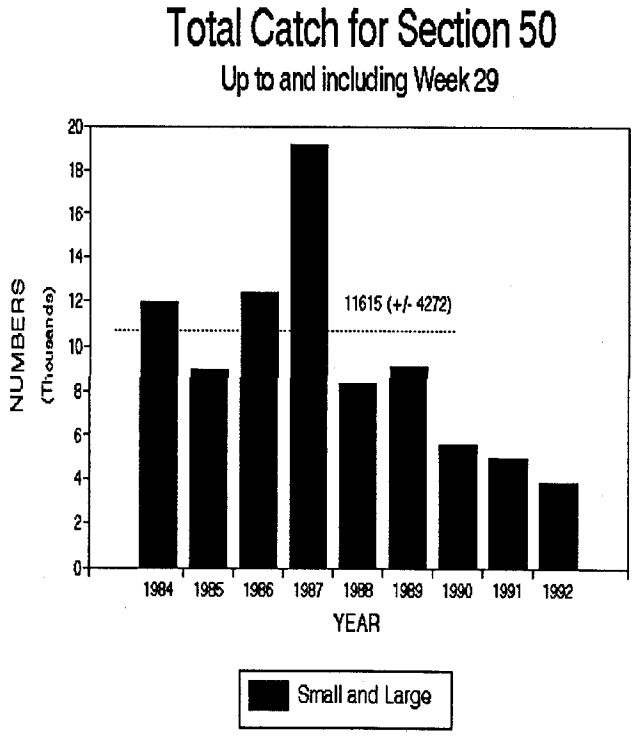


Figure 16. Comparison of cumulative small, large and total Atlantic salmon landings in southern Labrador Section 50, 1984-1992 up to and including week 29. Standardized week 29 was the week the commercial quota was reached in 1992. Horizontal line represents the 1984-1989 mean.

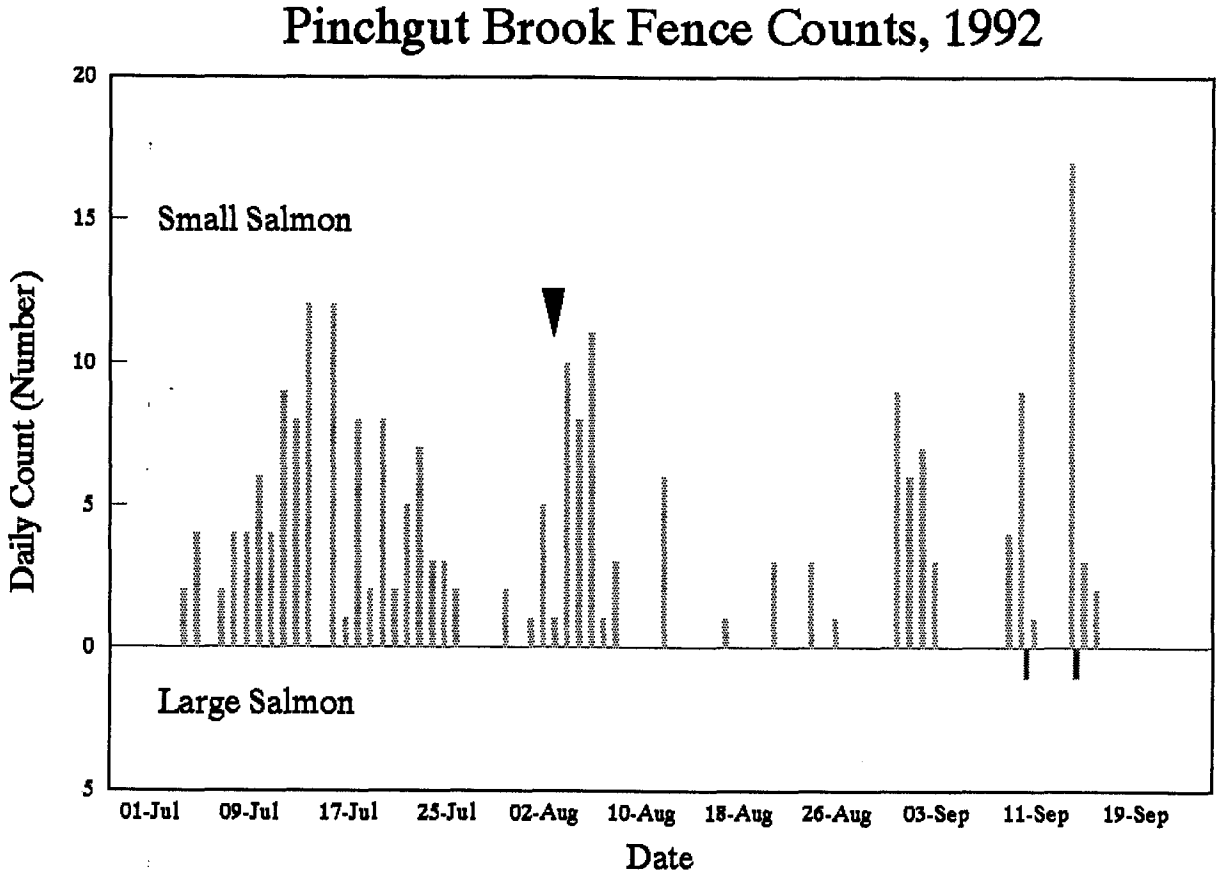


Figure 17. Daily counts of small and large Atlantic salmon at the Pinchgut Brook counting fence in 1992. Arrow indicates date SFA 13 recreational quota was reached.

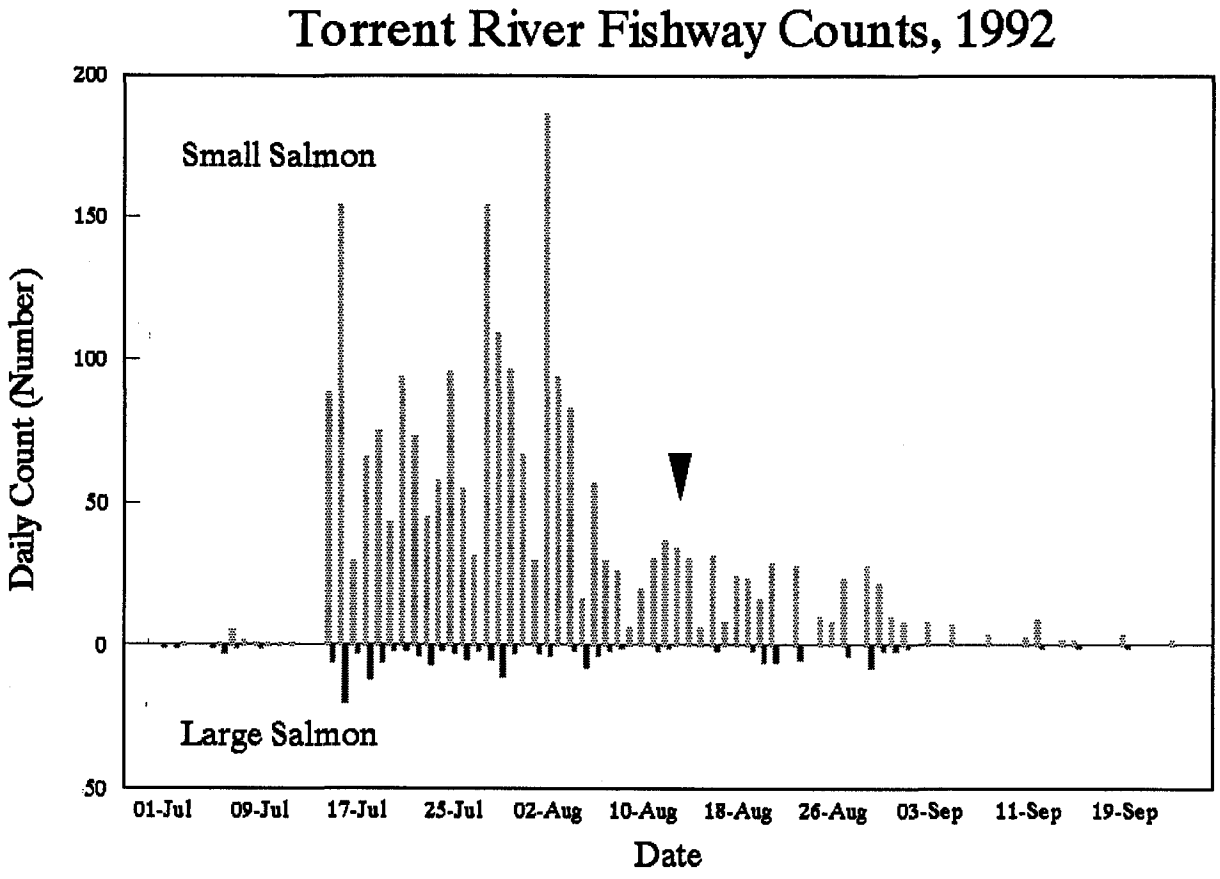


Figure 18. Daily counts of small and large Atlantic salmon at the Torrent River fishway in 1992. Arrow indicates date SFA 14(A) recreational quota was reached.

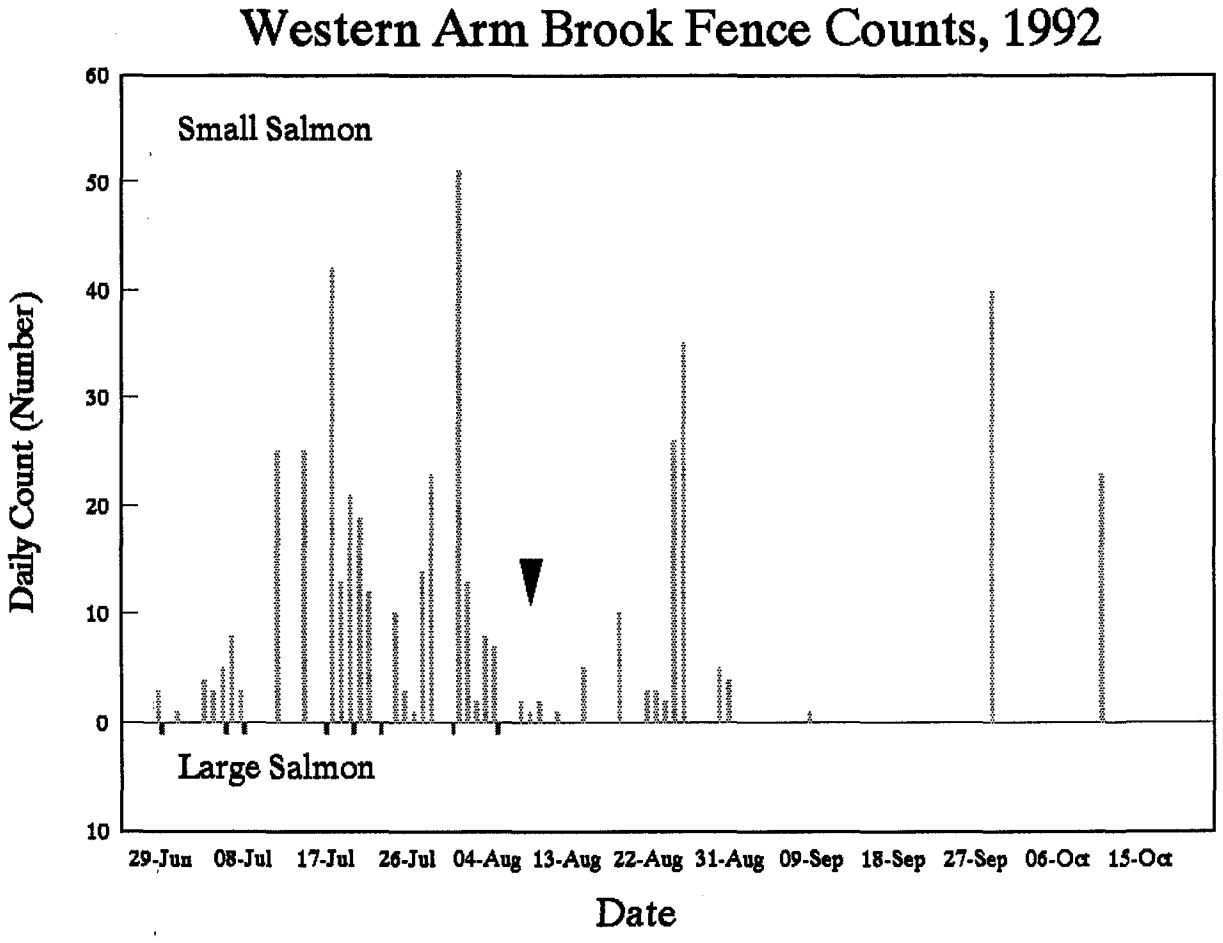


Figure 19. Daily counts of small and large Atlantic salmon at the Western Arm Brook counting fence in 1992. Arrow indicates date SFA 14(A) quota was reached.