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Assessment of Atlantic Salmon Stocks in Statistical Areas K and L, Western Newfoundland, 1982

by

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Abstract

A fisheries management program was put into effect in 1978 to restore the declining Atlantic salmon stocks in Statistical Areas K and L. The impact which the restrictions had in the fisheries and spawning escapements are evaluated and the present status of the stocks in each river are assessed. The reduced seasons had the desired affect of reducing exploitation in the commercial and recreational salmon fisheries, and increasing the spawning escapement in most rivers. The increased angling effort in the shortened season negated some of the anticipated benefits to spawning escapement. The target spawning escapements were not met in Humber River, Serpentine River, Harry's River, Flat Bay Brook and Fischells Brook. There were low abundances of grilse and large salmon in all rivers in 1978 and 1979 respectively. It is projected that this will result in low returns of grilse in 1983 and large salmon in 1984.

Résumé

Un programme de gestion des pêches a été mis en oeuvre en 1978 dans le but de restaurer les populations déclinantes de saumon atlantique des zones statistiques K et L. Une évaluation est faite de l'impact des restrictions sur les pêches, sur les géniteurs et sur les stocks actuele de chaque rivière. La diminution des saisons de pêche a eu l'effet désiré. Il y eut au une réduction de l'exploitation du saumon par les pêches sportives et commerciales ainsi qu'une augmentation du nombre de géniteurs de plusieurs rivières. Ces résultats furent cependant amoindris par l'intensification de l'effort de pêche à la ligne au cours de la saison abrégée. Le nombre de géniteurs désiré n'a pas été atteint dans les rivières Humber, Serpentine et Harrys ainsi que dans les ruisseaux Flat Bay et Fischells. On enregistre de plus une faible remontée de castillons et de gros saumons en 1978 et 1979 pour toutes les rivières. Cette situation permet de prévoir des retours faibles de castillons en 1983 et de gros saumons en 1984.

Introduction

In 1978, Fisheries and Oceans imposed restrictions (Tables 1 and 2) on the commercial and recreational Atlantic salmon fisheries of Areas K and L (Fig. 1). Assessments conducted in the mid-1970's indicated that the catches in the commercial fishery and in the sport fishery on most rivers were declining (Chadwick et al. 1978). Of particular concern was the decline in large salmon and the apparent decline in egg deposition. The following evaluates the impact of restrictions on the fisheries and assesses the present status of the stocks in Areas K and L. Fisheries management advice which was put forth by CAFSAC is in CAFSAC Advisory Document 83/7.

Methods

The impact of the 1978-82 salmon management program in Areas K and L was assessed by comparing egg depositions during the five years (1978-82) to target spawning requirements for each Area and river system and by examining trends in catch and effort in commercial and recreational fisheries.

Target spawning requirements for each river system were calculated using an egg deposition of 240 eggs per 100 m^2 of parr rearing area (Elson 1975) and an estimate of the number of eggs deposited per spawner (Table 3). The latter was calculated using a fecundity of 1540 eggs per kilogram as used in Atlantic Salmon Task Force Review (Anon. 1978) and mean values of sex ratio (percentage females) and weight for grilse sampled in the recreational fishery (unpublished data). Biological characteristics of large salmon were taken from samples in the commercial fisheries. The proportion of grilse and large salmon were taken from mean recreational harvests (1973-77) in Moores et al. (1978). Biological characteristics of salmon from the Little Codroy River and Highlands River were obtained from samples at fish counting fences (Murray 1968; Chadwick, unpublished data; respectively). Estimates of the amount of parr rearing habitat (Table 3) in each river was obtained from stream surveys (Anon. 1978).

Egg depositions during 1978-82 were calculated with two assumptions: 1) mean harvests in the recreational fishery during this period were proportional to spawning escapements (Chadwick 1982), and; 2) additional spawners would be available because of reduced fishing seasons. Angling exploitation rates were not available for stocks in Areas K and L, therefore, a range in spawning escapements were calculated using exploitation rates of 20% and 40% (Table 4), these are considered the minimum and maximum observed values for rivers in insular Newfoundland (Chadwick 1982).

Additional spawners (Table 4) were assumed to be available from season reductions in three fisheries: the recreational fishery in Areas K and L; the commercial fishery in Areas K and L; and the commercial fishery in Area J. In the recreational fishery, additional spawners (large salmon and grilse) (Table 5) were calculated by river system as the difference between harvests in reduced and full seasons for the years 1973-77. Additional spawners in the commercial fishery were calculated for Areas J, K, and L using the same technique; there were also no significant changes in fishing effort in these fisheries. Interception of mainland stocks in Area J were assumed to be 65%

(Pippy 1982). Spawners were divided among river systems in proportion to the mean 1973-77 recreational harvest. Because these additional spawners differed in biological characteristics from fish used to calculate spawning requirements a ratio was developed to convert the additional spawners to the equivalence of fish in spawning requirements (Table 6). This was based on eggs/spawner.

Trends in catch and effort were examined in historical data from both fisheries; adjustments were made to landings in the recreational fishery to account for season changes.

Results and Discussion

Area L

The catch statistics for the commercial salmon fishery in Area L are shown in Table 7 and Fig. 2. The mean catches of large salmon 1973-77 and 1978-82 are 5.0 t and 4.4 t respectively. The 19% difference between the means was not significant. The mean catch of small salmon (1SW) increased by 85% from 5.2 t in 1973-77 to 9.6 t in 1978-82. The increase is not statistically significant due to the large variance and small number of years. The catch per licensed gear unit increased by 66% from 35 kg/unit to 58 kg/unit. Although no overall statistical differences can be demonstrated, the data do suggest an increase in abundance of both large salmon and 1SW salmon available to the commercial fisheries 1978-82. Particularly, when one considers that the catches in 1978-82 occurred during a period with reduced commercial fishing season and licensed gear units.

There was no significant difference in the mean angling catches of grilse and large salmon in 1973-77 and 1978-82 (Tables 8 and 9, Fig. 3 and 4). However from 1978-82 the angling effort remained relatively constant, whereas there was a gradual increase in total catch and CUE during this period. This suggests increasing abundance of fish in the rivers 1978-82. But it could also be due to additional exploitation on fish release from commercial fisheries.

The linear relationships tested for catches of grilse and large salmon in the recreational and commercial fisheries of Area L are listed in Table 10. The angling catch of grilse (1SW salmon) in Area L (1978-82) was significantly correlated (P 0.05) to the commercial catch of grilse during the same year in Area L, and the commercial catch of large salmon in Area L (1978-82) was significantly correlated (P 0.1) to the commercial catch of large salmon during the same year in Area K. Since these correlations are positive, it can be inferred that if there is a change in catch of grilse in the commercial fishery, there will be a corresponding change in the grilse catches in the angling fishery in Area L. Similarly, if there is an increase or decrease in commercial catch of large salmon in Area K, there will also be a corresponding change in the commercial fishery of Area L. Although it is suspected that these fisheries are exploiting the same stocks, it cannot be concluded from these analyses.

Humber River

The unadjusted and adjusted angling catches of Atlantic salmon in the Humber River are shown in Tables 11 and 12 and Fig. 5 and 6. It appears that the shortened angling season had a negligible influence on catch. Average catches of large salmon and grilse declined by only 11% and 4% respectively (Fig. 6). The average angling effort, 8265 rod days, for 1978-82 is about 8% less than in the previous five years. This can only be partially explained by the reduced season. The recorded effort in 1977 was only 6127 rod days which is the lowest recorded since 1968. There has been a gradual increase in the angling effort since 1977. A gradual increase in the catches (Fig. 6) of grilse has resulted in a steady increase in catch per rod days from 0.38 in 1977 to 0.50 in 1982 (Fig. 5). The catches of grilse, 1980-82, although less than the peak catches of 6147 and 5102 in 1975 and 1976, are similar to the catches in the mid-1960's and early 1970's. There was considerable annual variation in the catches of large salmon, 1978-82, with less than 100 fish caught in 1979 and 1982 (Fig. 6). Although there seems to have been some improvement in the abundance of large salmon 1978-82, over the abundance in 1974-77, the mean catch of 153 salmon in 1978-82 is 30% less than the mean catch 1963-67 and 55% less than the mean catch 1968-72. It is anticipated that there will be a decrease in abundance of both grilse and large salmon in 1983 and 1984 due to the apparent low abundance of spawners in 1977 and 1978. The target spawning escapement is 18,452 fish (Table 3). The maximum estimate of spawners, 1978-82 indicates a deficit of 458 fish; the minimum estimate, however, indicates a deficit of 9,838 fish (Table 4). Thus, it would appear that spawning requirements are not being met on Humber River.

Hughes Brook and Cook's Brook

The target spawning requirements in Hughes Brook and Cook's Brook are 215 and 357 respectively (Table 3). The unadjusted recorded angling statistics for Hughes Brook and Cook's Brook are shown in Tables 13 and 14. There has not been a legal sport fishery on either stream since 1977. No data are available to assess the spawning escapements or to project returns.

Serpentine River

The angling catch statistics for Serpentine River are shown in Tables 15 and 16, and Fig. 7 and 8. Prior to 1966, the angling catch on Serpentine River comprised of about 40% large salmon (Table 15). Subsequent to 1966 the mean percentage of large salmon (by smolt class) was 15%; in only two years did the proportion of large salmon exceed 30%. The total numbers of large salmon have drastically declined since the mid-1960's when an average of 151 large salmon (1963-67) were caught annually, to the mid-1970's when an average of only 17 large salmon (1973-77) were harvested annually. There was no significant increase in the mean catch of large salmon 1977-82 over 1973-77. Since there was no significant increase in fishing effort (Fig. 7), it would appear that the abundance and thus spawning escapement of large salmon has not increased during the period 1978-82. The mean angling catch (165) of grilse during 1978-82 is significantly ($P<.05$) higher than the angling catches in the previous five years (Table 16, Fig. 8). This suggests an increase in abundance

and spawning escapement during 1978-82. However the 5-year mean, 1978-82 is still less than the mean catch of 232 observed in 1963-67.

It would appear that spawning escapements on Serpentine River are inadequate for optimal egg depositions. The maximum estimate of egg deposition 1978-82 indicates a deficit of about 1200 spawners; the minimum estimate would suggest that the shortage is greater (Table 4).

Fox Island River

The angling catches of Fox Island River are summarized in Table 17 and Fig. 9. The river was closed to angling 1976 to 1980 inclusive. Catches during the reduced season suggest an improvement in stock abundance.

Area K

The catches of Atlantic salmon in the commercial fisheries in Area K are shown in Table 18 and Fig. 10 and Statistical Area J and Sections 38 and 39 are presented in Table 19. The catches in the angling fisheries in Area K are shown in Tables 20 and 21 and Fig. 11 and 12. Data are not available on the proportion of large and 1SW salmon in the commercial fishery prior to 1969. Although the greatest total catch (59 t) in the commercial fisheries in Area K occurred in 1970 (Table 18), there has been a gradual decline in abundance from 1956 to 1975 (Fig. 10).

The mean total commercial catch of 25.6 tonnes during 1978-82 is not different from the 25.0 tonnes harvested during the equivalent fishing period 1974-77 (Table 18). This suggests that the overall abundance of salmon available to the commercial fishery June 1 to July 1, 1978-82 was similar to that available during the same period (June 1 - July 10) in 1974-77. If the reduction in licensed gear (1978-82) had a corresponding impact on fishing effort then it is possible that the abundance of salmon would have been higher during the fishing season, 1978-82. Nevertheless, it would appear that the restrictions on the commercial fisheries did allow additional salmon to enter the rivers. By taking the mean of the differences between the catch in the full season and the partial season each year 1974-77 and calculating 95% confidence limits, the total weight of fish escaping the commercial fishery 1978-82 was calculated to be 7.5 ± 3.8 tonnes. Considering 1SW and large salmon separately, the weight released would be 2.5 ± 2.1 tonnes 1SW salmon and 5.0 ± 2.2 tonnes of large salmon.

A number of correlations between harvests of large salmon and grilse were tested in the commercial and recreational fisheries (Table 22). The angling catches and commercial catches of large salmon (1969-82) in Area K in year n were positively correlated ($P<0.05$). The commercial catch of 1SW salmon in Area K was positively correlated ($P<0.05$) to the commercial catches of 1SW salmon in Statistical Section 38 (1978-82). The commercial catches of large salmon and of 1SW salmon in Area K + L were positively correlated ($P<.05$) to the commercial catch of large salmon and of 1SW salmon ($P<.01$) in Section 38 + 39. Also the commercial catch of 1SW salmon in Area K + L (1978-82) was positively correlated ($P<.05$) to the commercial catch of 1SW salmon in Section 39. These analyses indicate that the commercial fisheries in Areas K,

L and Sections 38 and 39 are harvesting the same stocks. This supports the findings of previous tagging studies (D. G. Reddin, Personal Communication).

The angling catches of large salmon and grilse peaked in 1963 (2240 fish) and in 1964 (8956 fish) respectively (Table 20, Fig. 12). Subsequently, there was a progressive decline in catches of both sea-age groups of salmon. From 1961 to 1976, the angling effort increased by 106% from 10,200 to 21,700 rod days. Table 21 presents a summary of angling catch statistics 1973-1977 adjusted to the seasons in effect during 1978-82. The mean number of rod days in the adjusted 1973-77 period (Table 21) is 12,840 which is not significantly different from the mean rod days for 1978-82 (Table 20). This suggests that the reduction in fishing effort observed from 1978 to 1982 resulted from the reduction in season (Fig. 11). The increased angling effort in 1981 and 1982 could have reduced the intended benefits from the season reductions during those years. The mean catch of large salmon in the partial angling season 1973-77 is 434 fish which is 47% less than the mean catch of large salmon during the full season (Tables 20 and 21). The mean catch of grilse in the partial season (1973-77) is 3,814 which is about 20% less than the catch during the full season. The mean catch of grilse (3814) and large salmon (465) during 1978-82 is not significantly different from the mean catch of grilse (4130) and large salmon (434) caught during the partial season 1973-77. This suggests that the average abundance of fish available to the angler during the reduced season 1978-82 was at least as great as in the previous five years. Thus it is apparent that the early run fish that were released from the commercial fishery were, for the most part, able to pass upstream to the headwater fish sanctuaries before the angling fishery opened. If one assumed that the average population size 1978-82 was similar to the average population size 1973-77 (which is supported by the commercial catch statistics) then the average number of fish released from the angling fishery can be estimated by calculating the mean difference between the full season and the partial season during 1973-77. The number of fish released would be 379 large salmon ± 113 (95% C.L.) and 1069 grilse ± 473.

Harry's River

The salmon angling catches for Harry's River 1953-82 are presented in Table 23 and Fig. 13 and 14. The angling catches for 1973-1977, adjusted to the July 1-August 15 season of 1978-82 are shown in Table 24 and Fig. 13 and 14. The mean five year catch of large salmon has declined by 79% from 331 in 1963-67 to 71 in 1973-77. The mean catch of grilse declined during the same period by 33% from 1528 to 1028. It is apparent from Fig. 14 that the downward trend of catches of large salmon seems to have levelled off at a very low abundance and that the numbers of grilse continue to slowly decline. The mean number of rod days and catch of grilse and large salmon 1978-82 is not significantly different from the mean effort and catches during July 1 - August 15, 1973-77 (Table 24).

The target number of spawners for Harry's River is 4911 fish (Table 3). Using the most optimistic scenario where all fish released from the commercial fisheries passed upstream and were not available to the recreational fishery, and exploitation in the recreational fishery was 20%, there would have been a surplus of 177 spawners (Table 4). The more pessimistic scenario predicted an

average spawner deficit of 1218 fish. Since there was no apparent increase in egg deposition in Harry's River during 1978-82, an increase in escapements over the next five years is not anticipated.

Southwest and Bottom Brooks

The angling catch statistics for Southwest and Bottom brooks are presented in Tables 25 and 26 and Fig. 15 and 16. The fishing effort on Southwest and Bottom brooks remained relatively constant at between 2000 and 3000 rod days between 1964 and 1974. In 1975 the effort increased to 6700 rod days, but quickly dropped to 3450 in 1977. A further reduction to a mean of 1380 rod days occurred in 1978-82, due to the shorter angling season (Table 25 and Fig. 16). The catch per rod day declined from 0.67 in 1958-62 to 0.22 fish per rod day in 1973-77. An improvement in CUE is apparent in 1980, 1981, and 1982, suggesting improved escapement to the river (Fig. 16). Figure 15 suggests that the abundance of large salmon has continued to decline from 1974 to 1982 whereas there was improvement in the abundance of grilse from 1980 to 1982. The catches of grilse suggests that their abundance is as high if not higher than during the early 1960's. Reports from field staff suggests that the abundance of large salmon could be higher in 1981 and 1982 due to early runs which permitted the fish to move to fish sanctuaries prior to opening of the angling season. Both estimates of spawning escapements indicate a surplus of spawners (Table 4).

It is concluded that there has been an overall improvement in the spawning escapement resulting from the reduced seasons, however no increase in escapements are expected in 1983 and 1984 due to low spawning escapements in 1978 and 1979.

Little Barachois Brook

Angling catch statistics are shown in Table 27 and 28 and Fig. 17 and 18. There has been a decline in CUE from 0.65 in 1972 to 0.31 in 1977 (Table 27). During this period the fishing effort increased by 300% and the catch increased by about 150%, although there was a decline in catches of large salmon (Fig. 18). It is also apparent from Fig. 18 that there has not been an improvement in spawning escapement during the period of season reductions and that exceptionally low spawning escapements occurred in 1978 and 1979. The maximum estimate of spawning escapement in 1978-82 indicates a surplus of 345 fish and the minimum estimate a surplus of 23 fish (Table 4).

There is an indication that due to the low egg depositions in 1978-79, the 1983 and 1984 spawning escapements will be lower than the 1980-82 mean escapements.

Flat Bay Brook

The angling catch statistics are presented in Table 29 and Fig. 19 and 20. The target egg deposition is 2905 fish (Table 3). From 1963 to 1972, the angling fishery had a mean annual catch of more than 1000 fish (Table 29). By 1975 the annual catch had declined to less than 500 fish. Although there was a reduced season on the sport fishery 1976-80, the 1981 and 1982 catches

(Fig. 20) do not indicate that there has been any improvement in the abundance of either large salmon or grilse. Table 4 indicates that there is a spawning deficit of between 251 and 1078 fish. It is also apparent from Table 29 that the escapements to the river were particularly low in 1978 and 1979. The progeny from the 1978 and 1979 spawners will be returning in 1983 and 1984.

Fischells Brook

The angling catch statistics are presented in Tables 30 and 31 and Fig. 21 and 22. Prior to 1967, the large salmon component of the escapement to Fishells River was greater than 25%. Since 1969 to 1977 there was noticable decline in both the large salmon and grilse components (Table 30, Fig. 22). During the period of season restrictions (1978-82) there was an overall improvement in the angling catches, particularly the grilse component in 1980-82. In 1979, however, there was a poor return of both components.

Although there was an apparent increase in egg deposition, 1978-82, the estimated average spawning escapement showed a deficit between 268 to 850 spawners (Table 4). Under the present regulations, the stocks should make a slow recovery. If optimal spawning requirements are to be met more quickly, however, then a reduction in harvest will be necessary.

Robinson's River

The angling catch statistics are presented in Tables 32 and 33 and Fig. 23 and 24. A review of Fig. 23 and Table 33 shows a substantial increase in angling effort during the reduced season 1978-82. This may have negated some of the benefits which would have accrued from the commercial and recreational season reductions. Nevertheless, even though the angling effort increased there was an increase in total catch and in CUE, suggesting an increase in abundance of fish. It is also apparent from Table 33 and Fig. 24 that there was a progressive increase in the numbers of grilse and large salmon. The target spawning escapements is 1752 fish (Table 3). For the period 1978-82, the most optimistic approach to calculating spawning escapement suggests that escapements, on average, were exceeded by 2638 fish (Table 4).

As with other rivers, the escapement of grilse in 1978 and large salmon in 1979 was depressed. Thus, it is predicted that the abundance of grilse and salmon will be below average in 1983 and 1984 respectively.

Barachois Brook

Angling catch statistics for Barachois Brook are presented in Tables 34, 35, Fig. 25, 26. There has been a slight decline in fishing effort during the fishing period June 20 to August 31, and a decline in catch and CUE (Fig. 25 and Table 35). Of particular interest, is the catch of 0, 3 and 2 large salmon in 1979, 1981 and 1982, respectively (Table 34, Fig. 26). There has also been a progressive decline in catches of grilse in the adjusted season from 1973 to 1982. Although the catch statistics indicate a reduction in abundance of spawners during 1978-82, the field staff have observed large numbers of early run fish in the headwater sanctuaries of Barachois Brook which suggests that a direct assessment from the catch data may underestimate spawning escapements

(Table 3). Both estimates of average spawning escapement 1978-82, indicated a surplus of spawners (Table 4).

It is concluded that the status of this stock cannot be reasonably assessed due to the apparent early run of salmon. However, the catch data suggests particularly low escapements in 1978 and 1979 (as in other rivers) which will result in reduced returns in 1983 and 1984.

Crabbes River

The angling catch statistics for Crabbes River are presented in Tables 36, and 37, Fig. 27 and 28. There was a substantial decline in the numbers of large salmon and grilse from the early 1960's to 1977 (Table 36). An evaluation of the catch statistics (Table 37) for the angling period June 20-August 31, indicates that from 1978-82 there was a significant increase in mean fishing effort, catch per rod day and total numbers of fish. The increased catch was apparent for large salmon except in 1979 and for grilse except in 1978 (Fig. 28). The target spawning escapement is 2345 fish (Table 3). The estimated mean spawning escapements 1978-82 using the two scenarios are 1) surplus of 977 fish and 2) a deficit of 73 fish (Table 4).

The low spawning escapements in 1978 and 1979 will result in depressed abundance in 1983 and 1984.

Highlands River

Highlands River was closed to angling 1978-82. The angling catch statistics prior to 1978 are presented in Table 38. Fisheries and Oceans operated a fish counting fence on Highlands River in 1980, 1981, and 1982: the catches of large salmon were 55, 29, 56 respectively and grilse were 82, 127, 100 respectively. The target spawning escapement is 600 fish. Thus it would appear that the spawning escapements were less than 50% target levels.

Grand Codroy River

The angling catch statistics for the Grand Codroy River are presented in Tables 39 and 40, and Fig. 29 and 30. The target spawning escapement is 3511 (Table 3). There has been a continual increase in angling effort on Grand Codroy River 1953-82. The 1982 effort was 60% higher than the mean 1968-72 angling effort (Table 39). The catch of grilse has increased in response to the fishing effort and has remained relatively constant at just over 1000 fish except for 1977 and 1978 when only 773 and 510 grilse were angled respectively (Table 39 and Fig. 30). The angling catches of large salmon, except for 1979, have increased over the catches 1970-77 (Fig. 30 and Table 40). The CUE has followed a downward trend since 1976 (Fig. 29). For the period 1978-82, it would appear that escapements of grilse and salmon have remained constant (except for 1977-78) and the escapement of large salmon has increased slightly. Both estimates of spawning escapements for 1978-82 indicated a surplus of spawners. It is anticipated that the abundance of salmon will be less in 1983 and 1984 due to low abundance of spawners in 1978 and 1979.

Little Codroy River

A summary of the angling catch statistics for Little Codroy River is presented in Tables 41 and 42, and Fig. 31 and 32. The target spawning escapement is 463 fish (Table 3). During the period of restrictions, 1978-82, the angling effort remained relatively constant (Fig. 32, Table 42). The catches and CUE show considerable annual variability, which could have resulted from annual variations in timing of upstream migration or indicate a very unstable stock. There was only one year (1982) in which the catch of large salmon showed any improvement. Particularly low escapements were apparent in 1978 and 1980. Both methods of calculating the average spawning escapements indicate a surplus of spawners (Table 4). A comparison of the angling catches in the full season and during July 1-August 15 from 1970-77 suggests considerable annual variation in the timing of the run of large salmon and to a lesser degree grilse to the river. This supports the findings of A. R. Murray when he operated a counting fence on Little Codroy River. This provides further uncertainty in the accuracy of estimates of spawning escapements 1978-82.

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Table 1. Summary of season changes in commercial and recreational fisheries of Areas J, K, and L.

	Before 1978	1978-1982
Commercial		
Area J	15 May-31 Dec.	20 May-10 July
Area K	15 May-31 Dec.	1 June-10 July
Area L	15 May-31 Dec.	1 June-10 July
Recreational		
Lt. Codroy R.	24 May-15 Sept.	1 July-15 Aug.
Gd. Codroy R.	"	20 June-31 Aug.
Highlands R.	"	No season
Crabbes R.	"	20 June-31 Aug.
Barachois R.	"	20 June-31 Aug.
Robinson's R.	"	20 June-31 Aug.
Fischells Bk.	"	20 June-31 Aug.
Flat Bay Bk.	"	¤20 June-20 July
Lt. Barachois Bk.	"	1 July-15 Aug.
Southwest and Bottom Bks.	"	*20 June-31 Aug.
Harry's R.	"	1 July-15 Aug.
Fox Island R.	"	**4 July-17 July.
Serpentine R.	"	1 July-31 Aug.
Cooks Bk.	"	No season
Humber R.	"	¤¤20 June-31 Aug.
Hughes Bk.	"	No season

¤ 20 June-20 July 1976-80; 20 June-31 Aug. 1981-82

* 15 June - 31 Aug. in 1979

** No season 1976-80

¤¤ 10 June-31 Aug. 1981-82 for Upper Humber; 20 June-7 Sept. 1980 for Lower Humber

Table 2. A summary of sections of rivers closed to fishing in Areas K and L.

River name	Section closed
Grand Codroy River to South Branch	Trans Canada Highway to source
Crabbes River	12 mile pool to source
Barachois Brook	Mine pool (Mile 14) to source
Robinson's River	Chatter Pool (Mile 16) to 25 yds. above falls at Mile 19
Fischels River	Big Steady (Mile 10) to 25 yds. above falls at Mile 18
Little Barachois Brook	Old Logger's School (Mile 19) to source
Southwest Brook (St. George's Bay)	Mouth of John's Brook to source
Harry's River	Mouth of Harry's River to below Sandbank Pool
Spruce Brook	Mouth of Spruce Brook to source
Pinch Gut Lake	All tributaries of Pinch Gut Lake
Serpentine River	All tributaries of Serpentine Lake including Serpentine River upstream from Serpentine Lake
Humber River	From a line drawn from Lundrigan's Wharf to Wild Cove Point upstream to Ballams Bridge
Adies Lake	All tributaries of Adies Lake

Table 3. Summary of rearing areas and biological characteristics used to calculate spawning requirements for rivers in Areas K and L. Optimal egg deposition was assumed to be 240 eggs per rearing unit (100 m^2). Fecundity was assumed to be 1540 eggs per kg.

		Grilse			L. Salmon			
River	Rearing area (100 m^2)	% grilse	% female	Mean weight (kg)	% large salmon	% female	Mean weight (kg)	Required spawners
Lt. Codroy	3,890	66	14	1.6	34	67	5.1	463
Gd. Codroy	25,963	86	57	1.4	14	90+	4.7+	3,511
Highlands	4,980	66	14*	1.4	34	67*	5.1*	601
Crabbes	18,429	76	40	1.4	24	90+	3.7+	2,345
Barachois	8,395	86	45	1.3	14	90+	3.7+	1,350
Robinsons	13,491	87	63	1.4	13	90+	3.7+	1,752
Fischells	13,661	84	46+	1.2	16	90+	3.7+	2,137
Flat Bay	16,012	92	46+	1.4	8	90+	3.7+	2,905
Lt. Barachois	7,104	88	86	1.4	12	90+	3.7+	759
Southwest	18,970	82	43	1.3	18	90+	3.7+	2,795
Harry's	26,394	93	50	1.3	7	90+	3.7+	4,911
Other rivers	10,016	86	46	1.4	14	90	3.7	1,530
Total Area K	167,305							25,059
Fox Island	6,558	58	46+	1.4+	42	90+	3.7+	577
Serpentine	17,799	85	22	1.9	15	90+	3.7+	2,233
Cooks	1,474	100	46+	1.4+	0	90+	3.7+	357
Humber	115,307	97	53	1.7	3	90+	3.7+	18,452
Hughes	1,221	91	46+	1.4+	9	90+	3.7+	215
Other rivers	13,241	97	46+	1.4+	3	90+	3.7+	2,848
Total Area L	155,600							24,682

* Values from Lt. Codroy were used.

\+ Mean values from Area K.

Table 4. Spawning escapements for rivers in Areas K and L using two exploitation rates; these are compared to spawning requirements.

River	Exploitation rate 20%	Exploitation rate 40%	Additional* fish released	Required spawners	Max.	Maximum** est. of escapement	Minimum*** est. of escapement
Area K							
Little Codroy	276	104	488	463	+	+301	+129
Grand Codroy	4,556	1,709	2,964	3,511	+	+4,009	+1,162
Highlands				601			
Crabbes	1,680	630	1,642	2,345	+	+977	-73
Barachois	752	282	1,829	1,350	+	+1,231	+761
Robinsons	2,844	1,067	1,546	1,752	+	+2,638	+861
Fischells	932	350	937	2,137	-	-268	-850
Flat Bay	1,324	497	1,329	2,904	-	-251	-1,078
Lt. Barachois	516	194	588	759	+	+345	+23
Southwest	1,940	728	3,473	2,795	+	+2,618	+1,406
Harry's	2,232	837	2,856	4,911	+	+177	-1,218
Area L							
Fox Island	92	35	118	577	-	-349	-406
Serpentine	756	284	271	2,233	-	-1,202	-1,674
Cooks	-	-	-	357			
Humber	15,008	5,628	3,034	18,452	+	-458	-9,838
Hughes	-	-	-	215			

*Fish released due to season reduction (Table 5) and adjusted to equivalent spawning potential (Table 6) i.e. additional fish released = total (Column 4, Table 6) x ratio (Column 7, Table 6). Slight differences may occur due to rounding-off of ratios.

**Equal to Column 2 + Column 4 - Column 5.

***Equal to Column 3 + Column 4 - Column 5.

Table 5. Summary of mean recreational catch in rivers of Areas K and L, and estimates of fish released from recreational fisheries in Areas K and L and commercial fisheries in Areas J, K and L.

	Recreational catch 5 yr. mean (1978-82)		Recreational catch as % of Area K (1973-77)		Fish released from recreational fishery		Fish released from commercial fishery*			
							K		L	
	Grilse	Salmon	Grilse	Salmon	Grilse	Salmon	Grilse	Salmon	Grilse	Salmon
Little Codroy	55	14	1	4	16	8	29	69	1	104
Grand Codroy	987	152	19	19	54	51	543	329	18	496
Highlands	-	-	1	1	-	-	29	17	1	26
Crabbes	336	84	5	12	39	44	143	208	5	314
Barachois	162	26	9	9	166	58	257	156	9	235
Robinson's	636	75	11	8	95	48	315	156	10	235
Fischells	215	18	5	5	45	32	143	87	5	131
Flat Bay	308	23	9	6	148	-	257	104	9	157
Lt. Barachois	123	6	5	4	58	8	143	69	5	104
Southwest	456	29	15	21	174	86	429	363	14	549
Harry's	522	36	20	9	316	22	572	156	19	235
Total Area K							2860	1730**	96	2612**
Fox Island	21	2	<1	7	-	-	5	24	1	35
Serpentine	165	24	2	11	21	3	11	37	1	55
Cooks	-	-	<1	0			6	0	1	0
Humber	3599	153	95	79	163	14	523	267	72	392
Hughes	-	-	1	3			5	10	1	15
Total Area L							550	338	76	497

*Fish released to each river was calculated by multiplying the total fish released to the Area by the appropriate percentage in Columns 4 or 5.

**Includes fish released to other rivers.

Table 6. Total numbers of fish released in each river due to reductions in fisheries in Areas J, K and L and their spawning potential (eggs per spawner). A ratio is also calculated to compare the spawning potential of these fish to the spawning potential of fish normally escaping into Area K rivers.

	Fish released			Eggs per spawner		
	Grilse*	Salmon**	Total	Released fish	Escaped fish	Ratio
Area K						
Little Codroy	46	181	227	4328	2017	2.15
Grand Codroy	615	876	1491	3530	1775	1.99
Highlands	-	-	-	-	-	-
Crabbes	187	566	753	4104	1886	2.18
Barachois	432	449	881	3099	1493	2.08
Robinsons	420	439	859	3319	1548	1.80
Fischells	193	250	443	3246	1535	2.11
Flat Bay	414	261	675	2605	1323	1.97
Lt. Barachois	206	181	387	3426	2247	1.52
Southwest	617	998	1615	3507	1629	2.15
Harry's	907	413	1320	2793	1290	2.17
Area L						
Fox Island	6	59	65	4963	2729	1.82
Serpentine	33	95	128	4053	1913	2.12
Cooks	7	0	-	-	-	-
Humber	758	673	1431	3183	1500	2.12
Hughes	-	-	-	-	-	-

*Total of Columns 6, 8, and 10 in Table 5.

**Total of Columns 7, 9, and 11 in Table 5.

Table 7. Commercial landings of Atlantic salmon and licenced fishing gear in Statistical Area L, 1952 to 1982. A gear unit is 50 fathoms of gill net. The landings in 1974 to 1977 during the period June 1 to July 10 are shown in parentheses.

Year	Licenced effort (gear units)	Salmon >2.7 kg (mt)	Salmon <2.7 kg (mt)	Total (mt)	Catch per licenced gear unit (mt)
1952				20	
1953				22	
1954				33	
1955				6	
1956				20	
1957				-	
1958				28	
1959				26	
1960				25	
1961				13	
1962				17	
1963				58	
1964				26	
1965				35	
1966				43	
1967				28	
1968				11	
1969	221	5	9	14	0.06
1970	153	3	13	16	0.10
1971	248	1	2	3	0.01
1972	258	3	9	12	0.05
1973	277	3	9	12	0.04
1974	198	7(5)	4(3)	11(8)	0.06
1975	412	4(4)	5(4)	9(8)	0.02
1976	301	4(3)	3(3)	7(6)	0.02
1977	270	7(5)	5(4)	12(9)	0.04
1978	264	5	5	10	0.04
1979	247	1	8	9	0.04
1980	255	9	16	25	0.10
1981	253	4	8	12	0.04
1982	196	4	10	14	0.07
Mean					
1973-77	292	5.0	5.2	10.2	0.03
S.D.	78	1.9	2.3	2.2	
1974-77*	295	4	4	8	0.04
S.D.	89	1.9	.6	1.3	
1978-82	243	4.6	9.4	14.0	0.06
S.D.	27	2.9	4.1	6.4	

*With season from June to July 10.

Table 8. Sports harvest of Atlantic salmon in Area L, 1953-82.

STATISTICAL AREA: L

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	4075	1389	230	1619	0.40	.
1954	4595	994	196	1190	0.26	88
1955	2557	1534	193	1727	0.68	84
1956	7917	1419	283	1702	0.21	84
1957	3524	2201	293	2494	0.71	83
1958	4066	1919	410	2329	0.57	84
1959	4481	2207	379	2586	0.58	84
1960	4385	2159	324	2483	0.57	87
1961	4541	2047	260	2307	0.51	89
1962	5393	2939	336	3275	0.61	86
1963	6518	4240	299	4539	0.70	91
1964	9798	5390	650	6040	0.62	87
1965	8193	4388	385	4773	0.58	93
1966	9992	4428	433	4861	0.49	91
1967	6685	2501	267	2768	0.41	94
1968	7207	2750	162	2912	0.40	94
1969	12805	5160	542	5702	0.45	84
1970	14848	3586	594	4180	0.28	90
1971	10925	4183	385	4568	0.42	90
1972	11811	4183	232	4415	0.37	95
1973	11938	3838	372	4210	0.35	92
1974	10367	2867	172	3039	0.29	96
1975	10575	6232	130	6362	0.60	96
1976	11958	5262	72	5334	0.45	99
1977	7265	2357	55	2412	0.33	99
1978	8602	2962	258	3220	0.37	90
1979	8632	3437	29	3466	0.40	99
1980	8997	3700	320	4020	0.45	91
1981	9528	4389	163	4552	0.48	96
1982	9829	4521	126	4647	0.47	97
MEANS AND STANDARD DEVIATIONS						
53-57	4533.6	1507.4	239.0	1746.4	0.39	85
S.D.	2036.4	438.0	47.2	470.9	0.10	1
58-62	4573.2	2254.2	341.8	2596.0	0.57	86
S.D.	493.5	398.6	57.2	396.5	0.02	1
63-67	8237.2	4189.4	406.8	4596.2	0.56	91
S.D.	1649.4	1047.7	151.2	1176.0	0.04	1
68-72	11519.2	3972.4	383.0	4355.4	0.38	90
S.D.	2818.1	886.4	188.0	997.0	0.03	2
73-77	10420.6	4111.2	160.2	4271.4	0.41	97
S.D.	1913.8	1621.9	127.2	1618.6	0.06	1
78-82	9117.6	3801.8	179.2	3981.0	0.44	95
S.D.	545.6	654.0	113.7	635.5	0.02	2

Table 9. Summary of the Atlantic salmon angling catch statistics for Area L reported each year 1973-77 during the portion of the angling season equivalent to the reduced angling season of 1978-82.

Year	Rod days	Large salmon (no.)	Grilse (no.)	Total (no.)	Fish per rod day
1973	9586	314	3362	3676	0.38
1974	8675	129	2677	2806	0.32
1975	9219	111	5961	6072	0.66
1976	10083	61	4953	5014	0.50
1977	5977	48	2216	2264	0.38

Table 10. List of linear regressions conducted during analysis of the commercial and angling fisheries in Area L.

1. Angling catch of grilse* in Area L (year n) on commercial catch of grilse in Area L (year n).
   1969-1982; $y = -0.0028x + 4161.57$ n = 14; R = 0.0001
   1978-1982; $y = 0.1358x + 2536.50$ n = 5; R = 0.80 (* at P 0.05)

2. Angling catch of large salmon in Area L (year n) on commercial catch of large salmon Area L (year n)
   1969-1982; $y = -0.0210x + 333.51$ n = 14; R = 0.07
   1978-1982; $y = 0.0051x + 156.67$ n = 5; R = 0.02

3. Commercial catch of large salmon in Area L (year n) on commercial catch of large salmon in Area K (year n)
   1969-1982; $y = 0.0114x + 3965.71$ n = 14; R = 0.003
   1978-1982; $y = 0.4607x + 264.05$ n = 5; R = 0.70 (* at P 0.1)

4. Commercial catch of grilse in Area L (year n) on commercial catch of 1SW salmon in Area K (year n)
   1969-1982; $y = 0.1725x + 4936.96$ n = 14; R = 0.10
   1978-1982; $y = 0.6868x - 2370.56$ n = 5; R = 0.57

5. Commercial catch of large salmon Area L (year n) on commercial catch of large salmon Section 39
   1969-1982; $y = 0.0160x + 3168.95$ n = 14; R = 0.07
   1978-1982; $y = 0.2099x - 3101.56$ n = 5; R = 0.55

*Grilse = 1SW salmon

Table 11. Sports harvest of Atlantic salmon in Humber River, 1953-82.

RIVER: HUMBER RIVER

CODE: 44024300

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	3715	1260	149	1409	0.38	.
1954	4161	876	137	1013	0.24	90
1955	2177	1376	138	1514	0.70	86
1956	6953	1076	110	1186	0.17	93
1957	2637	1778	89	1867	0.71	92
1958	3350	1686	194	1880	0.56	90
1959	3681	1996	187	2183	0.59	90
1960	3511	1938	178	2116	0.60	92
1961	3639	1867	134	2001	0.55	94
1962	4017	2390	108	2498	0.62	95
1963	5348	3898	160	4058	0.76	94
1964	7222	4681	268	4949	0.69	94
1965	6551	3951	193	4144	0.63	96
1966	8842	3989	322	4311	0.49	92
1967	5317	2252	160	2412	0.45	96
1968	5104	2168	96	2264	0.44	96
1969	9690	4459	478	4937	0.51	82
1970	11785	2785	526	3311	0.28	89
1971	9027	3949	375	4324	0.48	88
1972	9413	3961	219	4180	0.44	95
1973	9612	3411	304	3715	0.39	93
1974	8976	2742	107	2849	0.32	97
1975	9611	6147	114	6261	0.65	96
1976	10489	5102	61	5163	0.49	99
1977	6127	2158	45	2203	0.36	99
1978	7633	2722	187	2909	0.38	92
1979	7961	3343	27	3370	0.42	99
1980	8292	3512	303	3815	0.46	92
1981	8701	4132	153	4285	0.49	96
1982	8737	4287	95	4382	0.50	98
MEANS AND STANDARD DEVIATIONS						
53-57	3928.6	1273.2	124.6	1397.8	0.36	91
S.D.	1869.7	339.9	24.5	326.6	0.10	1
58-62	3639.6	1975.4	160.2	2135.6	0.59	92
S.D.	247.3	259.4	37.4	233.1	0.01	1
63-67	6656.0	3754.2	220.6	3974.8	0.60	94
S.D.	1467.5	898.6	71.8	940.7	0.06	1
68-72	9003.8	3464.4	338.8	3803.2	0.42	90
S.D.	2428.1	950.4	179.6	1038.0	0.05	2
73-77	8963.0	3912.0	126.2	4038.2	0.45	97
S.D.	1674.3	1666.4	103.7	1665.3	0.06	1
78-82	8264.8	3599.2	153.0	3752.2	0.45	95
S.D.	475.8	632.4	103.6	620.8	0.02	1

Table 12. Summary of Atlantic salmon angling catch statistics for Humber River, June 20 - August 31, 1973-1982. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1973	8901	272	3264	3536	0.40	
1974	7983	84	2580	2664	0.33	3
1975	8916	105	5923	6028	0.68	4
1976	9766	57	4861	4918	0.50	1
1977	5720	42	2117	2159	0.38	1
1978	7633	187	2722	2909	0.38	
1979	7961	27	3343	3370	0.42	1
1980	8292	303	3512	3815	0.46	8
1981	8701	153	4132	4285	0.49	4
1982	8737	95	4287	4382	0.50	2
Mean						
1973-1977	8257	112	3749	3861	0.45	3
S	1552	93	1599	1601		
C.V.	19	83	43	41		
1978-1982	8264	153	3599	3740	0.44	4
S	476	104	632	631		
C.V.	6	68	18	17		

Table 13. Sports harvest of Atlantic salmon in Hughes Brook, 1953-82.

RIVER: HUGHES BROOK

CODE: 44024500

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	0	0	0	0	0.00	.
1954	0	0	0	0	0.00	0
1955	0	0	0	0	0.00	0
1956	0	0	0	0	0.00	0
1957	0	0	0	0	0.00	0
1958	0	0	0	0	0.00	0
1959	0	0	0	0	0.00	0
1960	0	0	0	0	0.00	0
1961	0	0	0	0	0.00	0
1962	0	0	0	0	0.00	0
1963	0	0	0	0	0.00	0
1964	0	0	0	0	0.00	0
1965	0	0	0	0	0.00	0
1966	0	0	0	0	0.00	0
1967	0	0	0	0	0.00	0
1968	226	57	0	57	0.25	0
1969	485	74	7	81	0.17	89
1970	1025	211	27	238	0.23	73
1971	396	44	0	44	0.11	100
1972	750	55	0	55	0.07	100
1973	954	177	24	201	0.21	70
1974	0	0	0	0	0.00	100
1975	140	4	0	4	0.03	0
1976	211	6	0	6	0.03	100
1977	429	64	0	64	0.15	100
1978	0	0	0	0	0.00	100
1979	0	0	0	0	0.00	0
1980	0	0	0	0	0.00	0
1981	0	0	0	0	0.00	0
1982	0	0	0	0	0.00	0
MEANS AND STANDARD DEVIATIONS						
53-57	0.0	0.0	0.0	0.0	0.00	0
S.D.	0.0	0.0	0.0	0.0	0.00	0
58-62	0.0	0.0	0.0	0.0	0.00	0
S.D.	0.0	0.0	0.0	0.0	0.00	0
63-67	0.0	0.0	0.0	0.0	0.00	0
S.D.	0.0	0.0	0.0	0.0	0.00	0
68-72	576.4	88.2	6.8	95.0	0.16	92
S.D.	314.3	69.5	11.7	81.1	0.04	7
73-77	346.8	50.2	4.8	55.0	0.16	91
S.D.	373.1	75.6	10.7	85.8	0.04	10
78-82	0.0	0.0	0.0	0.0	0.00	100
S.D.	0.0	0.0	0.0	0.0	0.00	0

Table 14. Sports harvest of Atlantic salmon in Cooks Brook, 1953-82.

RIVER: COOKS BROOK

CODE: 44023700

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	0	0	0	0	0.00	.
1954	0	0	0	0	0.00	0
1955	0	0	0	0	0.00	0
1956	0	0	0	0	0.00	0
1957	0	0	0	0	0.00	0
1958	0	0	0	0	0.00	0
1959	0	0	0	0	0.00	0
1960	0	0	0	0	0.00	0
1961	0	0	0	0	0.00	0
1962	0	0	0	0	0.00	0
1963	0	0	0	0	0.00	0
1964	211	125	3	128	0.61	0
1965	182	98	0	98	0.54	100
1966	275	43	0	43	0.16	100
1967	442	71	0	71	0.16	100
1968	661	236	0	236	0.36	100
1969	1631	416	0	416	0.26	100
1970	942	423	0	423	0.45	100
1971	591	48	0	48	0.08	100
1972	446	47	1	48	0.11	98
1973	448	133	0	133	0.30	100
1974	199	2	0	2	0.01	100
1975	111	2	0	2	0.02	100
1976	15	0	0	0	0.00	100
1977	47	4	0	4	0.09	0
1978	0	0	0	0	0.00	100
1979	0	0	0	0	0.00	0
1980	0	0	0	0	0.00	0
1981	0	0	0	0	0.00	0
1982	0	0	0	0	0.00	0
MEANS AND STANDARD DEVIATIONS						
53-57	0.0	0.0	0.0	0.0	0.00	0
S.D.	0.0	0.0	0.0	0.0	0.00	0
58-62	0.0	0.0	0.0	0.0	0.00	0
S.D.	0.0	0.0	0.0	0.0	0.00	0
63-67	222.0	67.4	0.6	68.0	0.31	99
S.D.	159.9	48.5	1.3	49.4	0.11	1
68-72	854.2	234.0	0.2	234.2	0.27	100
S.D.	470.2	186.0	0.4	185.8	0.06	0
73-77	164.0	28.2	0.0	28.2	0.17	100
S.D.	173.6	58.6	0.0	58.6	0.09	0
78-82	0.0	0.0	0.0	0.0	0.00	100
S.D.	0.0	0.0	0.0	0.0	0.00	0

Table 15. Sports harvest for Atlantic Salmon in Serpentine River, 1953-82.

RIVER: SERPENTINE RIVER (COAL RIVER)

CODE: 44020900

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	143	91	59	150	1.05	.
1954	184	72	31	103	0.56	75
1955	56	77	39	116	2.07	65
1956	229	160	107	267	1.17	42
1957	266	136	115	251	0.94	58
1958	239	154	72	226	0.95	65
1959	459	175	138	313	0.68	53
1960	416	127	92	219	0.53	66
1961	639	119	103	222	0.35	55
1962	613	380	187	567	0.92	39
1963	330	176	105	281	0.85	78
1964	450	351	322	673	1.50	35
1965	776	249	169	418	0.54	67
1966	489	281	107	388	0.79	70
1967	449	103	50	153	0.34	85
1968	642	209	28	237	0.37	79
1969	875	182	49	231	0.26	81
1970	868	138	40	178	0.21	82
1971	834	130	7	137	0.16	95
1972	1088	116	5	121	0.11	96
1973	754	95	41	136	0.18	74
1974	654	71	18	89	0.14	84
1975	457	66	7	73	0.16	91
1976	475	133	7	140	0.29	90
1977	296	119	10	129	0.44	93
1978	667	237	71	308	0.46	63
1979	384	76	2	78	0.20	99
1980	329	169	15	184	0.56	84
1981	408	179	8	187	0.46	95
1982	576	165	22	187	0.32	89
MEANS AND STANDARD DEVIATIONS						
53-57	175.6	107.2	70.2	177.4	1.01	58
S.D.	81.3	38.8	38.7	76.7	0.14	6
58-62	473.2	191.0	118.4	309.4	0.65	55
S.D.	162.3	108.0	45.2	149.3	0.13	5
63-67	498.8	232.0	150.6	382.6	0.77	66
S.D.	166.1	95.7	104.7	192.8	0.19	9
68-72	861.4	155.0	25.8	180.8	0.21	86
S.D.	158.5	39.0	19.6	52.9	0.04	3
73-77	527.2	96.8	16.6	113.4	0.22	85
S.D.	179.3	29.2	14.4	30.4	0.04	4
78-82	472.8	165.2	23.6	188.8	0.40	87
S.D.	142.4	57.7	27.5	81.4	0.05	7

Table 16. Summary of Atlantic salmon angling catch statistics for Serpentine River, July 1 to August 31, 1973-1982. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1973	655	40	87	127	0.19	
1974	556	17	68	85	0.15	16
1975	253	3	35	38	0.15	4
1976	317	4	92	96	0.30	10
1977	257	6	99	105	0.41	6
1978	667	71	237	308	0.46	
1979	384	2	76	78	0.20	1
1980	329	15	169	184	0.56	16
1981	408	8	179	187	0.46	5
1982	576	22	165	187	0.32	11
Mean						
1973-1977	408	14	76	91	0.24	15
S	186	16	26	36		
V	0.46	1.11	0.34	0.40		
1978-1982	473	24	165	188	0.40	13
S	142	28	58	81		
V	0.30	1.17	0.35	0.43		

Table 17. Sports harvest for Atlantic salmon in Fox Island River, 1953-82.

RIVER: FOX ISLAND RIVER (FOX BROOK)

CODE: 43019200

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	217	38	22	60	0.28	.
1954	250	46	28	74	0.30	58
1955	284	66	15	81	0.29	75
1956	589	156	62	218	0.37	52
1957	541	279	87	366	0.68	64
1958	469	78	143	221	0.47	66
1959	335	33	54	87	0.26	59
1960	385	89	53	142	0.37	38
1961	233	44	23	67	0.29	79
1962	263	148	39	187	0.71	53
1963	220	132	32	164	0.75	82
1964	490	207	55	262	0.53	71
1965	292	68	23	91	0.31	90
1966	198	29	4	33	0.17	94
1967	352	54	57	111	0.32	34
1968	389	64	38	102	0.26	59
1969	32	18	8	26	0.81	89
1970	26	3	1	4	0.15	95
1971	77	12	3	15	0.19	50
1972	76	2	6	8	0.11	67
1973	117	17	3	20	0.17	40
1974	285	51	47	98	0.34	27
1975	135	13	9	22	0.16	85
1976	0	0	0	0	0.00	100
1977	0	0	0	0	0.00	0
1978	0	0	0	0	0.00	0
1979	0	0	0	0	0.00	0
1980	0	0	0	0	0.00	0
1981	164	62	2	64	0.39	0
1982	188	43	8	51	0.27	89
MEANS AND STANDARD DEVIATIONS						
53-57	376.2	117.0	42.8	159.8	0.42	61
S.D.	174.8	102.0	30.6	131.8	0.09	4
58-62	337.0	78.4	62.4	140.8	0.42	63
S.D.	94.9	45.3	46.8	65.0	0.07	4
63-67	310.4	98.0	34.2	132.2	0.43	77
S.D.	117.4	71.8	22.3	86.4	0.08	8
68-72	120.0	19.8	11.2	31.0	0.26	73
S.D.	152.3	25.6	15.2	40.6	0.04	10
73-77	107.4	16.2	11.8	28.0	0.26	58
S.D.	117.8	20.9	20.0	40.5	0.06	21
78-82	70.4	21.0	2.0	23.0	0.33	86
S.D.	96.8	29.5	3.5	31.8	0.05	4

Table 18. Commercial landings of Atlantic salmon and licenced fishing gear in Statistical Area K, 1952 to 1982. A gear unit is 50 fathoms of gill net. The landings in 1974 to 1977 during the period June 1 to July 10 are shown in parentheses.

Year	Licenced effort (gear units)	Salmon >2.7 kg (mt)	Salmon <2.7 kg (mt)	Total (mt)	Catch per licenced gear unit (mt)
1952				21	
1953				40	
1954				31	
1955				39	
1956				33	
1957				43	
1958				56	
1959				48	
1960				49	
1961				50	
1962				38	
1963				44	
1964				35	
1965				42	
1966				46	
1967				56	
1968				29	
1969	218	13	22	35	0.16
1970	226	49	10	59	0.26
1971	337	21	7	28	0.08
1972	260	18	15	33	0.13
1973	365	12	33	45	0.12
1974	395	16(9)	15(12)	31(21)	0.08
1975	574	11(7)	9(8)	20(15)	0.03
1976	501	17(13)	21(19)	38(32)	0.08
1977	467	22(17)	19(15)	41(32)	0.09
1978	456	11	12	23	0.05
1979	455	6	17	23	0.05
1980	425	16	24	40	0.09
1981	403	7	19	26	0.06
1982	338	4	13	17	0.05
Mean					
1973-77	460	15.6	19.5	35.0	0.08
S.D.	84	4.4	10.3	9.8	
1974-77*	484	11.5	13.5	25.0	
S.D.	74	4.4	4.7	8.4	
1978-82	415	8.8	17.0	25.6	0.06
S.D.	49	5.5	5.5	8.6	

*With season from June 1 to July 10.

Table 19. Commercial landings of large salmon and 1SW salmon in Area J and Statistical Sections 39 and 38.

	Area J			Section 39			Section 38		
Year	Large Salmon (MT)	1SW Salmon (MT)	Total (MT)	Large salmon (MT)	1SW salmon (MT)	Total (MT)	Large salmon (MT)	1SW salmon (MT)	Total (MT)
1969	255	40	295	144	11	155	77	5	82
1970	152	36	188	83	15	98	47	8	55
1971	81	32	113	43	13	56	20	6	26
1972	109	50	159	30	3	33	50	7	57
1973	88	117	205	-	-	71	-	-	82
1974	121	205	326	-	-	119	-	-	92
1975	200	81	281	67	35	102	60	12	72
1976	321	85	406	83	13	96	66	18	84
1977	159	14	173	69	4	73	58	4	62
1978	90	4	94	39	1	40	36	1	37
1979	86	13	99	37	2	39	20	7	27
1980	113	36	149	43	6	49	51	9	60
1981	97	13	110	37	2	39	39	3	42
1982	91	18	109	41	2	43	24	1	25

Table 20. Sports harvest for Atlantic salmon in Area K, 1953-82.

STATISTICAL AREA: K

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	8040	3118	1066	4184	0.52	.
1954	3994	1578	670	2248	0.56	82
1955	5696	2126	617	2743	0.48	72
1956	8213	3187	1166	4353	0.53	65
1957	8720	4580	1621	6201	0.71	66
1958	7699	3172	1551	4723	0.61	75
1959	8824	2664	928	3592	0.41	77
1960	8054	3935	603	4538	0.56	82
1961	10244	3930	967	4897	0.48	80
1962	12834	6485	1133	7618	0.59	78
1963	15743	8420	2240	10660	0.68	74
1964	16849	8956	1878	10834	0.64	82
1965	14721	6127	1544	7671	0.52	85
1966	11977	3648	1450	5098	0.43	81
1967	15534	5608	1577	7185	0.46	70
1968	15114	5615	987	6602	0.44	85
1969	16025	6987	1082	8069	0.50	84
1970	19612	6153	1049	7202	0.37	87
1971	18103	5339	660	5999	0.33	90
1972	15803	4218	871	5089	0.32	86
1973	19017	6430	1020	7450	0.39	81
1974	18946	4322	744	5066	0.27	90
1975	21678	5771	756	6527	0.30	85
1976	20964	5121	554	5675	0.27	91
1977	17209	4355	994	5349	0.31	84
1978	11084	2327	597	2924	0.26	88
1979	7751	2572	84	2656	0.34	97
1980	12316	4213	673	4886	0.40	79
1981	14311	4911	500	5411	0.38	89
1982	15417	5045	469	5514	0.36	91
MEANS AND STANDARD DEVIATIONS						
53-57	6932.6	2917.8	1028.0	3945.8	0.57	71
S.D.	2014.0	1150.8	409.0	1552.2	0.05	4
58-62	9531.0	4037.2	1036.4	5073.6	0.53	78
S.D.	2089.0	1470.4	345.9	1509.1	0.04	1
63-67	14964.8	6551.8	1737.8	8289.6	0.55	79
S.D.	1834.8	2166.4	323.3	2443.5	0.05	3
68-72	16931.4	5662.4	929.8	6592.2	0.39	86
S.D.	1867.9	1023.3	170.9	1136.3	0.03	1
73-77	19562.8	5199.8	813.6	6013.4	0.31	86
S.D.	1778.8	912.4	194.1	972.3	0.02	2
78-82	12175.8	3813.6	464.6	4278.2	0.35	89
S.D.	2994.0	1287.6	227.5	1382.5	0.02	2

Table 21. Summary of the Atlantic salmon angling catch statistics for Area K reported each year 1973-77 during the portion of the angling season equivalent to the reduced angling season of 1978-82.

Year	Rod days	Large Salmon (no)	Grilse (no)	Total (no)	Fish per rod day
1973	13117	566	5373	5939	0.45
1974	14605	481	3671	4152	0.28
1975	12843	287	4130	4417	0.34
1976	11838	246	3936	4182	0.35
1977	11801	588	3542	4130	0.35

Table 22. List of linear regressions calculated for harvest statistics in commercial and angling fisheries in Area K.

1. Angling catches of large salmon in Area K (year n) on commercial catches of large salmon (year n) in Area K
   1969-1982 $y = 0.0144x + 490.15$ $n = 14$; $R^2 = 0.31$ Significant at $P<0.05$
   1978-1982 $y = 0.0270x + 223.33$ $n = 5$; $R^2 = 0.35$

2. Angling catches of grilse in Area K (year n) on commercial catch of 1SW salmon in Area K (year n)
   1969-1982 $y = 0.0418x + 4132.27$ $n = 14$; $R^2 = 0.05$
   1978-1982 $y = 0.0909x + 2267.10$ $n = 5$; $R^2 = 0.11$

3. Commercial catches of 1SW salmon in Area K on commercial catches of 1SW salmon in Section 39 (year n)
   1969-1982 $y = -0.0085x + 10680.33$ $n = 14$; $R^2 = 0.00$
   1978-1982 $y = 1.8428x + 12219.84$ $n = 5$; $R^2 = 0.64$

4. Commercial catch of large salmon in Area K (year n) on commercial catch of large salmon in Section 39 (year n)
   1969-1982 $y = 0.0851x + 10680.33$ $n = 14$; $R^2 = 0.08$
   1978-1982 $y = 0.176x - 2666.61$ $n = 5$; $R^2 = 0.12$

5. Commercial catch of large salmon in Area K (year n) on commercial catch of large salmon in Section 38 (year n)
   1969-1982 $y = 0.0743x + 12421.1$ $n = 14$; $R^2 = 0.02$
   1978-1982 $y = 0.4468x + 7679.45$ $n = 5$; $R^2 = 0.75$ Significant at $P<.01$

6. Commercial catch of 1SW salmon in Area K (year n) on commercial catch of 1SW salmon in Section 38 (year n)
   1969-1982 $y = 0.1475x + 14757.01$ $n = 14$; $R^2 = 0.02$
   1978-1982 $y = 1.4045x + 12381.8$ $n = 5$; $R^2 = 0.84$ Significant at $P<0.05$

7. Commercial catch of 1SW salmon in Area K (year n) on commercial catch of 1SW salmon in Area J (year n)
   1969-1982 $y = 0.0922x + 12902.89$ $n = 14$; $R^2 = 0.21$
   1978-1982 $y = 0.3416x + 11125.05$ $n = 5$; $R^2 = 0.69$ Significant at $P<0.1$

8. Commercial catch of large salmon in Area K (year n) on commercial catch of large salmon in Area J (year n)
   1969-1982 $y = 0.0178x + 13146.19$ $n = 14$; $R^2 = 0.02$
   1978-1982 $y = 0.3144x - 20846.81$ $n = 5$; $R^2 = 0.51$

9. Commercial catch of large salmon in Area K + Area L (year n) on commercial catch of large salmon in Section 39 + Section 38 (year n)
   1969-1982 $y = 0.0624x + 13334.43$ $n = 14$; $R^2 = 0.08$
   1978-1982 $y = 0.4703x - 20948.67$ $n = 5$; $R^2 = 0.81$ Significant at $P<0.05$*)

Table 22. (Cont'd.) List of linear regressions calculated for harvest statistics in commercial and angling fisheries in Area K.

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10. Commercial catches of large salmon in Area K + Area L (year n) on commercial catch of large salmon in Section 39 (year n)
    1969-1982 $y = 0.1011x + 13849.27$ $n = 14$; $R^2 = 0.11$
    1978-1982 $y = 0.3860x - 434.95$ $n = 5$; $R^2 = 0.25$

11. Commercial catch of 1SW salmon in Area K + Area L (year n) on commercial catch of 1SW salmon in Section 39 (year n)
    1969-1982 $y = 0.1366x + 24901.2$ $n = 14$; $R^2 = 0.04$
    1978-1982 $y = 3.8733x + 16257.44$ $n = 5$; $R^2 = 0.89$ Significant at $P<0.05$

12. Commercial catches of 1SW salmon in Area K + Area L (year n) on commercial catch of 1SW salmon in Section 38 + 39 (year n)
    1969-1982 $y = -0.0588x + 24469.9$ $n = 14$; $R^2 = 0.01$
    1978-1982 $y = 1.6062x + 16854.83$ $n = 5$; $R^2 = 0.94$ Significant at $P<0.01$

Table 23. Sports harvest of Atlantic salmon in Harry's River, 1953-82.

RIVER: HARRYS RIVER

CODE: 41012000

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	3458	935	146	1081	0.31	.
1954	800	244	18	262	0.33	98
1955	1464	499	61	560	0.38	80
1956	2211	668	206	874	0.40	71
1957	1689	1418	493	1911	1.13	58
1958	537	984	218	1202	2.24	87
1959	1466	604	95	699	0.48	91
1960	302	603	91	694	2.30	87
1961	1676	734	119	853	0.51	84
1962	3316	1488	226	1714	0.52	76
1963	4354	2467	457	2924	0.67	77
1964	3933	2673	373	3046	0.77	87
1965	3338	1175	262	1437	0.43	91
1966	2113	620	316	936	0.44	79
1967	2630	706	248	954	0.36	71
1968	2640	863	85	948	0.36	89
1969	3360	1491	181	1672	0.50	83
1970	5288	1662	207	1869	0.35	88
1971	5146	1435	47	1482	0.29	97
1972	3632	782	32	814	0.22	98
1973	4748	1583	196	1779	0.37	80
1974	4218	941	34	975	0.23	98
1975	2180	704	16	720	0.33	98
1976	2893	902	40	942	0.33	95
1977	3853	1008	68	1076	0.28	93
1978	3142	713	65	778	0.25	94
1979	755	148	1	149	0.20	100
1980	1602	518	65	583	0.36	69
1981	2082	659	18	677	0.33	97
1982	2141	570	31	601	0.28	96
MEANS AND STANDARD DEVIATIONS						
53-57	1924.4	752.8	184.8	937.6	0.49	75
S.D.	995.7	448.9	187.1	626.7	0.15	11
58-62	1459.4	882.6	149.8	1032.4	0.71	85
S.D.	1192.1	372.4	66.8	433.4	0.19	2
63-67	3273.6	1528.2	331.2	1859.4	0.57	84
S.D.	917.5	976.9	85.9	1047.9	0.08	3
68-72	4013.2	1246.6	110.4	1357.0	0.34	92
S.D.	1158.2	397.1	79.3	458.0	0.04	3
73-77	3578.4	1027.6	70.8	1098.4	0.31	93
S.D.	1034.1	330.5	72.4	402.1	0.03	3
78-82	1944.4	521.6	36.0	557.6	0.29	94
S.D.	869.4	222.2	28.5	241.0	0.02	2

Table 24. Summary of Atlantic salmon angling statistics for Harry's River, July 1 - August 15, 1973-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1973	2877	159	1035	1194	0.42	
1974	2795	19	775	794	0.28	2
1975	959	5	361	366	0.38	1
1976	1707	25	646	671	0.39	6
1977	2704	39	741	780	0.29	6
1978	3142	65	713	778	0.25	
1979	755	1	148	149	0.20	0
1980	1602	65	518	583	0.36	31
1981	2082	17	659	676	0.32	3
1982	2141	31	570	601	0.28	4
Mean 1973-77						
$\bar{X}$	2208	49	712	761	0.34	6
S	844	62	243	297		
CV	38	127	34	39		
1978-82						
$\bar{X}$	1944	36	522	557	.29	6
S	869	29	222	241		
CV	45	81	43	43		

Table 25. Sports harvest of Atlantic salmon in Southwest and Bottom Brooks, 1953-82.

RIVER: SOUTHWEST AND BOTTOM BROOKS

CODE: 41011500

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	477	117	46	163	0.34	.
1954	193	48	76	124	0.64	61
1955	406	114	61	175	0.43	44
1956	335	120	37	157	0.47	75
1957	727	223	128	351	0.48	48
1958	173	265	78	343	1.98	74
1959	848	255	152	407	0.48	64
1960	266	603	11	614	2.31	96
1961	1304	307	144	451	0.35	81
1962	1088	597	65	662	0.61	83
1963	1484	736	291	1027	0.69	67
1964	2375	694	155	849	0.36	83
1965	1636	768	108	876	0.54	87
1966	1970	555	324	879	0.45	70
1967	2867	876	383	1259	0.44	59
1968	1696	527	87	614	0.36	91
1969	2188	866	28	894	0.41	95
1970	2056	604	125	729	0.35	87
1971	2145	419	150	569	0.27	80
1972	2613	554	152	706	0.27	73
1973	2837	895	165	1060	0.37	77
1974	2953	364	214	578	0.20	81
1975	6705	1606	254	1860	0.28	59
1976	5865	581	71	652	0.11	96
1977	3453	568	161	729	0.21	78
1978	1353	274	27	301	0.22	95
1979	844	180	6	186	0.22	98
1980	1157	426	46	472	0.41	80
1981	1792	659	34	693	0.39	93
1982	1738	741	32	773	0.44	95
MEANS AND STANDARD DEVIATIONS						
53-57	427.6	124.4	69.6	194.0	0.45	57
S.D.	197.6	62.7	35.9	89.8	0.04	6
58-62	735.8	405.4	90.0	495.4	0.67	79
S.D.	499.2	178.7	58.7	136.8	0.21	4
63-67	2066.4	725.8	252.2	978.0	0.47	73
S.D.	563.5	116.9	116.2	171.9	0.05	5
68-72	2139.6	594.0	108.4	702.4	0.33	86
S.D.	328.0	166.4	52.0	125.5	0.03	3
73-77	4362.6	802.8	173.0	975.8	0.22	82
S.D.	1794.8	487.5	68.7	527.5	0.04	6
78-82	1376.8	456.0	29.0	485.0	0.35	94
S.D.	398.6	241.2	14.6	249.8	0.05	2

Table 26. Summary of Atlantic salmon angling statistics for Southwest and Bottom Brooks, June 20-August 31, 1970-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1970	780	29	342	371	0.48	
1971	831	37	284	321	0.39	10
1972	1476	29	439	468	0.32	9
1973	1584	78	761	839	0.53	15
1974	2159	130	308	438	0.20	15
1975	3596	111	1216	1327	0.37	26
1976	2164	31	441	472	0.22	2
1977	1718	87	421	508	0.29	16
1978	1353	27	274	301	0.22	
1979	844	6	180	186	0.22	2
1980	1157	46	426	472	0.41	20
1981	1792	34	659	693	0.39	7
1982	1738	32	741	773	0.44	5
Mean 1973-77						
$\bar{X}$	2244	87	629	717	0.32	12
S	799	38	369	377		
CV	36	44	59	53		
1978-82						
$\bar{X}$	1377	29	456	485	0.35	6
S	399	15	241	250		
CV	29	52	53	52		

Table 27. Sports harvest of Atlantic salmon in Little Barachois Brook, 1953-82.

RIVER: LITTLE BARACHOIS BROOK

CODE: 41011100

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	115	68	29	97	0.84	.
1954	96	42	6	48	0.50	92
1955	204	57	3	60	0.29	93
1956	307	140	8	148	0.48	88
1957	226	131	12	143	0.63	92
1958	209	101	10	111	0.53	93
1959	247	44	22	66	0.27	82
1960	346	114	17	131	0.38	72
1961	361	136	7	143	0.40	94
1962	381	189	14	203	0.53	91
1963	357	222	9	231	0.65	95
1964	569	302	42	344	0.60	84
1965	690	253	23	276	0.40	93
1966	223	150	8	158	0.71	97
1967	253	125	4	129	0.51	97
1968	266	97	0	97	0.36	100
1969	142	59	0	59	0.42	100
1970	301	110	0	110	0.37	100
1971	337	172	4	176	0.52	96
1972	485	295	18	313	0.65	91
1973	621	230	35	265	0.43	89
1974	999	316	47	363	0.36	83
1975	756	256	27	283	0.37	92
1976	717	205	29	234	0.33	90
1977	932	249	37	286	0.31	85
1978	339	73	7	80	0.24	97
1979	165	37	0	37	0.22	100
1980	436	183	10	193	0.44	79
1981	602	151	7	158	0.26	96
1982	489	169	8	177	0.36	95
MEANS AND STANDARD DEVIATIONS						
53-57	189.6	87.6	11.6	99.2	0.52	91
S.D.	86.1	44.8	10.3	46.0	0.08	1
58-62	308.8	116.8	14.0	130.8	0.42	88
S.D.	76.0	52.8	5.9	49.9	0.05	3
63-67	418.4	210.4	17.2	227.6	0.54	93
S.D.	203.6	72.9	15.6	87.3	0.06	3
68-72	306.2	146.6	4.4	151.0	0.49	96
S.D.	124.0	92.4	7.8	99.9	0.07	2
73-77	805.0	251.2	35.0	286.2	0.36	88
S.D.	156.3	41.3	7.9	47.7	0.02	2
78-82	406.2	122.6	6.4	129.0	0.32	96
S.D.	164.9	64.0	3.8	67.3	0.04	2

Table 28. Summary of Atlantic salmon angling catch statistics for Little Barachois River, July 1 - August 15, 1970-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1970	217	0	85	85	0.39	
1971	212	3	118	121	0.57	3
1972	375	18	285	303	0.81	13
1973	487	30	203	233	0.48	10
1974	746	45	280	325	0.44	18
1975	454	15	159	174	0.38	5
1976	482	21	156	177	0.37	12
1977	629	22	169	191	0.30	12
1978	339	7	73	80	0.24	
1979	165	0	37	37	0.22	0
1980	436	10	183	193	0.44	21
1981	602	7	151	158	0.26	4
1982	489	8	169	177	0.36	5
1973-77						
$\bar{X}$	560	27	193	220	0.39	12
S	125	12	52	63		
CV	22	44	27	29		
1978-82						
$\bar{X}$	406	6	123	129	0.32	5
S	165	4	64	67		
CV	41	67	52	52		

Table 29. Sports harvest of Atlantic salmon in Flat Bay Brook, 1953-82.

RIVER: FLAT BAY BROOK

CODE: 41010800

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	900	666	119	785	0.87	.
1954	499	329	46	375	0.75	94
1955	864	431	33	464	0.54	91
1956	773	566	29	595	0.77	94
1957	884	718	19	737	0.83	97
1958	902	620	39	659	0.73	95
1959	613	334	18	352	0.57	97
1960	1559	1010	65	1075	0.69	84
1961	1176	764	35	799	0.68	97
1962	1200	1378	74	1452	1.21	91
1963	1515	1827	92	1919	1.27	94
1964	1657	1853	97	1950	1.18	95
1965	1658	778	175	953	0.57	91
1966	861	576	33	609	0.71	96
1967	1485	898	63	961	0.65	90
1968	1505	951	40	991	0.66	96
1969	1635	857	95	952	0.58	91
1970	3206	1496	115	1611	0.50	88
1971	2741	1019	80	1099	0.40	95
1972	2559	879	71	950	0.37	93
1973	2064	696	84	780	0.38	91
1974	2156	510	59	569	0.26	92
1975	2625	408	42	450	0.17	92
1976	1705	609	48	657	0.39	89
1977	1045	209	26	235	0.22	96
1978	537	140	12	152	0.28	95
1979	263	72	4	76	0.29	97
1980	932	445	26	471	0.51	73
1981	1299	457	39	496	0.38	92
1982	1357	427	33	460	0.34	93
MEANS AND STANDARD DEVIATIONS						
53-57	784.0	542.0	49.2	591.2	0.75	94
S.D.	166.7	161.7	40.2	174.5	0.06	1
58-62	1090.0	821.2	46.2	867.4	0.80	94
S.D.	354.4	395.8	22.9	417.9	0.12	2
63-67	1435.2	1186.4	92.0	1278.4	0.89	93
S.D.	330.7	607.7	53.0	615.7	0.15	1
68-72	2329.2	1040.4	80.2	1120.6	0.48	93
S.D.	733.6	262.5	28.0	280.8	0.05	1
73-77	1919.0	486.4	51.8	538.2	0.28	92
S.D.	588.5	188.8	21.6	208.1	0.05	1
78-82	877.6	308.2	22.8	331.0	0.38	92
S.D.	475.4	186.4	14.5	200.3	0.04	2

Table 30. Sports harvest of Atlantic salmon in Fischells Brook, 1953-82.

RIVER: FISCHELLS BROOK

CODE: 40009600

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	211	97	38	135	0.64	.
1954	172	34	43	77	0.45	69
1955	215	32	45	77	0.36	43
1956	259	147	69	216	0.83	32
1957	441	182	78	260	0.59	65
1958	459	156	99	255	0.56	65
1959	407	144	31	175	0.43	83
1960	366	95	38	133	0.36	79
1961	582	193	72	265	0.46	57
1962	674	282	57	339	0.50	77
1963	943	425	120	545	0.58	70
1964	874	305	136	441	0.50	76
1965	624	202	84	286	0.46	78
1966	442	52	55	107	0.24	79
1967	612	355	40	395	0.65	57
1968	642	277	44	321	0.50	89
1969	718	416	77	493	0.69	78
1970	766	302	135	437	0.57	75
1971	582	239	27	266	0.46	92
1972	417	133	63	196	0.47	79
1973	952	401	81	482	0.51	62
1974	753	220	27	247	0.33	94
1975	522	184	21	205	0.39	91
1976	418	185	16	201	0.48	92
1977	468	245	66	311	0.66	74
1978	292	154	31	185	0.63	89
1979	168	67	0	67	0.40	100
1980	386	227	40	267	0.69	63
1981	463	272	11	283	0.61	95
1982	651	357	7	364	0.56	97
MEANS AND STANDARD DEVIATIONS						
53-57	259.6	98.4	54.6	153.0	0.59	57
S.D.	106.0	66.9	17.7	82.6	0.07	8
58-62	497.6	174.0	59.4	233.4	0.47	72
S.D.	127.7	69.8	27.4	80.8	0.03	5
63-67	699.0	267.8	87.0	354.8	0.51	74
S.D.	205.8	145.4	41.0	166.9	0.05	2
68-72	625.0	273.4	69.2	342.6	0.55	82
S.D.	136.0	102.5	41.4	121.8	0.04	3
73-77	622.6	247.0	42.2	289.2	0.46	84
S.D.	224.4	89.8	29.3	116.5	0.05	6
78-82	392.0	215.4	17.8	233.2	0.59	92
S.D.	181.9	110.9	16.9	112.6	0.03	4

Table 31. Summary of Atlantic salmon angling statistics for Fischels Brook, June 20 - August 31, 1973-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1973	595	22	341	363	0.61	
1974	541	5	208	213	0.39	1
1975	227	1	100	101	0.44	0
1976	219	4	133	137	0.63	4
1977	316	17	227	244	0.77	11
1978	292	31	154	185	0.63	
1979	168	0	67	67	0.40	0
1980	386	40	227	267	0.69	37
1981	463	11	272	283	0.61	5
1982	651	7	357	364	0.55	3
Mean 1973-77						
$\bar{X}$	380	10	202	212	0.56	5
S	177	9	94	102		
CV	47	90	47	48		
1978-82						
$\bar{X}$	392	18	215	233	0.59	8
S	182	17	111	113		
CV	46	94	52	49		

Table 32. Sports harvest of Atlantic salmon in Robinsons River, 1953-82.

RIVER: ROBINSONS RIVER

CODE: 40009200

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	874	489	152	641	0.73	.
1954	725	370	203	573	0.79	71
1955	754	363	106	469	0.62	78
1956	1482	588	199	787	0.53	65
1957	1822	796	178	974	0.53	77
1958	1772	360	298	658	0.37	73
1959	1615	488	98	586	0.36	79
1960	1726	760	117	877	0.51	81
1961	1481	732	166	898	0.61	82
1962	1438	1005	117	1122	0.78	86
1963	1823	1206	390	1596	0.88	72
1964	1551	935	282	1217	0.78	81
1965	1455	1021	200	1221	0.84	82
1966	1070	504	142	646	0.60	88
1967	1491	847	166	1013	0.68	75
1968	1805	805	147	952	0.53	85
1969	1040	567	73	640	0.62	92
1970	1037	519	80	599	0.58	88
1971	1171	373	57	430	0.37	90
1972	640	287	41	328	0.51	90
1973	1437	820	85	905	0.63	77
1974	1134	354	17	371	0.33	98
1975	1556	611	42	653	0.42	89
1976	1842	556	56	612	0.33	92
1977	1184	403	184	587	0.50	75
1978	671	235	68	303	0.45	86
1979	989	495	23	518	0.52	91
1980	1352	684	113	797	0.59	81
1981	1527	861	129	990	0.65	84
1982	1648	905	41	946	0.57	95
MEANS AND STANDARD DEVIATIONS						
53-57	1131.4	521.2	167.6	688.8	0.61	73
S.D.	493.4	179.5	40.0	196.8	0.05	3
58-62	1606.4	669.0	159.2	828.2	0.52	80
S.D.	146.5	251.7	81.6	212.8	0.08	3
63-67	1478.0	902.6	236.0	1138.6	0.77	80
S.D.	270.0	259.4	101.1	346.6	0.05	3
68-72	1138.6	510.2	79.6	589.8	0.52	89
S.D.	422.4	199.3	40.6	238.7	0.04	1
73-77	1430.6	548.8	76.8	625.6	0.44	87
S.D.	288.9	184.8	64.8	190.6	0.06	5
78-82	1237.4	636.0	74.8	710.8	0.57	88
S.D.	402.5	276.6	45.5	293.3	0.03	3

Table 33. Summary of Atlantic salmon angling statistics for Robinson's River, June 20 - August 31, 1970-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1970	606	1	388	389	0.64	
1971	560	8	312	320	0.57	2
1972	459	4	273	277	0.60	1
1973	1091	38	759	797	0.73	12
1974	935	4	338	342	0.37	1
1975	912	0	407	407	0.45	0
1976	987	5	387	392	0.40	1
1977	873	97	381	478	0.55	20
1978	671	68	235	303	0.45	
1979	989	23	495	518	0.52	9
1980	1352	113	684	797	0.59	19
1981	1527	129	861	990	0.65	16
1982	1648	41	905	946	0.57	5
Mean 1973-77						
$\bar{X}$	960	29	454	483	0.50	6
S	84	41	172	182		
CV	9	141	38	38		
1978-82						
$\bar{X}$	1237	75	636	711	0.57	11
S	403	45	277	293		
CV	33	60	44	41		

Table 34. Sports harvest of Atlantic salmon in Barachois Brook, 1953-82.

RIVER: BARACHOIS BROOK

CODE: 40009000

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	45	23	4	27	0.60	.
1954	66	33	14	47	0.71	62
1955	60	27	15	42	0.70	69
1956	183	228	70	298	1.63	28
1957	185	167	68	235	1.27	77
1958	237	109	87	196	0.83	66
1959	184	59	16	75	0.41	87
1960	179	86	15	101	0.56	80
1961	336	215	25	240	0.71	77
1962	404	236	47	283	0.70	82
1963	750	271	145	416	0.55	62
1964	839	342	99	441	0.53	73
1965	966	542	111	653	0.68	75
1966	507	187	90	277	0.55	86
1967	788	546	159	705	0.89	54
1968	878	613	124	737	0.84	81
1969	1343	766	154	920	0.69	80
1970	1300	372	69	441	0.34	92
1971	904	550	54	604	0.67	87
1972	1025	348	184	532	0.52	75
1973	1222	568	77	645	0.53	82
1974	894	257	70	327	0.37	89
1975	1129	510	117	627	0.56	69
1976	1572	526	46	572	0.36	92
1977	1218	534	56	590	0.48	90
1978	273	51	102	153	0.56	84
1979	342	124	0	124	0.36	100
1980	622	290	24	314	0.50	84
1981	487	210	3	213	0.44	99
1982	313	137	2	139	0.44	99
MEANS AND STANDARD DEVIATIONS						
53-57	107.8	95.6	34.2	129.8	1.20	65
S.D.	70.0	95.6	32.1	127.0	0.20	12
58-62	268.0	141.0	38.0	179.0	0.67	77
S.D.	98.8	79.5	30.3	89.1	0.06	5
63-67	770.0	377.6	120.8	498.4	0.65	72
S.D.	168.1	161.5	29.9	177.3	0.07	6
68-72	1090.0	529.8	117.0	646.8	0.59	83
S.D.	219.0	174.0	55.2	187.2	0.09	3
73-77	1207.0	479.0	73.2	552.2	0.46	86
S.D.	243.7	125.9	27.3	129.2	0.04	4
78-82	407.4	162.4	26.2	188.6	0.46	90
S.D.	144.6	90.9	43.5	77.8	0.03	4

Table 35. Summary of Atlantic salmon angling statistics for Barachois River, June 20 - August 31, 1972-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1972	534	57	259	316	0.59	
1973	627	7	478	485	0.77	3
1974	519	29	242	271	0.52	6
1975	395	17	241	258	0.65	7
1976	560	4	221	225	0.40	2
1977	758	19	384	403	0.53	8
1978	273	102	51	153	0.56	
1979	342	0	124	124	0.36	0
1980	622	24	290	314	0.50	16
1981	487	3	210	213	0.44	1
1982	313	2	137	139	0.44	1
Mean 1973-77						
$\bar{X}$	572	15	313	328	0.57	5
S	134	10	113	111		
CV	23	67	36	34		
1978-82						
$\bar{X}$	407	26	162	189	0.46	8
S	145	43	91	78		
CV	36	165	56	41		

Table 36. Sports harvest of Atlantic salmon in Crabbes Brook, 1953-82.

RIVER: CRABBES BROOK

CODE: 40008600

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	153	71	34	105	0.69	.
1954	157	116	51	167	1.06	58
1955	194	76	99	175	0.90	54
1956	747	180	219	399	0.53	26
1957	1278	331	311	642	0.50	37
1958	1088	134	274	408	0.38	55
1959	1142	236	184	420	0.37	42
1960	838	147	50	197	0.24	83
1961	1005	324	112	436	0.43	57
1962	1170	569	196	765	0.65	62
1963	1272	468	300	768	0.60	65
1964	1625	818	291	1109	0.68	62
1965	1252	430	242	672	0.54	77
1966	954	240	155	395	0.41	74
1967	1054	485	201	686	0.65	54
1968	1063	452	227	679	0.64	68
1969	1397	833	234	1067	0.76	66
1970	1324	303	150	453	0.34	85
1971	1026	310	85	395	0.38	78
1972	932	398	152	550	0.59	67
1973	830	333	106	439	0.53	79
1974	1010	294	98	392	0.39	77
1975	1641	270	90	360	0.22	77
1976	859	191	58	249	0.29	82
1977	859	217	126	343	0.40	60
1978	907	138	127	265	0.29	63
1979	501	229	14	243	0.49	91
1980	902	363	91	454	0.50	72
1981	905	389	115	504	0.56	76
1982	1135	561	75	636	0.56	84
MEANS AND STANDARD DEVIATIONS						
53-57	505.8	154.8	142.8	297.6	0.59	39
S.D.	499.5	107.7	118.6	222.5	0.07	6
58-62	1048.6	282.0	163.2	445.2	0.42	59
S.D.	133.5	177.7	85.5	203.7	0.07	5
63-67	1231.4	488.2	237.8	726.0	0.59	68
S.D.	257.6	208.7	61.1	256.2	0.04	4
68-72	1148.4	459.2	169.6	628.8	0.55	74
S.D.	201.1	218.0	61.8	267.5	0.09	5
73-77	1039.8	261.0	95.6	356.6	0.34	76
S.D.	343.4	57.4	24.9	70.4	0.06	3
78-82	870.0	336.0	84.4	420.4	0.48	76
S.D.	229.1	161.9	44.3	166.0	0.05	4

Table 37. Summary of Atlantic salmon angling statistics for Crabbes River, June 20 - August 31, 1970-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1970	827	57	253	310	0.37	
1971	828	42	283	325	0.39	14
1972	706	93	384	477	0.68	25
1973	576	65	312	377	0.65	14
1974	840	84	287	371	0.44	21
1975	796	18	186	204	0.26	6
1976	498	15	146	161	0.32	7
1977	606	75	178	253	0.42	34
1978	907	127	138	265	0.29	
1979	501	14	229	243	0.49	9
1980	902	91	363	454	0.50	28
1981	905	115	389	504	0.56	24
1982	1135	75	561	636	0.56	16
Mean 1973-77						
$\bar{X}$	663	51	222	273	0.41	19
S	148	33	73	98		
CV	22	65	33	36		
1978-82						
$\bar{X}$	870	84	336	420	0.48	20
S	229	44	162	166		
CV	26	52	48	40		

Table 38. Sports harvest of Atlantic salmon in Highlands River, 1953-82.

RIVER: HIGHLANDS RIVER

CODE: 40008300

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	133	40	50	90	0.68	.
1954	76	7	33	40	0.53	55
1955	134	42	55	97	0.72	11
1956	313	24	23	47	0.15	65
1957	197	43	59	102	0.52	29
1958	451	14	90	104	0.23	32
1959	369	16	69	85	0.23	17
1960	507	24	64	88	0.17	20
1961	204	8	11	19	0.09	69
1962	690	12	97	109	0.16	8
1963	567	6	92	98	0.17	12
1964	422	3	55	58	0.14	10
1965	200	26	12	38	0.19	20
1966	370	33	15	48	0.13	63
1967	456	27	69	96	0.21	32
1968	269	27	8	35	0.13	77
1969	312	105	9	114	0.37	75
1970	216	63	16	79	0.37	87
1971	179	41	25	66	0.37	72
1972	73	16	4	20	0.27	91
1973	149	19	8	27	0.18	67
1974	247	21	14	35	0.14	58
1975	362	28	8	36	0.10	72
1976	108	23	8	31	0.29	78
1977	239	47	18	65	0.27	56
1978	0	0	0	0	0.00	100
1979	0	0	0	0	0.00	0
1980	0	0	0	0	0.00	0
1981	0	0	0	0	0.00	0
1982	0	0	0	0	0.00	0
MEANS AND STANDARD DEVIATIONS						
53-57	170.6	31.2	44.0	75.2	0.44	40
S.D.	90.4	15.6	15.4	29.4	0.14	11
58-62	444.2	14.8	66.2	81.0	0.18	24
S.D.	178.7	5.9	33.8	36.1	0.02	7
63-67	403.0	19.0	48.6	67.6	0.17	25
S.D.	134.5	13.5	34.7	27.8	0.02	8
68-72	209.8	50.4	12.4	62.8	0.30	81
S.D.	91.7	35.2	8.3	37.1	0.06	4
73-77	221.0	27.6	11.2	38.8	0.18	66
S.D.	98.5	11.3	4.6	15.1	0.04	5
78-82	0.0	0.0	0.0	0.0	0.00	100
S.D.	0.0	0.0	0.0	0.0	0.00	0

Table 39. Sports harvest of Atlantic salmon in Grand Codroy River, 1953-82.

RIVER: GRAND CODROY RIVER

CODE: 40003300

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	1424	556	367	923	0.65	.
1954	1060	310	154	464	0.44	78
1955	1152	442	132	574	0.50	70
1956	1411	510	299	809	0.57	60
1957	1195	545	270	815	0.68	65
1958	1737	414	349	763	0.44	61
1959	1665	449	237	686	0.41	64
1960	1679	432	135	567	0.34	77
1961	2011	512	271	783	0.39	61
1962	2205	675	236	911	0.41	68
1963	2328	728	337	1065	0.46	67
1964	2465	985	332	1317	0.53	69
1965	2458	862	301	1163	0.47	77
1966	3051	678	301	979	0.32	74
1967	3260	688	238	926	0.28	74
1968	3988	925	222	1147	0.29	76
1969	3390	965	223	1188	0.35	81
1970	3447	627	137	764	0.22	88
1971	3243	732	120	852	0.26	84
1972	2637	468	120	588	0.22	86
1973	3468	825	143	968	0.28	77
1974	4144	991	149	1140	0.28	85
1975	3757	1126	123	1249	0.33	89
1976	4174	1205	132	1337	0.32	90
1977	3069	773	212	985	0.32	85
1978	3125	510	148	658	0.21	84
1979	3298	1135	30	1165	0.35	94
1980	4645	1032	250	1282	0.28	82
1981	4407	1148	133	1281	0.29	89
1982	5300	1112	200	1312	0.25	85
MEANS AND STANDARD DEVIATIONS						
53-57	1248.4	472.6	244.4	717.0	0.57	68
S.D.	162.0	101.2	99.3	190.4	0.04	4
58-62	1859.4	496.4	245.6	742.0	0.40	66
S.D.	238.6	106.4	77.0	126.9	0.02	3
63-67	2712.4	788.2	301.8	1090.0	0.40	72
S.D.	414.8	132.3	39.4	155.5	0.05	2
68-72	3341.0	743.4	164.4	907.8	0.27	83
S.D.	484.1	207.1	53.5	255.8	0.02	2
73-77	3722.4	984.0	151.8	1135.8	0.31	86
S.D.	467.6	186.3	35.1	161.4	0.01	2
78-82	4155.0	987.4	152.2	1139.6	0.27	86
S.D.	923.3	270.6	82.4	275.0	0.02	2

Table 40. Summary of Atlantic salmon angling statistics for Grand Codroy River, June 20 - August 31, 1973-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1973	2836	82	797	879	0.31	
1974	3796	127	962	1089	0.29	14
1975	2945	62	1018	1080	0.37	6
1976	3177	59	1114	1173	0.47	5
1977	2825	177	760	937	0.33	14
1978	3125	148	510	658	0.21	
1979	3298	30	1135	1165	0.35	6
1980	4645	250	1032	1282	0.28	18
1981	4407	133	1148	1281	0.29	11
1982	5300	200	1112	1312	0.25	15
Mean 1973-77						
$\bar{X}$	3116	101	930	1033	0.33	10
S	406	50	149	121		
CV	13	50	16	12		
1978-82						
$\bar{X}$	4155	152	987	1140	0.27	13
S	923	82	271	275		
CV	22	54	27	24		

Table 41. Sports harvest of Atlantic salmon in Little Codroy River, 1953-82.

RIVER: LITTLE CODROY RIVER

CODE: 40001400

YEAR	EFFORT ROD DAYS	GRILSE <2.7KG	SALMON >2.7KG	TOTAL CATCH	CUE	PERCENT GRILSE
1953	175	17	79	96	0.55	.
1954	93	14	25	39	0.42	40
1955	140	6	4	10	0.07	78
1956	101	2	6	8	0.08	50
1957	38	4	4	8	0.21	33
1958	57	3	9	12	0.21	31
1959	162	3	2	5	0.03	60
1960	111	1	0	1	0.01	100
1961	16	1	1	2	0.13	50
1962	76	6	1	7	0.09	50
1963	141	7	4	11	0.08	60
1964	323	9	12	21	0.07	37
1965	155	20	25	45	0.29	26
1966	197	19	10	29	0.15	67
1967	218	30	6	36	0.17	76
1968	150	50	0	50	0.33	100
1969	255	10	8	18	0.07	86
1970	381	42	11	53	0.14	48
1971	318	31	11	42	0.13	79
1972	451	38	28	66	0.15	53
1973	531	35	32	67	0.13	54
1974	316	43	13	56	0.18	73
1975	221	46	16	62	0.28	73
1976	522	126	50	176	0.34	48
1977	494	95	40	135	0.27	76
1978	273	29	10	39	0.14	90
1979	336	83	2	85	0.25	94
1980	227	35	8	43	0.19	91
1981	377	87	11	98	0.26	76
1982	294	43	40	83	0.28	69
MEANS AND STANDARD DEVIATIONS						
53-57	109.4	8.6	23.6	32.2	0.29	50
S.D.	51.7	6.5	32.2	38.0	0.12	10
58-62	84.4	2.8	2.6	5.4	0.06	48
S.D.	55.3	2.0	3.6	4.4	0.03	13
63-67	206.8	17.0	11.4	28.4	0.14	52
S.D.	72.0	9.3	8.2	13.1	0.04	11
68-72	311.0	34.2	11.6	45.8	0.15	74
S.D.	115.8	15.2	10.2	17.8	0.02	9
73-77	416.8	69.0	30.2	99.2	0.24	66
S.D.	140.1	39.6	15.7	53.5	0.04	7
78-82	301.4	55.4	14.2	69.6	0.23	82
S.D.	57.7	27.5	14.8	26.8	0.02	6

Table 42. Summary of Atlantic salmon angling statistics for Little Codroy River, July 1 - August 15, 1970-82. Percent large salmon is calculated by smolt year class.

Year	Rod days	Large salmon	Grilse	Total	Fish per rod day	% Large salmon
1970	286	10	39	49	0.17	
1971	236	10	31	41	0.17	20
1972	331	20	20	40	0.12	39
1973	435	20	33	53	0.12	50
1974	231	12	42	54	0.23	27
1975	126	16	34	50	0.40	28
1976	339	34	83	117	0.35	50
1977	327	29	72	101	0.31	26
1978	273	10	29	39	0.14	
1979	336	2	83	85	0.25	6
1980	227	8	35	43	0.19	9
1981	337	11	87	98	0.29	24
1982	294	40	43	83	0.28	32
Mean 1973-77						
$\bar{X}$	292	22	53	75	0.26	29
S	117	9	23	32		
CV	40	41	43	43		
1978-82						
$\bar{X}$	293	14	55	70	0.24	20
S	46	15	28	27		
CV	16	107	51	39		

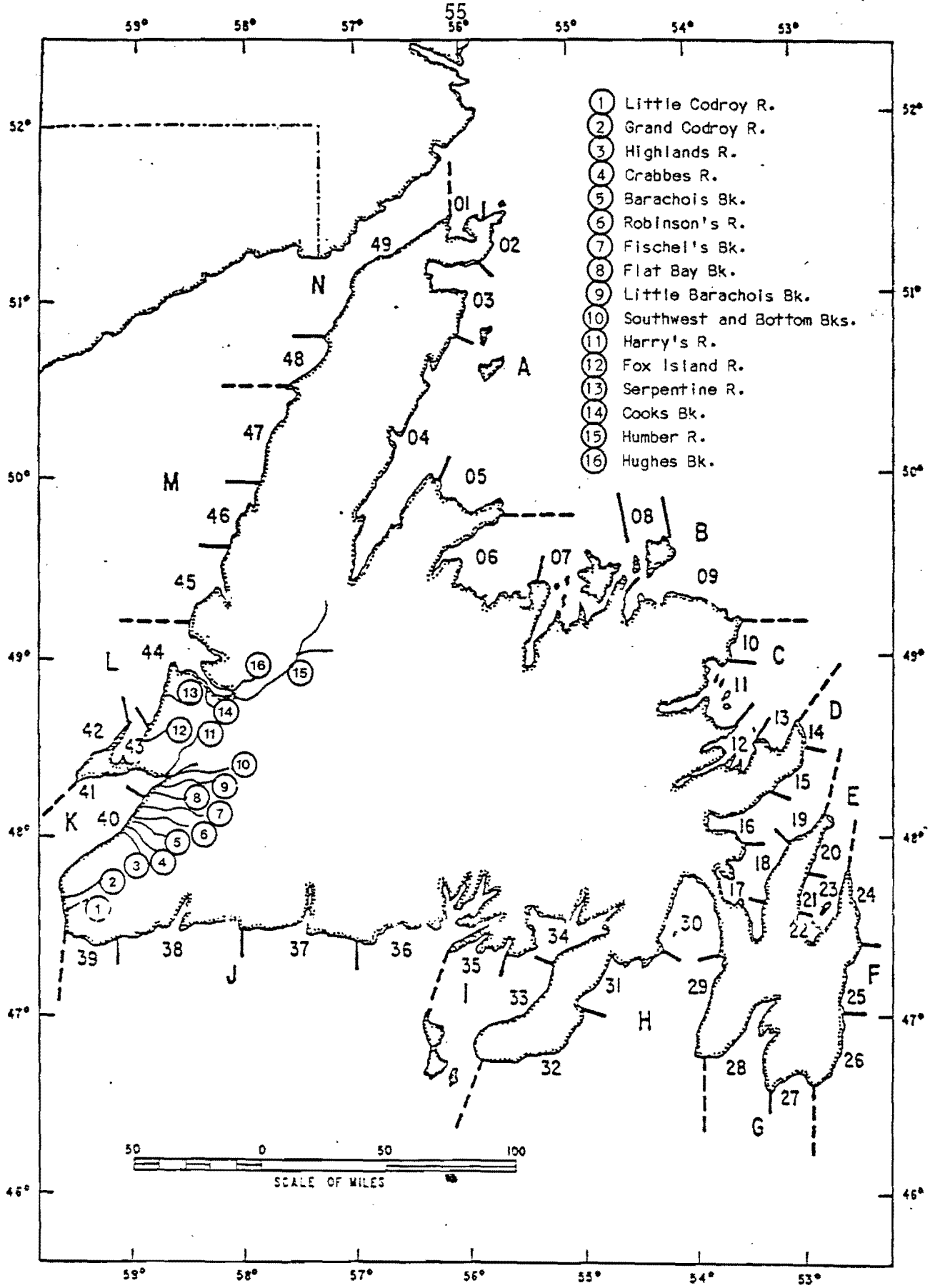


Fig. 1. Boundaries of Statistical Section (numerically indicated) and Statistical Areas (alphabetical) in insular Newfoundland. Major river systems in Areas K and L are also shown.

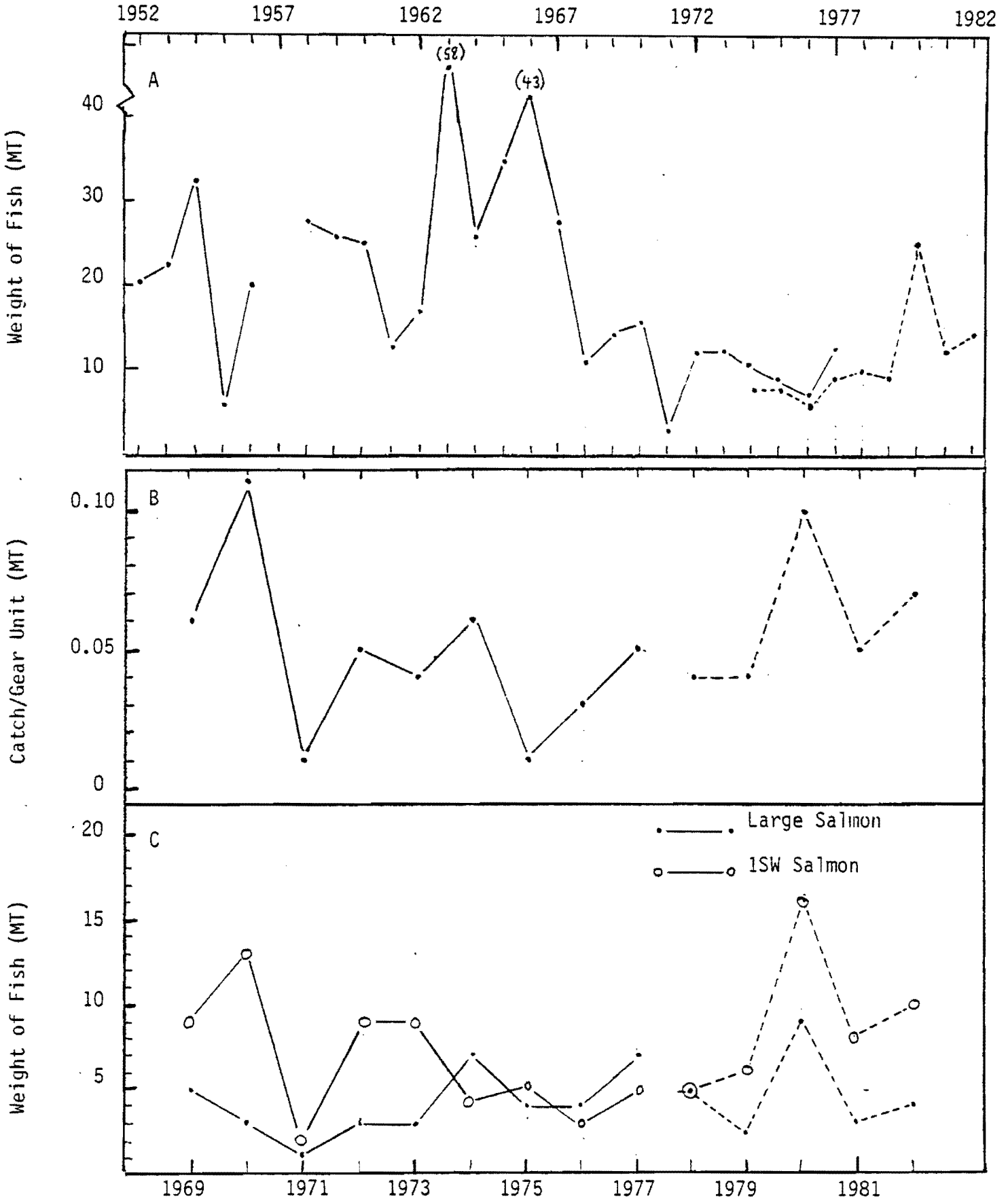


Fig. 2. A - Total weight of salmon (1952-82); B - catch per gear unit (1 unit = 50 fathoms) (1969-82); C - weight of large salmon and 1SW salmon (1969-82) harvested by commercial fishery in Area L. Solid line represents season May 15-Dec. 31. Broken line represents season June 1-July 10.

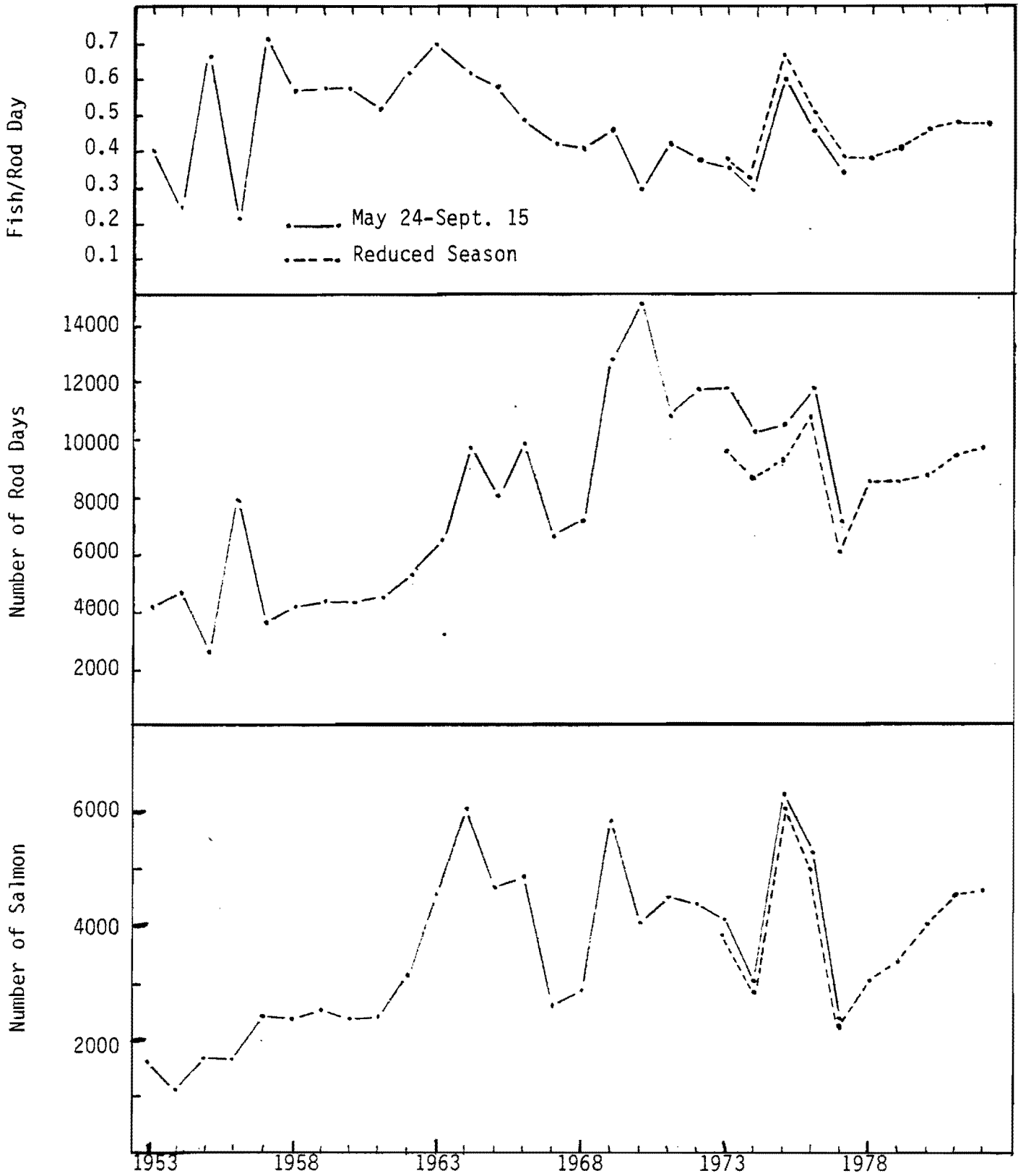


Fig. 3. Total Atlantic salmon angling catch statistics in Area L, May 24-Sept. 15, 1953-1977; and during the reduced season 1973-82.

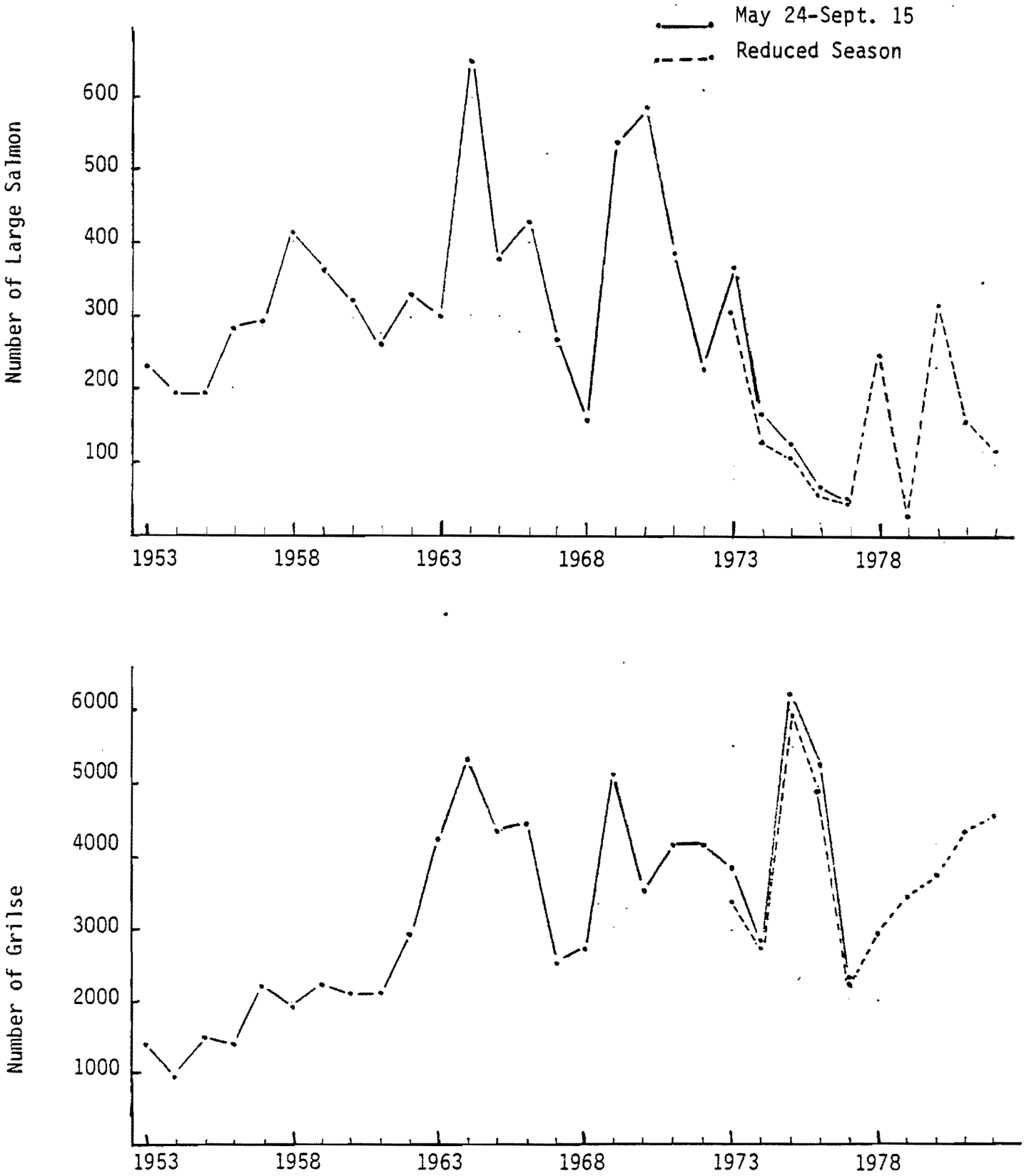


Fig. 4. Numbers of large salmon and grilse angled in Area L, May 24-Sept. 15, 1953-1977; and during the reduced season 1973-82.

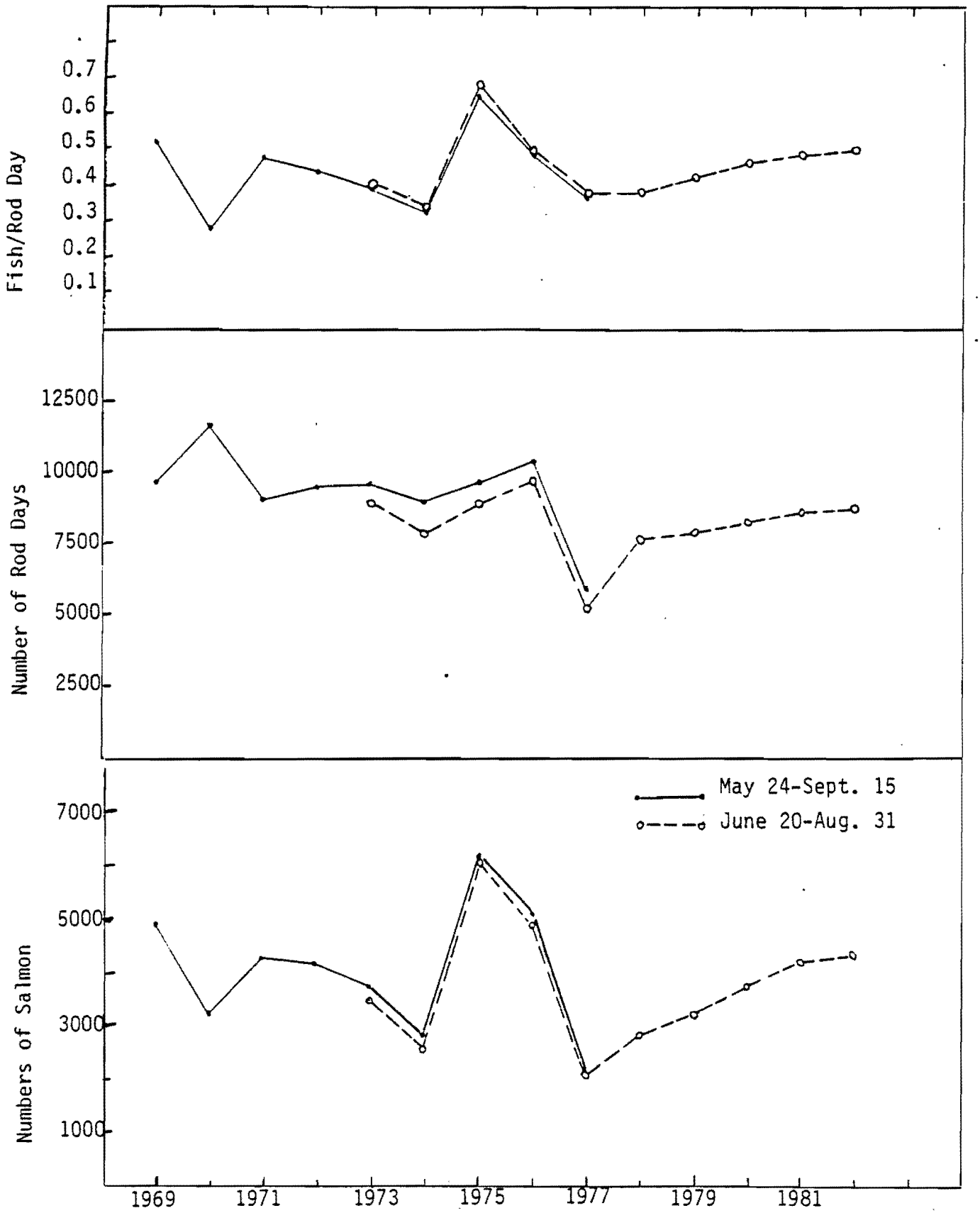


Fig. 5. Total Atlantic salmon angling catch statistics for Humber River May 24-Sept. 15 (1969-1977) and June 20-Aug. 31 (1973-82).

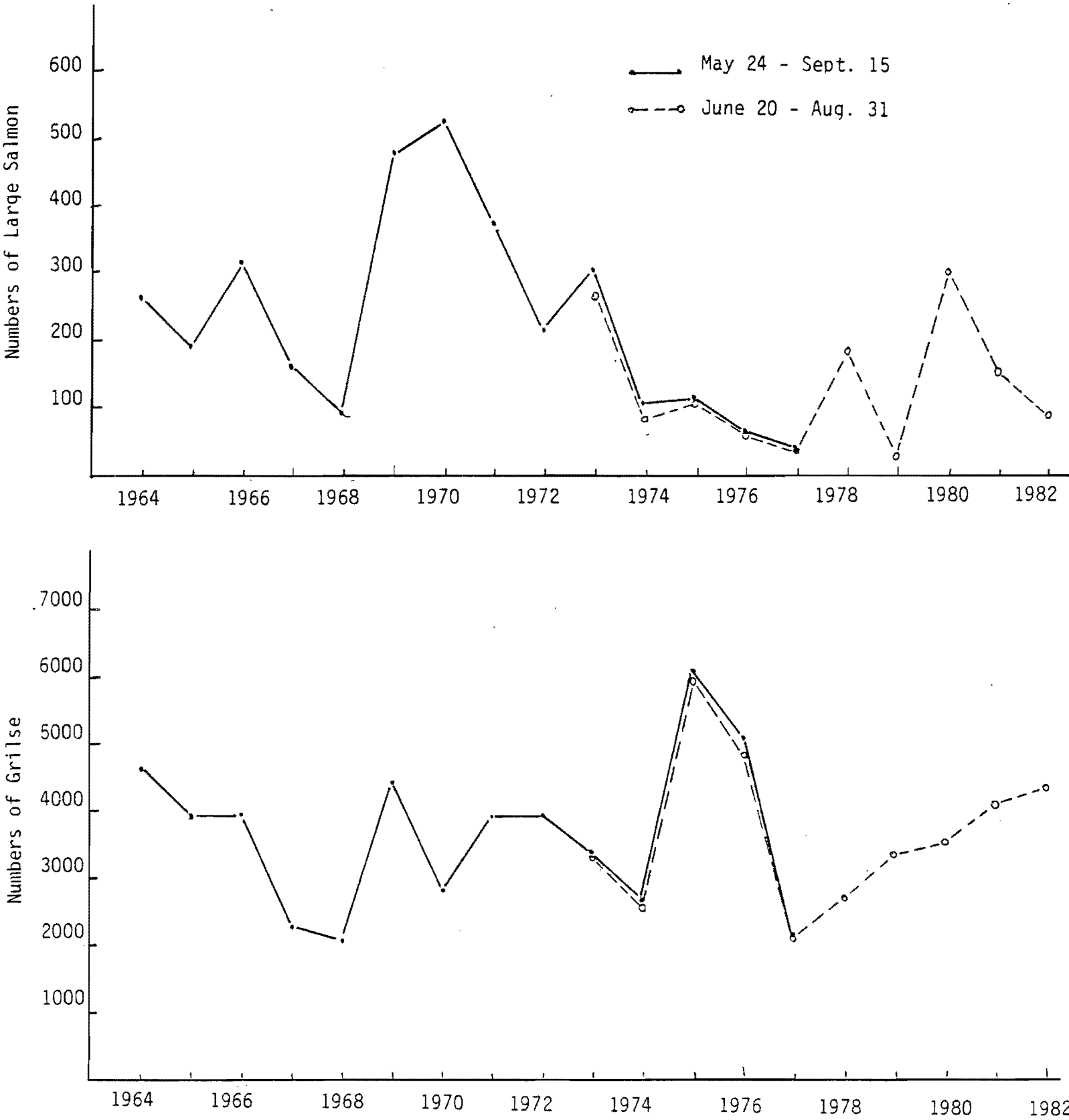


Fig. 6. Numbers of large salmon and grilse angled on Humber River May 24 - Sept. 15 (1964-1977) and June 20 - August 31 (1973-1982).

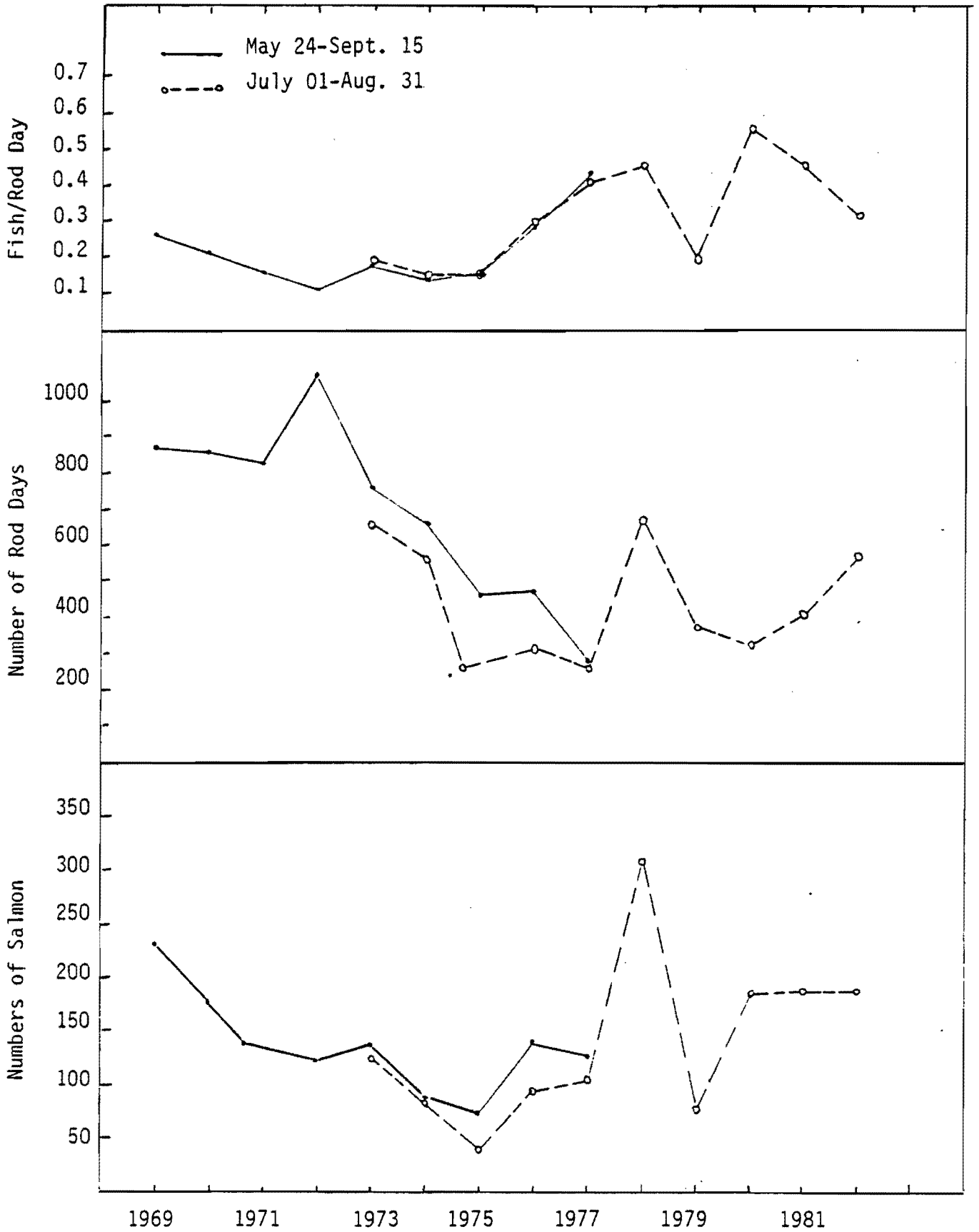


Fig. 7. Total Atlantic salmon angling catch statistics for Serpentine River May 24-Sept. 15 (1969-1982) and July 01-August 31 (1973-1982).

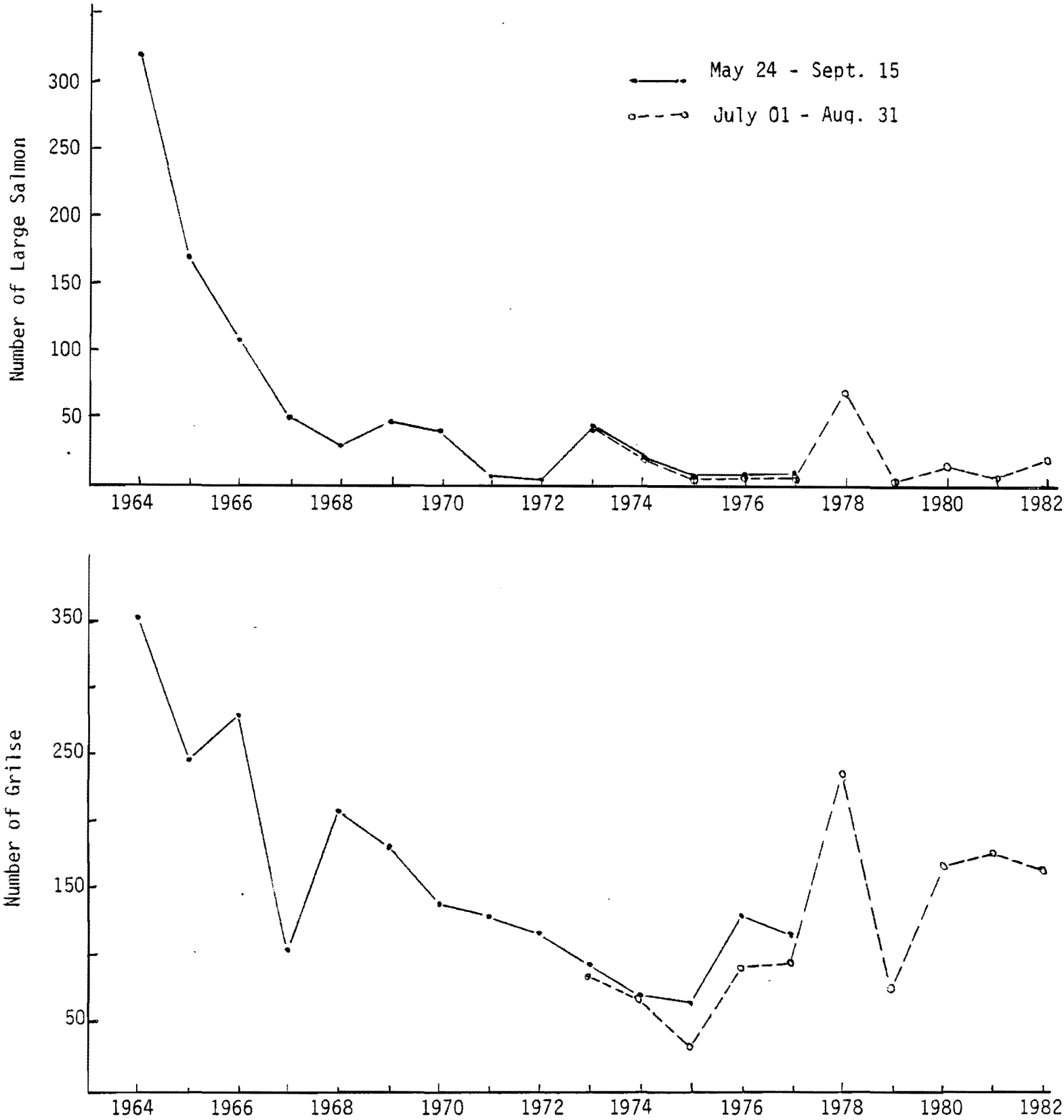


Fig. 8. Numbers of large salmon and grilse angled on Serpentine River May 24 - Sept. 15 (1964-1977) and July 01 - August 31 (1973-1982).

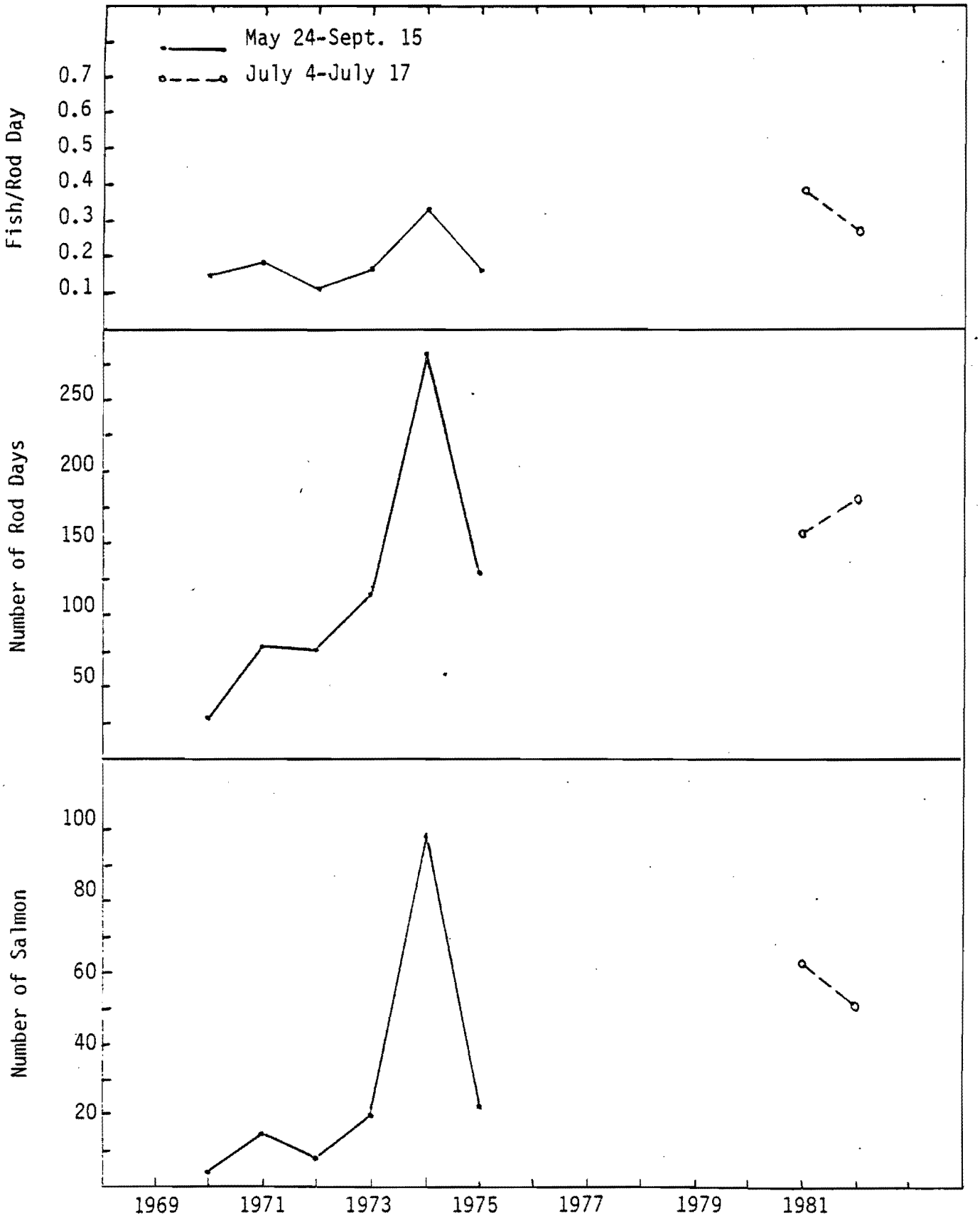


Fig. 9. Total salmon angling catch statistics for Fox Island River May 24-Sept. 15 (1970-1975) and July 4-July 17 (1981-1982).

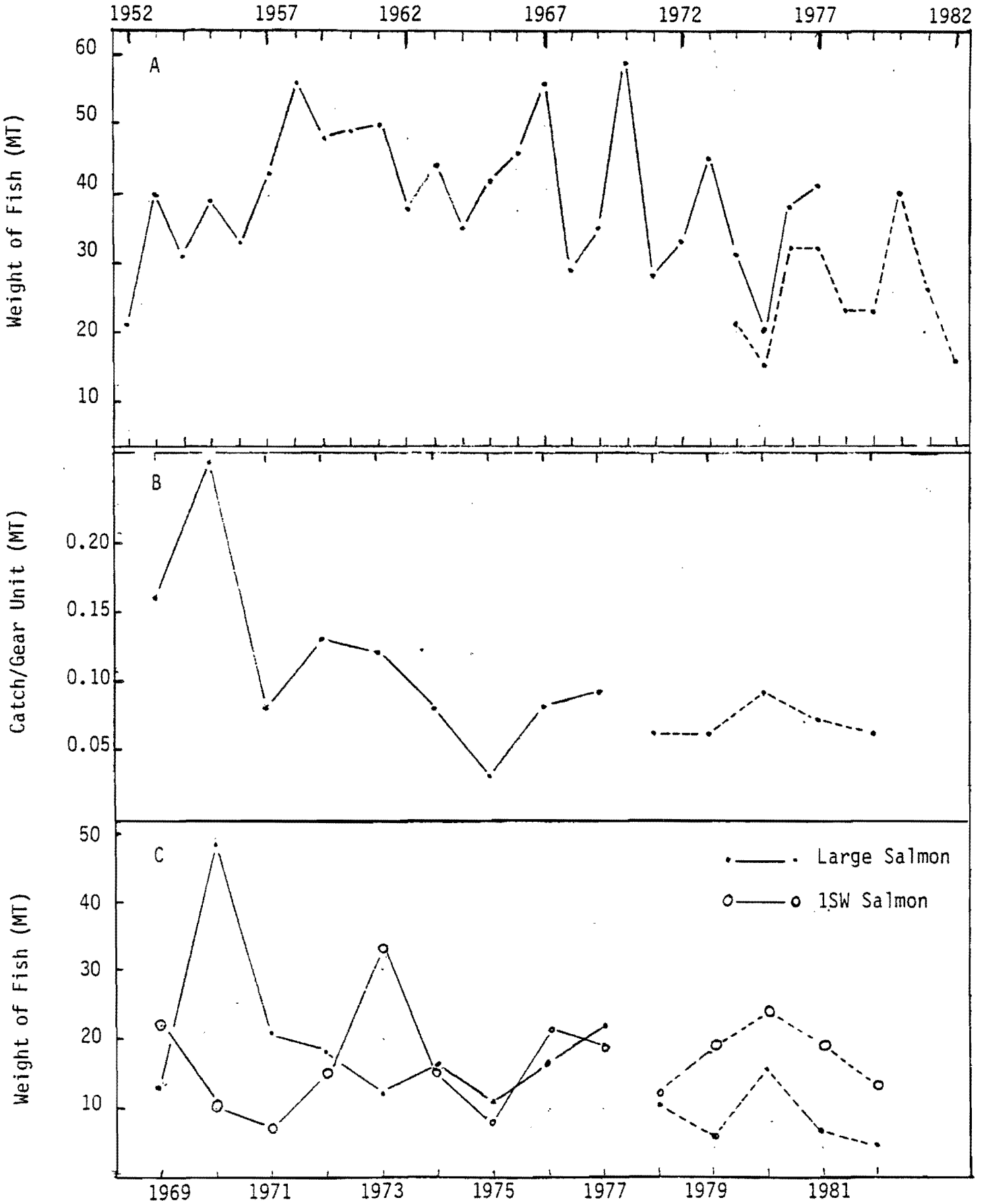


Fig. 10. A - Total weight of salmon (1952-82); B - Catch per gear unit (50 fathoms) 1969-82; and, C - Weight of large salmon and 1SW salmon (1969-82) harvested by commercial fishery in Area K. Solid line represents season May 15-Dec. 31. Broken line represents season June 1-July 10.

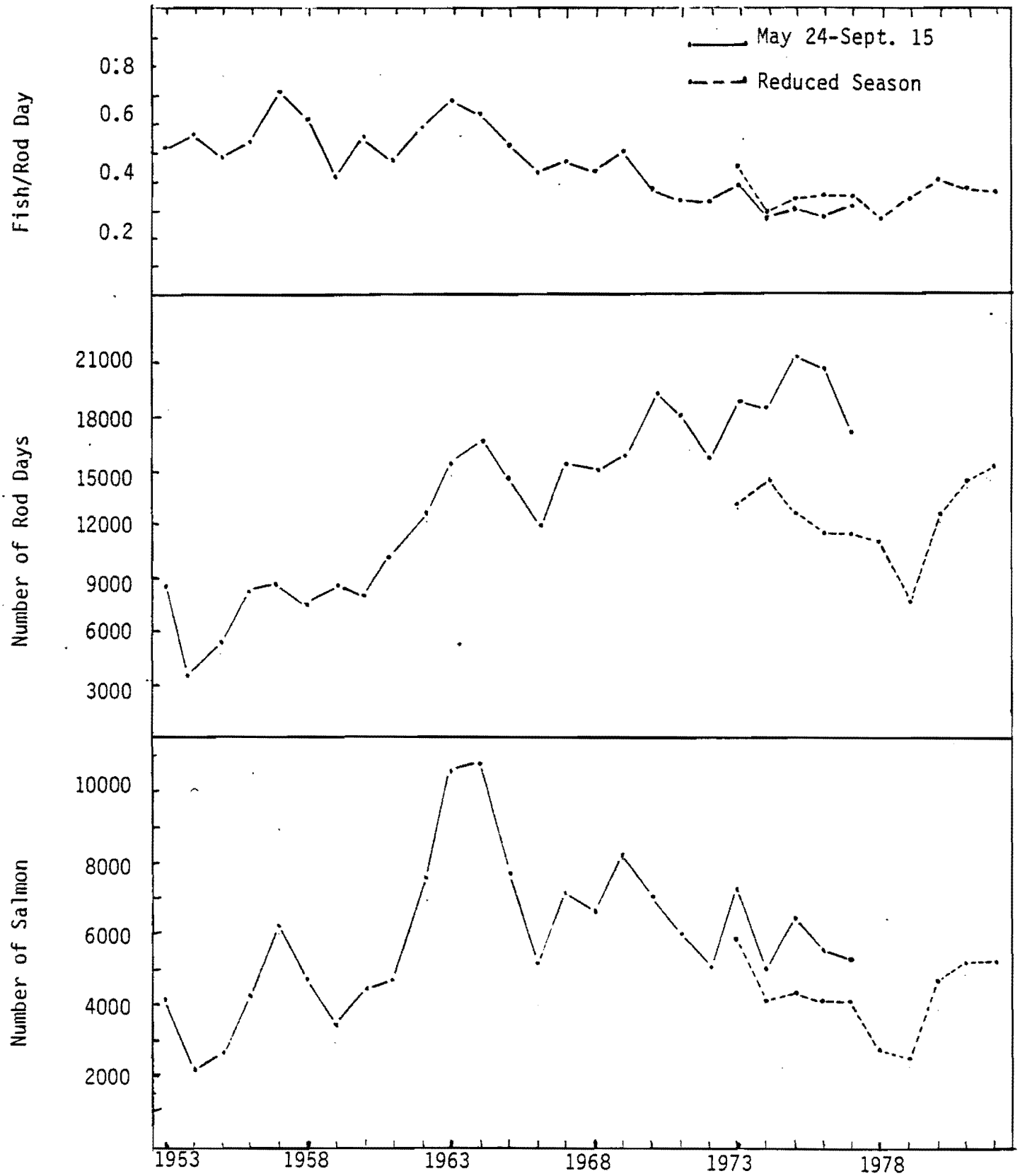


Fig. 11. Total Atlantic salmon angling catch for Area K. May 24-Sept. 15 (1953-1977), and during the reduced angling season 1973-82.

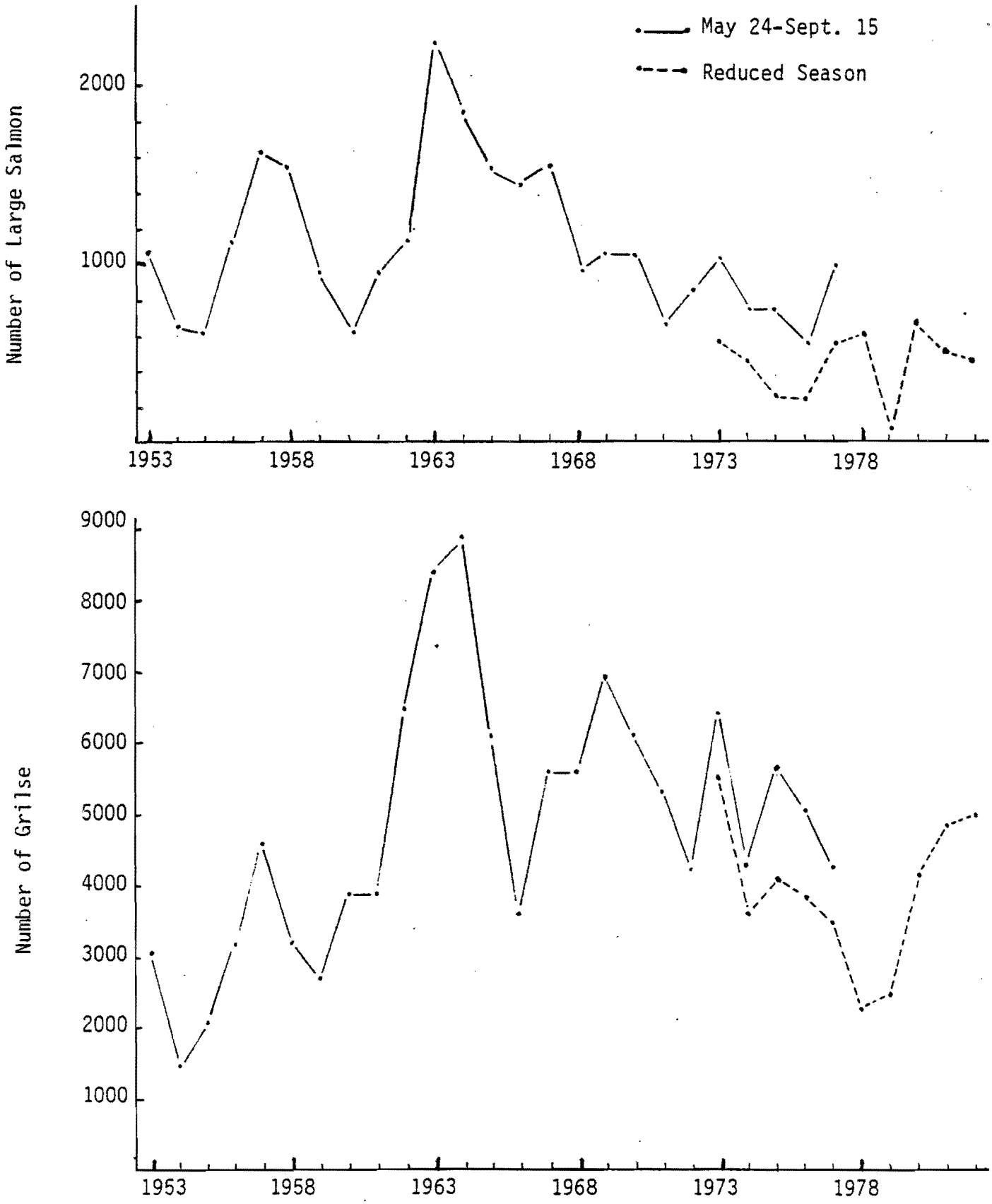


Fig. 12. Numbers of large salmon and grilse angled in Area K, May 24-Sept. 15 1953-1977, and during the reduced season 1973-82.

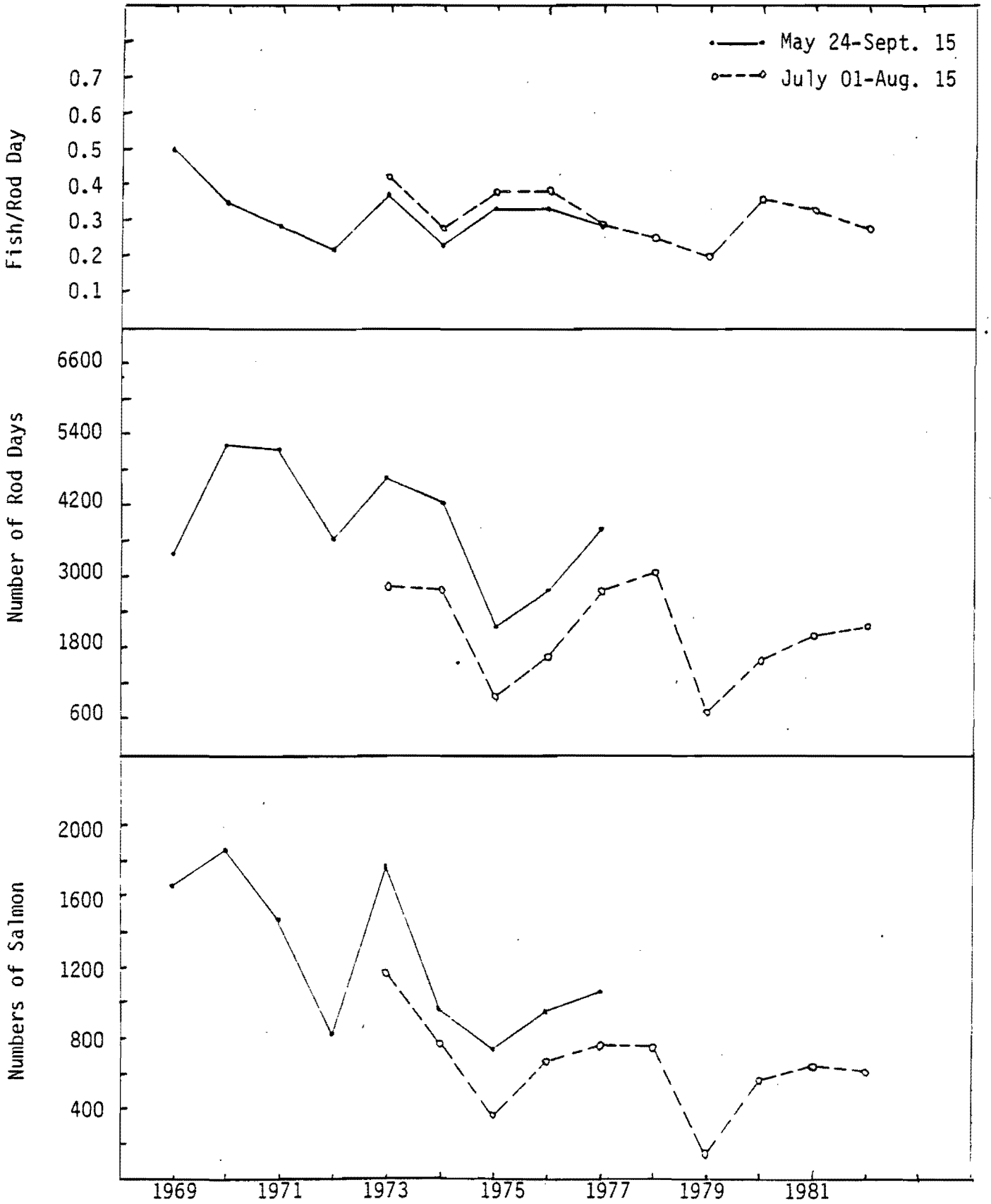


Fig. 13. Total salmon angling catch statistics for Harry's River, May 24-Sept. 15 (1969-1977) and July 01-August 15 (1973-1982).

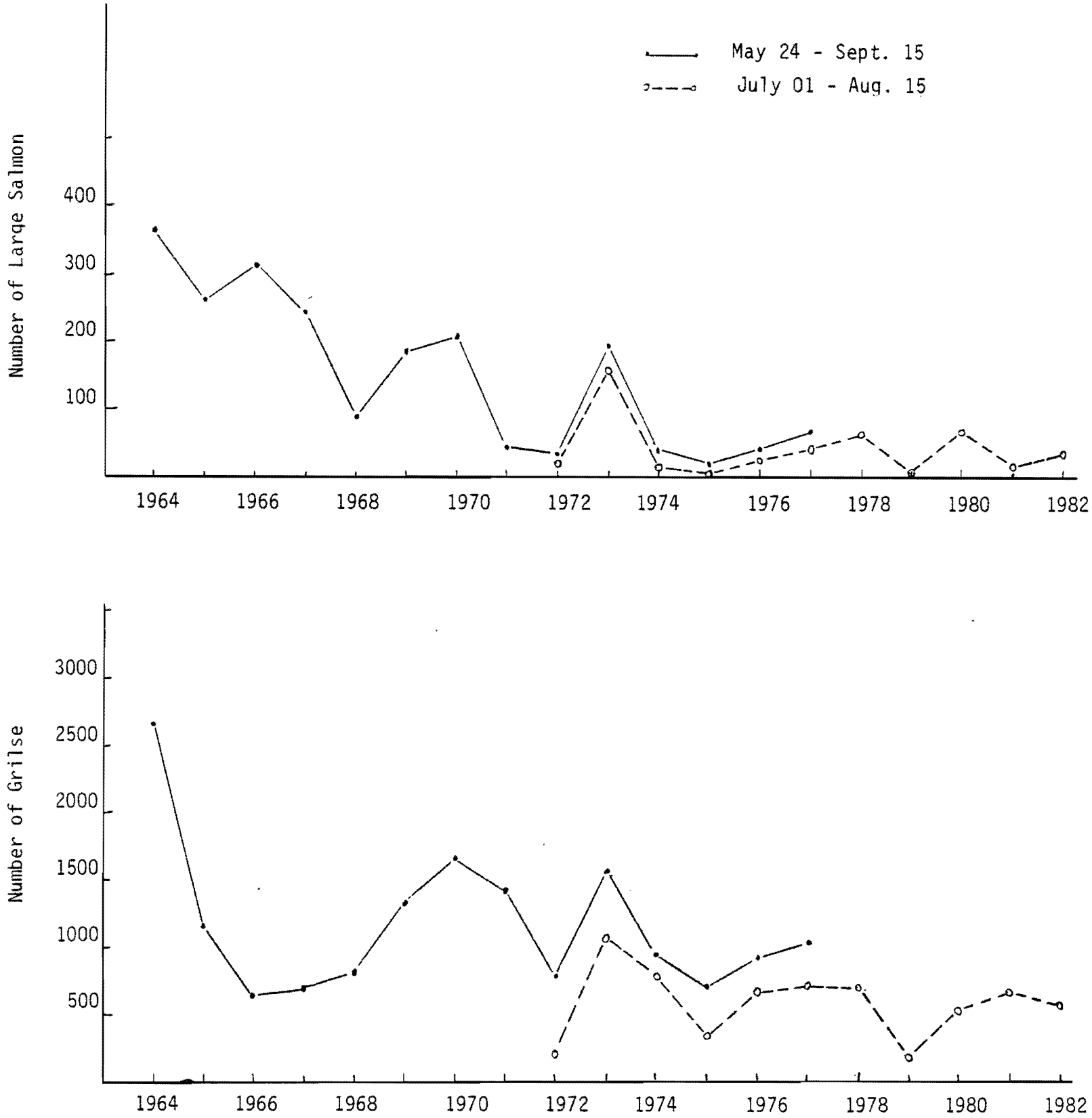


Fig. 14. Angling catch of large salmon and grilse on Harry's River May 24 - Sept. 15 (1964-1977) and July 01 - August 15 (1972-1982).

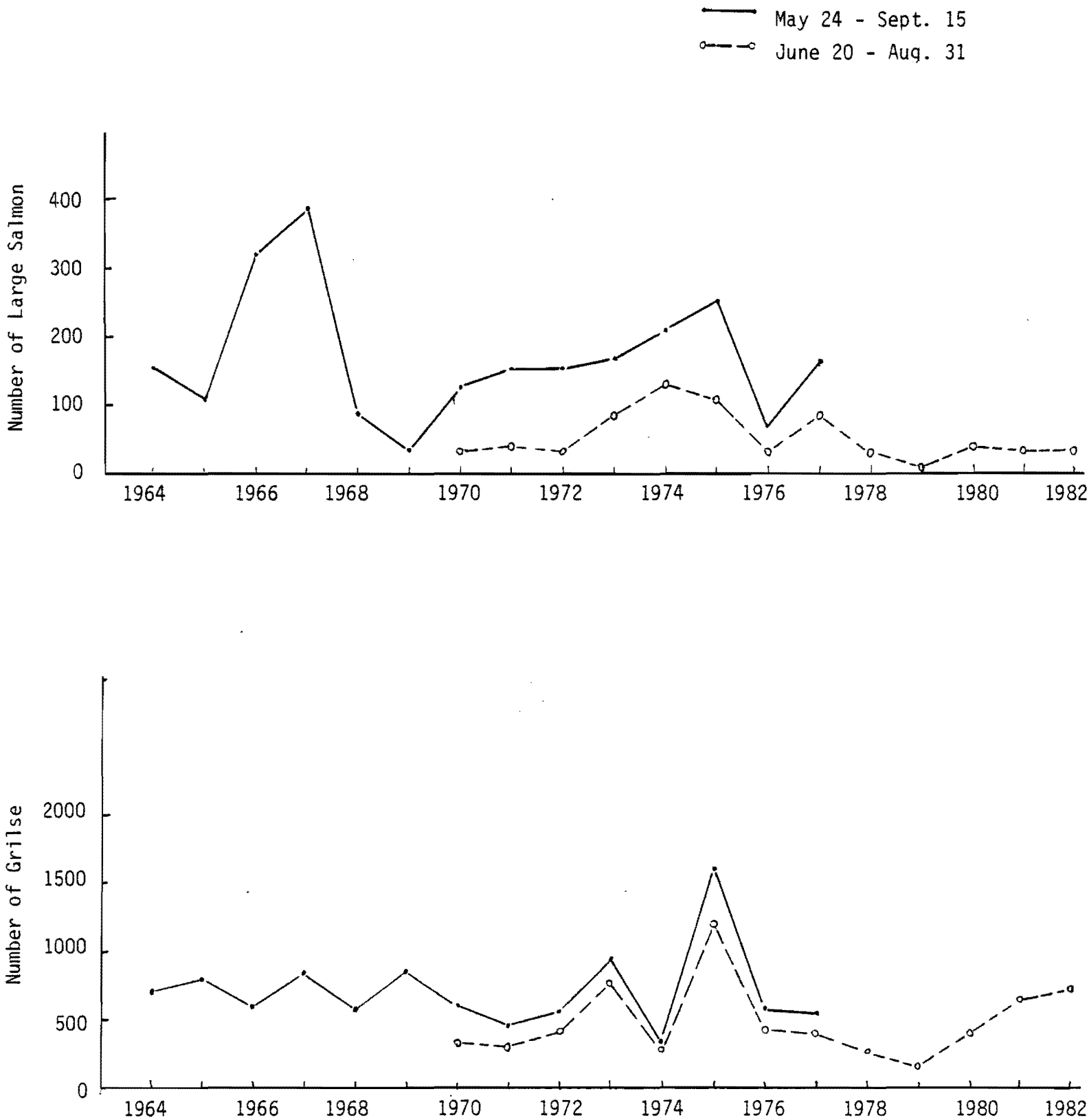


Fig. 15. Numbers of large salmon and grilse angled on Southwest and Bottom Brooks, May 24 - Sept. 15 (1964-1977) and June 20 - Aug. 31 (1970-1982).

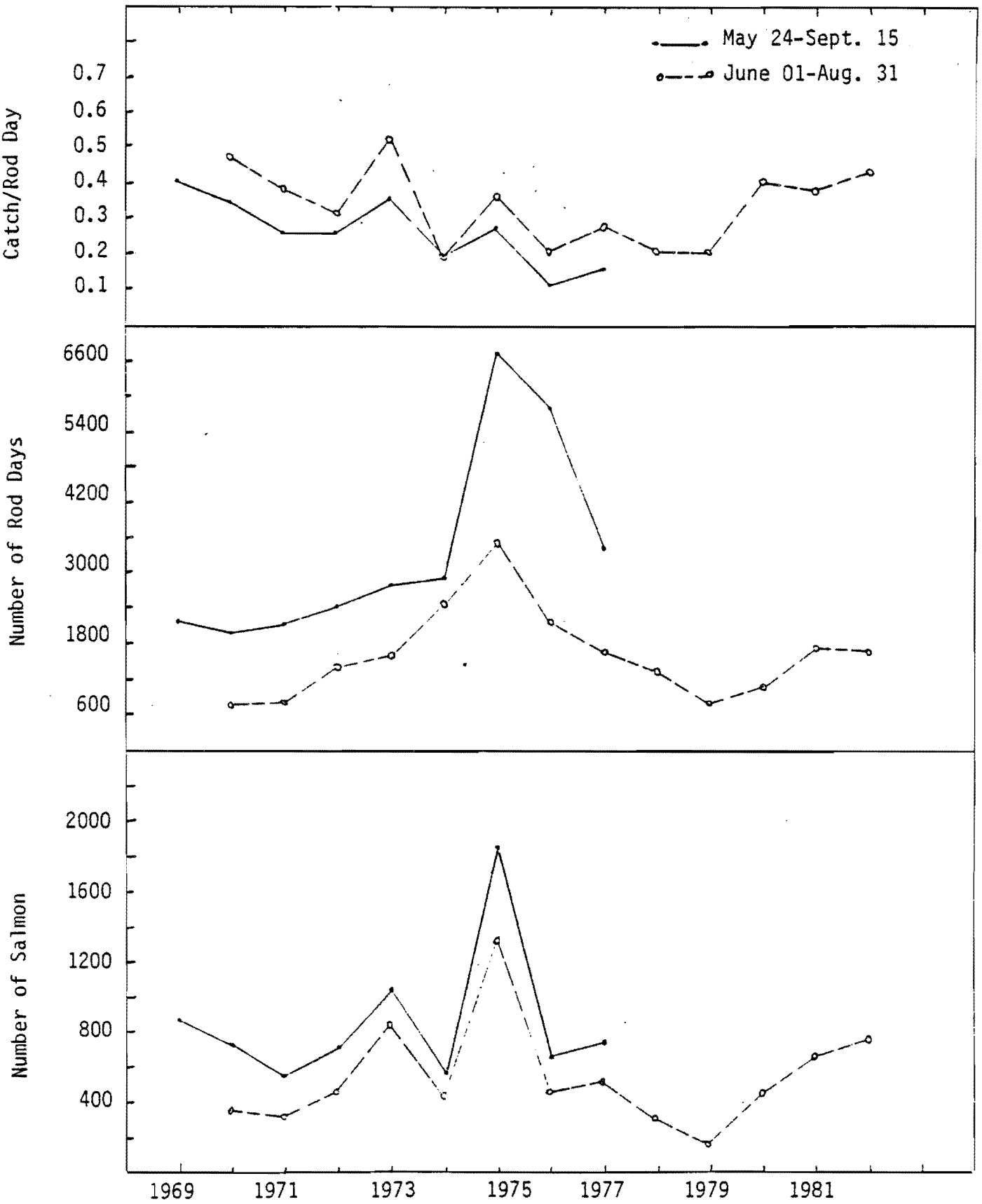


Fig. 16. Total salmon angling catch statistics for Southwest and Bottom Brooks for period May 24-Sept. 15 (1969-77) and June 20-August 31 (1970-82).

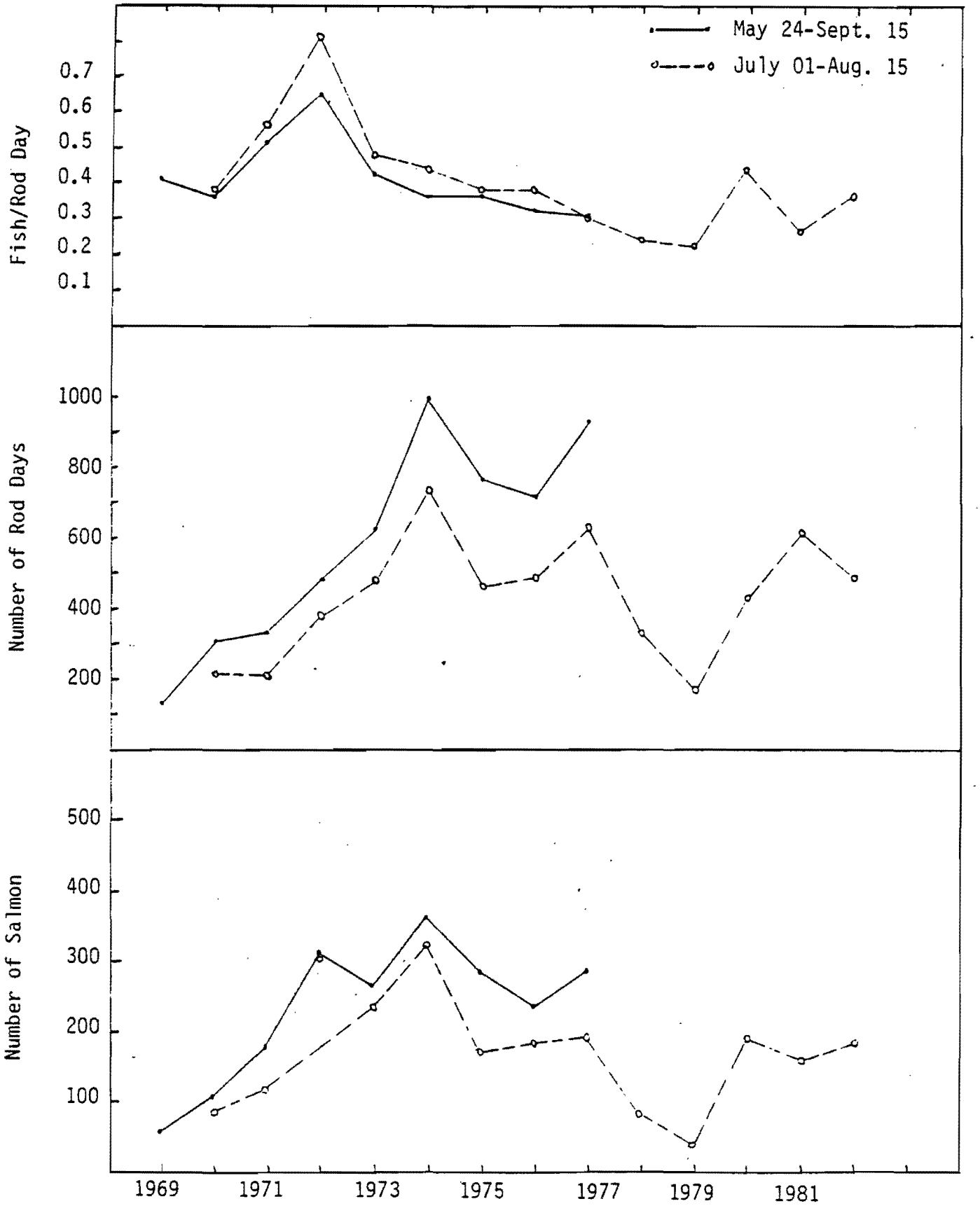


Fig. 17. Total salmon angling catch statistics for Little Barachois Brook for period May 24-Sept. 15 (1969-77) and July 01-Aug. 15 (1970-1982).

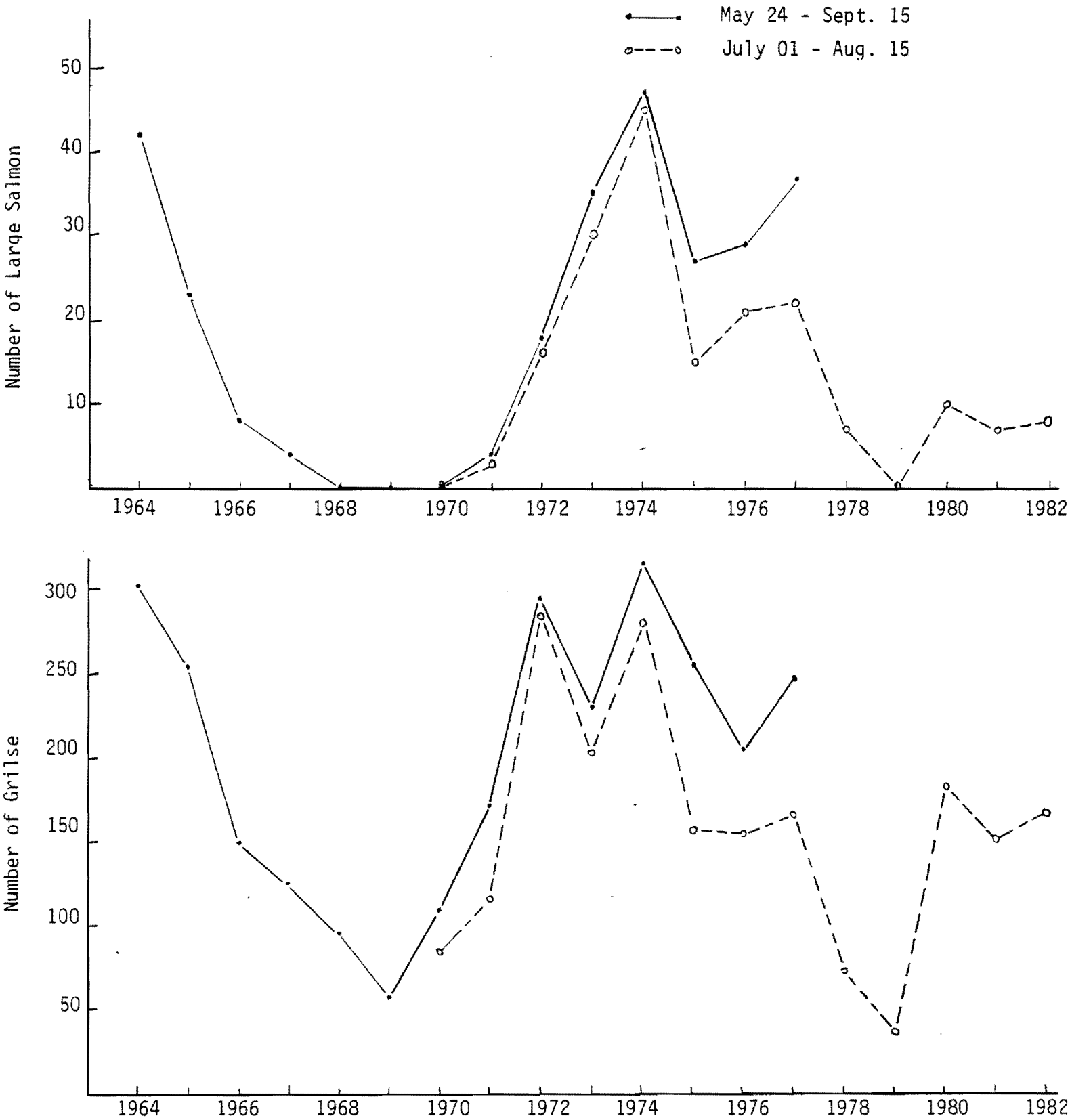


Fig. 18. Angled catch of large salmon and grilse on Little Barachois River, May 24 - Sept. 15 (1964-1977) and July 01 - Aug. 15 (1970-1982).

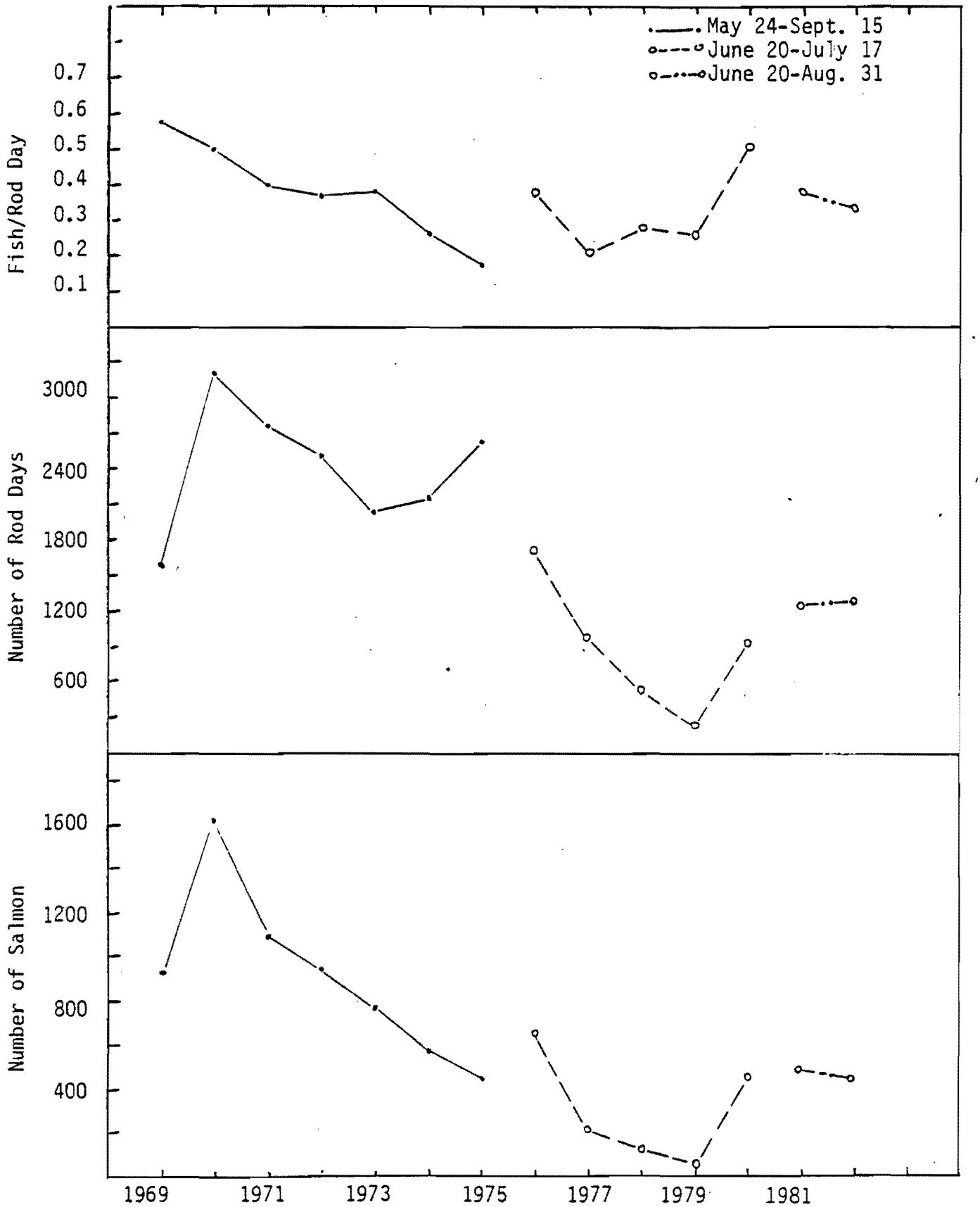


Fig. 19. Total salmon angling catch statistics for Flat Bay Brook May 24-Sept. 15 (1969-1975), June 20-July 17 (1976-1980), and June 20-August 31 (1980-1981).

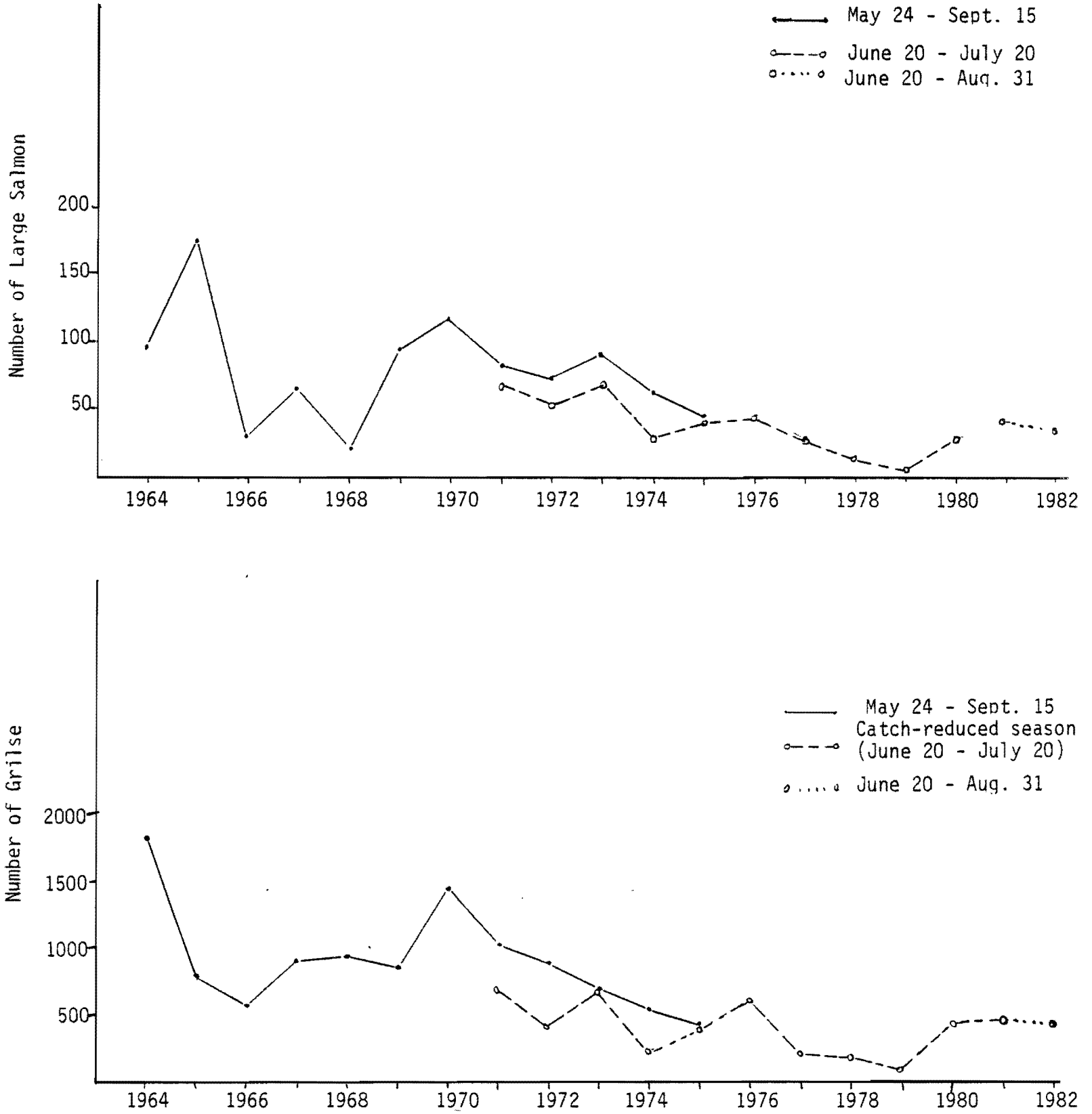


Fig. 20. Numbers of large salmon and grilse angled on Flat Bay Brook, May 24 - Sept. 15 (1964-1975), June 20 - July 20 (1971-1980), and June 20 - August 31 (1981-1982).

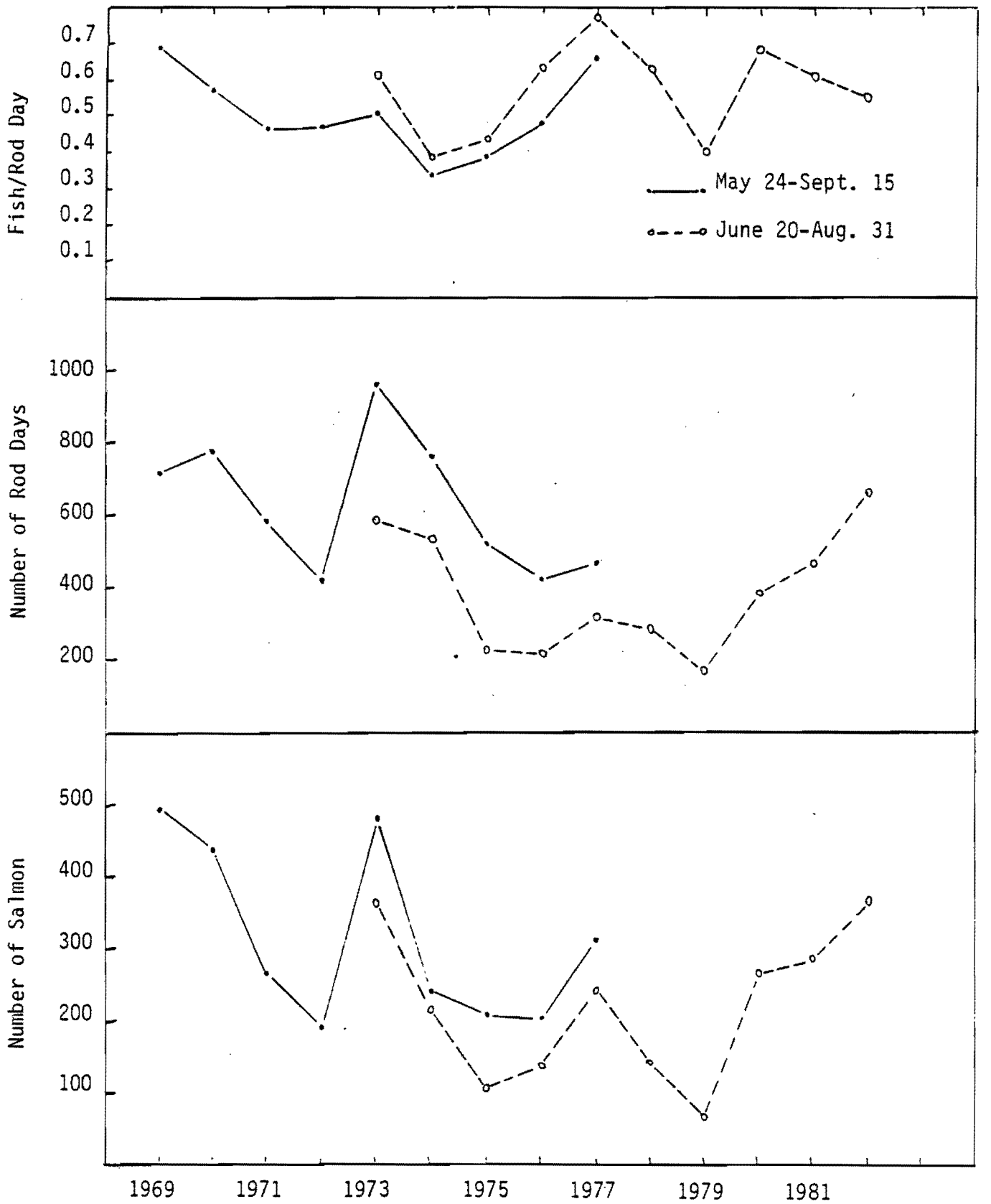
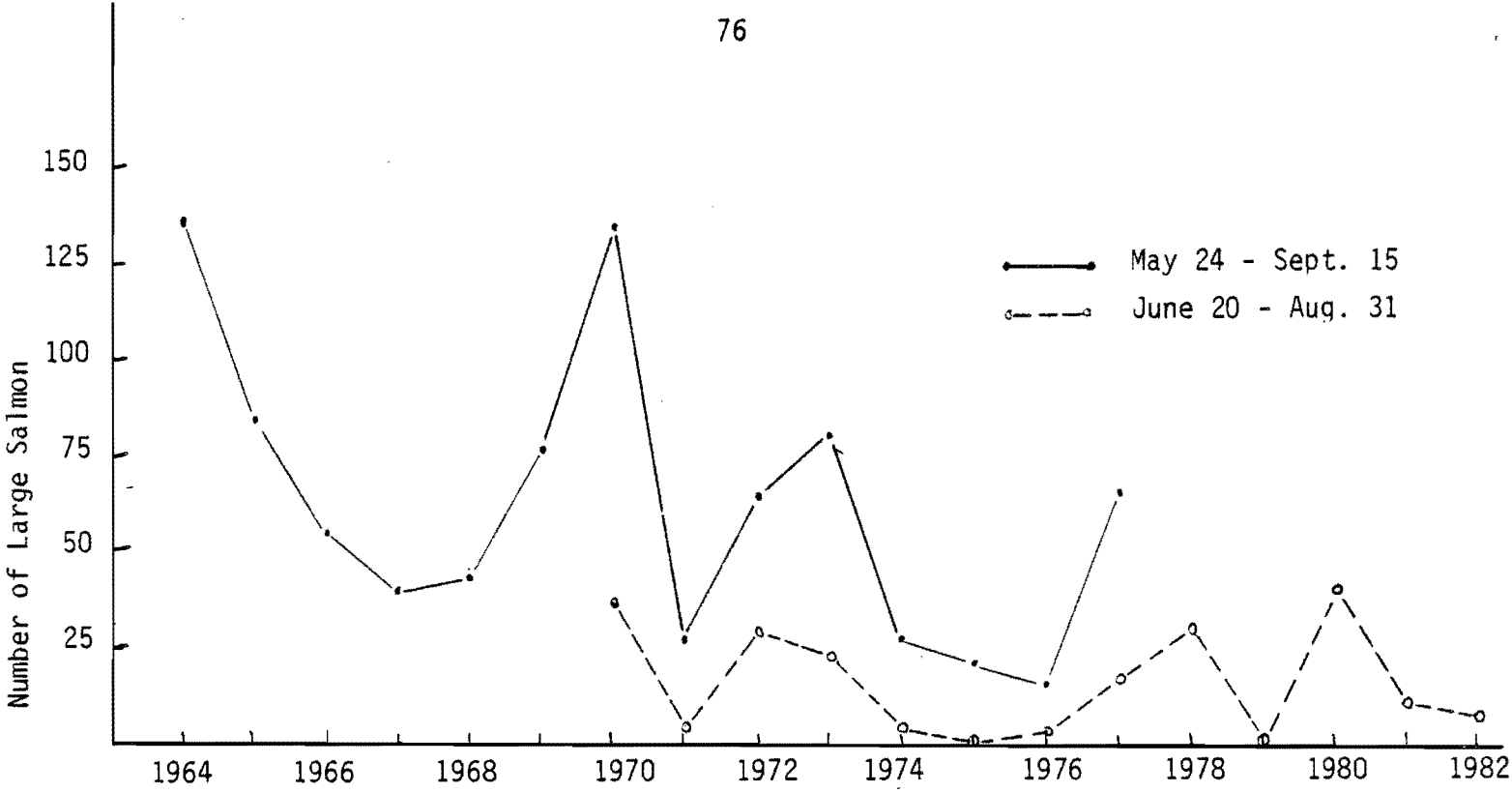


Fig. 21. Total salmon angling catch statistics for Fischells Brook for period May 24-Sept. 15 (1969-77), and June 20-May 31 (1973-82).



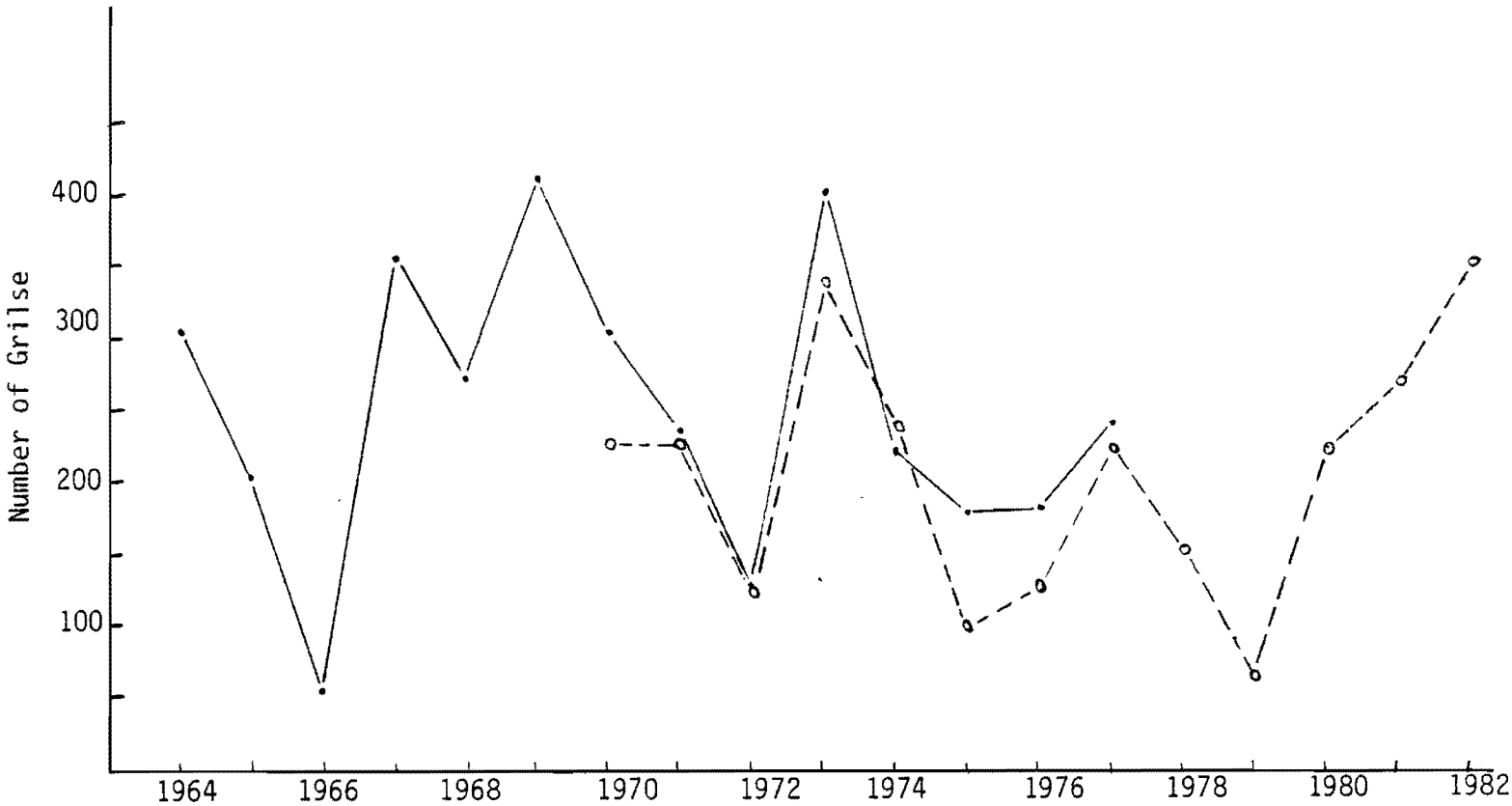


Fig. 22. Angled catch for Fischells Brook for full season (1964-1977), and reduced season (1970-1982).

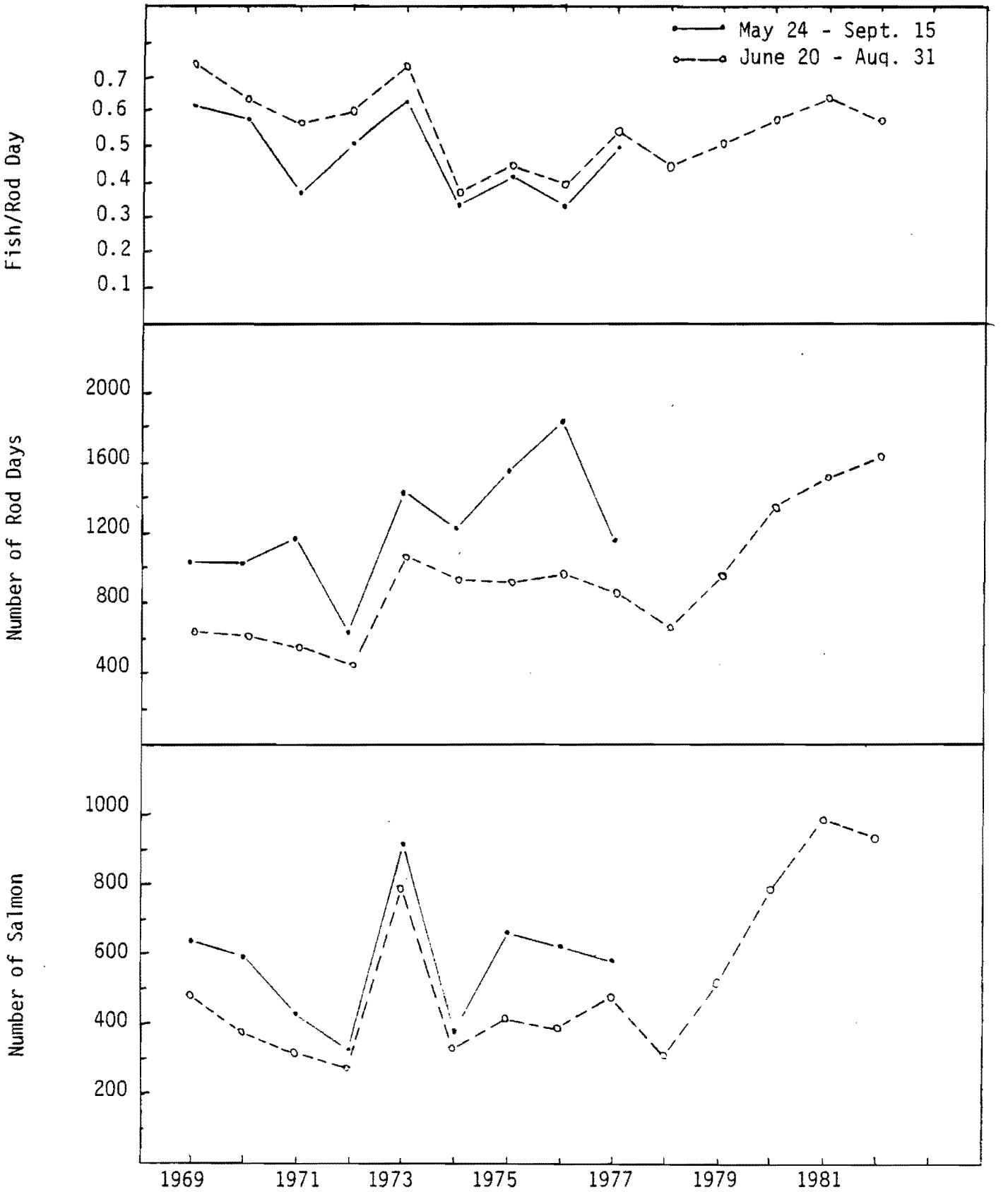
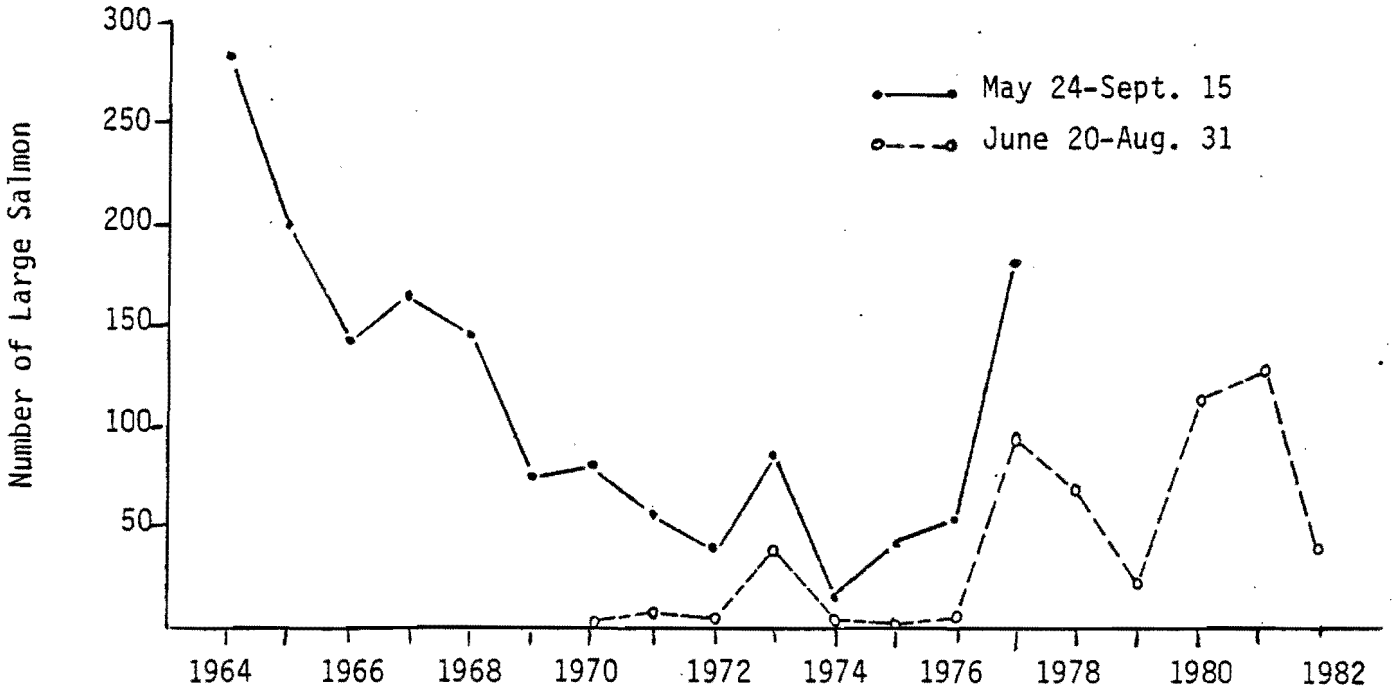


Fig. 23. Total salmon angling catch statistics for Robinson's River for period May 24 - Sept. 15 (1969-1977), and June 20 - Aug. 31 (1969-1982).



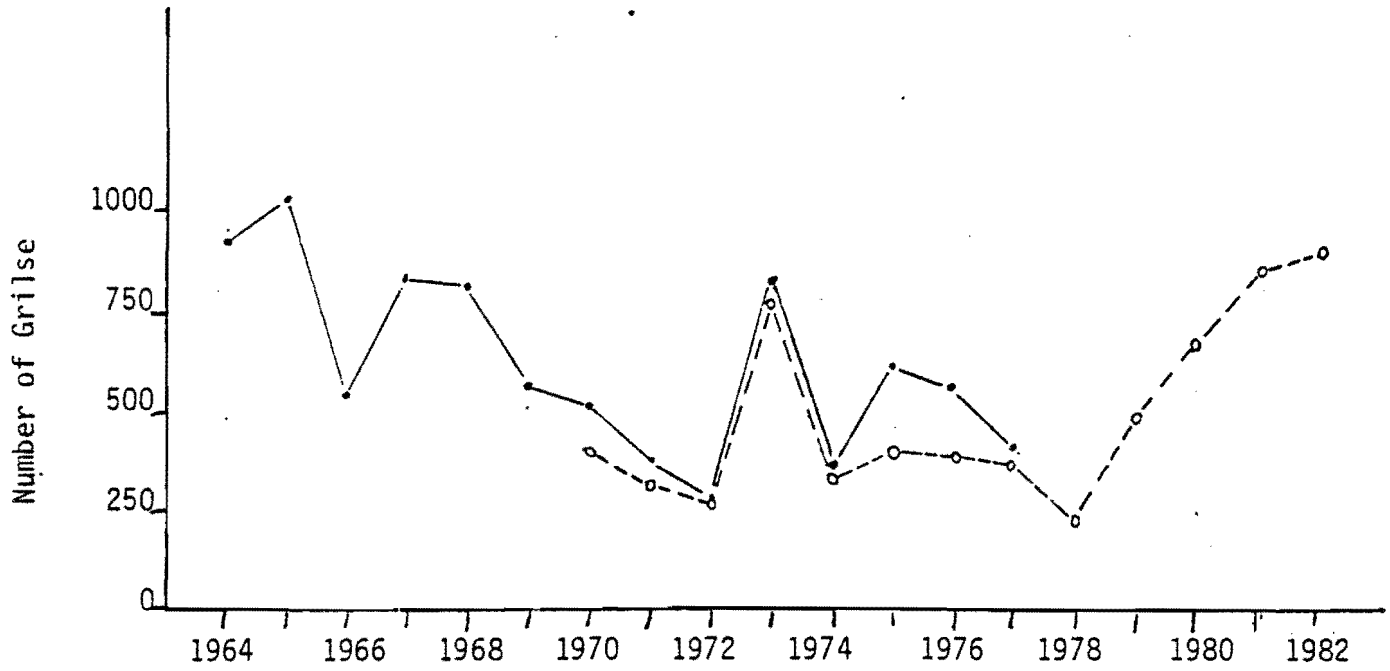


Fig. 24. Numbers of large salmon and grilse angled in Robinson's River during the period May 24-Sept. 15 (1964-77) and June 20-Aug. 31 (1970-82).

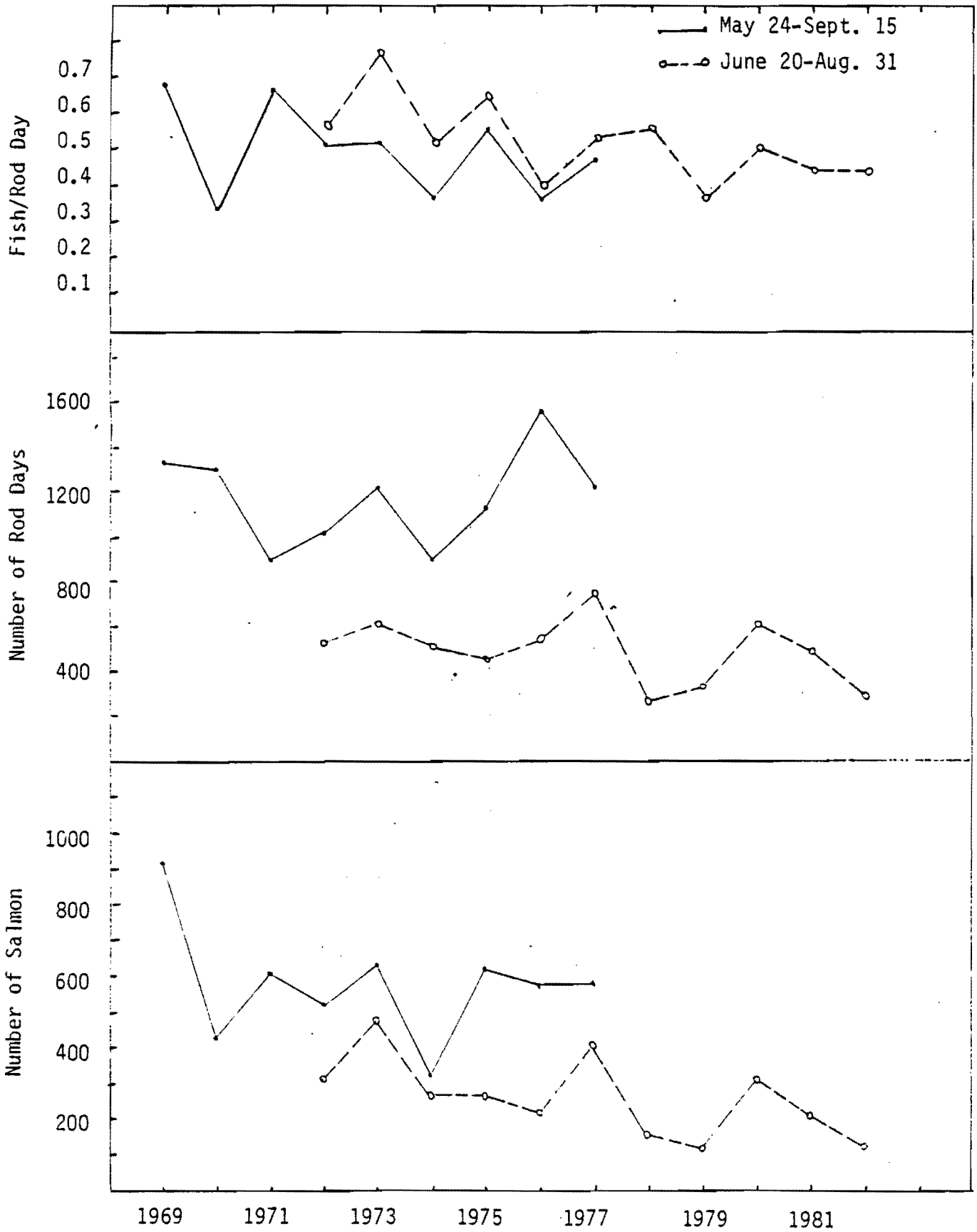


Fig. 25. Total salmon angling catch statistics for Barachois Brook, May 24-Sept. 15 (1969-77), and June 20-Aug. 31 (1972-83).

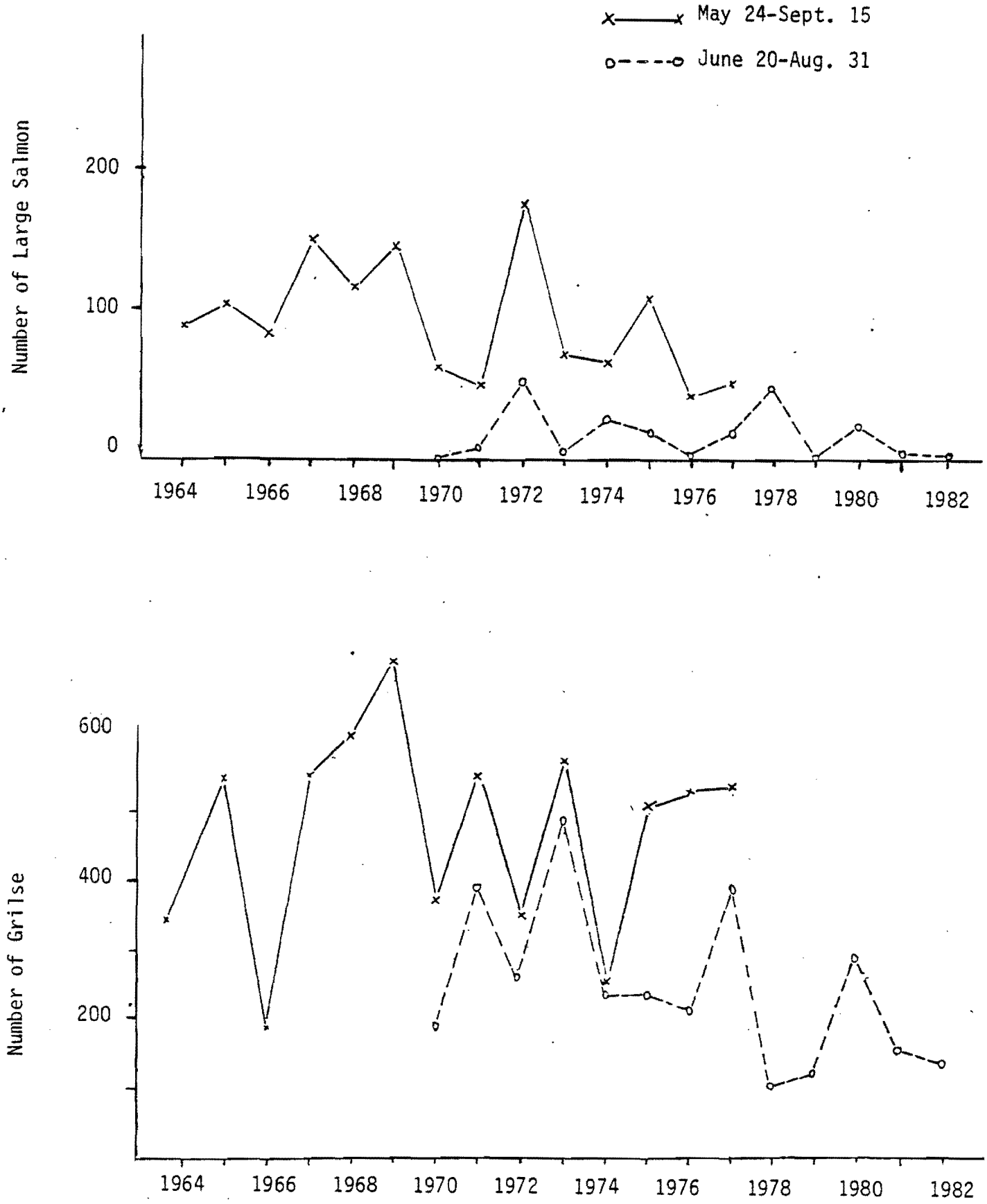


Fig. 26. Numbers of large salmon and numbers of grilse angled on Barachois Brook May 24-Sept. 15 (1964-77), and June 20-Aug. 31 (1970-82).

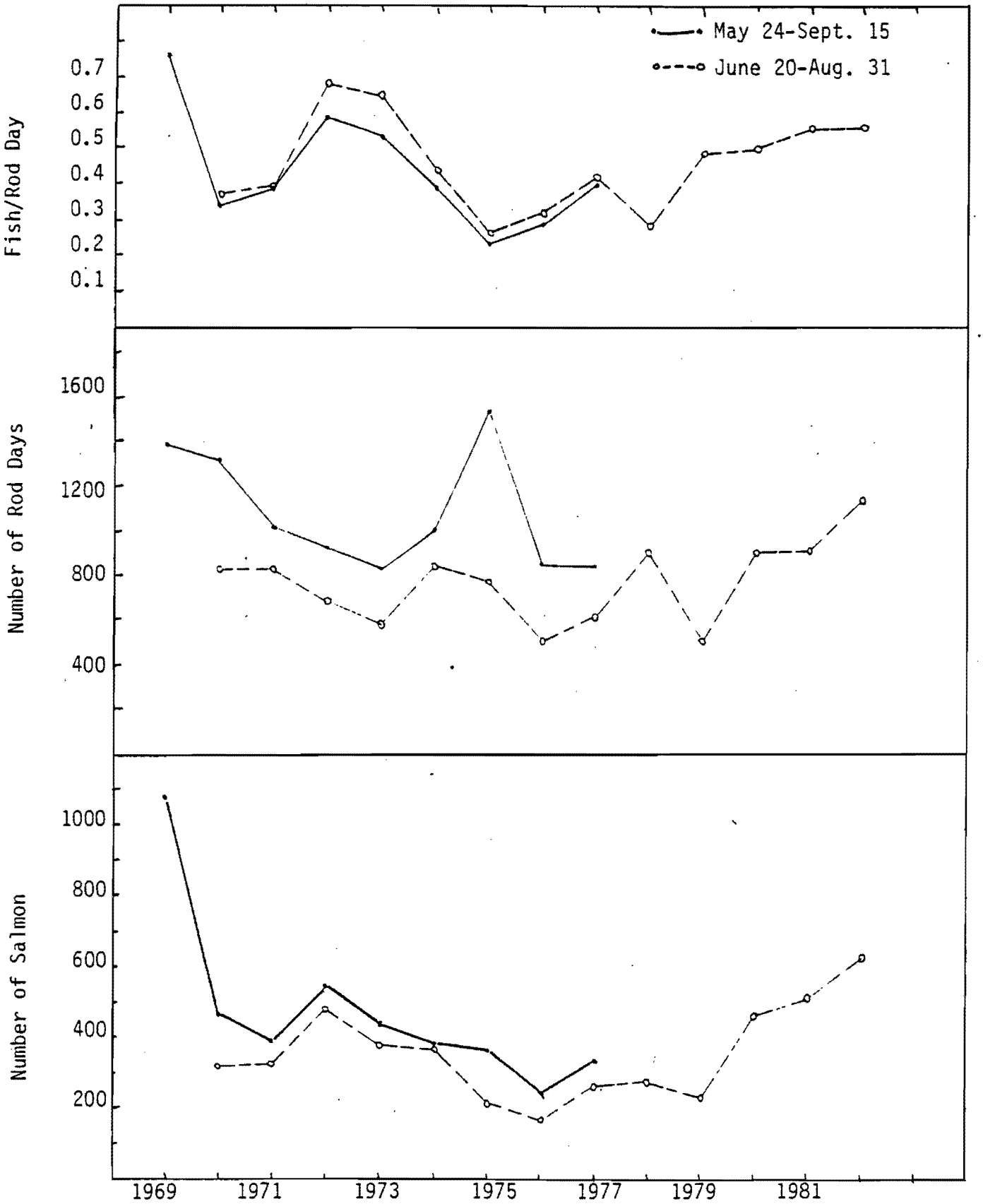


Fig. 27. Total salmon angling catch statistics for Crabbes River, May 24-Sept. 15 (1969-77), and June 20-Aug. 31 (1970-82).

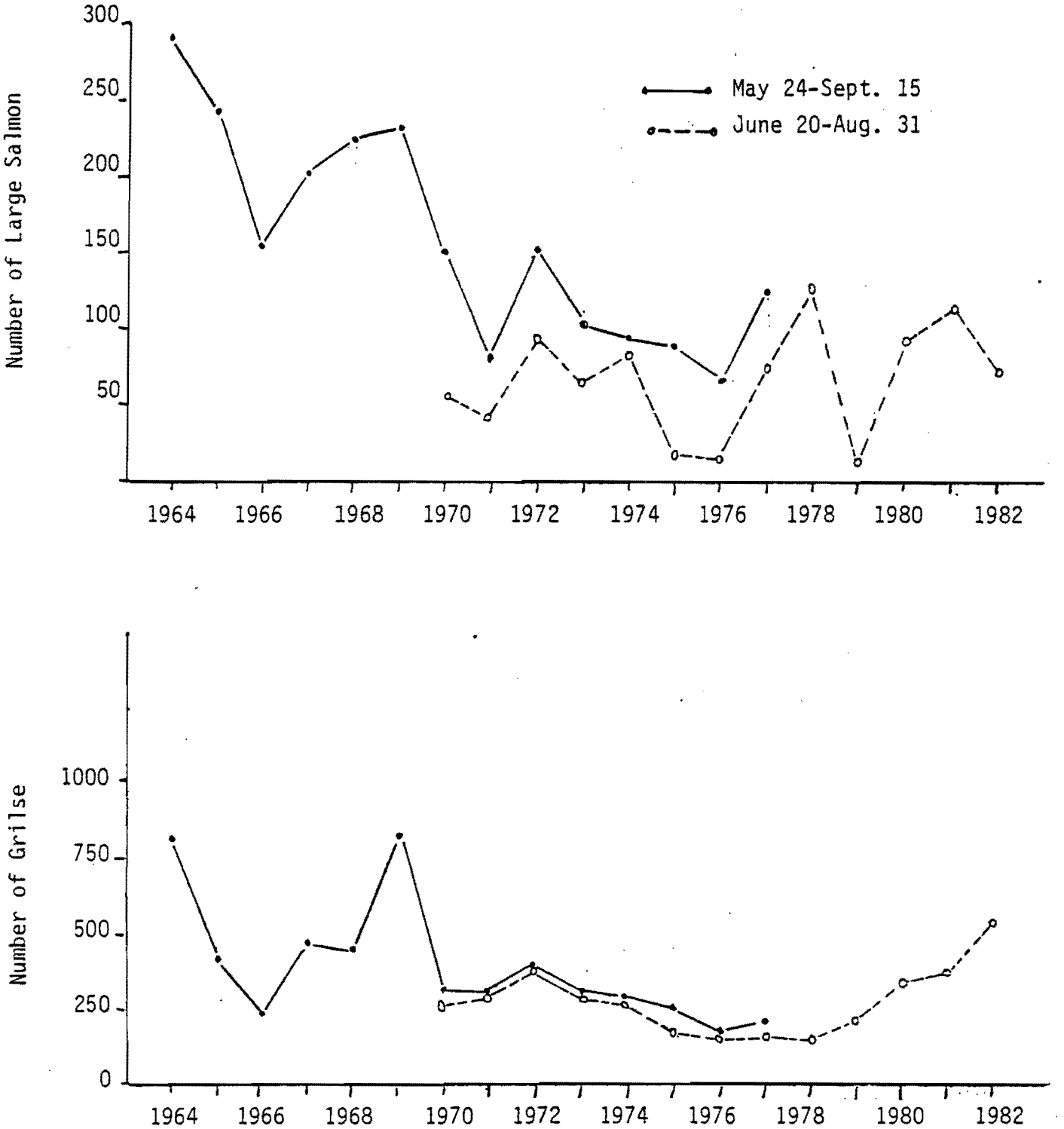


Fig. 28. Numbers of salmon and grilse angled on Crabbes River, May 24-Sept. 15 (1964-77), and June 20-Aug. 31 (1970-82).

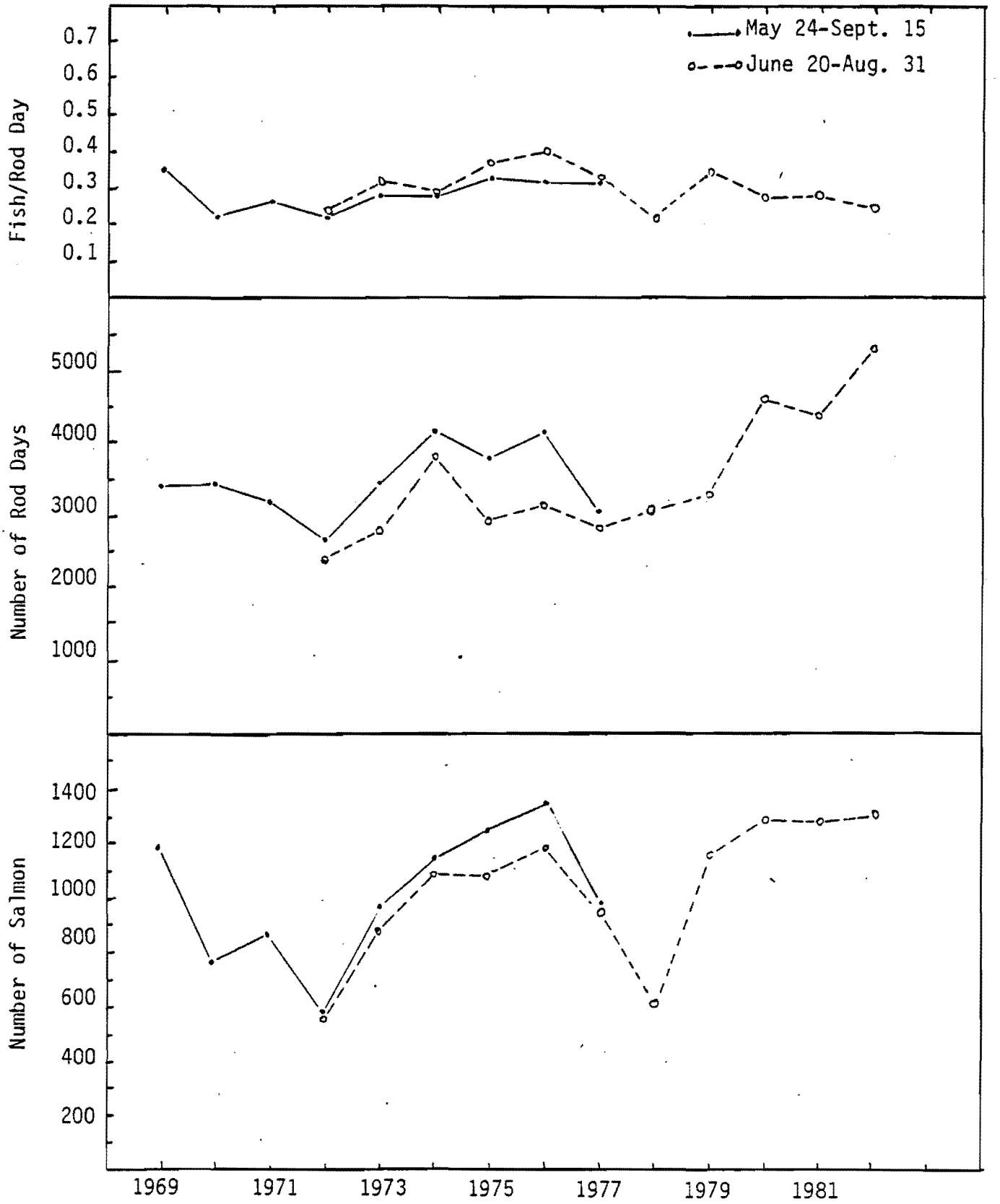


Fig. 29. Total salmon angling catch statistics for Grand Codroy River, for period May 24-Sept. 15 (1969-77) and June 20-Aug. 31 (1972-82).

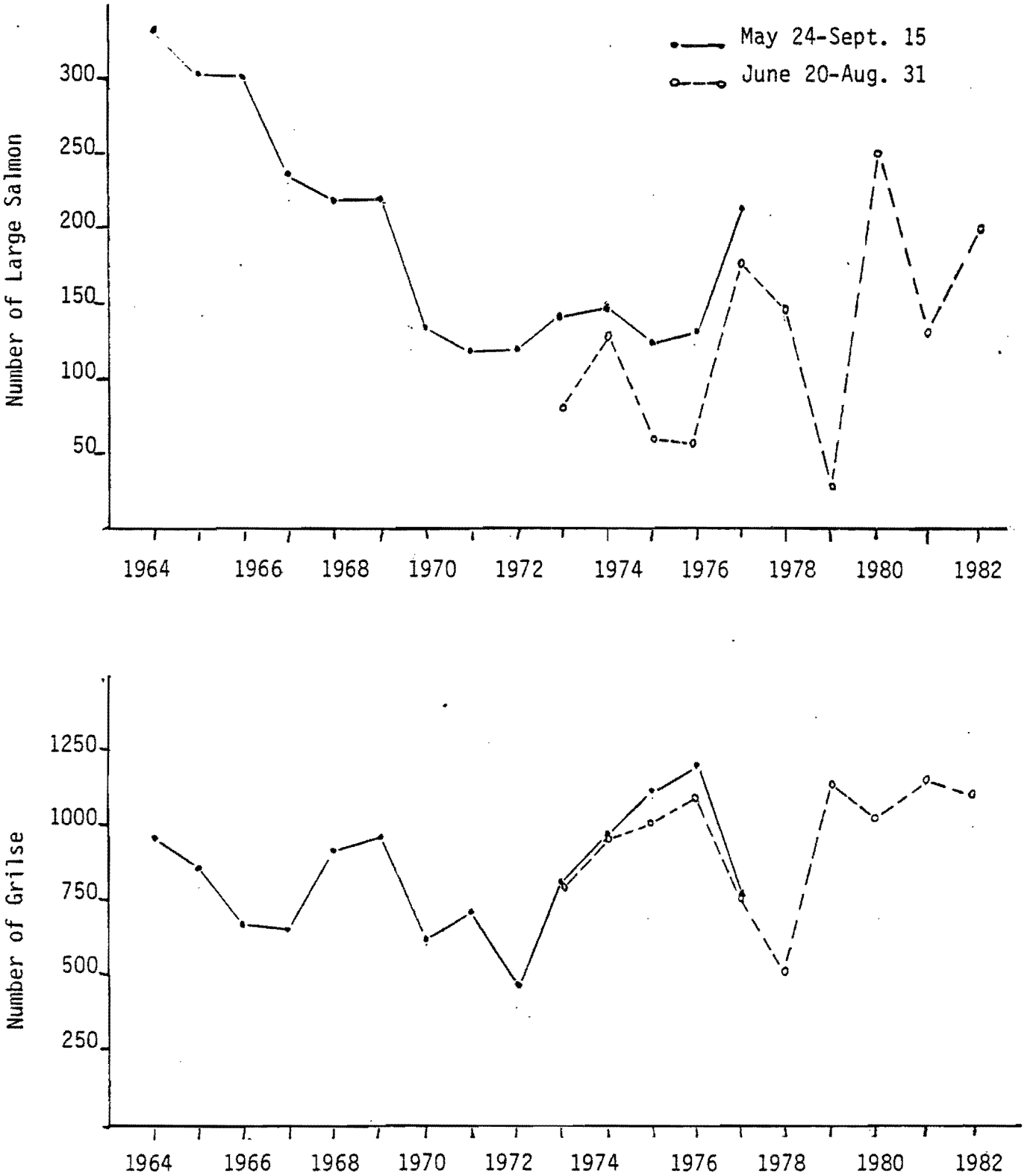


Fig. 30. Numbers of large salmon and grilse angled on the Grand Codroy River during the period May 24-Sept. 15 (1964-77), and June 20-Aug. 31 (1973-82).

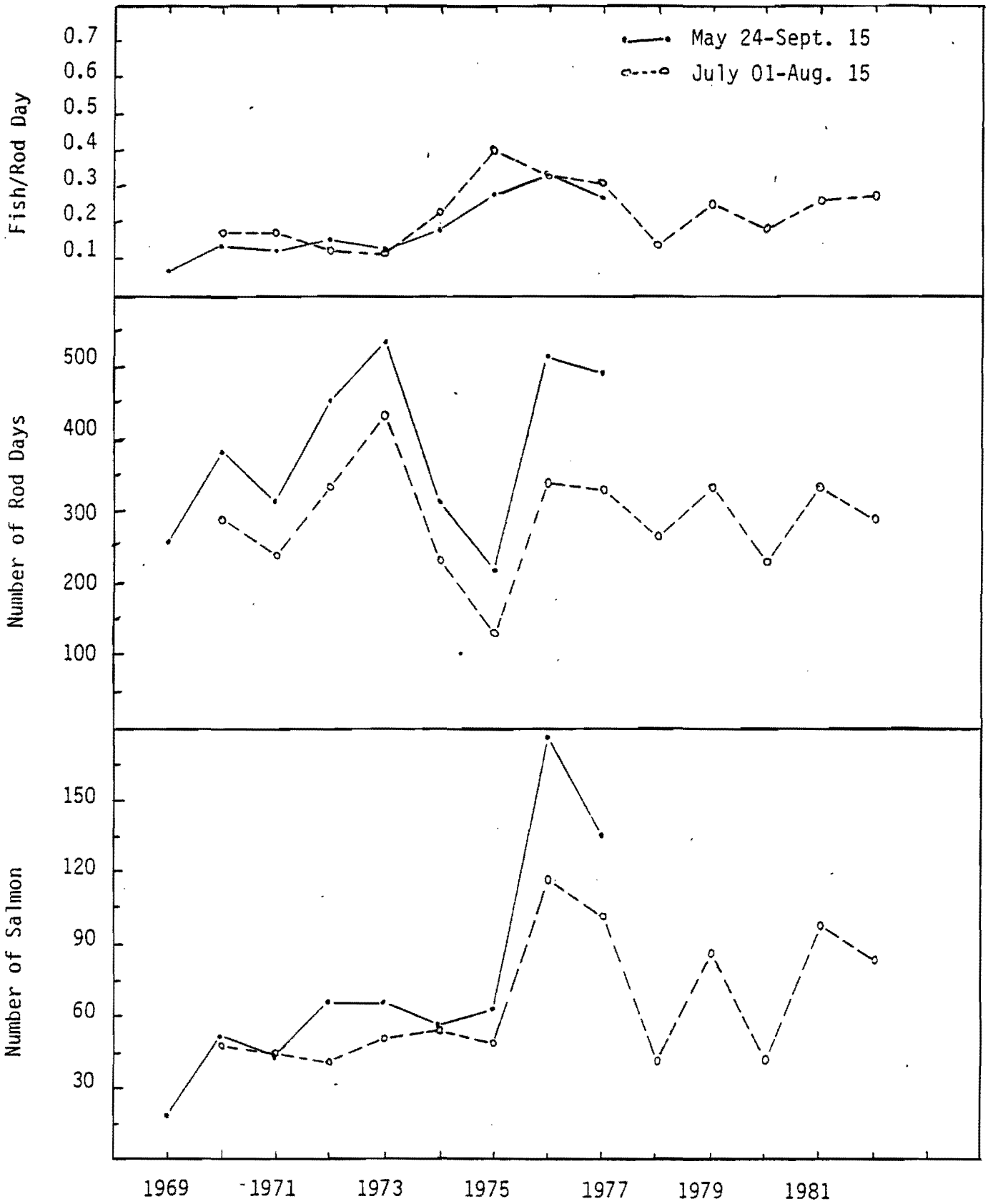


Fig. 31. Angling catch statistics for Little Codroy River for period May 24-Sept. 15 (1969-77), and July 01-Aug. 15 (1970-82).

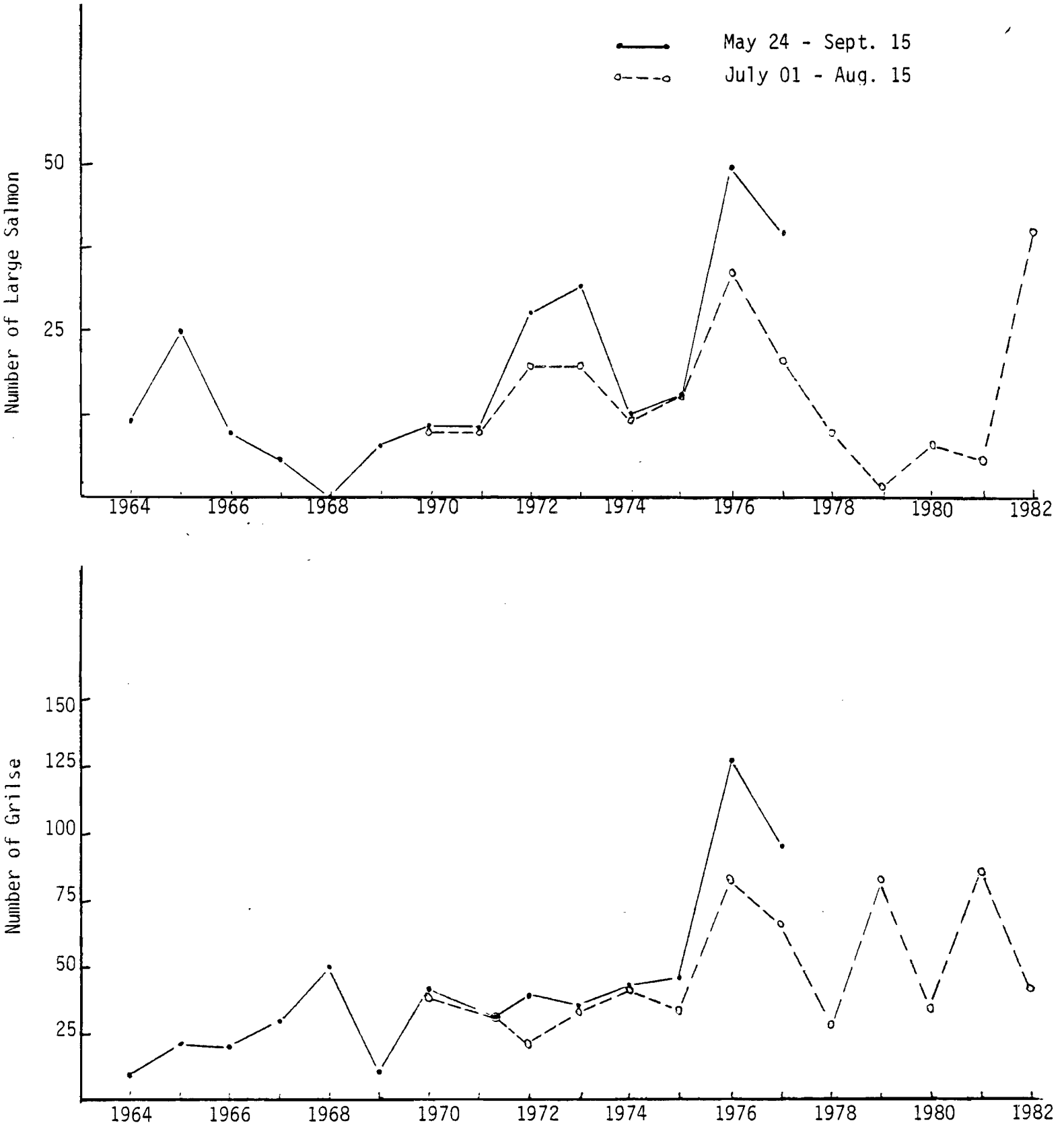


Fig. 32. Numbers of large salmon and grilse angled on the Little Codroy River during the period May 24 - Sept. 15 (1964-1977), and July 01 - Aug. 15 (1970-1982).