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Contact details:

Post:

Team Leader Fisheries

Name:

Phillip Rippon

Address:

**Tyneside House, Skinnerburn Road, Newcastle
Business Park, Newcastle upon Tyne, NE4 7AR**

A Review of the Welsh Region

Microtagging Programme

1984 - 1993

Garry Jones,
Regional FRCN Dept.,
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Executive Summary

1. The microtagging of juvenile salmon commenced in Welsh Region in 1984, with sea trout being tagged from 1988 onwards. The tagging process consists of injecting a binary coded wire tag (approx. 2mm long) into the nose of the anaesthetised fish. The adipose fin is removed, also under anaesthetic, to aid in identifying tagged fish at the adult stage.
2. Up to the end of August 1992 a total of 524,357 salmon and 172,714 sea trout were tagged and released into 16 and 5 Welsh rivers respectively (Tables 1 & 2). The majority (98.3%) of salmon and all the sea trout were hatchery-reared reflecting both the commitment to fish culture within the Region for mitigation and rehabilitation purposes and the paucity of facilities and resources for the capture of wild smolts.
3. Up to the end of December 1993 a total of 1216 from 524,357 hatchery reared salmon stocked were recaptured, representing 0.23% of fish tagged. Of these fish 689 were recorded in homewaters and 527 in distant water fisheries (Table 1). Of the 9046 wild smolts microtagged and released, 59 were recaptured representing 0.65% of fish tagged.
4. Comparison of recapture rates for each migration year shows a degree of variation with a high recovery rate and hence survival recorded for the 1987 smolt year both Nationally (England and Wales) and for Welsh individual rivers.
5. The recapture of microtagged salmon from Welsh rivers was similar in homewater (56%) and distant water fisheries (44%). The greatest exploitation of hatchery reared salmon stocked into Welsh rivers (and presumably wild fish) outside of homewaters was in the drift net fishery off Southern Ireland (31%). Smaller numbers were caught in Northern Ireland, the Faroes Isles, Greenland and the North East Coast fisheries.
6. Homewater rod and net catches were approximately equal and equivalent to 20% and 17% of fish recaptured respectively. A high proportion were recovered during in-river trapping and broodstock collection (26%), with smaller numbers recorded in rivers other than which they were stocked into (5%).
7. The Severn Estuary commercial fishery exploits salmon from most rivers entering the upper Severn Estuary and must therefore be considered as a mixed stock commercial fishery. The exploitation by the fishery accounted for 17% of recoveries. The only other commercial fishery to report microtagged salmon was in the Dee estuary. There is no evidence that this fishery exploits salmon from other Welsh rivers, although a small number of fish from North Western rivers are taken.
8. There seems little point in microtagging fish that are stocked into rivers that do not have an adequate adult screening programme as minimal recaptures will result. Rivers with trapping facilities and/or participating commercial/recreational fisheries should only be considered for the future tagging strategy.
9. The analysis of recoveries for each life stage stocked suggested that the highest return rate came from salmon stocked as 2+ smolts. However, taking production costs into account, the most economic life stage to stock is as 1+ smolts. Direct release of fish into the lower river, as opposed to direct release in the upper river or smolt pond located in upper catchment is considered to be the method of stocking smolts that

produces the highest return as adults. The recovery of smolts released via ponds located in the lower catchment will be investigated further.

10. There are indications that the success of a particular smolt migration year can be estimated from the salmon catch in the Southern Ireland fishery as the fishery appears to be independent of variations in effort and river flow which affect homewater fisheries.
11. Hatchery reared salmon contributed up to 40% of rod caught fish in some recovering industrial rivers. The salmon stocking provided a seed from which natural reproduction was enhanced. However, there was no control river as all recovering industrial and/or polluted rivers were stocked with migratory salmonids as part of the rehabilitation.
12. The return rate of wild salmon smolts was higher than that of hatchery-reared fish and the proportion of multi sea winter salmon, particularly 3SW fish, in the returns was higher than that for hatchery fish. A smaller proportion of wild fish were caught in the S. Ireland fishery with a consequent increase in the fraction caught in homewaters, although only small numbers were caught. Greater efforts should be made to tag wild salmon smolts on rivers with adult screening programmes.

13. Of 172,714 sea trout stocked, 338 were recaptured which represents a recovery rate of 0.20%. This figure is similar to the overall recovery rate for salmon (0.23%) even though sea trout are only recovered from homewaters. As they tend not to migrate great distances to Atlantic Ocean feeding grounds they are not exploited by high seas fisheries.

14. The overall recapture rate of sea trout (0.20% of fish stocked) is similar to that of salmon (0.23%), the former being recovered exclusively from homewater fisheries. The majority of sea trout were recovered in the rivers that they were stocked into, most during trapping and broodstock collection (65%). None were recovered from homewater commercial fisheries.

15. A higher return of sea trout stocked as smolts (0.14% of fish stocked) was noted than for stocked parr (0.04%). Most sea trout recaptured returned to freshwater after one year at sea (72%) followed by fish returning after two years at sea (13%), in the year of smolting (12%), and after three years at sea (3%).

16. Recovery of sea trout stocked via smolt release ponds located in the lower Mawddach catchment was four times higher than for smolts released directly into the lower river.

17. No information is available on the survival and recovery of wild sea trout smolts from Welsh rivers. Consideration should be given to tagging wild sea trout smolts, particularly where downstream traps are in place (eg. Conwy and Taff).

18. Recommendations.

18.1 That microtagged fish are only released into rivers with good adult screening programmes. For salmon these rivers are the Taff, Dee and Ogmore and for sea trout the Mawddach and Ogmore. This strategy would provide the following information:-

Actual return rates of stocked salmon and sea trout to the home river, The timing and composition of adult returns from stocked salmon and sea trout,

Exploitation rate of these fish by anglers,
Comparison of the relative survival of fish stocked in each year,
Contribution of stocked fish to the overall adult return and to the rod
fishery.

- 18.2 That wild salmon and sea trout smolts are tagged on the above rivers that have adult screening programmes. This would provide the following additional information:-

Comparison of return rates of wild and hatchery reared salmon and sea trout,
The timing and composition of adult returns from wild salmon and sea trout.

- 18.3 That the conclusions of this report be used to effectively manage the future stocking strategy of migratory salmonids within the Region.

- 18.4 That the original objectives of the microtagging programme be redefined as follows to include the above recommendations:-

- a) To determine the relative contributions of salmon and sea trout from key Welsh rivers to the various homewater commercial and recreational fisheries on these rivers.
- b) To calculate the exploitation rate of salmon from key Welsh rivers by the Southern Ireland drift net fishery.
- c) To obtain information on the timing, composition, magnitude and adult return rates of wild salmon and sea trout smolts and to determine any differences in exploitation patterns and survival between wild and hatchery reared fish.

1. Introduction.

The microtagging of juvenile salmon commenced in Welsh Region in 1984, with sea trout being tagged from 1988 onwards. The tagging process consists of injecting a binary coded wire tag (approx. 2mm long) into the nose of the anaesthetised fish. The adipose fin is removed, also under anaesthetic, to aid in identifying tagged fish at the adult stage. The tagging of fish greater than around 8cm in length is straightforward with tagging rates of 500 - 700 fish per hour per two man team. Mortalities as a result of tagging are negligible and subsequent tag loss rate is generally less than 1%.

The original objectives of the tagging programme were:

- 1.1 To determine the relative contributions of salmon from Welsh rivers to the various homewater commercial and recreational fisheries.
- 1.2 To determine the relative contributions of salmon from Welsh rivers to the various high seas interceptory fisheries.
- 1.3 To determine the relative contributions of salmon from various rivers to mixed stock commercial fisheries.
- 1.4 To determine the efficacy of restocking and enhancement practices. This includes survival and return rates from various life history stages, methods of stocking and release.
- 1.5 To determine the rate of recovery of industrialised river catchments in relation to 1.4 above.
- 1.6 To obtain information on the timing, composition, magnitude and adult return rates of wild smolts.
- 1.7 To determine any differences in exploitation patterns between wild and hatchery-reared fish.

Of these objectives only 1.1, 1.4 and 1.5 are applicable to sea trout as they rarely migrate outside coastal waters.

This report reviews the data on tag recaptures recorded from hatchery and wild parr and smolts tagged between 1984 and 1992 and makes recommendations on future stocking and tagging strategies.

2. Tagging Programme.

Up to the end of August 1992 a total of 524,357 salmon and 172,714 sea trout were tagged and released into 16 and 5 Welsh rivers respectively (Tables 1 & 2). The majority (98.3%) of salmon and all the sea trout were hatchery-reared reflecting both the commitment to fish culture within the Region for mitigation and rehabilitation purposes and the paucity of facilities and resources for the capture of wild smolts.

Introductions of tagged fish have largely been determined by on-going stocking requirements and has therefore concentrated on rivers with fishery protection schemes, fish kill mitigations or industrial river rehabilitation programmes. This has led to a geographical bias towards rivers in South East Wales, particularly in the earlier years of the tagging programme. The majority of the sea trout were stocked into the Ogmôre and Mawddach catchments as part of the rehabilitation of those river systems following large scale pollution incidents.

3. Adult tag recoveries.

3.1 Homewater Fisheries

Due to the diffuse nature of many of the fisheries, organised scanning of catches is largely impractical and so the recovery of tagged fish has relied to a large extent upon voluntary reports by fishermen with the incentive of a £5 reward. This has been backed up by a large scale publicity campaign including leaflets, licence stationary notices and press advertising. In addition, a number of fish dealers and commercial fishermen report tagged fish in return for the reward and/or purchase of the fish at a favourable rate. Tagged fish are also recovered during broodstock collection and are caught in a number of fixed traps in the Region.

3.2 Distant Water Fisheries

Scanning of landed catches at Faroes (prior to the 1991 buyout) and West Greenland has been organised in conjunction with market sampling programmes to collect biological samples and other fisheries data. A proportion of the landings have been examined since 1985. These scanning programmes have been coordinated by the International Council for the Exploration of the Sea (ICES). Microtagging programmes have been initiated separately by agencies in other countries, and fisheries in Ireland, Northern Ireland and parts of East Scotland have also been routinely scanned for microtags since 1986. In addition the Ministry of Agriculture, Fisheries and Food (MAFF) have coordinated the scanning programme along the North East coast of England as part of a wider investigation of the patterns of exploitation of the coastal fishery on local stocks.

3.3 Raising Factors

The data on tag recaptures represent only those fish which were actually caught which may vary between fisheries according to the exploitation rate. In order to compare the tag recovery rates between fisheries the number of recaptures must be scaled up to the total catch of the fishery by means of raising factors. These are calculated by dividing the total catch by the number of fish scanned. In many homewater fisheries it is not possible to derive raising factors in this way and they can only be determined from a knowledge of total stock size and the proportion of tagged fish from, for example, fish counters or traps.

4. Results.

These results include adult recaptures up to the end of 1993 for both homewater and distant water fisheries.

4.1 Salmon

A summary of stocking and recovery of microtagged salmon for each river follows. Data on numbers of fish tagged and recaptured are given in Appendix 1.

4.1.1 River Afan

Two batches of 4049 and 2500 one year old parr/smolts were stocked into the Afan in 1989 and 1990 respectively (Fig. 1). The 1989 batch originated from farm-reared stock of scottish origin, whilst the 1990 batch originated from Usk stock. A total of 7 recaptures were recorded

from the 1989 stocking of which 6 were reported from S. Ireland and one was rod-caught on the neighbouring River Ogmoo. Only one recapture, from S. Ireland, was recorded from the 1990 stocking (Fig. 1). This gives actual recapture rates of 0.17% and 0.04% and raised recapture rates of 0.40% and 0.08% respectively. The relatively large numbers of fish recorded in the S. Ireland fishery from the 1989 stocking indicates good survival of this batch although the lack of home-river recaptures indicates either low exploitation or reporting rates in the Afan.

4.1.2 River Cleddau

In 1989 and 1990, 5094 S1's (one year old smolts) and 4616 S2's (two year old smolts) were stocked into the Cleddau (Fig. 2). None of the 1989 stocking were subsequently recaptured and only a single recapture from the S. Ireland fishery resulted from the 1990 stocking, giving recapture rates of 0% and 0.02% respectively. This indicates poor survival of these batches and low exploitation and/or reporting rates in homewaters.

4.1.3 River Clwyd

Two batches of 5294 1+ parr and 1356 S1's were stocked into the Clwyd in 1991 (Fig 3). Two recaptures were reported from the 1+ parr stocking, both from S. Ireland, giving a recovery rate of 0.04%. Three of the S1's were subsequently recovered, one in S. Ireland, one grilse and one two sea winter salmon from the neighbouring River Conwy, giving a recapture rate of 0.22%.

4.1.4 River Dee

Since 1986, a total of 85,529 1+ parr, 2,448 1+ parr/smolts, 23,455 S1's and 3228 S2's have been stocked into the Dee catchment (Fig. 4). Recaptures (100) have been recorded in S. Ireland, N. Ireland, N.E. Coast and Faroes in addition to homewater nets and rods and, since 1991, in an adult trap located on Chester Weir.

Actual percentage recoveries vary widely between batches and age groups, ranging from 0.004 to 0.28% for 1+ parr, 0.01% to 0.35% for S1's and 0.90% for the one batch of S2's. The higher recovery rates were recorded for fish stocked in 1991 and 1992, when recaptures in the trap contributed greatly to the return (for example 40 trap caught fish in 1993 compared to 8 by the rods).

The highest recorded recapture rate was for the one batch of 3228 2+ smolts stocked in 1991. After applying raising factors (based on trap efficiency and exploitation rates in each fishery), recapture rates for this batch are 2.7% for grilse and 1.5% for 2 sea winter salmon, giving an overall recovery rate of 4.2%. The highest recovery rate of parr was for the 8672 stocked in 1991 (1.3% after raising factors) when 24 fish were caught, 22 in the Chester trap.

The recovery rates of salmon stocked into the Dee was, with the exception of the one batch of 2+ smolts, generally disappointing.

4.1.5. River Dysynni

One batch of 2179 S1's were stocked into the Dysynni in 1991, and one batch of 4485 S2's in 1992. A total of 18 of the S1's (0.83%) were recovered including 13 in S. Ireland and 3 in the Dysynni during broodstock collection. A further 2 fish were caught in the nearby rivers Mawddach and Conwy, also during broodstock collection. Six

(0.13%) of the S2's were recaptured, three in S. Ireland and three during broodstock collection. No salmon were taken by homewater nets or rods, indicating either a low reporting rate or low level of exploitation.

4.1.6 River Ebbw

Two batches of tagged fish were stocked into the Ebbw in 1988; 1000 1+ parr and 1165 S1's (Fig. 6). A total of 8 fish (0.8%) were recovered from the batch of parr, including 2 from S. Ireland, 1 from Greenland and 5 from the neighbouring River Taff. A total of three (0.26%) recaptures were reported from the batch of 1165 S1's consisting of 2 from S. Ireland and 1 from the Taff. No home-river recaptures have been recorded.

4.1.7 River Gwendraeth

5000 S1's were stocked in this river in 1989, four of these fish being recaptured in S. Ireland (Fig. 7).

4.1.8 River Loughor

A total of 9167 S1's were stocked in two batches in 1989 (5001 fish) and 1992 (4166 fish). Twelve of the first batch (0.24%) were recaptured, 5 from S. Ireland, one each from N. Ireland and the Faroes fishery, one from a net set in the Estuary and four in the Severn Estuary commercial fishery (Fig. 8). Only one of the second batch was recaptured, the fish being reported from S. Ireland (0.02%). No home-river recaptures were reported.

4.1.9 Mawddach Catchment

A total of 9005 1+ parr in three batches and 14,386 S1's, also in three batches, have been stocked into the Mawddach and Wnion between 1990 and 1992 (Fig. 9). Three of the 1621 1+ parr released in 1990 were recaptured (0.19%), one in the Faroes, one in the river Dyfi and one in the Mawddach rod fishery, the latter as a two sea winter salmon. Four of the 2815 parr released in 1991 were recaptured (0.14%), 3 from S. Ireland and one in the rod fishery. It is anticipated that the 1992 parr will return as grilse in 1994.

Five of 9613 S1's stocked in 1990 were recaptured, four in S. Ireland and one during broodstock collection. Five of 2520 S1's stocked in 1991 were recaptured, three in S. Ireland, one in N. Ireland and one during broodstock collection. Two of the 2253 S1's stocked in 1992 were recovered, one in S. Ireland and one in the Dyfi. This gives recovery rates of 0.05%, 0.20% and 0.09% for S1's stocked in 1990, 1991 and 1992 respectively.

4.1.10 River Ogmore

A total of 48,273 1+ parr and 35,245 S1's were stocked into the Ogmore between 1989 and 1992 (Fig. 10). The 17,082 1+ parr released in 1992 are expected to return to the Ogmore in 1994. Thirty three of the 19,991 1+ parr released in 1990 were recaptured, 21 in S. Ireland (0.11%), three in N. Ireland (0.02%) and nine in the rod fishery (0.05%) giving a total recovery of 0.17%. Thirty five of the 11,200 1+ parr stocked in 1991 were recaptured, 11 in S. Ireland (0.10%) and 24 by the rods (0.21%) giving an overall recovery of 0.31%.

One of the 3136 S1's released in 1989 was recaptured in the Ogmores giving a recapture rate of 0.03%. Eighteen of 7677 S1's stocked in 1990 were recovered, comprising 11 in S. Ireland (including three 2 sea winter salmon), two in the Severn Estuary putchers, one in the Tywi and 4 by the home-river rods giving overall recovery rates of 0.18% and 0.05% for 1 and 2 sea winter salmon respectively. Two of the 637 S1's stocked in 1991 were recovered in S. Ireland giving a recapture rate of 0.32%. Finally, 22 of the 23,795 S1's stocked in 1992 were recaptured, 11 in S. Ireland and 11 in the rod fishery, giving a recovery rate of 0.09%.

4.1.11 River Rhymney

In total, 17,235 S1's were stocked in 1987, 1988, 1990 and 1992, and 3490 S2's were stocked in 1989 (Fig. 11). Overall recovery rates for the batches of 1 year old smolts stocked ranged from 0.05% in 1992 to 0.80% in 1988. Two of the 2064 S1's stocked in 1987 were recovered, one in the Faroes and the other in the N.E. Coast drift nets, giving a recovery rate of 0.10%. Sixteen of the 2019 S1's stocked in 1988 were recaptured, 7 in S. Ireland, three in the Taff, two in the Severn Estuary and two during a fishkill on the Rhymney, giving a recovery of 0.79%. Nineteen of 4944 S1's stocked in 1990 were recovered, nine in S. Ireland, seven in the Taff and three in the Severn Estuary (0.38%). Four of the 8208 S1's stocked in 1992 were recaptured in S. Ireland (0.05%).

Thirty two of the 3490 S1's stocked in 1987 were recaptured, 12 in S. Ireland, 17 in the Taff and 3 in the Severn Estuary giving a recovery rate of 0.92%.

4.1.12 River Taff

Around 10,000 2 year old smolts were stocked into the Taff annually since 1986 (from 4703 in 1986 to 12,300 in 1988, mean 8,442), primarily as part of the Cardiff bay monitoring programme. In addition, one batch of 2286 S1's was stocked in 1988. A series of semi-impassable weirs confine fish to the lower 10km of river which has resulted in a large number of rod and trap recaptures (Figure 12). Fish passes have been constructed on all three, two of which contain adult traps. These traps and an annual programme of broodstock collection have added to the recapture of tagged fish.

Of the 59,100 2 year old salmon smolts stocked from 1986 - 1992, 489 were recaptured (0.83%). High seas recaptures accounted for 155 (131 in S. Ireland, 20 in N.Ireland, 2 in Greenland and one each off Faroes and Northumbria), with the remainder (334) being recovery in homewaters (47 in Usk/Severn nets, 10 in other rivers, 199 from traps/broodstock collection and 78 by anglers).

Twenty two of the 2286 S1's stocked in 1988 were recovered, 10 in S.Ireland, 9 in homewater nets, 2 in the River Usk and one during broodstock collection.

Annual recovery rates for 2+ smolts varied between 0.28% in 1986 to 1.46% in 1987, the latter probably due to a large number of salmon (45) being taken from immediately below a semi-impassable weir in 1988. However, recaptures in S. Ireland were also at a peak in 1987 (0.46%) compared to other years (0.10% - 0.28%).

Return rates of salmon to home river ranged from 0.02% in 1986 to 0.88% in 1991. There was a poor return to homewaters of the 10,014 S2's

stocked in 1988, although the recapture rate in S. Ireland (0.20%) was similar to other years.

4.1.13 River Tawe

A total of 23,002 1+ parr were stocked into the Tawe in 1987 and 1988 in addition to 13,644 S1's in 1989 and 1990 (Figure 13). Overall recoveries varied between years and between batches.

Twenty of the 15,002 1+ parr stocked in 1987 were recaptured, 9 in S. Ireland, 2 in N. Ireland, 1 in Greenland, 1 in the Severn Estuary, 3 in the Usk drift nets and 4 by River Tawe rods; giving a total recovery rate of 0.13%. 25 of the 8000 1+ parr stocked in 1988 were recovered, 11 in S. Ireland, one off the Faroe Isles, 1 in the Severn Estuary and 11 by Tawe rods, giving a recovery rate of 0.31%.

Seven of the 7615 S1's stocked in 1989 were recaptured, 2 in S. Ireland, 1 in the River Tywi and 4 in an adult trap on the Tawe, giving a recovery rate of 0.09%. 12 of the 6029 S1's stocked in 1990 were recovered, 1 in S. Ireland, one in the River Ogmore, 4 in the Tawe trap and 6 by anglers giving an overall recovery of 0.20%.

4.1.14 River Tywi

Two batches of 1+ smolts (one of 3414 in 1989 and one of 3797 in 1992) were stocked into the River Tywi, and one batch of 4748 1+ parr/smolts in 1990 (Fig. 14).

One of the batch of 3414 S1's stocked in 1989 was caught by an angler in the Tywi giving a recapture rate of 0.03%. One of the 3797 S1's stocked in 1992 was also caught by an angler (0.03%). No other fish were recovered, probably indicating poor survival of these fish.

4.1.15 River Usk

The Usk has been stocked annually since 1984, with a total of 15,501 1+ parr, 10,048 1+ parr/2+ smolts, 7635 1+ smolts and 77,734 2+ smolts being released into the river. The one batch of 10,048 1+ parr tagged in 1986 were released in two batches, one as 1+ parr in 1986 and the other as 2+ smolts in 1987 due to water supply problems at the hatchery. As it is not possible to distinguish the recaptures from each release, this batch is excluded from much of the data analysis on releases of particular age classes.

Individual recapture rates varied between years and between age classes released, but overall survival of 1+ smolts (0.30%) was greater than that of 2+ smolts (0.23%), both being much higher than that of 1+ parr (0.03%). The highest return for an individual batch of salmon was from the release of 10,023 2+ smolts in 1987 (0.54%). It appears that the smolt migration year of 1987 was particularly good on the Usk, as the batch of 10,048 parr/smolts mentioned earlier also showed an similar return rate (0.52%).

Releases of 1+ parr took place in 1985 (7871) and 1989 (7630). Recoveries from each of the two batches was poor, with 3 fish recaptured from the first batch (0.04%) and one fish from the second batch (0.01%), all four being caught in S. Ireland.

S1's were stocked into the Usk in 1986 (4325) and 1991 (3310). A total of 21 fish were recaptured from the 1986 stocking (9 in S. Ireland, 4 in N. Ireland, 2 in Greenland, 1 off N.E. Coast, 3 in Usk drift nets, 1 found dead after spawning in the Usk and one found dead in the nearby

River Taff) giving an overall recapture rate of 0.49%. Two of the fish stocked out in 1991 were recaptured (one in the Usk drift nets and one in the Severn Estuary) giving the lower recapture rate of 0.06%.

S2's were stocked annually, excepting 1985, since 1984 with numbers stocked ranging from 4900 (1991) to 15,000 (1989), the mean being 9716 fish per annum. Recapture rates from the batches varied between 0.03% (1986) and 0.54 (1987). The high recapture rate of the 1987 batch was in part due to an increase in screening of the Usk drift net catch, which led to 12 of the 54 recaptures. However, the catch in S. Ireland, which can be considered to be an independent sampling point, was also high and accounted for 24 of the 54 recaptures, probably indicating high marine survival of that batch. Conversely, of the 10,000 S2's stocked out the previous year (1986) only three were recaptured, including 1 from S. Ireland.

The 15,000 S2's stocked in 1989 were released in three batches of 5000 fish; one in the upper River Usk, one in the lower River Usk and the other via the smolt release pond at Cynrig Hatchery. Using the S. Ireland catch as an independent sample, then the recaptures of each batch are as follows:-

Release Location	No. released	No. recaptured in S. Ireland	Recapture Rate
Upper Usk	5000	6	0.12%
Smolt pond	5000	10	0.20%
Lower Usk	5000	13	0.26%

From this analysis it would seem that direct release into the lower river gives a higher return than smolt pond release (located in the upper catchment) or direct release in the upper river. This strategy was also suggested by Aprahamian and Jones (1989) on the basis of the subsequent recapture of the fish at Uskmouth power station in the Usk Estuary.

4.1.16 River Wye

One batch of 3207 S1's was stocked into the River Wye in 1991 (Figure 16). Four of these fish were recaptured, 1 in S. Ireland, 2 in the Taff fish trap and one on the River Usk following tagging at the Taff fish trap.

4.1.17 Wild Smolts

Wild smolts were captured and tagged at two locations, i) on the main River Wye at Ballingham by smolt net and ii) in a temporary downstream trap located on the River Grwyne, a tributary of Usk.

i) River Wye

The numbers of smolts caught and tagged annually ranged from 416 in 1989 to a maximum of 4084 in 1987 (Figure 17). Recapture rates ranged from 0.23% in 1985 to 0.91% in 1987. The high recapture rate of the 1987 smolts reinforces the view expressed in the River Usk section that the 1987 migration was very successful. Overall, 54 of 7689 fish stocked were recaptured, 21 in S. Ireland (recapture rate of 0.27%), 1 in N. Ireland (0.01%), 1 in Greenland and 1 off Faroe Isles (both 0.01%), 3 in the Severn Estuary (0.04%), 9 in the Usk drift nets (0.12%), 2 in nearby river Usk (0.03%) and 12 by Wye anglers (0.16%) giving a total overall return of 0.70%.

ii) River Usk

A total of 1357 smolts were caught in the smolt trap on the River Grwynne and tagged, 32 in 1987, 184 in 1988, 1101 in 1990 and 40 in 1991 (Figure 18). None of the 32 fish tagged in 1987 were caught, 3 of the 184 tagged in 1988 were recaptured (2 in Usk drift nets, 1 in Taff trap, 1.63%), 2 of the 1101 tagged in 1990 (1 in Usk nets, 1 in Severn nets, 0.18%) and none of the 40 tagged in 1991. The overall recapture rate was 0.37%.

4.1.18 Summary of results.

Up to the end of December 1993 a total of 1216 from 524,357 hatchery reared salmon stocked were recaptured, representing 0.23% of fish tagged. Of these fish 689 were recorded in homewaters and 527 in distant water fisheries (Table 1). Of the 9046 wild smolts microtagged and released, 59 were recaptured representing 0.65% of fish tagged. A summary of the actual numbers of fish recovered and the raised number of fish is given for each river in Appendix 1.

Raising factors must be applied to the various fisheries before direct comparisons can be made between them (Table 3). The overall distribution of raised recaptures is given in Figure 19. The catch in the homewater traps and broodstock collection (26%) accounts for the greatest proportion of Welsh salmon recaptured, followed by the S. Ireland fishery (25%), rods (20%) and homewater nets (17%). No other component accounts for more than 5% of the total recaptures.

Comparison of recapture rates for each migration year (migration year for smolt = year stocked, for 1+ parr = year stocked +1) shows a degree of variation (Figure 20). The variation is shown by total recaptures and captures in Southern Ireland separately; the latter are independent of changes in exploitation patterns in homewaters, so the figures can give a guide to the relative marine survival of salmon for each migration year. A high recovery rate and hence survival was noted for individual rivers for the 1987 smolt year, particularly the Usk and wild Wye smolts. A study of the fate of all British microtagged salmon found that 1987 was an excellent smolt year Nationally, each highseas fishery exhibiting high recovery rates, particularly S. Ireland (Russell, 1993). It is believed that the critical period for salmon, when the majority of natural mortality occurs, is soon after first entering saltwater as a smolt (Russell & Potter, 1993).

4.2 Sea Trout

As sea trout rarely migrate outside of coastal waters recaptures in high seas fisheries are non-existent. All recaptures will therefore be in homewater fisheries.

4.2.1 Mawddach Catchment

Sea trout stocking began in the catchment in 1988 to facilitate the recovery of the catchment following a major fish kill in 1984. The angling effort is concentrated on the lower reaches and is primarily targeted at sea trout rather than salmon. A total of 41,529 1+ parr and 86,724 S1's were stocked into the catchment between 1988 and 1992 (Table 2, Figure 21). Recovery rates have varied between years and between age classes, ranging from 0.026% to 1.350% for individual stockings. Overall, 115 fish were caught by anglers (0.090% recovery) and 188 during broodstock collection (0.147%) giving an overall recovery of 0.236%.

Overall, the recapture of sea trout that had spent one year at sea was highest (74% of fish recaptured), followed by fish that returned in the year of smolting (13%), fish that returned after one year at sea (11%) and finally after three (2%) years at sea.

Sea trout were stocked into the Rivers Mawddach, Wnion and Eden via direct release into the watercourse, and into the Mawddach and Wnion via smolt release ponds. The numbers stocked in each separate release and the numbers recaptured of each batch are given in Table 2. It is apparent that when parallel stocking via smolt pond and direct release are carried out, then the return from those fish released via pond are always highest. Overall recovery of smolts released via pond (0.63%) are four times higher than those released directly into the river (0.17%).

4.2.2 River Taff

One batch of 4434 sea trout were stocked into the Taff in 1988. Twenty six of the fish were recaptured, 7 by anglers and 19 during broodstock collection and traps (Figure 22). The recovery rate for the batch was 0.59% (Table 2). The greatest proportion of sea trout returned to freshwater after one year at sea (54%).

4.2.3 River Dyfi

One batch of 1243 sea trout was released in 1990. None were subsequently recaptured.

4.2.4 River Ogmore

The Ogmore was stocked with sea trout as part of the re-toration project from 1991 onwards. A total of 38,388 fish were stocked, 23,562 1+ parr, 14,826 1+ smolts and 14,565 1+ parr/smolts (Figure 23). Very few fish have so far been recovered, 6 of 12,689 1+ parr stocked in 1991 (0.05% recovery) and 3 of 4374 S1's stocked in 1992 (0.07% recovery). However, it is anticipated that some of the later batches stocked will be recovered in future years.

4.2.5 River Usk

A small batch of 396 was introduced into the Usk in 1988. None were subsequently recaptured.

4.2.6 Summary of Results

Of 172,714 sea trout stocked, 338 were recaptured which represents a recovery rate of 0.20%. This figure is similar to the overall recovery rate for salmon (0.23%) even though sea trout are only recovered from homewaters. As they tend not to migrate great distances to Atlantic Ocean feeding grounds they are not exploited by these fisheries and more sea trout per release are likely to return than salmon.

5. Progress Against Objectives

5.1 Salmon

5.1.1 Relative contributions to homewater fisheries

Based upon knowledge of the local fisheries and trapping and tagging data, raising factors have been estimated which enable a general measure of relative exploitation levels to be obtained. A breakdown of the number of fish recovered by river is given in Table 3.

A comparison of the recapture rate of salmon in homewaters for each migration year shows a steady increase in the number of fish reported (Figure 24). This is probably due to anglers and commercial fishermen becoming more aware of the tag incentive scheme as the project progressed, and the use of a number of trapping stations on some of our rivers during the last few years.

The distribution of the catch in the various elements of the homewater fishery (expressed as a percentage of fish returning to homewaters) is as follows:

Rods	Nets	Other	Non-natal rivers
28%	21%	39%	12%

NB. "Other" includes traps, broodstock collection and mortalities.
 "Non-natal rivers" are fish caught in rivers other than those they were stocked into and include all methods of capture other than nets.

The majority of net caught salmon are taken in the Severn Estuary drift nets, fixed engines and lave nets. A smaller number (of Dee salmon) are caught in the Dee Estuary (Table 1).

It is apparent that homewater rods and nets account for a similar proportion of salmon recaptured in homewaters. This compared with Regional annual rod and net catches of salmon which are similar (mean annual catch 1984-1993 is 6670 rods, 4080 nets). It is interesting to note that some 12% of fish are captured in rivers other than those which they were stocked into.

5.1.2 Contribution of Welsh salmon to distant water fisheries.

The average distribution of catch (raised numbers of salmon) between these fisheries is as follows:

S. Ireland	N. Ireland	Greenland	Faroes	N.E. Coast
76%	8%	12%	3%	1%

The Greenland and Faroos fisheries exploit fish which would have returned to homewaters as multi-sea winter salmon and their impact on spawning stocks is proportionally greater than the other fisheries which exploit mainly grilse. The Faroos fishery was bought out in 1991 and the Greenland fishery in 1993. The cessation of fishing in the two areas will have a relatively small impact on the actual numbers of salmon returning to Wales, but even a small increase in multi sea winter fish is welcomed as these fish have a greater economic value and importance to the spawning stock.

Annual variation in recaptures in the Southern Ireland fishery follows the same pattern as total recaptures (Figure 20). Therefore the fishery can provide an independent index of survival between different migration years. The results show that recaptures from different rivers can vary considerably and may be explained by differences in survival rates between rivers and batches of fish stocked, although migration patterns of salmon may vary between individual stocks.

5.1.3 Mixed stock commercial fisheries.

The main mixed stock commercial fishery in Wales is in the upper Severn Estuary. The fishery, which comprises 8 drift nets, 3 putcher ranks and

various draft and lave nets, operates from around Cardiff to the Severn River. The fishery exploits salmon from a variety of Welsh rivers, from the Tawe in the west to the Wye in the east. The majority originate from the Rivers Usk, Taff and Rhymney with fewer numbers from the Tawe and Ogmre (Figure 25). No information is available on the contribution of other river stocks, particularly Severn salmon, as no fish were microtagged during the period of review.

5.1.4 Age composition of stocked and recaptured salmon.

Comparison of the raised recapture rates for the different age classes stocked (Figure 26a) shows that relative survival is as follows:

Wild smolt(2.1) > 2+ smolt(1.70) > 1+ smolt(0.48) > 1+ parr(0.35).

The recovery of 2+ smolts is heavily influenced by the recapture rate in the Taff. Excluding all Taff salmon the survival of 2+ smolts is estimated at 0.91%.

The average economic cost of these life stages can be assessed by referring to average production costs of the fish and raised recovery rates.

Life stage	%overall recovery rate	%rod return	Av. cost to produce	Cost of fish returning to homewater	Cost of fish caught by rods
1+ parr	0.35	0.14	£0.70	£200	£500
1+ smolt	0.48	0.13	£0.70	£146	£538
2+ smolt	1.70	0.22	£1.20	£171	£545

The table shows that although a higher return is shown for 2+ smolts, the most economic life stage to stock is as 1+ smolt, where the cost of a fish taken in the rod fishery is estimated to be £146.

The majority of fish recaptured were destined to return as grilse (84%). More adults from wild smolts returned as multi-sea winter salmon, particularly 3 sea winter, than did those from all hatchery reared fish (Figure 26a) although when expressed as a percentage of each sea age class returning the proportions of grilse were similar (Figure 26b).

On the Rivers Usk and Ogmre smolts have been released in batches at different locations to attempt to establish the most efficient release method. The Ogmre fish have yet to return to the river (stocked in 1991-2). However, the highest recovery of the three Usk batches came from the smolts released directly into the lower river. Work on the recapture of smolts migrating through the Usk Estuary has shown that the preferred release location on the Usk is directly into the lower river (Aprahamian and Jones, 1989). The fish stocked into the lower river were considered to be less susceptible to in-river mortality as they spent less time in the river before reaching the marine environment.

5.1.5 Recovery of industrial rivers.

Many of the South Wales industrial rivers have recovered sufficiently during the last 20 years to once again support a migratory salmonid fishery. Most of these rivers have been stocked with brown trout and salmon. The largest, the River Taff, has had around 10,000 salmon smolts stocked annually since 1986, along with greater numbers of fry (50,000) since 1990. Microtagged salmon have accounted for up to 40%

of the annual catch in some years (Gough & Jones, 1991) and salmon runs have steadily improved during that time, as have the sea trout run, given that only 4400 sea trout smolts were stocked in 1988. These migratory trout may have originated from the many brown trout stocked into the upper river or may be strays from nearby river systems. As can be seen from Figure 19 some 8% of fish are caught in rivers other than those into which they were stocked. This recovery of sea trout without stocking has been noted on other rivers (Solomon, 1992).

5.1.6 Wild smolts.

Only 9046 wild smolts were tagged, the majority of these on the River Wye (7689), the remainder on the Usk. Recapture rates for these wild fish are higher than for hatchery reared stock, probably because the fish are less "naive" than the hatchery fish and less susceptible to predation. The proportion of multi sea winter salmon originating from the wild fish is slightly higher than that for hatchery fish. This could be due to the larger smolt size of hatchery fish, the tendency for the larger smolts to return as grilse being well documented (Thorpe, 1989 Skilbrei, 1989).

5.1.7 Exploitation of wild and hatchery salmon.

There seems to be minor differences in the exploitation patterns of wild and hatchery-reared fish (Figure 27). A smaller proportion of wild salmon were caught in the S. Ireland fishery than hatchery fish and a consequently higher proportion returned to the homewater rods and nets. This may reflect the small numbers of wild salmon tagged or could be related to the higher rate of MSW salmon that result from wild smolts, these fish possibly utilising different migration routes and feeding grounds than the grilse that are caught off Ireland. No salmon were caught in fixed traps, probably because none were tagged in rivers that have trapping facilities.

5.2 Sea Trout.

5.2.1 The relative contributions of sea trout to various homewater fisheries.

Sea trout recaptures came only from the various in-river rod fisheries or during trapping/broodstock collection activities. None were recovered from commercial fisheries.

5.2.2 Restocking and enhancement practices.

Three of the five catchments stocked with sea trout have so far seen no adult returns (Usk, Dyfi and Ogmore). The return rate from the one batch of 4500 parr stocked into the River Taff was quite high (0.59%), probably due to the fish being confined to the lower 10km of the river by weirs and the operation of an adult fish trap.

The Mawddach catchment has been stocked extensively with sea trout parr and smolts since 1988 in a number of locations. In 1988 and 89 the survival of parr was higher than that of smolts (Table 2), both age classes being released directly into the river. In 1990, 1991 and 1992, some smolts were released via smolt release ponds on the Mawddach and Wnion which allowed the fish to migrate when they had become acclimatised to the wild. This resulted in a substantial increase in return rates of adults compared to both parr and directly released smolts (Table 2). The recovery of three batches of smolts stocked into the release pond is around 4 x that of equivalent batches released directly into the river.

5.2.3 To determine the recovery of industrial river catchments.

The River Taff, as mentioned earlier, is recovering from a history of pollution. The run of sea trout has improved steadily during the last ten years to reach a peak of around 700 fish (Cardiff Bay Report, 1993). As only one batch of sea trout was stocked, this recovery is unlikely to be due to stocking, as was similarly the case on the Tyne (Solomon, 1992). However, many brown trout, some of which may have had migratory tendencies, were stocked into the upper Taff, which also holds a good population of native trout (Brown et al 1986).

The Mawddach catchment is also recovering from the more recent pollution of 1984 with anglers catches recovering. As the recaptures of tagged fish comprise a small proportion of the reported rod catch (15 of 200 in 1992) the recovery is unlikely to be due in full to the enhancement stocking, although the practice will seed the river with adult spawners.

6. Conclusions

6.1 Salmon.

- 6.1.1 The recapture of microtagged salmon from Welsh rivers was similar in homewater (56%) and distant water fisheries (44%). The greatest exploitation of hatchery reared salmon stocked into Welsh rivers (and presumably wild fish) outside of homewaters was in the drift net fishery off Southern Ireland (31%). Smaller numbers were caught in Northern Ireland, the Faroes Isles, Greenland and the North East Coast fisheries.
- 6.1.2 Homewater rod and net catches were approximately equal and equivalent to 20% and 17% of fish recaptured respectively. A high proportion were recovered during in-river trapping and broodstock collection (26%), with smaller numbers recorded in rivers other than which they were stocked into (5%).
- 6.1.3 The Severn Estuary commercial fishery exploits salmon from most rivers entering the upper Severn Estuary and must therefore be considered as a mixed stock commercial fishery. The exploitation by the fishery accounted for 17% of recoveries. The only other commercial fishery to report microtagged salmon was in the Dee estuary. There is no evidence that this fishery exploits salmon from other Welsh rivers, although a small number of fish from North Western rivers are taken.
- 6.1.4 There seems little point in microtagging fish that are stocked into rivers that do not have an adequate adult screening programme as minimal recaptures will result. Rivers with trapping facilities and/or participating commercial/recreational fisheries should only be considered for the future tagging strategy.
- 6.1.5 The analysis of recoveries for each life stage stocked suggested that the highest return rate came from salmon stocked as 2+ smolts. However, taking production costs into account, the most economic life stage to stock is as 1+ smolts. Direct release of fish into the lower river, as opposed to direct release in the upper river or smolt pond located in upper catchment is considered to be the method of stocking smolts that produces the highest return as adults. The recovery of smolts released via ponds located in the lower catchment will be investigated further.
- 6.1.6 There are indications that the success of a particular smolt migration year can be estimated from the salmon catch in the Southern Ireland fishery as the fishery appears to be independent of variations in effort and river flow which affect homewater fisheries.
- 6.1.7 Hatchery reared salmon contributed up to 40% of rod caught fish in some recovering industrial rivers. The salmon stocking provided a seed from which natural reproduction was enhanced. However, there was no control river as all recovering industrial and/or polluted rivers were stocked with migratory salmonids as part of the rehabilitation.
- 6.1.8 The return rate of wild salmon smolts was higher than that of hatchery-reared fish and the proportion of multi sea winter salmon, particularly 3SW fish, in the returns was higher than that for hatchery fish. A smaller proportion of wild fish were caught in the S. Ireland fishery with a consequent increase in the fraction caught in homewaters, although only small numbers were caught. Greater efforts should be made to tag wild salmon smolts on rivers with adult screening programmes.

6.2 Sea trout.

- 6.2.1 The overall recapture rate of sea trout (0.20% of fish stocked) is similar to that of salmon (0.23%), the former being recovered exclusively from homewater fisheries. The majority of sea trout were recovered in the rivers that they were stocked into, most during trapping and broodstock collection (65%). None were recovered from homewater commercial fisheries.
- 6.2.2 A higher return of sea trout stocked as smolts (0.14% of fish stocked) was noted than for stocked parr (0.04%). Most sea trout recaptured returned to freshwater after one year at sea (72%) followed by fish returning after two years at sea (13%), in the year of smolting (12%), and after three years at sea (3%).
- 6.2.3 Recovery of sea trout stocked via smolt release ponds located in the lower Mawddach catchment was four times higher than for smolts released directly into the lower river.
- 6.2.3 No information is available on the survival and recovery of wild sea trout smolts from Welsh rivers. Consideration should be given to tagging wild sea trout smolts, particularly where downstream traps are in place (eg. Conwy and Taff).

7. Recommendations.

- 7.1 That microtagged fish are only released into rivers with good adult screening programmes. For salmon these rivers are the Taff, Dee and Ogmore and for sea trout the Mawddach and Ogmore. This strategy would provide the following information:-

Actual return rates of stocked salmon and sea trout to the home river,
The timing and composition of adult returns from stocked salmon and sea trout,
Exploitation rate of these fish by anglers,
Comparison of the relative survival of fish stocked in each year,
Contribution of stocked fish to the overall adult return and to the rod fishery.

- 7.2 That wild salmon and sea trout smolts are tagged on the above rivers that have adult screening programmes. This would provide the following additional information:-

Comparison of return rates of wild and hatchery reared salmon and sea trout,
The timing and composition of adult returns from wild salmon and sea trout.

- 7.3 That the conclusions of this report be used to effectively manage the future stocking strategy of migratory salmonids within the Region.

- 7.4 That the original objectives of the microtagging programme be redefined as follows to include the above recommendations:-

7.4.1. To determine the relative contributions of salmon and sea trout from key Welsh rivers to the various homewater commercial and recreational fisheries on these rivers.

7.4.2 To calculate the exploitation rate of salmon from key Welsh rivers by the Southern Ireland drift net fishery.

7.4.3 To obtain information on the timing, composition, magnitude and adult return rates of wild salmon and sea trout smolts and to determine any differences in exploitation patterns and survival between wild and hatchery reared fish.

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Table 1. Numbers of salmon stocked and recovered in each river.

AGE	RIVER	NUMBER	ROD			NET			OTH			OTHER RIVERS			TOT HOM WAT			SI			NI			G/F			OTH			TOTDIST WAT			TOT		
			1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+	1+	2+	3+			
1+P 1+PS 1+S 2+S	AFAN	6549											1			0 0 0 0 1 0 0 0 0 0 0 0	6 1											0 0 0 6 1 0 0 0 0 0 0 0	0 0 0 6 2 0 0 0 0 0 0 0						
1+P 1+PS 1+S 2+S	CLEDDAU	8281 4616														0 0 0 0 0 0 0 0 0 0 0 0	1										0 0 0 0 0 0 0 0 0 1 0 0	0 0 0 0 0 0 0 0 0 1 0 0							
1+P 1+PS 1+S 2+S	CLWYD	5294 1356	1												1 0 0 0 0 0 1 1 0 0 0 0	2										2 0 0 0 0 0 1 0 0 0 0 0	3 0 0 0 0 0 2 1 0 0 0 0								
1+P 1+PS 1+S 2+S	DEE	85529 2448 23455 3228	3 3			5 2		22							30 5 0 0 0 0 20 1 0 16 7 0	4		3				1			1	8 1 0 0 0 0 6 0 0 5 1 0	38 6 0 0 0 0 26 1 0 21 8 0								
1+P 1+PS 1+S 2+S	OYSYNNI	2179 4485													0 0 0 0 0 0 5 0 0 3 0 0	13										0 0 0 0 0 0 13 0 0 3 0 0	0 0 0 0 0 0 18 0 0 6 0 0								
1+P 1+PS 1+S 2+S	EBBW	1000 1165													5 0 0 0 0 0 0 1 0 0 0 0	2								1		3 0 0 0 0 0 2 0 0 0 0 0	8 0 0 0 0 0 2 1 0 0 0 0								
1+P 1+PS 1+S 2+S	GWENDRAETH	5000													0 0 0 0 0 0 0 0 0 0 0 0	4										0 0 0 0 0 0 4 0 0 0 0 0	0 0 0 0 0 0 4 0 0 0 0 0								
1+P 1+PS 1+S 2+S	LOUGHOR	9167													0 0 0 0 0 0 5 0 0 0 0 0	6		1				1				0 0 0 0 0 0 8 0 0 0 0 0	0 0 0 0 0 0 13 0 0 0 0 0								
1+P 1+PS 1+S 2+S	HAMDACH	9005 14386	1 1					1							2 1 0 0 0 0 3 0 0 0 0 0	3								1		4 0 0 0 0 0 9 0 0 0 0 0	6 1 0 0 0 0 12 0 0 0 0 0								
1+P 1+PS 1+S 2+S	OGHORE	48082 35245	30 3												30 3 0 0 0 0 18 1 0 0 0 0	32		3								35 0 0 0 0 0 21 3 0 0 0 0	65 3 0 0 0 0 39 4 0 0 0 0								
1+P 1+PS 1+S 2+S	RHYNNEY	17235 3490													0 0 0 0 0 0 16 3 0 13 7 0	20								1		0 0 0 0 0 0 22 0 0 12 0 0	0 0 0 0 0 0 38 3 0 25 7 0								
1+P 1+PS 1+S 2+S	TAFF	2286 59100													0 0 0 0 0 0 12 0 0 236 98 0	10										0 0 0 0 0 0 10 0 0 154 1 0	0 0 0 0 0 0 22 0 0 390 99 0								
1+P 1+PS 1+S 2+S	TAME	23002 13644	11 4			5									17 4 0 0 0 0 15 3 0 0 0 0	20		2				2				24 0 0 0 0 0 4 0 0 0 0 0	41 4 0 0 0 0 19 3 0 0 0 0								
1+P 1+PS 1+S 2+S	TYWI	4748 7211													0 0 0 0 0 0 2 0 0 0 0 0											0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 2 0 0 0 0 0								
1+P 1+PS 1+S 2+S	USK	15501 10048 7635 77734													0 0 0 22 2 0 1 6 0 58 10 1	4		5							1	4 0 0 27 0 1 16 1 0 108 5 0	4 0 0 49 2 1 17 7 0 166 15 1								
1+P 1+PS 1+S 2+S	WYE	3207													0 0 0 0 0 0 3 0 0 0 0 0	1										0 0 0 0 0 0 1 0 0 0 0 0	0 0 0 0 0 0 4 0 0 0 0 0								
1+P 1+PS 1+S 2+S	TOTAL	187413 23893 151452 152653	46 11 0			10 2 0		23 0 0		6 0 0					85 13 0 22 3 0 101 16 0 326 122 1	67 0 0		8 0 0							4 1 0 0 0 0 1 1 0 1 1 0	80 1 0 33 1 1 117 4 0 283 7 0	165 14 0 55 4 1 218 20 0 609 129 1								
WILD	USK	1357													4 1 0 0 0 0 0 0 0 0 0 0											0 0 0 0 0 0 0 0 0 0 0 0	4 1 0 0 0 0 0 0 0 0 0 0								
WILD	WYE	7689	8 4			11 1 2									20 6 2 0 0 0 0 0 0 0 0 0	21		1						2		25 1 0 0 0 0 0 0 0 0 0 0	45 7 2 0 0 0 0 0 0 0 0 0								
WILD	TOTAL	9046	8 4 0			14 2 2		0 0 0		2 1 0					24 7 2 0 0 0 0 0 0 0 0 0	21 0 0		0 1 0							2 0 0	25 1 0 0 0 0 0 0 0 0 0 0	49 8 2 0 0 0 0 0 0 0 0 0								

Table 2. Numbers of sea trout stocked and recovered in Welsh rivers.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES												% RECOVERY			
	YEAR	AGE	NUMBER	RODS				BROODSTOCK COLLECTION				TOTAL							
				0+	1+	2+	3+	0+	1+	2+	3+	0+	1+	2+	3+				
MAWDDACH	1988	1+P	12787	1	3	1	1								1	3	1	1	0.047
		1+S DIRECT	7640			2											2		0.026
		1+S POND																	
	1989	1+P	8615		4	1	2			13			1		17	1	3		0.244
		1+S DIRECT	17324	3	3		1							3	3		1		0.040
		1+S POND																	
	1990	1+P	11727	2	1	5				4	2			2	5	7		0.119	
		1+S DIRECT	9014		4	1				14	2	2			18	3		0.233	
		1+S POND	5061		6	1				20	3	1			26	4	1	0.613	
	1991	1+P	8400		6	1			13					19	1			0.238	
		1+S DIRECT	9294	6	4	2			13	1				6	17	3		0.280	
		1+S POND	7998	14	18	3			12	53	8			26	71	11		1.350	
	1992	1+P	15110		7				1					1	7			0.053	
		1+S DIRECT	15283						1	26				1	38			0.255	
		1+S POND																	

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES												% RECOVERY		
	YEAR	AGE	NUMBER	RODS				BROODSTOCK COLLECTION				TOTAL						
				0+	1+	2+	3+	0+	1+	2+	3+	0+	1+	2+	3+			
TAFF	1988	1+P 1+S 2+S	4434	1	5	1				9	5	5	1	14	6	5		0.586

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES												% RECOVERY		
	YEAR	AGE	NUMBER	RODS				BROODSTOCK COLLECTION				TOTAL						
				0+	1+	2+	3+	0+	1+	2+	3+	0+	1+	2+	3+			
USK	1988	1+P 1+S 2+S	396															

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES												% RECOVERY		
	YEAR	AGE	NUMBER	RODS				BROODSTOCK COLLECTION				TOTAL						
				0+	1+	2+	3+	0+	1+	2+	3+	0+	1+	2+	3+			
DYFI	1990	1+P 1+S 2+S	1243															

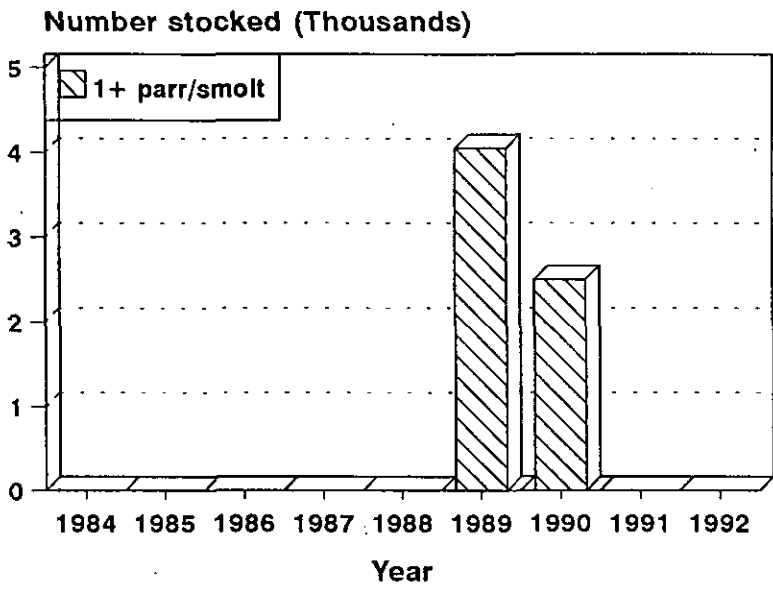
RIVER	STOCKING DETAILS			HOME WATER RECAPTURES												% RECOVERY		
	YEAR	AGE	NUMBER	RODS				BROODSTOCK COLLECTION				TOTAL						
				0+	1+	2+	3+	0+	1+	2+	3+	0+	1+	2+	3+			
OGMORE	1991	1+P	12699	2	3									2	3			
		1+S 2+S	12699															
	1992	1+P 1+S 2+S	10873 4374	1	2									1	2			

Table 3. Numbers of salmon stocked and raised numbers recovered in each river.

AGE	RIVER	NUMBER	1+ ROO	2+ 3+	1+ NET	2+ 3+	1+ OTH	2+ 3+	OTHER RIVERS	1+ 2+ 3+	TOT HOM WAT	1+ 2+ 3+	SI	1+ 2+ 3+	NI	1+ 2+ 3+	G/F	1+ 2+ 3+	OTK	1+ 2+ 3+	TOTDIST WAT	1+ 2+ 3+	TOT	1+ 2+ 3+
1+P 1+PS 1+S 2+S	AFAN	6549								5	0 0 0 0 5 0 0 0 0 0 0 0		11 2								0 0 0 11 2 0 0 0 0 0 0 0		0 0 0 11 7 0 0 0 0 0 0 0	
1+P 1+PS 1+S 2+S	CLEDOU	8281 4616									0 0 0 0 0 0 0 0 0 0 0 0		2								0 0 0 0 0 0 0 0 0 2 0 0		0 0 0 0 0 0 0 0 0 2 0 0	
1+P 1+PS 1+S 2+S	CLWYD	5294 1356	5							1 5	5 0 0 0 0 0 1 5 0 0 0 0		3 1								3 0 0 0 0 0 1 0 0 0 0 0		3 0 0 0 0 0 2 5 0 2 0 0	
1+P 1+PS 1+S 2+S	DEE	85529 2468 23455 3228	18 18 60 6 6 12		25 10 10 5 10		110 35 70 15			5	153 28 0 0 0 0 110 6 0 81 37 0		6 8 7 12		6		2		1		13 2 0 0 0 0 10 0 0 7 12 0		166 30 0 0 0 0 120 6 0 88 49 0	
1+P 1+PS 1+S 2+S	DYSYNNI	2179 4485					3 3		2		0 0 0 0 0 0 5 0 0 3 0 0		22 5								0 0 0 0 0 0 22 0 0 5 0 0		0 0 0 0 0 0 27 0 0 8 0 0	
1+P 1+PS 1+S 2+S	EBBW	1000 1165							13 1		13 0 0 0 0 0 0 1 0 0 0 0		5 2			3					8 0 0 0 0 0 2 0 0 0 0 0		21 0 0 0 0 0 3 1 0 0 0 0	
1+P 1+PS 1+S 2+S	GWENDRAETH	5000									0 0 0 0 0 0 0 0 0 0 0 0		7								0 0 0 0 0 0 7 0 0 0 0 0		0 0 0 0 0 0 7 0 0 0 0 0	
1+P 1+PS 1+S 2+S	LOUGHOR	9167			25						0 0 0 0 0 0 25 0 0 0 0 0		18		1		4				0 0 0 0 0 0 23 0 0 0 0 0		0 0 0 0 0 0 48 0 0 0 0 0	
1+P 1+PS 1+S 2+S	MADDACH	9005 14386	5 5			1					6 5 0 0 0 0 7 0 0 0 0 0		4 21			2					6 0 0 0 0 0 22 0 0 0 0 0		7 5 0 0 0 0 34 0 0 0 0 0	
1+P 1+PS 1+S 2+S	OGMORE	48082 35245	150 15 75 5		10					5	150 15 0 0 0 0 90 5 0 0 0 0		65 53 6		4						69 0 0 0 0 0 53 6 0 0 0 0		219 15 0 0 0 0 143 11 0 0 0 0	
1+P 1+PS 1+S 2+S	RHYMNEY	17235 3490			20 5 5 10	2		18 6 32 5			0 0 0 0 0 0 40 11 0 37 15 0		25 42			3		2			0 0 0 0 0 0 30 0 0 42 0 0		0 0 0 0 0 0 70 11 0 79 15 0	
1+P 1+PS 1+S 2+S	TAFF	2286 59100	180 75		45 210 25	5		6 24 10			0 0 0 0 0 0 56 0 0 910 414 0		20 330		42		49		2		0 0 0 0 0 0 20 0 0 421 2		0 0 0 0 0 0 76 0 0 1331 416 0	
1+P 1+PS 1+S 2+S	TAME	23002 13644	44 16 24 4		25		28 4		1 10 5		70 16 0 0 0 0 62 9 0 0 0 0		63 16		6		36				105 0 0 0 0 0 16 0 0 0 0 0		175 16 0 0 0 0 78 9 0 0 0 0	
1+P 1+PS 1+S 2+S	TYVI	4748 7211	10								0 0 0 0 0 0 10 0 0 0 0 0										0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 10 0 0 0 0 0	
1+P 1+PS 1+S 2+S	USK	15501 10048 7635 77734	15 5 5 45 10 5		50 5 20 190 5			5 1 39 11			0 0 0 65 10 0 0 26 0 274 27 5		7 58 15 177 3		12 9 25		13 89 10		1 1 1 1 1 1			7 0 0 71 0 1 37 1 0 292 13 0		7 0 0 136 10 1 37 27 0 566 40 5
1+P 1+PS 1+S 2+S	WYE	3207								7	0 0 0 0 0 0 7 0 0 0 0 0		2								0 0 0 0 0 0 2 0 0 0 0 0		0 0 0 0 0 0 9 0 0 0 0 0	
1+P 1+PS 1+S 2+S	TOTAL	187413 23893 151452 152653	212 54 0 15 5 0 174 20 0 231 97 5		50 10 0 50 0 0 110 25 0 410 50 0		111 0 0 0 0 0 75 1 0 569 320 0		14 0 0 0 10 0 60 17 0 95 26 0		387 64 0 65 15 0 419 62 0 1305 493 5		153 0 0 69 2 0 210 6 0 563 15 0		16 0 0 12 0 0 11 0 0 67 0 0		41 2 0 0 0 0 19 0 0 138 10 0		1 0 0 1 0 1 2 1 0 1 2 0			211 2 0 82 2 1 242 7 0 769 27 0		598 66 0 147 17 1 661 69 0 2074 520 5
	WILD	USK	1357		15 5				1		16 5 0 0 0 0 0 0 0 0 0 0										0 0 0 0 0 0 0 0 0 0 0 0		16 5 0 0 0 0 0 0 0 0 0 0	
	WILD	WYE	7689	40 20	30 5 10				5 5		75 30 10 0 0 0 0 0 0 0 0 0		46		-1		8		2		56 1 0 0 0 0 0 0 0 0 0 0		131 31 10 0 0 0 0 0 0 0 0 0	
	WILD	TOTAL	9046	40 20 0	45 10 10	0 0 0			6 5 0		91 35 10 0 0 0 0 0 0 0 0 0		46 0 0		0 1 0		8 0 0		2 0 0		56 1 0 0 0 0 0 0 0 0 0 0		147 36 10 0 0 0 0 0 0 0 0 0	

Figure 1. Number of salmon of each age class stocked and recovered in the River Afan.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

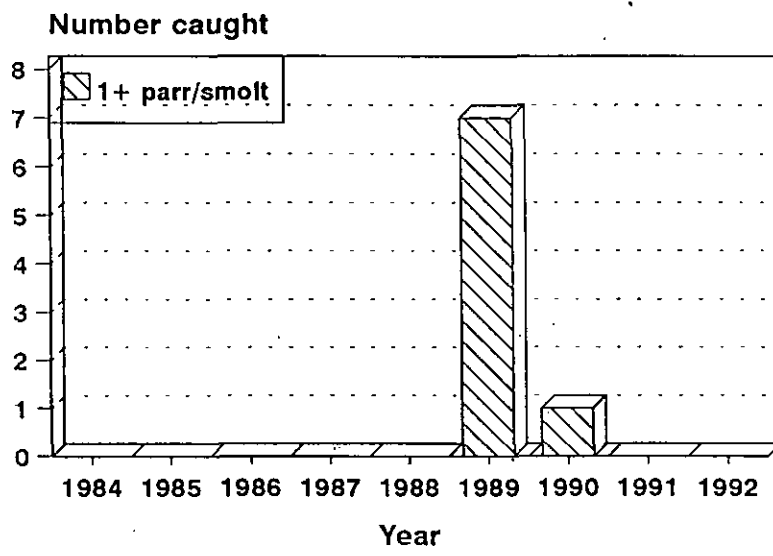
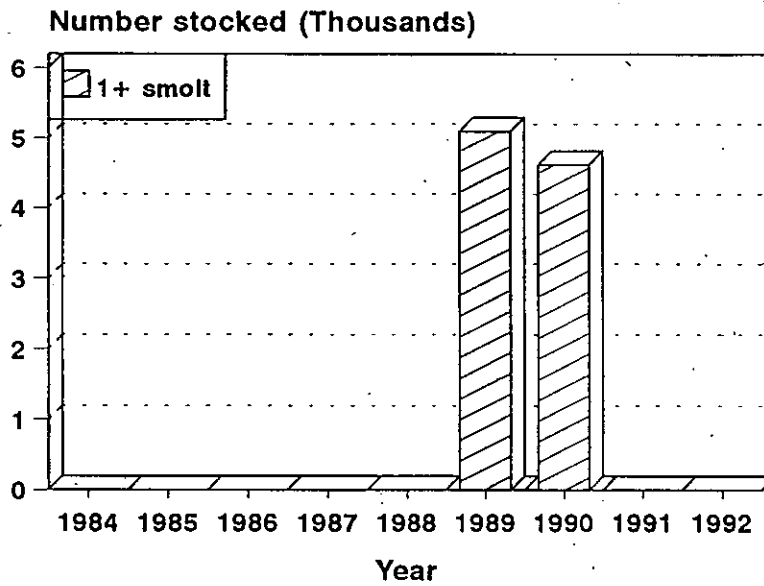


Figure 2. Number of salmon of each age class stocked and recovered in the River Cleddau.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

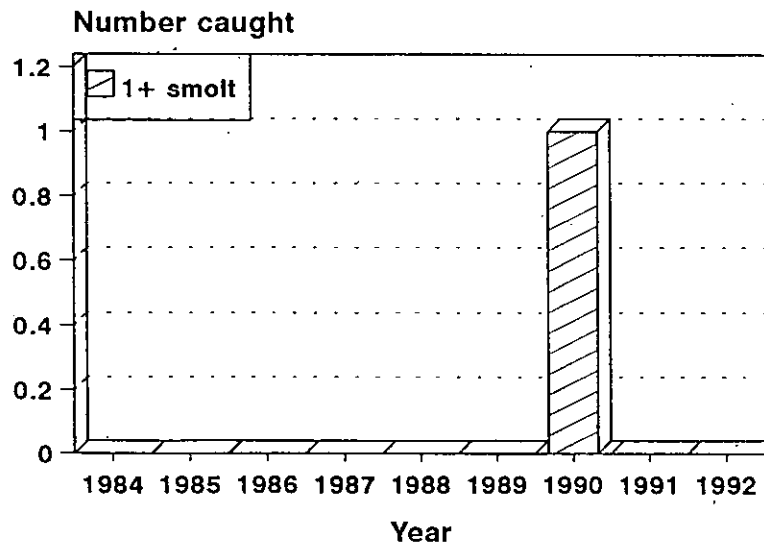
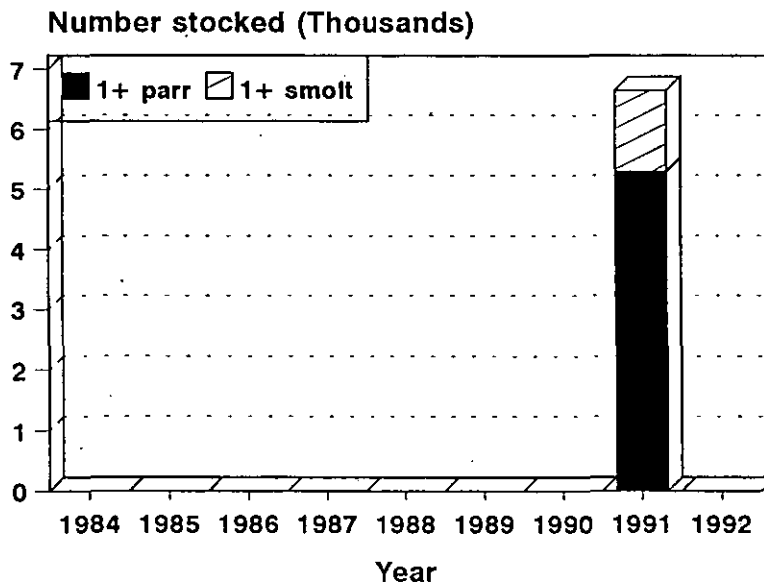


Figure 3. Number of salmon of each age class stocked and recovered in the River Clwyd.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

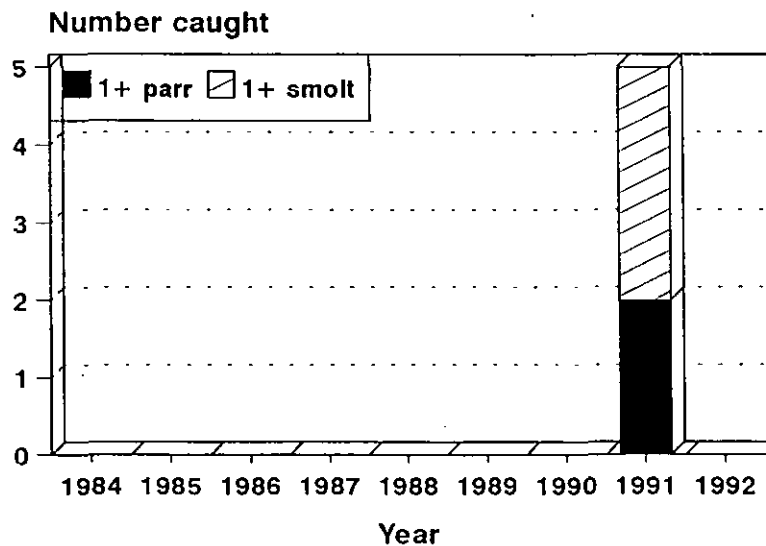
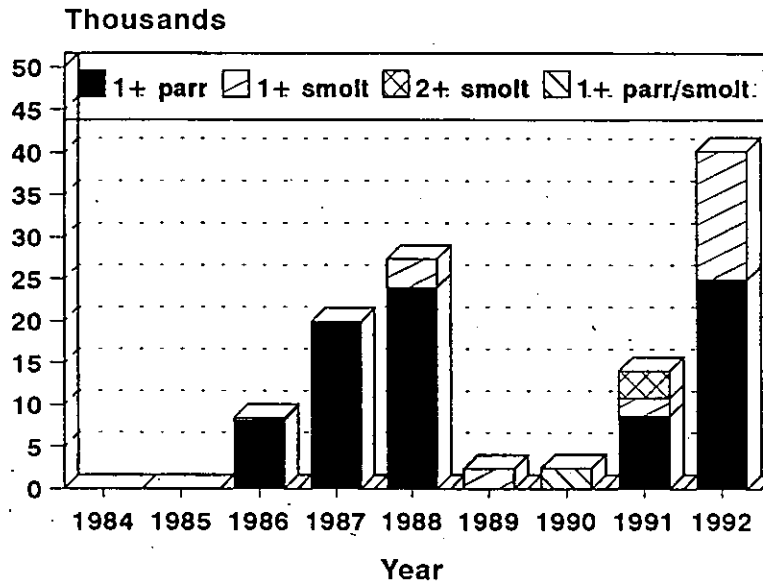


Figure 4. Number of salmon of each age class stocked and recovered in the River Dee.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

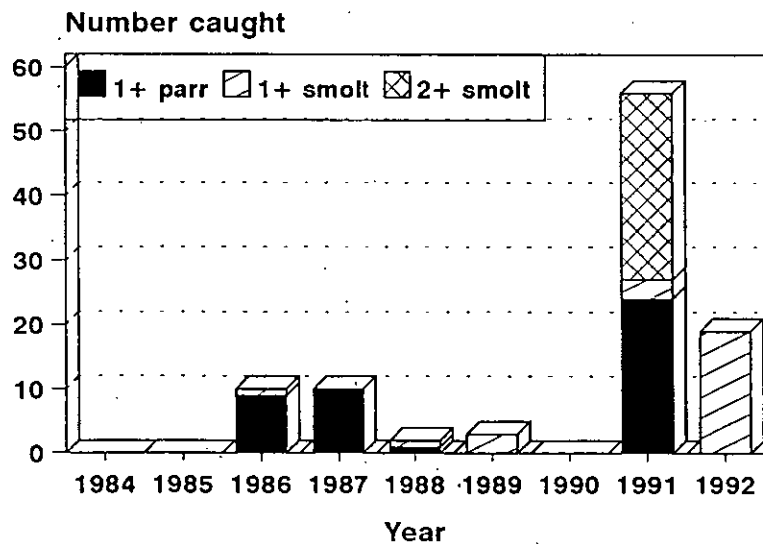
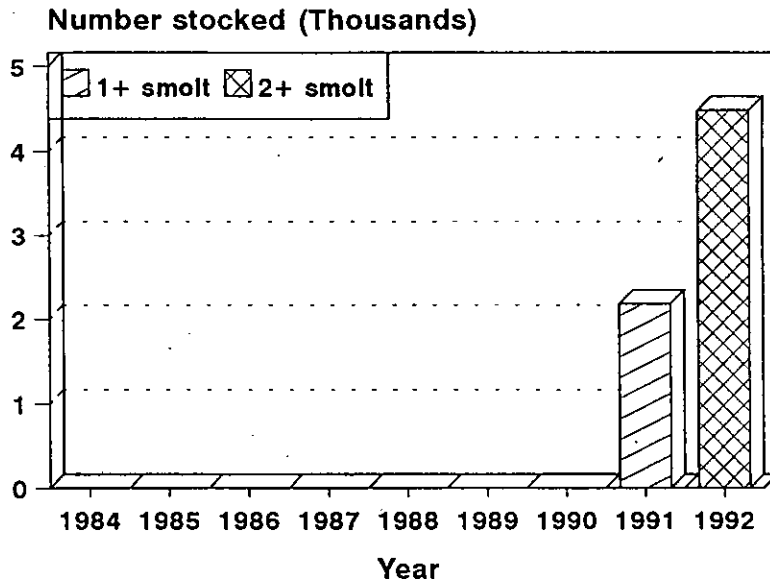


Figure 5. Number of salmon of each age class stocked and recovered in the River Dysynni.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

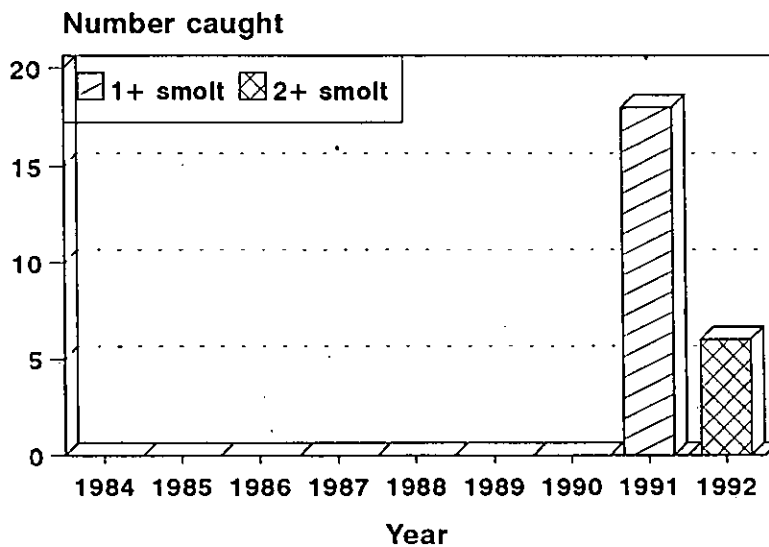
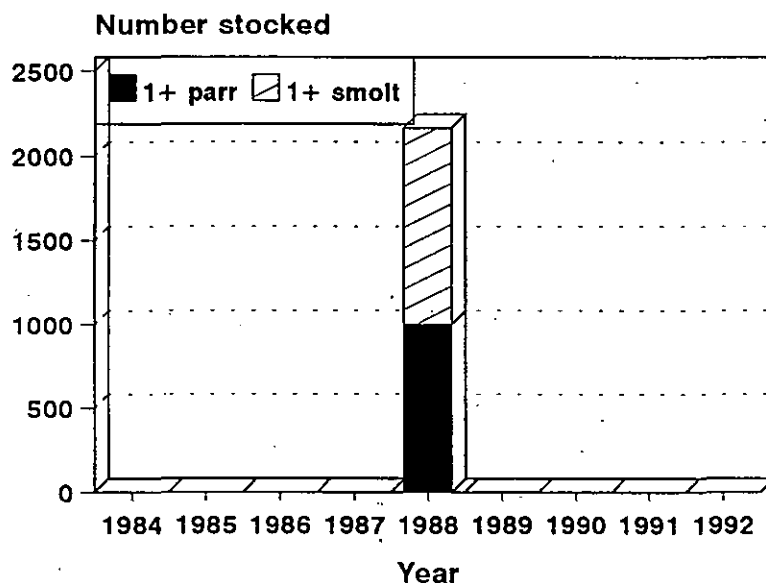


Figure 6. Number of salmon of each age class stocked and recovered in the River Ebbw.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

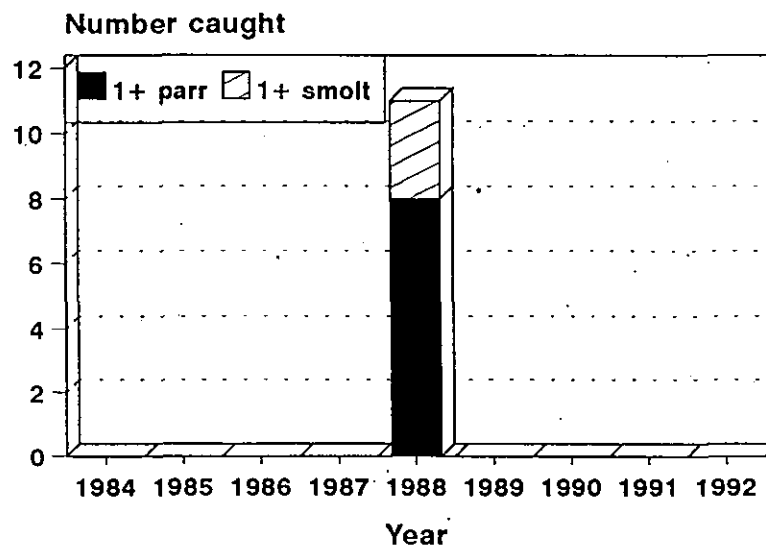
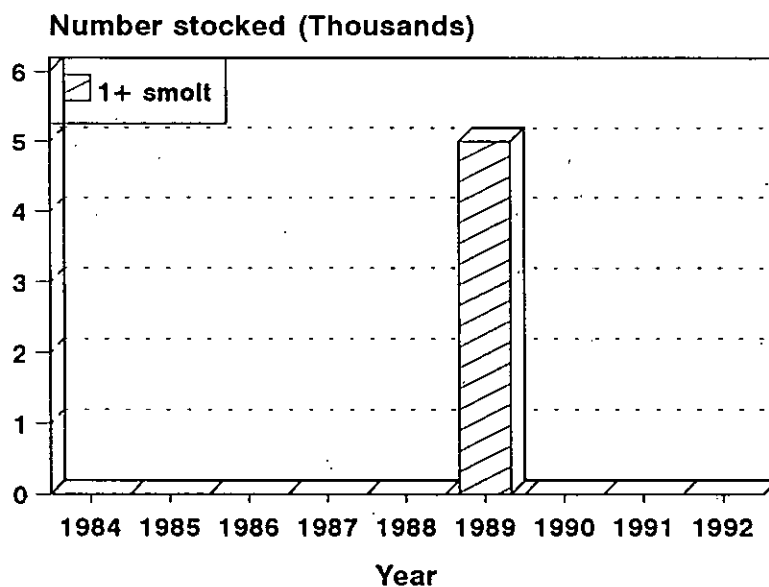


Figure 7. Number of salmon of each age class stocked and recovered in the River Gwendraeth.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

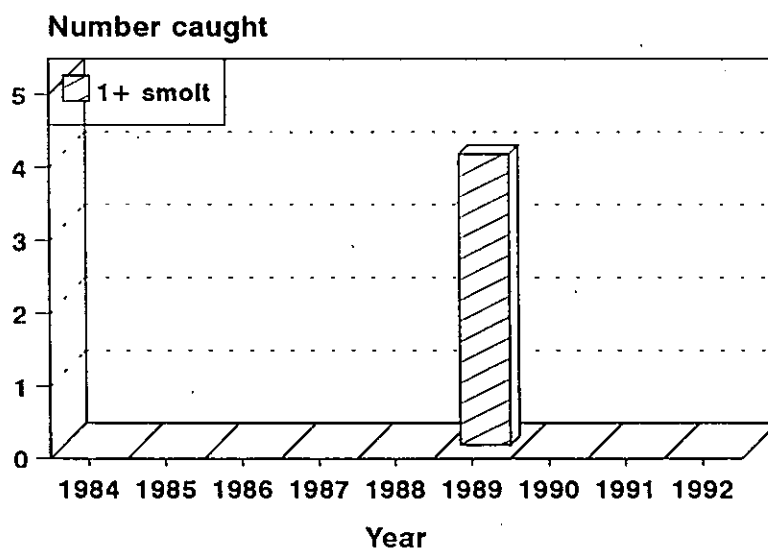
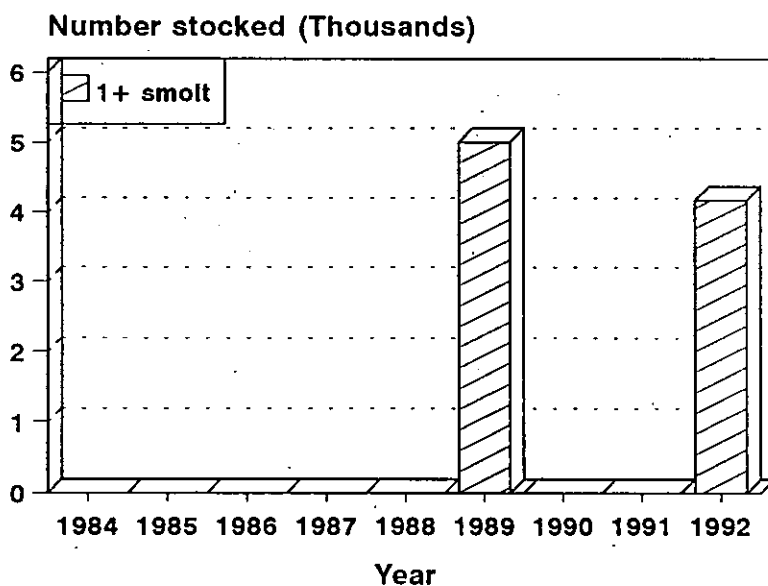


Figure 8. Number of salmon of each age class stocked and recovered in the River Loughor.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

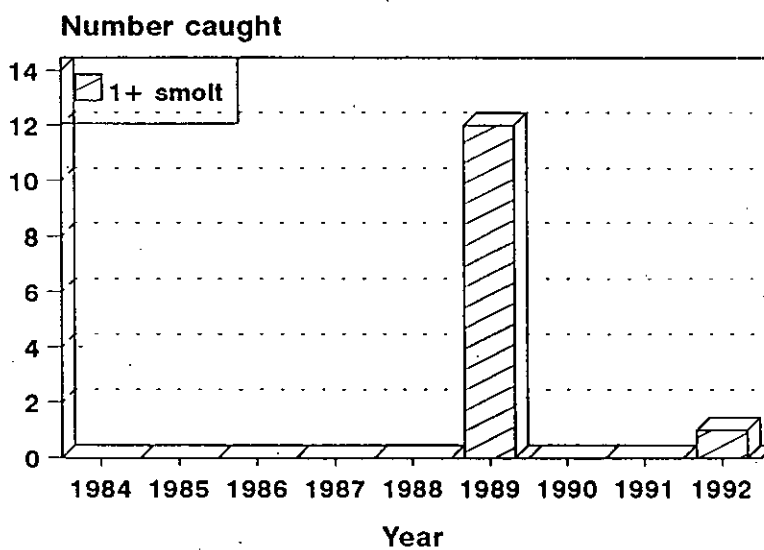
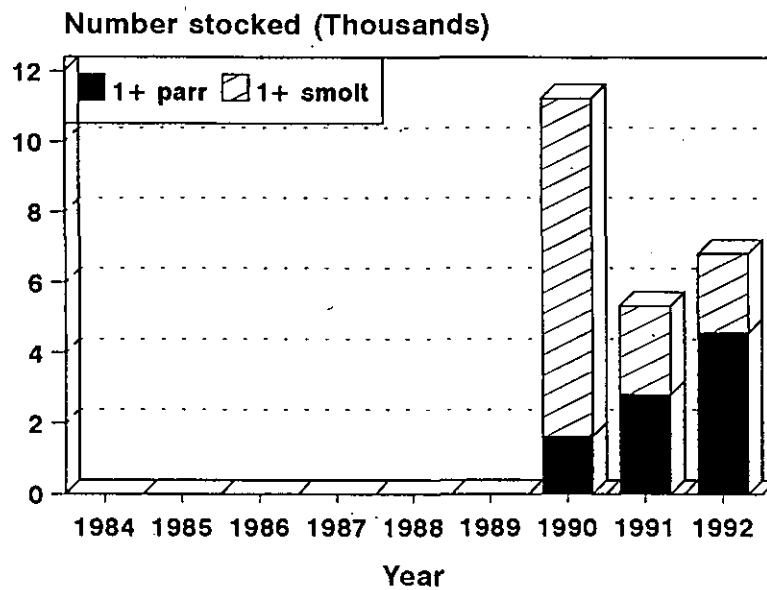


Figure 9. Number of salmon of each age class stocked and recovered in the River Mawddach.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

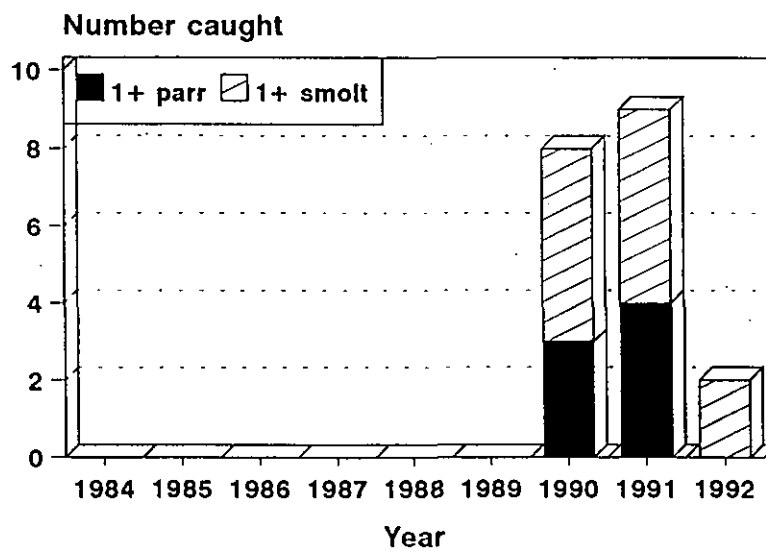
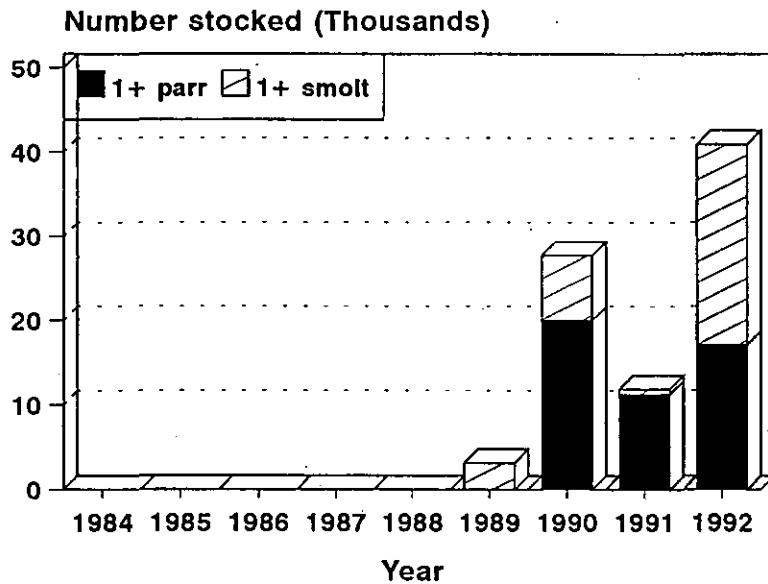


Figure 10. Number of salmon of each age class stocked and recovered in the River Ogmore.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

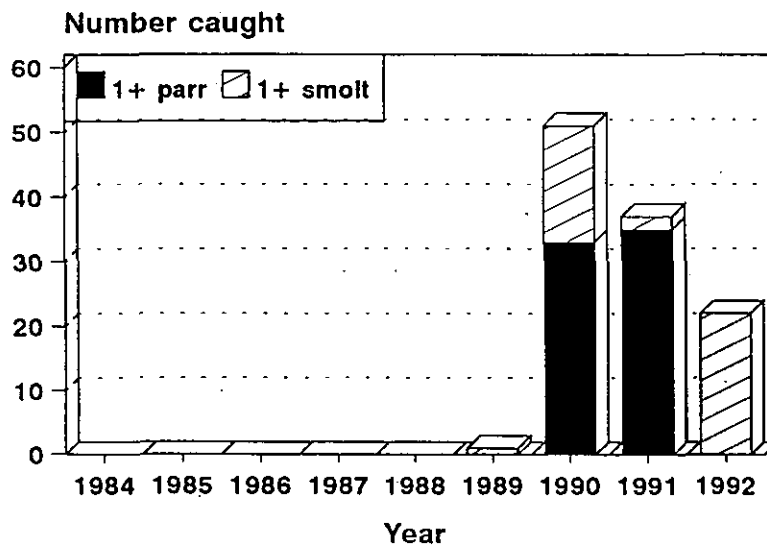
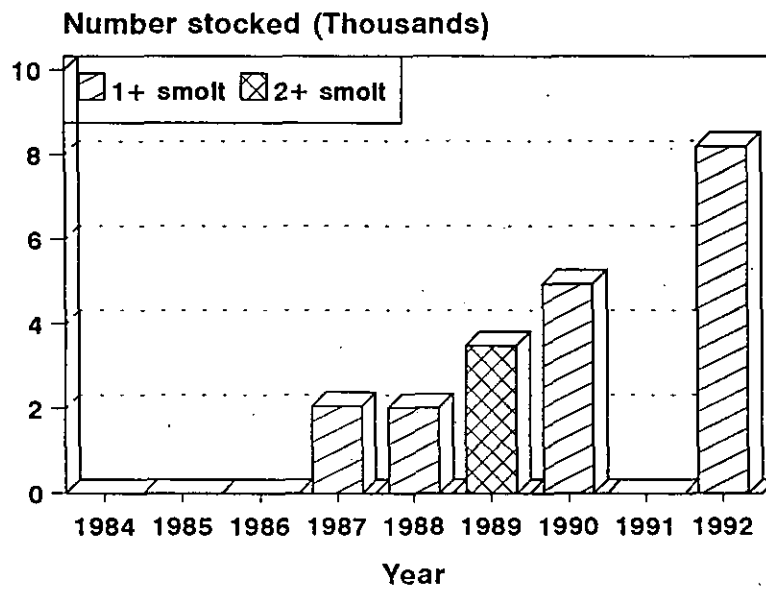


Figure 11. Number of salmon of each age class stocked and recovered in the River Rhymney.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

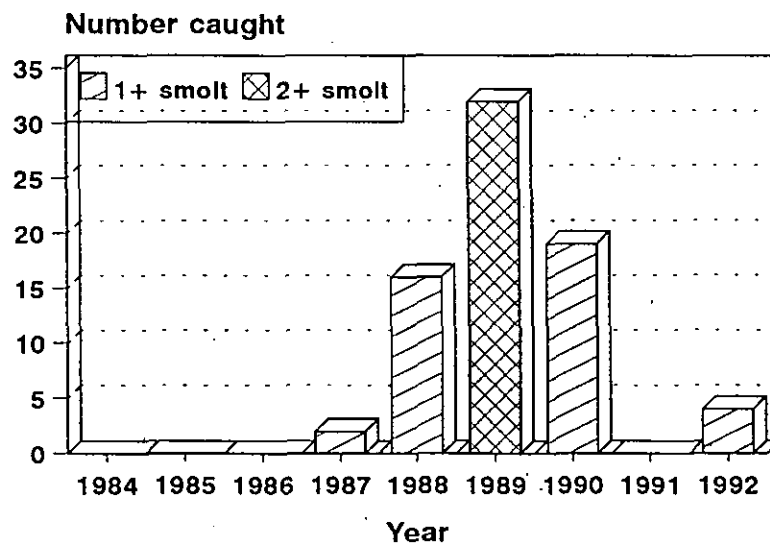
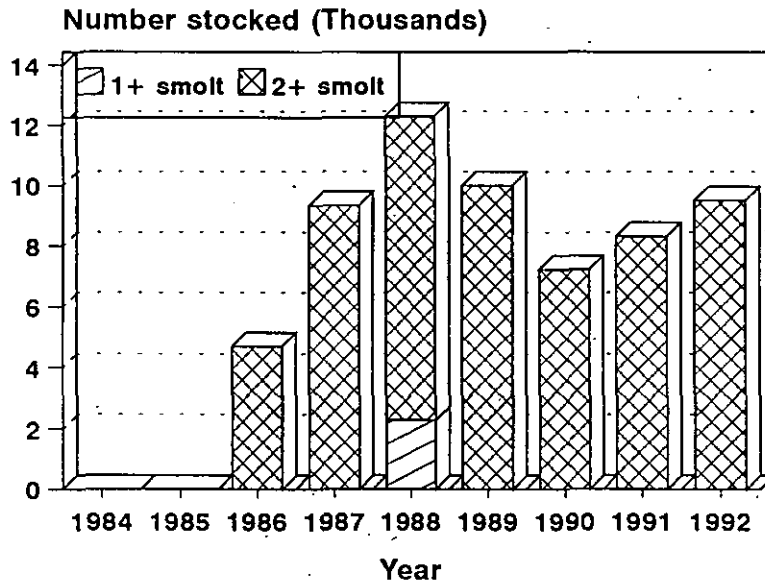


Figure 12. Number of salmon of each age class stocked and recovered in the River Taff.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

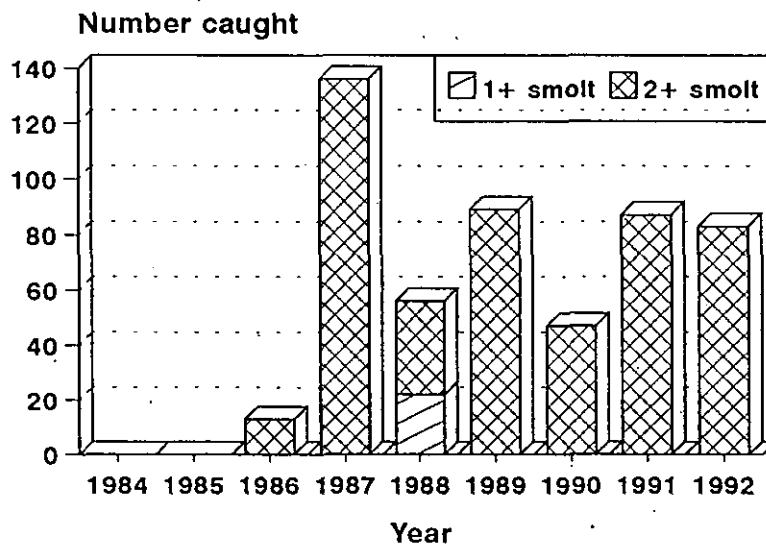
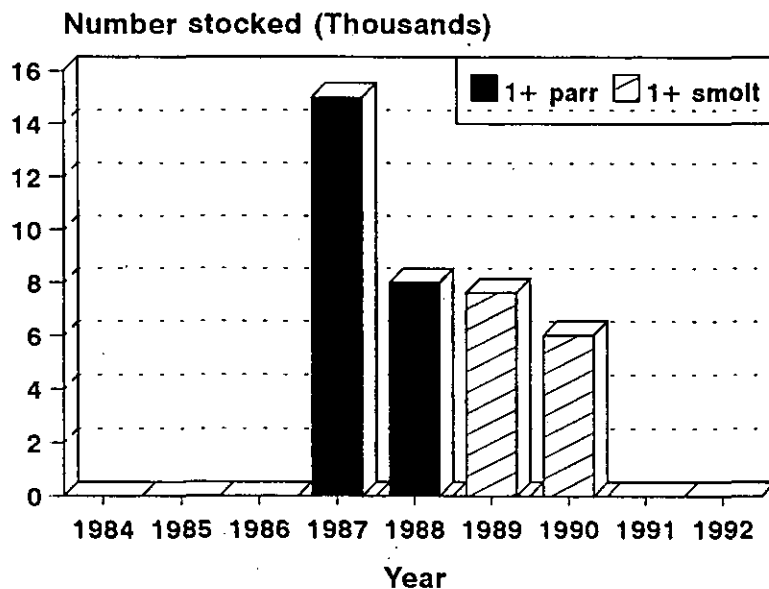


Figure 13. Number of salmon of each age class stocked and recovered in the River Tawe.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

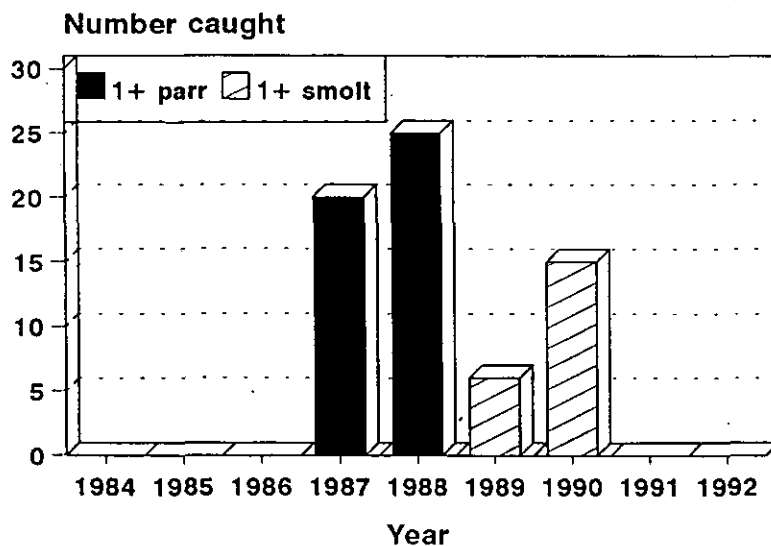
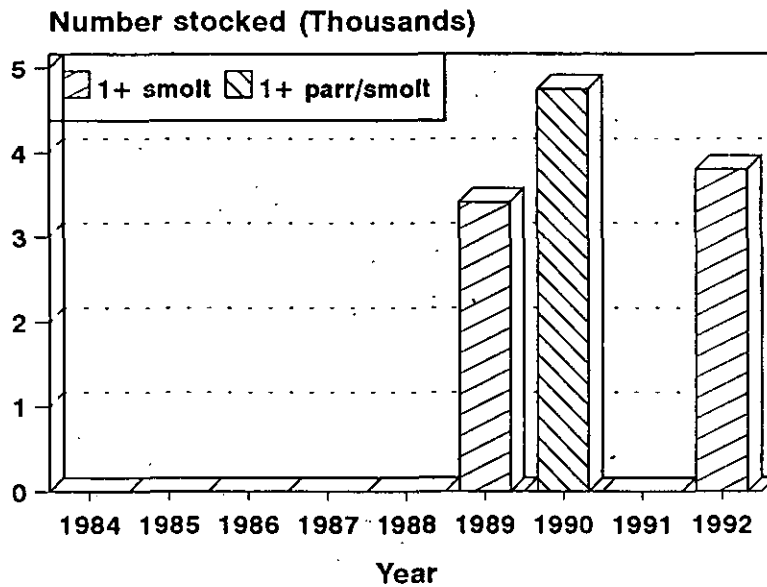


Figure 14. Number of salmon of each age class stocked and recovered in the River Tywi.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

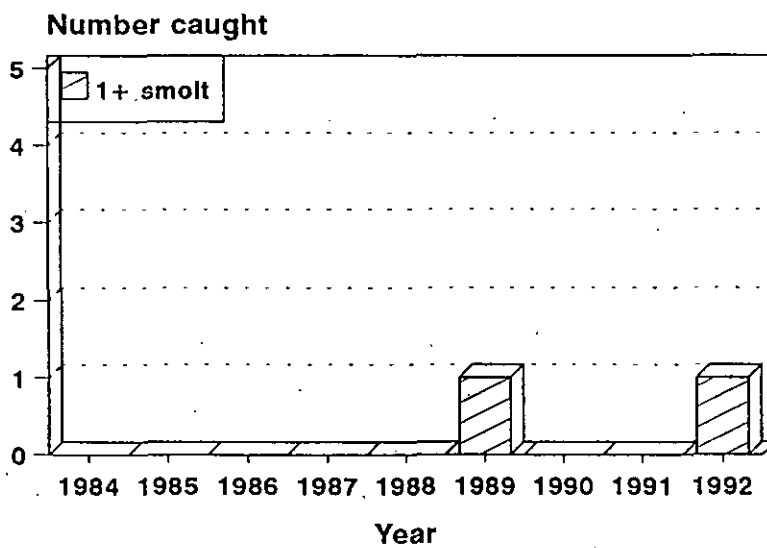
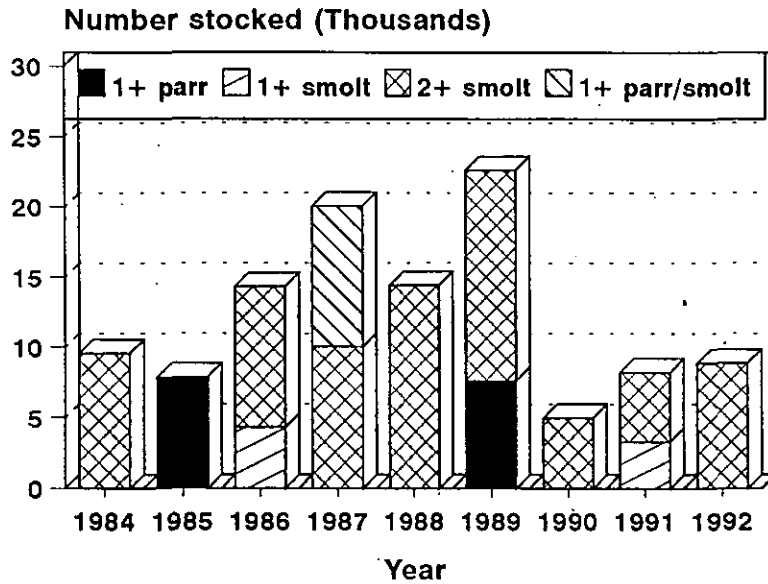


Figure 15. Number of salmon of each age class stocked and recovered in the River Usk.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

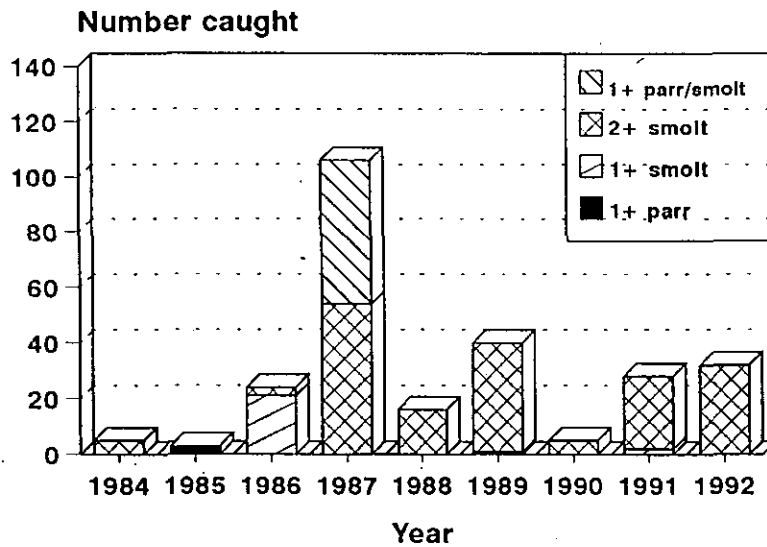
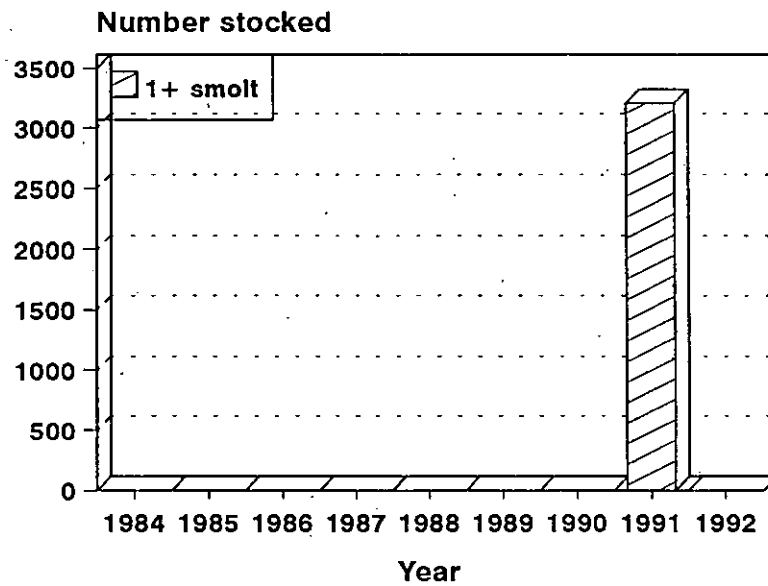


Figure 16. Number of salmon of each age class stocked and recovered in the River Wye.

Number of fish stocked in each year.



Number of fish recaptured from each stocking.

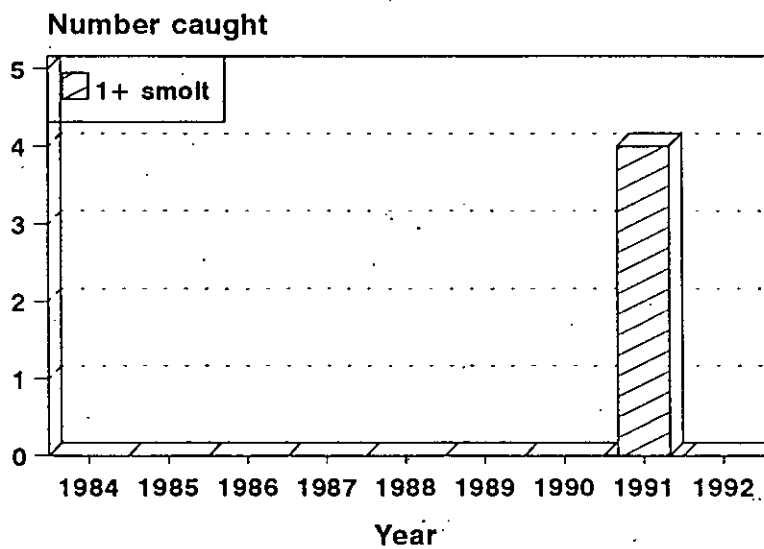
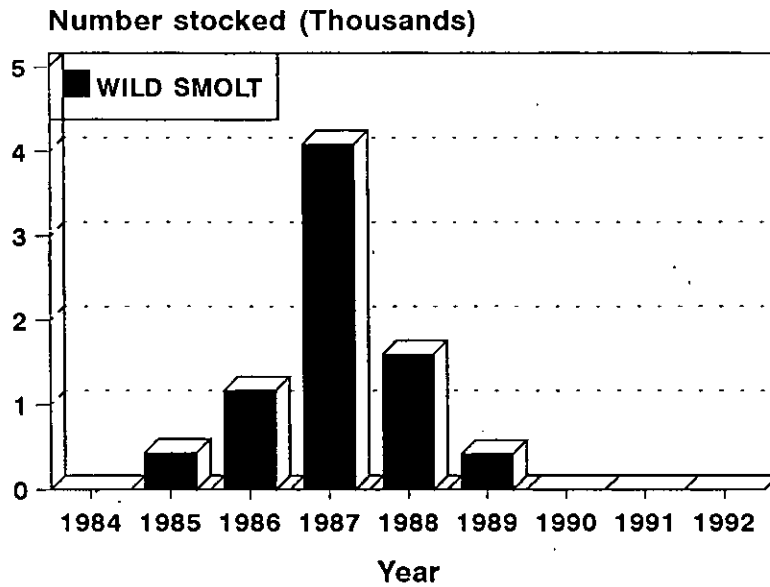


Figure 17. Number of wild smolts tagged and recaptured on the River Wye.

Number of fish tagged in each year.



Number of fish caught from each years tagging.

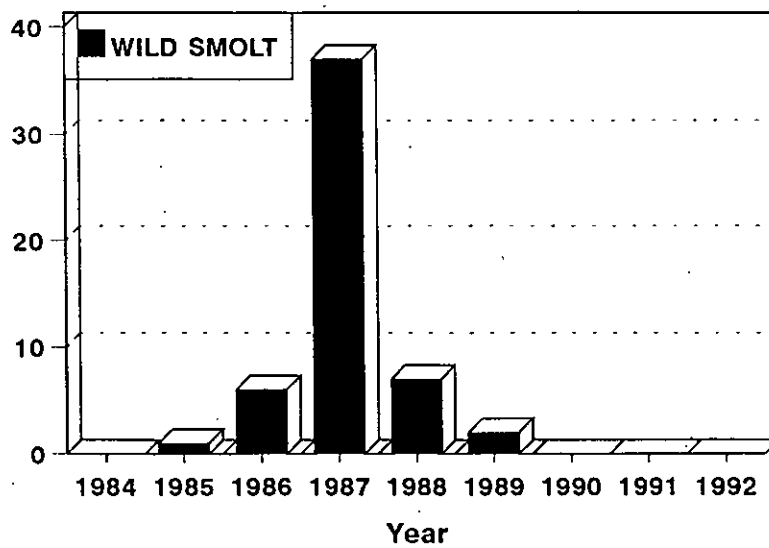
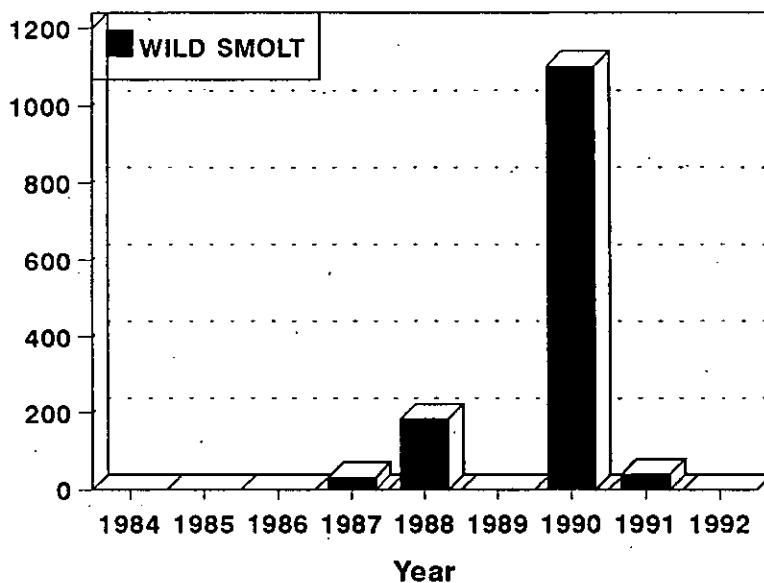


Figure 18. Number of wild smolts tagged and recaptured on the River Usk.

Number of fish tagged in each year.



Number of fish caught from each years tagging.

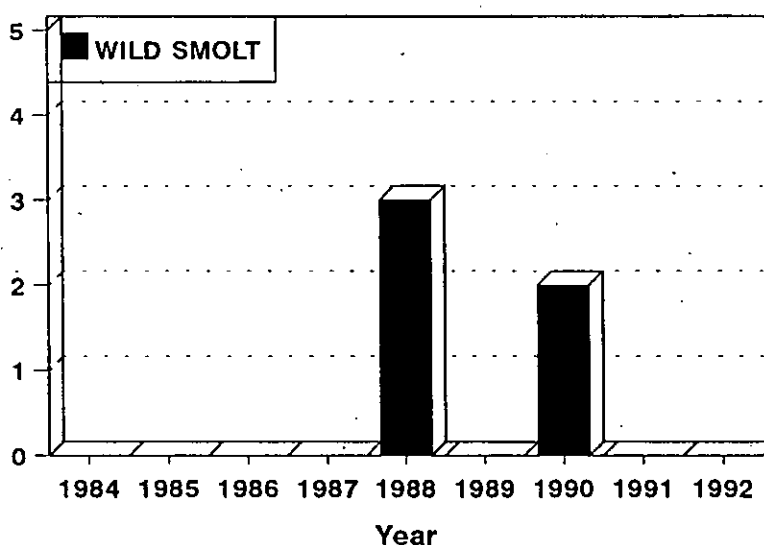
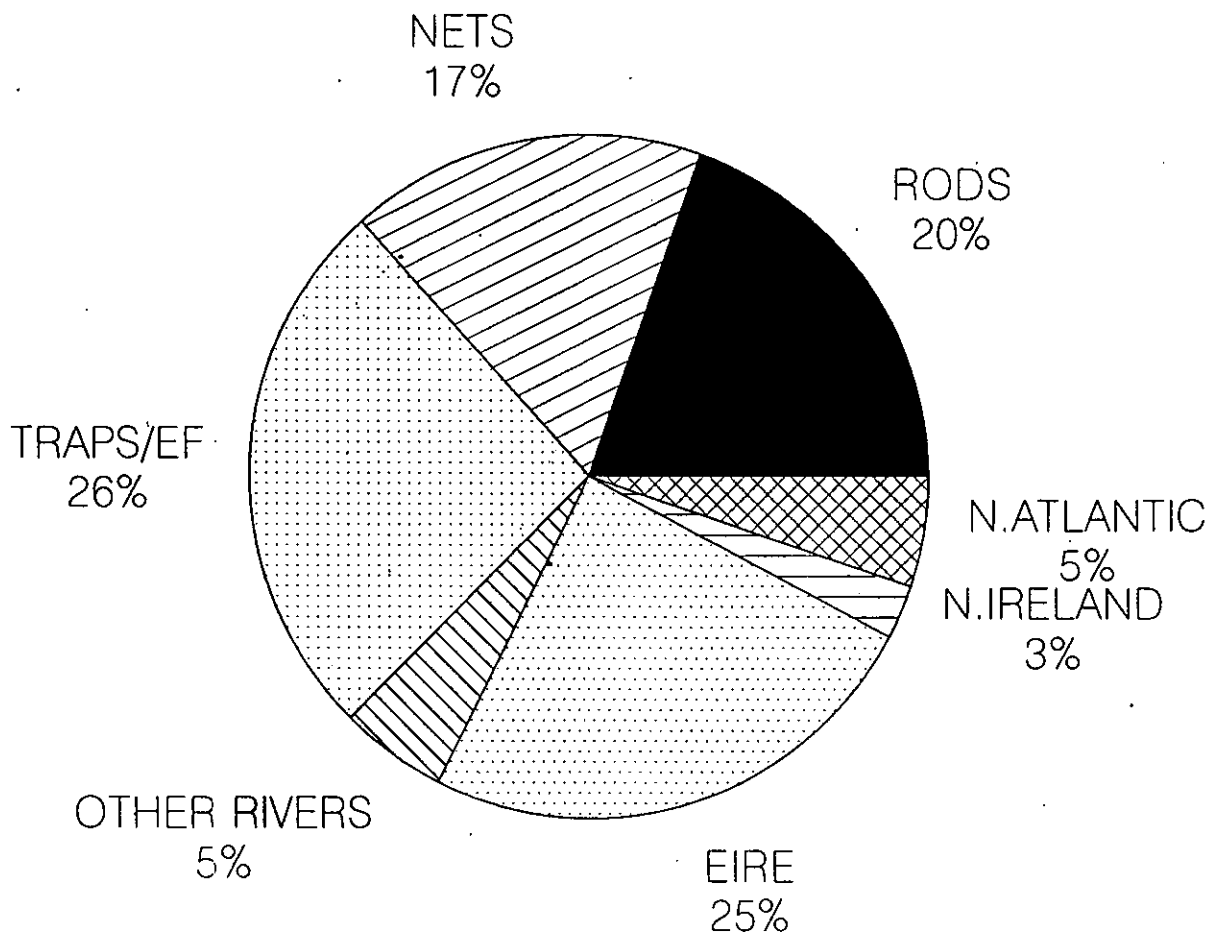


FIGURE 19. DISTRIBUTION OF RECAPTURES OF MICROTAGGED SALMON



**FIGURE 20. RECOVERY OF SALMON FOR EACH
MIGRATION YEAR**

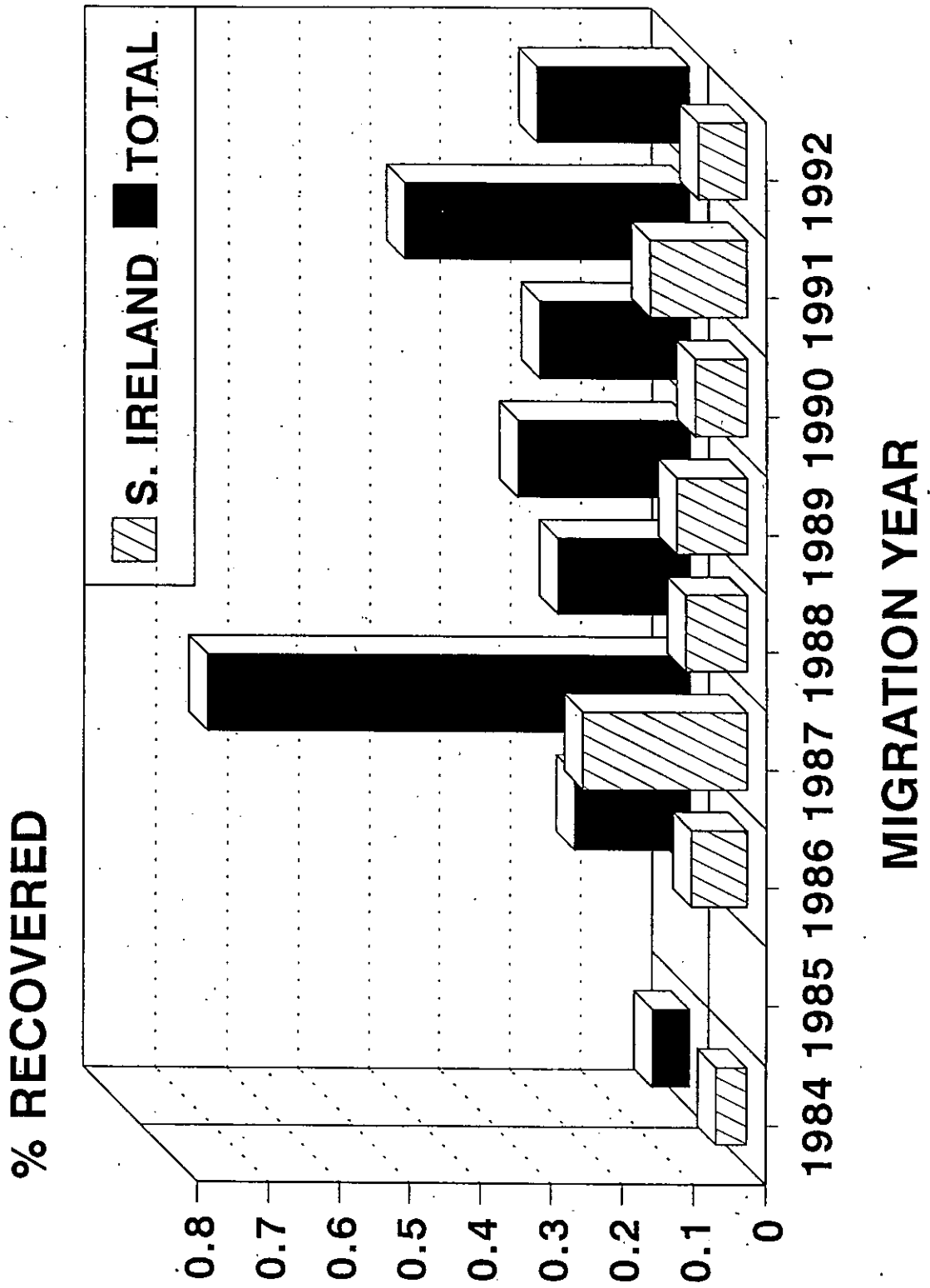
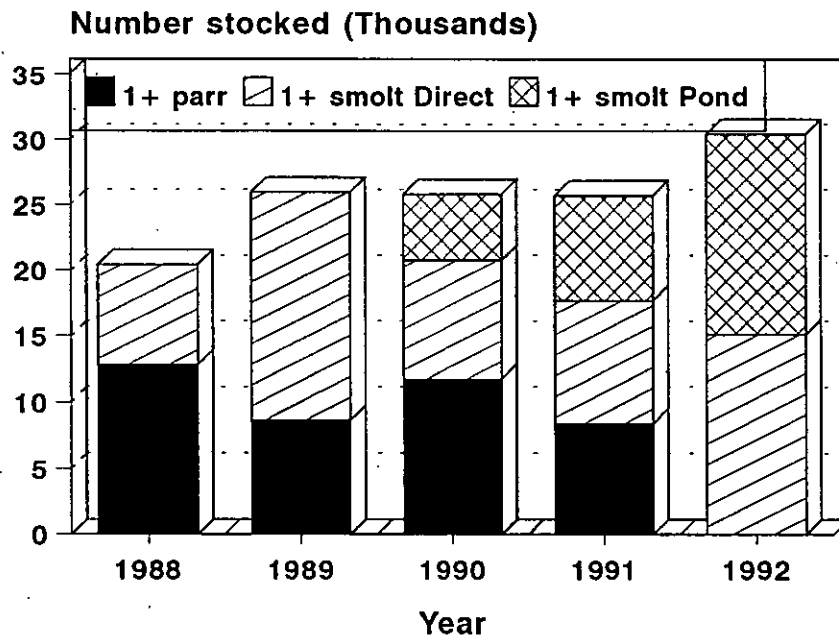


Figure 21. Number of sea trout stocked and recovered in the Mawddach catchment

Number of fish stocked in each year.



Number of fish caught in each year.

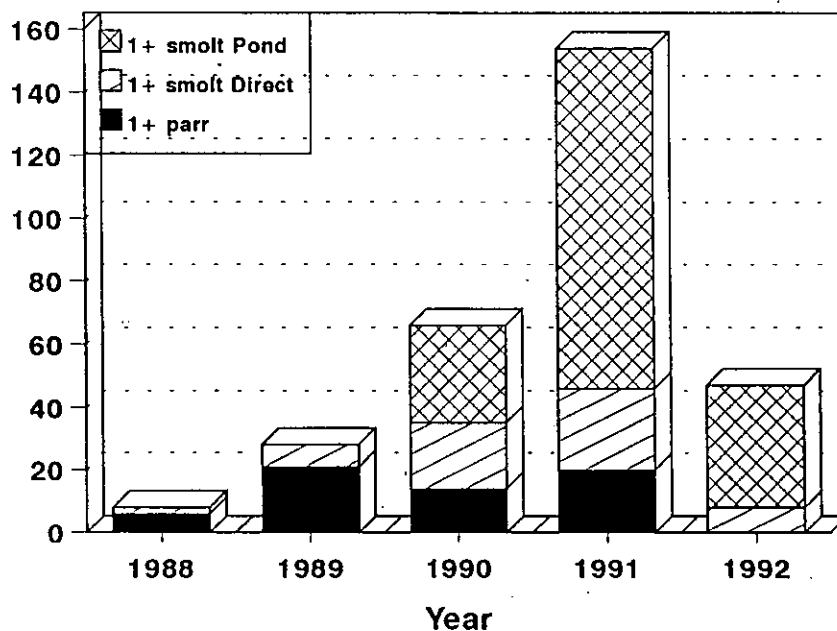
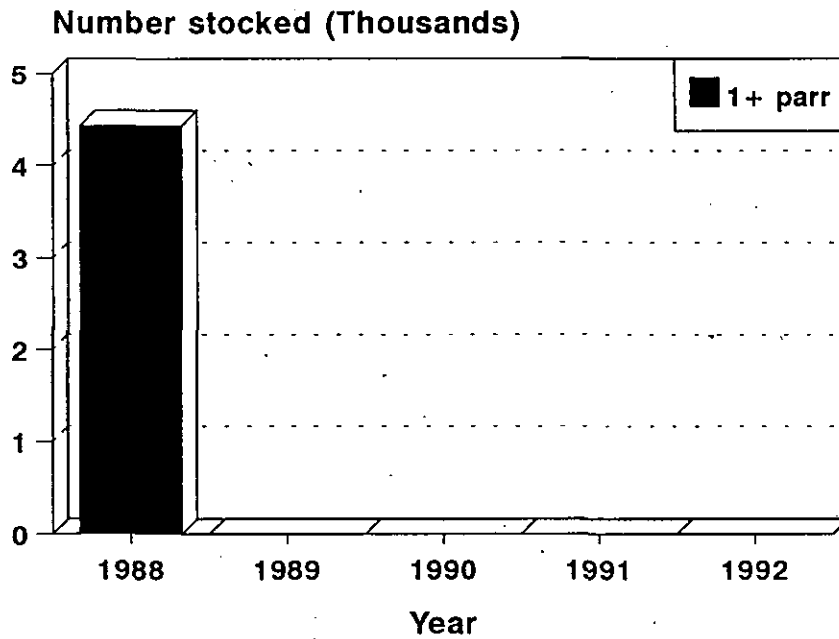


Figure 22. Number of sea trout stocked and recovered in the Taff catchment

Number of fish stocked in each year.



Number of fish caught in each year.

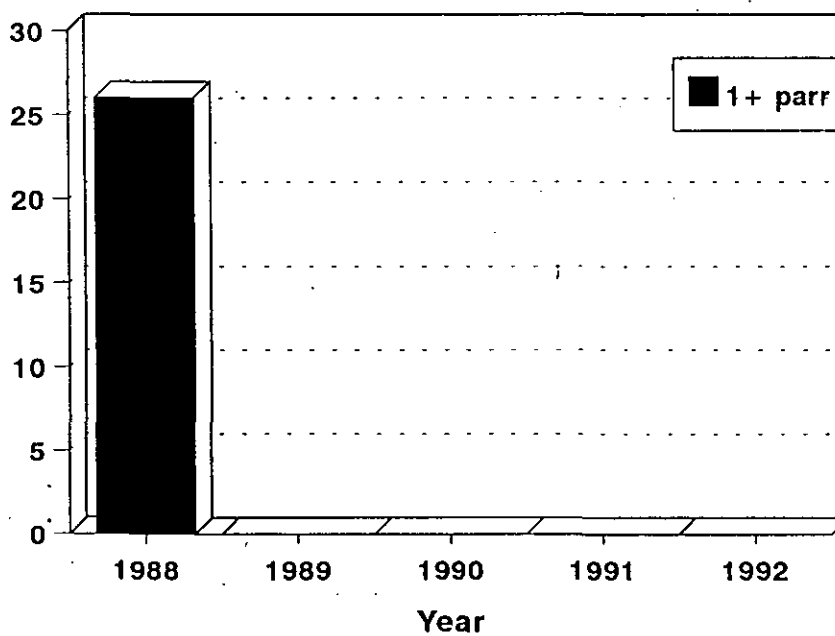
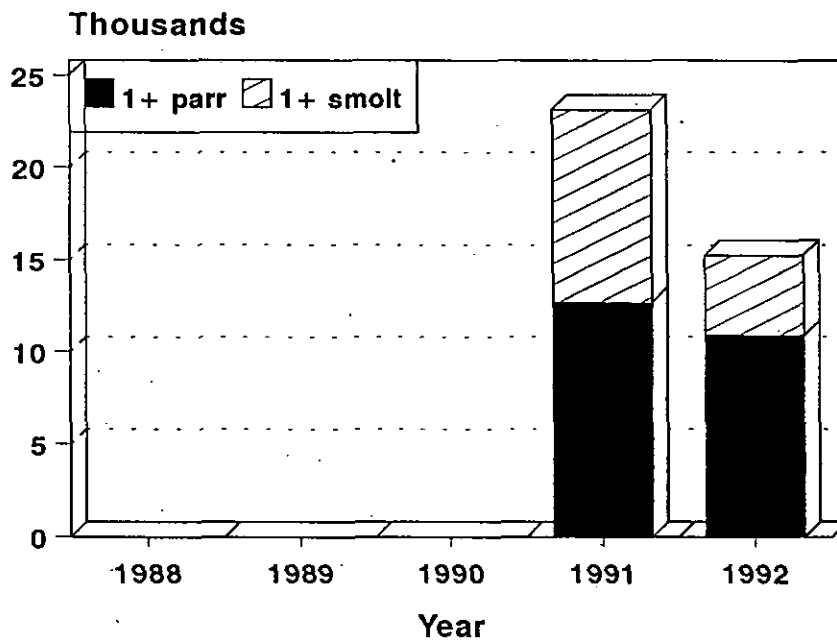


Figure 23. Number of sea trout stocked and recovered in the Ogmore catchment

Number of fish stocked in each year.



Number of fish caught in each year.

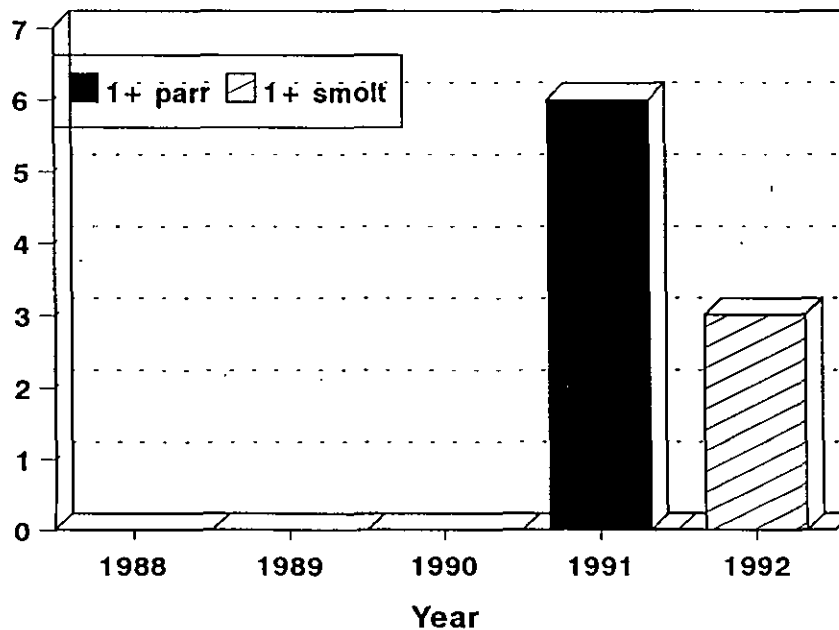


Figure 24. Number of salmon reported in homewaters, 1985-93

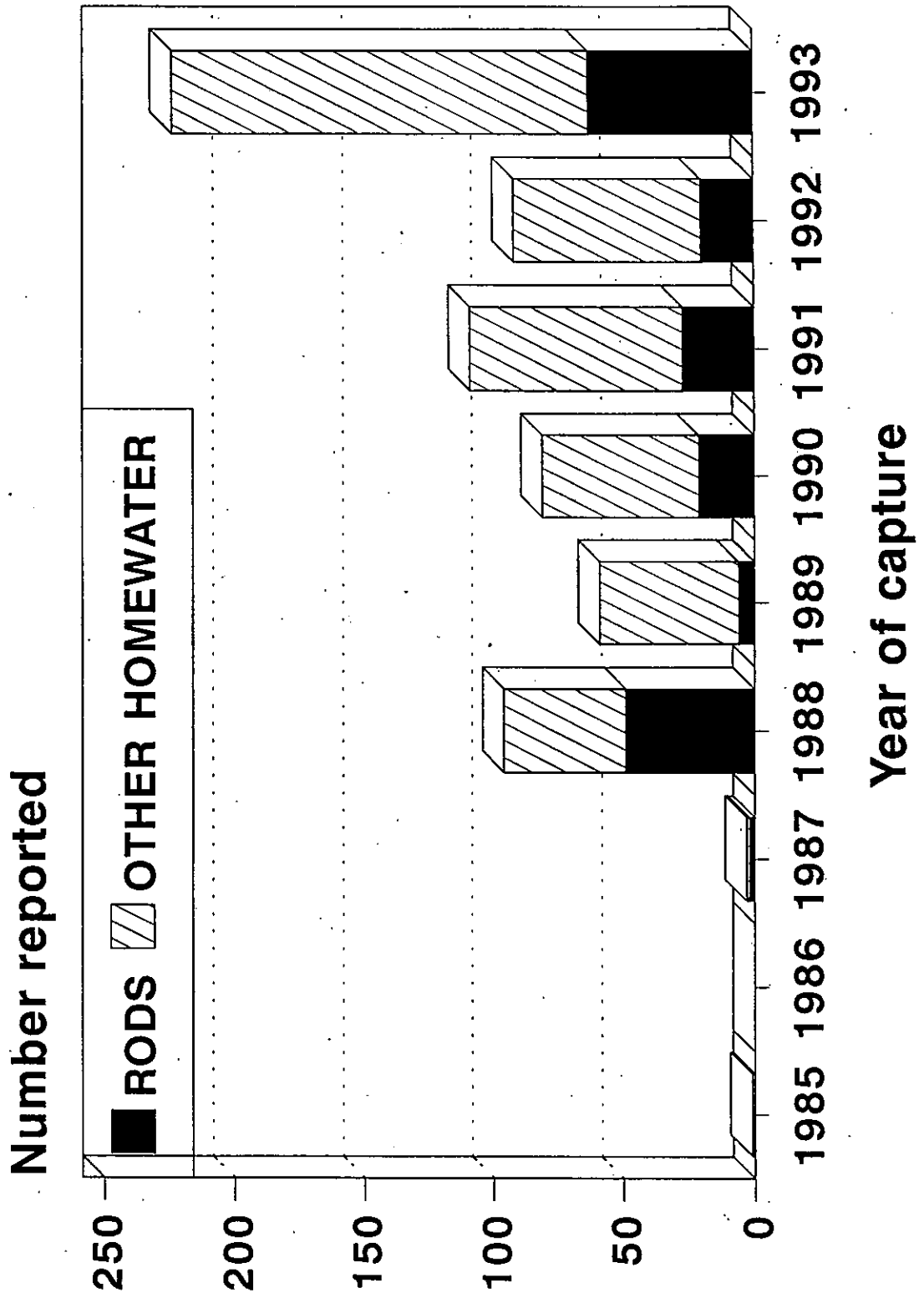
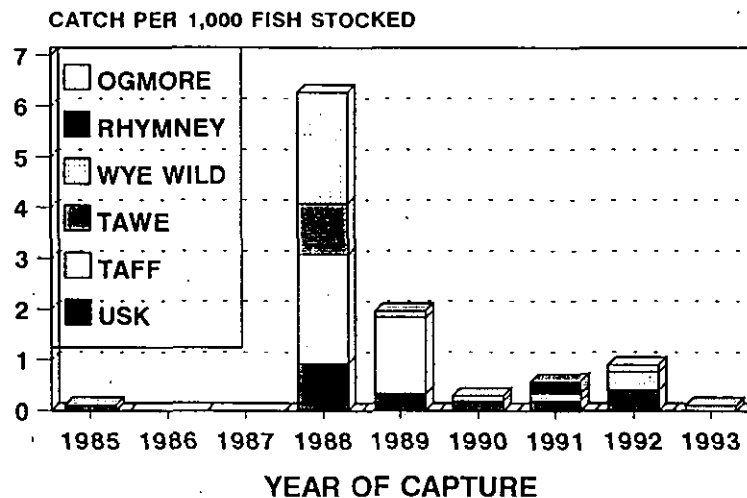


Figure 25. Recaptures of salmon in the Severn Estuary.

MICROTAGGED SALMON CAUGHT IN USK DRIFT NET FISHERY - DISTRIBUTION BY RIVER OF RELEASE



MICROTAGGED SALMON CAUGHT IN SEVERN ESTUARY COMMERCIAL FISHERY (NON DRIFT NETS) - DISTRIBUTION BY RIVER OF RELEASE

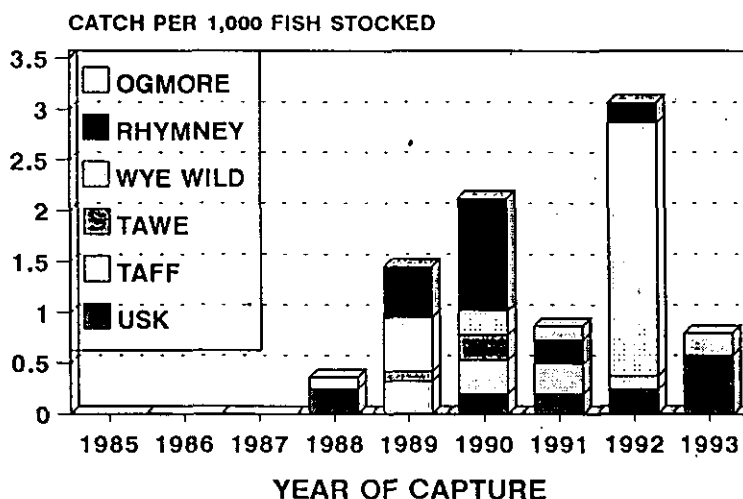
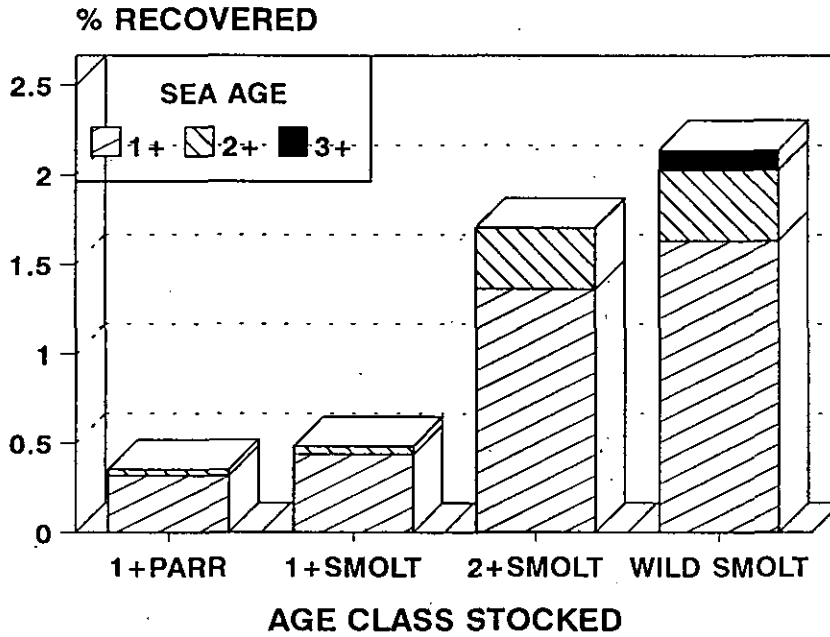


Figure 26. Recovery of salmon sea ages.

a) Differential recovery of each age class stocked



b) Proportion of each salmon sea age recovered

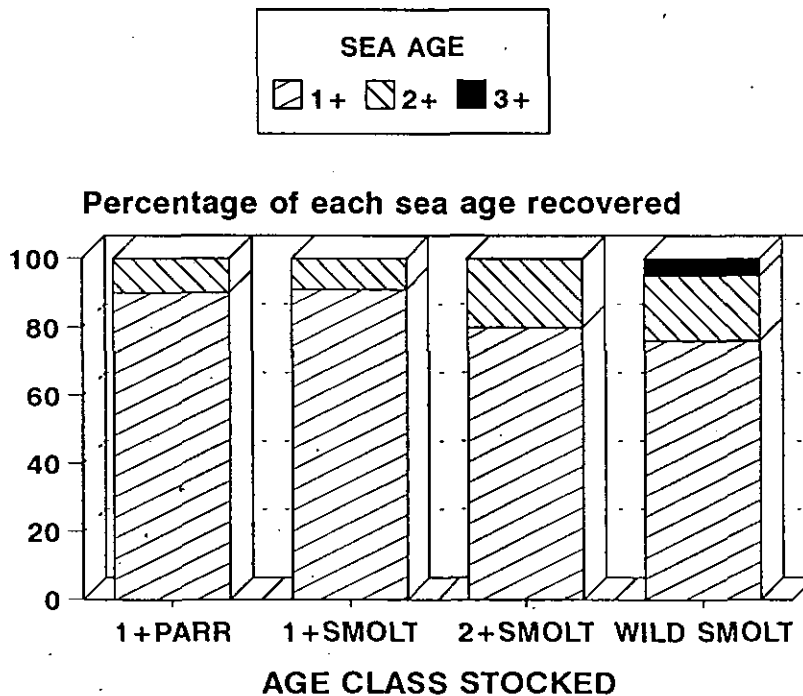
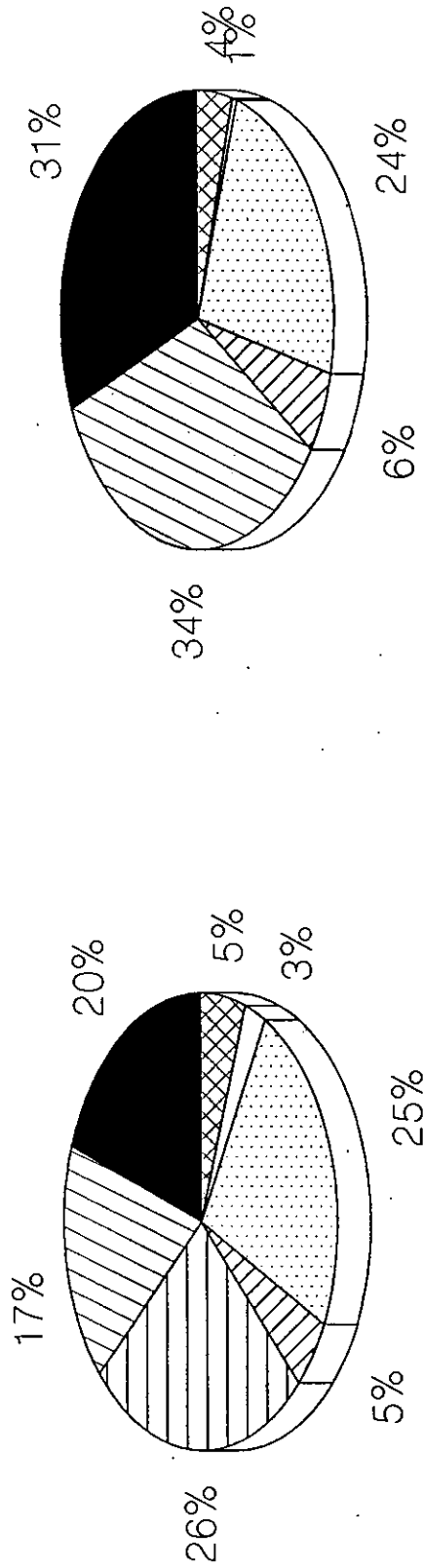
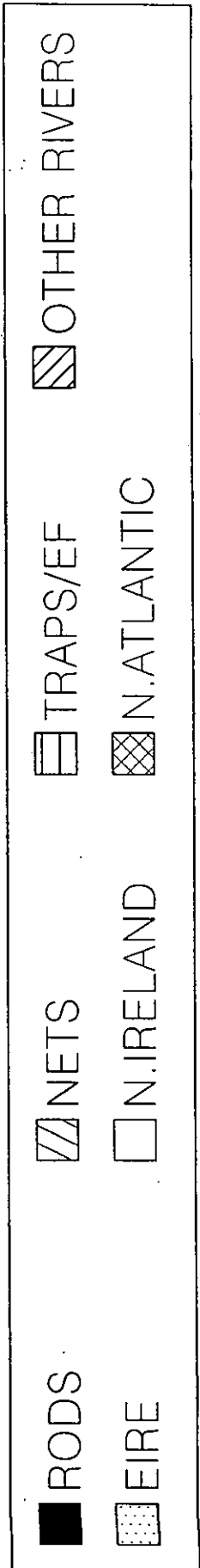


FIGURE 27. COMPARISON OF RECAPTURES OF HATCHERY REARED AND WILD SALMON



HATCHERY-REARED SALMON

WILD SALMON



APPENDIX 1

River Afan.

a) Actual numbers of salmon captured by each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FARDES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+	
AFAN	1989	1+P 1+S 2+S	4049			1		5						5
	1990	1+P 1+S 2+S	2500					1						1

b) Raised numbers of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FARDES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+	
AFAN	1989	1+P 1+S 2+S	4049			5		9						9
	1990	1+P 1+S 2+S	2500					2						2

River Cleddau.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING-DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N.E. COAST	OTHER	TOTAL		
CLEDDAU	1989	1+P	5094	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+		
		1+P/S															
		1+S															
		2+S															
	1990	1+P	4616														
		1+P/S															
		1+S															
		2+S															
	1991	1+P															
		1+P/S															
		1+S															
		2+S															

b) Raised numbers of salmon caught in each fishery.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N.E. COAST	OTHER	TOTAL		
CLEDDAU	1989	1+P	5094	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+		
		1+P/S															
		1+S															
		2+S															
	1990	1+P	4616														
		1+P/S															
		1+S															
		2+S															
	1991	1+P															
		1+P/S															
		1+S															
		2+S															

River Clwyd.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER 1+2+3+	SEVERN EST 1+2+3+	OTHER RIVERS 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+		OTHER 1+2+3+
CLWYD	1991	1+P 1+P/S 1+S 2+S	5294 1356												2 2
						1	1								1

b) Raised numbers of fish caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER 1+2+3+	SEVERN EST 1+2+3+	OTHER RIVERS 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+		OTHER 1+2+3+
CLWYD	1991	1+P 1+P/S 1+S 2+S	5294 1356												3 5
						1	5								2

River Dee.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER		RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S.IRE -LAND	N.IRE -LAND	GREEN -LAND	FARDES	N.E. COAST	OTHER	TOTAL	
					1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	
DEE	1986	1+P	8087		1	2				1	3			1		7	
		1+P/S														2	
		1+S	287		1											1	
		2+S															
	1987	1+P	19880		1	2				2			1			8	
		1+P/S														2	
		1+S															
		2+S															
	1988	1+P	23984		1											1	
		1+P/S															
		1+S	3407							1						1	
		2+S															
	1989	1+P															
		1+P/S															
		1+S	2382		2	1										2	
		2+S														1	
	1990	1+P															
		1+P/S	2448														
		1+S															
		2+S															
	1991	1+P	8672		2					1						26	
		1+P/S															
		1+S	2133							1						3	
		2+S	3228		1	2	14	3	5	1						21	
	1992	1+P	24906														
		1+P/S															
		1+S	15246		8					3			1			18	
		2+S							1								

River Dee.
 b) Raised numbers of salmon caught in each fishery.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES					DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S. IRE -LAND 1+ 2+ 3+	N. IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROEES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
DEE	1986	1+P/S	8087	5	5 10				2	6			1		19 10	
		1+S 2+S	287		5										5	
	1987	1+P	19880	5 10	20			3				2			30 10	
		1+P/S 1+S 2+S														
	1988	1+P	23984	5											5	
		1+P/S 1+S 2+S	3407					3							3	
	1989	1+P														
		1+P/S 1+S 2+S	2382	10 5											10 5	
	1990	1+P	2448													
		1+P/S 1+S 2+S														
	1991	1+P	8672	10					1						117	
		1+P/S 1+S 2+S	2133 3228	5 10	5 10	10 70 15			1 7 12						11 87 47	
	1992	1+P	24906													
		1+P/S 1+S 2+S	15246	40	5	20		5	4			2			76	

River Dysynni.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	
DYSYNNI	1991	1+P	2179											18
		1+S			3	2	13							
		2+S												
	1992	1+P	4485											6
		1+P/S			3									
		1+S												
		2+S						3						

b) Raised numbers of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	
DYSYNNI	1991	1+P	2179											27
		1+P/S			3	2	22							
		1+S												
		2+S												
	1992	1+P	4485											8
		1+P/S			3									
		1+S												
		2+S						5						

River Ebbw.

a) Actual numbers of salmon caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	S.IRE -LAND	N.IRE -LAND	GREEN -LAND	FARDES	N.E. COAST	OTHER	
EBBW	1988	1+P	1000											8
		1+P/S 1+S 2+S	1165			5		2		1				

b) Raised numbers of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	S.IRE -LAND	N.IRE -LAND	GREEN -LAND	FARDES	N.E. COAST	OTHER	
EBBW	1988	1+P	1000											21
		1+P/S 1+S 2+S	1165			13		5		3				

River Gwendraeth.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	YEAR	AGE	NUMBER	HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL		
				RODS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+		TOTAL 1+2+3+	
GWENDRATH	1989	1+P 1+S 2+S	5000					4								4

b) Raised number of salmon caught in each fishery.

RIVER	YEAR	AGE	NUMBER	HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL		
				RODS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+		TOTAL 1+2+3+	
GWENDRATH	1989	1+P 1+S 2+S	5000					7								7

River Loughor.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	
LOUGHOR	1989	1+P 1+P/S 1+S 2+S	5001		1		4							11
								5	1					
	1992	1+P 1+P/S 1+S 2+S	4166					1						1

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	
LOUGHOR	1989	1+P 1+P/S 1+S 2+S	5001		5		20							43
								17	1					4
	1992	1+P 1+P/S 1+S 2+S	4166					1						1

Kawdach Catchment.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

STOCKING DETAILS			HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL	
RIVER	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FARDES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
MAWDACH & UNION	1990	1+P	1621	1		1						1			2	
		1+P/S							4						1	5
		1+S 2+S	9613													
	1991	1+P	2815	1											4	
		1+P/S							3						1	5
		1+S 2+S	2520													
	1992	1+P	4569													
		1+P/S						1								
		1+S 2+S	2253													2

b) Raised number of salmon caught in each fishery.

STOCKING DETAILS			HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL	
RIVER	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S.IRE -LAND 1+ 2+ 3+	N.IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FARDES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
MAWDACH & UNION	1990	1+P	1621	5		1						2			3	
		1+P/S							4						1	6
		1+S 2+S	9613													
	1991	1+P	2815	5											9	
		1+P/S							4						1	6
		1+S 2+S	2520													
	1992	1+P	4569													
		1+P/S						5								
		1+S 2+S	2253													17

River Ogmore.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	ROOS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S. IRE -LAND 1+2+3+	N. IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+	
OGMORE	1989	1+P 1+P/S 1+S 2+S	3136	1										1
	1990	1+P 1+P/S 1+S 2+S	19991	6	3		2	21	3					30
			7677	3	1	1		8	3					14
	1991	1+P 1+P/S 1+S 2+S	11200	24				11						35
			637					2						2
	1992	1+P 1+P/S 1+S 2+S	17082											
			23795	11				11						22

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL
	YEAR	AGE	NUMBER	ROOS 1+2+3+	NETS 1+2+3+	OTHER RIVERS 1+2+3+	SEVERN EST 1+2+3+	S. IRE -LAND 1+2+3+	N. IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+	
OGMORE	1989	1+P 1+P/S 1+S 2+S	3136	5										5
	1990	1+P 1+P/S 1+S 2+S	19991	30	15		10	36	4					70
			7677	15	5	5		9	6					39
	1991	1+P 1+P/S 1+S 2+S	11200	120				29						149
			637					4						4
	1992	1+P 1+P/S 1+S 2+S	17082											
			23795	110				40						150

River Rhymney.

a) Actual number of salmon caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER		RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N. E. COAST	OTHER	TOTAL	
					1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	1+ 2+ 3+	
RHYMNEY	1987	1+P 1+P/S 1+S 2+S	2064										1				2
	1988	1+P 1+P/S 1+S 2+S	2019				1	3	2	7							13
	1989	1+P 1+P/S 1+S 2+S	3490				1	12	5	12							25
	1990	1+P 1+P/S 1+S 2+S	4944				3	7		9							19
	1992	1+P 1+P/S 1+S 2+S	8208							4							4

River Rhymney.
 b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES					DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S. IRE -LAND 1+ 2+ 3+	N. IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROES 1+ 2+ 3+	N. E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
RHYMNEY	1987	1+P 1+P/S 1+S 2+S	2064									2	1		3	
	1988	1+P 1+P/S 1+S 2+S	2019			2	5 5	7 6	13						27 11	
	1989	1+P 1+P/S 1+S 2+S	3490				5 10	32 5	25						62 15	
	1990	1+P 1+P/S 1+S 2+S	4944				15	11	12						38	
	1992	1+P 1+P/S 1+S 2+S	8208						17						17	

River Taft.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S. IRE -LAND 1+ 2+ 3+	N. IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROEES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+		
TAFF	1986	1+P 1+P/S 1+S 2+S	4703	1					7	5					13		
	1987	1+P 1+P/S 1+S 2+S	9338	45	20	4	1	4	43	14			1		127		
	1988	1+P 1+P/S 1+S 2+S	2286 10014	1	5 10	1	4 2	2	10 20			1			22 34		
	1989	1+P 1+P/S 1+S 2+S	10000	4	12	1	2	21	28						54		
	1990	1+P 1+P/S 1+S 2+S	7224	1	1	1	3	21	7	1		1			35		
	1991	1+P 1+P/S 1+S 2+S	8312	5	3	1	1	21	13					1	44		
	1992	1+P 1+P/S 1+S 2+S	9509	7		61	2		13						83		

River Taff.
 b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	ROOS 1+2+3+	NETS 1+2+3+	OTHER 1+2+3+	SEVERN EST 1+2+3+	OTHER RIVERS 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FARDES 1+2+3+	N.E. COAST 1+2+3+	OTHER 1+2+3+	TOTAL 1+2+3+		
TAFF	1986	1+P 1+P/S 1+S 2+S	4703	5					10	8					23		
	1987	1+P 1+P/S 1+S 2+S	9338	90 10	100	4	5 5	20 5	118	33			2		366 26		
	1988	1+P 1+P/S 1+S 2+S	2286 10014	5 5			4 2	2	20 60			6			72 131		
	1989	1+P 1+P/S 1+S 2+S	10000	20 60	5	80 80	10	5	65						175 155		
	1990	1+P 1+P/S 1+S 2+S	7224	5	5	84 40	15	5	10	1	39				154 50		
	1991	1+P 1+P/S 1+S 2+S	8312	25	15 5	84 168	5		23		4				156 173		
	1992	1+P 1+P/S 1+S 2+S	9509	35		244		10	44						333		

River Tawe.

a) Actual numbers of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER 1+2+3+	SEVERN EST 1+2+3+	OTHER RIVERS 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+		OTHER 1+2+3+
TAVE	1987	1+P 1+P/S 1+S 2+S	15002	2 2	3		1		9	2	1				18 2
	1988	1+P 1+P/S 1+S 2+S	8000	9 2			1	1	11			1			23 2
	1989	1+P 1+P/S 1+S 2+S	7615			3 1		1	2						6
	1990	1+P 1+P/S 1+S 2+S	6029	6 1		4		1 1	2						13 2

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS 1+2+3+	NETS 1+2+3+	OTHER 1+2+3+	SEVERN EST 1+2+3+	OTHER RIVERS 1+2+3+	S.IRE -LAND 1+2+3+	N.IRE -LAND 1+2+3+	GREEN -LAND 1+2+3+	FAROEES 1+2+3+	N.E. COAST 1+2+3+		OTHER 1+2+3+
TAVE	1987	1+P 1+P/S 1+S 2+S	15002	10 10	15		5		35	6	34				107 10
	1988	1+P 1+P/S 1+S 2+S	8000	45 10			5	1	28			2			85 10
	1989	1+P 1+P/S 1+S 2+S	7615			3 1		5	12						20
	1990	1+P 1+P/S 1+S 2+S	6029	30 5		4		5 5	4						43

River Tywi.

a) Actual number of salmon caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS		HOME WATER RECAPTURES				DISTANT WATER RECAPTURES						TOTAL	
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROEES	N. E. COAST		OTHER
TYWI	1989	1+P												
		1+P/S												
		1+S	3414	1										
		2+S												
	1990	1+P												
		1+P/S												
		1+S	4748											
		2+S												
	1992	1+P												
		1+P/S												
		1+S	3797	1										
		2+S												

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS		HOME WATER RECAPTURES				DISTANT WATER RECAPTURES						TOTAL	
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROEES	N. E. COAST		OTHER
TYWI	1989	1+P												
		1+P/S												
		1+S	3414	5										
		2+S												
	1990	1+P												
		1+P/S												
		1+S	4748											
		2+S												
	1992	1+P												
		1+P/S												
		1+S	3797	5										
		2+S												

River Usk.
 a) Actual number of salmon caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	ROOS	NETS	OTHER RIVERS	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N.E. COAST	OTHER	TOTAL		
USK	1984	1+P															
		1+P/S															
		1+S	9545		1				4						5		
	1985	1+P															
		1+P/S	7871					3							3		
		1+S															
	1986	1+P															
		1+P/S			3												
		1+S	4325	1	1	1			9	4	2		1		15		
	1987	1+P															
		1+P/2+S	10048	3	16		3	1	21	5			1		49		
		1+S	10023	2	12		2	2	24	8	2	1	1		54		
	1988	1+P															
		1+P/S															
		1+S	14408		5				4	1	2	1			14		
	1989	1+P															
		1+P/S	7630						1						1		
		1+S	15000	2	1		2	3	26	1		2			32		
	1990	1+P															
		1+P/S															
		1+S	5000		1		1	1	2						5		
	1991	1+P															
		1+P/S															
		1+S	3310	4	2	1	1	4	11						1		
	1992	1+P															
		1+P/S															
		1+S	8858	3	6			4	19						32		

River Usk.
 b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS				HOME WATER RECAPTURES					DISTANT WATER RECAPTURES						TOTAL	
	YEAR	AGE	NUMBER		ROOS	NETS	OTHER	SEVERN	OTHER	S. IRE	N. IRE	GREEN	FARDES	N.E. COAST	OTHER		TOTAL
					1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	
USK	1984	1+P 1+P/S 1+S 2+S															13
			9545		5					8							5
	1985	1+P 1+P/S 1+S 2+S	7871							5							
	1986	1+P 1+P/S 1+S 2+S	4325 10000		5	15 5				15 2	9 2	13		1			24 36 4 5
	1987	1+P 1+P/2+S 1+S 2+S	10048		5	80		15		58	12			1			182 10 1
	1988	1+P 1+P/S 1+S 2+S															
			14408		25					8 1	4	56					84 2
	1989	1+P 1+P/S 1+S 2+S	7630							2							
			15000		5	5		10		46 2							72 27 5
	1990	1+P 1+P/S 1+S 2+S															
			5000		5			5		3							18
	1991	1+P 1+P/S 1+S 2+S															
			3310 4900		5 10			5 5		8 3	19						5 5 62 4
	1992	1+P 1+P/S 1+S 2+S															
			8858		30			8		33							96

River kye.

a) Actual number of salmon caught in each component of homewater and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S.IRE -LAND	N.IRE -LAND	GREEN -LAND	FARDES	N.E. COAST		OTHER
WYE	1991	1+P 1+P/S 1+S 2+S	3207	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+
								3							4

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES					DISTANT WATER RECAPTURES					TOTAL	
	YEAR	AGE	NUMBER	RODS	NETS	OTHER	SEVERN EST	OTHER RIVERS	S.IRE -LAND	N.IRE -LAND	GREEN -LAND	FARDES	N.E. COAST		OTHER
WYE	1991	1+P 1+P/S 1+S 2+S	3207	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+
								7	2						9

River Usk - Wild Smolts.

a) Actual number of fish caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES							DISTANT WATER RECAPTURES							TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N. E. COAST	OTHER	TOTAL			
GRYNNNE WILD SMOLTS	1987	1+S) 2+S)	32	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+			
	1988	1+S) 2+S)	184		2									1	3			
	1989	1+S) 2+S)																
	1990	1+S) 2+S)	1101		1		1								1 1			
	1991	1+S) 2+S)	40															

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES							DISTANT WATER RECAPTURES							TOTAL
	YEAR	AGE	NUMBER	RODS	NETS	OTHER RIVERS	SEVERN EST	OTHER RIVERS	S. IRE -LAND	N. IRE -LAND	GREEN -LAND	FAROES	N. E. COAST	OTHER	TOTAL			
GRYNNNE WILD SMOLTS	1987	1+S) 2+S)	32	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+	1+2+3+			
	1988	1+S) 2+S)	184		10			1							11			
	1989	1+S) 2+S)																
	1990	1+S) 2+S)	1101		5		5								5 5			
	1991	1+S) 2+S)	40															

River Wye - wild smolts.

a) Actual number of salmon caught in each component of home water and distant water fisheries.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S. IRE -LAND 1+ 2+ 3+	N. IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROEES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
WYE WILD SMOLTS	1985	1+S) 2+S)	430						1						1	
	1986	1+S) 2+S)	1164	1					5						6	
	1987	1+S) 2+S)	4084	7	3	9	1	1	1	13		1	1	31	5	
	1988	1+S) 2+S)	1595	1			2		1	1	1	1		5	2	
	1989	1+S) 2+S)	416					1						1	1	

b) Raised number of salmon caught in each fishery.

RIVER	STOCKING DETAILS			HOME WATER RECAPTURES						DISTANT WATER RECAPTURES						TOTAL
	YEAR	AGE	NUMBER	RODS 1+ 2+ 3+	NETS 1+ 2+ 3+	OTHER 1+ 2+ 3+	SEVERN EST 1+ 2+ 3+	OTHER RIVERS 1+ 2+ 3+	S. IRE -LAND 1+ 2+ 3+	N. IRE -LAND 1+ 2+ 3+	GREEN -LAND 1+ 2+ 3+	FAROEES 1+ 2+ 3+	N.E. COAST 1+ 2+ 3+	OTHER 1+ 2+ 3+	TOTAL 1+ 2+ 3+	
WYE WILD SMOLTS	1985	1+S) 2+S)	430						1						1	
	1986	1+S) 2+S)	1164	5					7						12	
	1987	1+S) 2+S)	4084	35	15	20	5	5	5	33			1	1	99	
	1988	1+S) 2+S)	1595	5			10		2		6	2			20	
	1989	1+S) 2+S)	416					5							3	