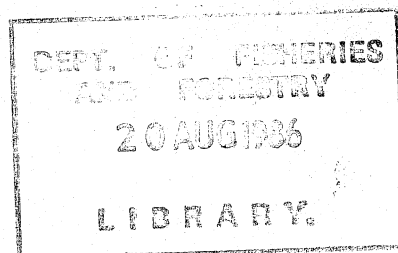


# **An Roinn Turasoireachta, Iascaigh agus Foraoiseachta**



## **RESULTS OF MAGNETIC TAG RECOVERY PROGRAMME IN THE MAYO AREA IN 1985**

by

**Patrick Gallagher**

RESULTS OF MAGNETIC TAG RECOVERY PROGRAMME  
IN THE MAYO AREA IN 1985

BY

PATRICK GALLAGHER

Fisheries Research Centre  
Abbotstown, Castleknock, Dublin 15

Fishery Leaflet 131

June 1986

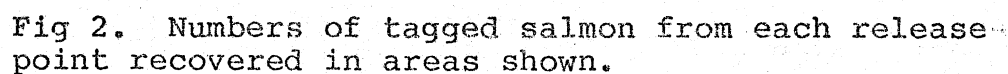
Department of Tourism, Fisheries and Forestry, Dublin 2

---

This leaflet deals with the results of the magnetic tag recovery programme for the Mayo area in 1985. The commercial salmon catch was sampled for adipose fin clipped and microtagged fish at a number of locations in Mayo. All fish with adipose fin clips were screened with a magnetic tag detector for tags, and the tags were read to establish the origin of the fish.

Fish are tagged at various locations throughout the country with magnetic wire tags. These tagged fish are released at different times of the year, and in various river systems to establish the best time of year to release fish and the best locations. The majority of all the tagged fish are hatchery reared, only in the Corrib River are wild fish tagged.

The commercial catch was sampled at the following locations: Killala, Moy Fishery, Belderg, Porturlin, Belmullet, Geesala, Doohoma and Achill during the salmon season. The main areas fished by the fishermen from the above locations are shown in Fig 2. These are not exclusively fished by people from the areas mentioned, there is a considerable degree of overlap.



### THE CODED WIRE TAG

The tag is very small and is just visible to the naked eye. It comes as a binary coded steel wire and is cut into lengths of approximately 1.1 mm. with a diameter of 0.25 mm: smaller than the dot on an "i". Under a microscope the marks on the tag can be read to identify a particular group of fish.

A tag injector feeds the coded stainless steel wire from a spool through a hollow needle, cuts off the tags and implants them automatically. Head moulds especially made for each size of fish being tagged ensure correct placement of the tag in the cartilage of the head. Fig. 1 shows the dissected head of a fish with the tag in place.

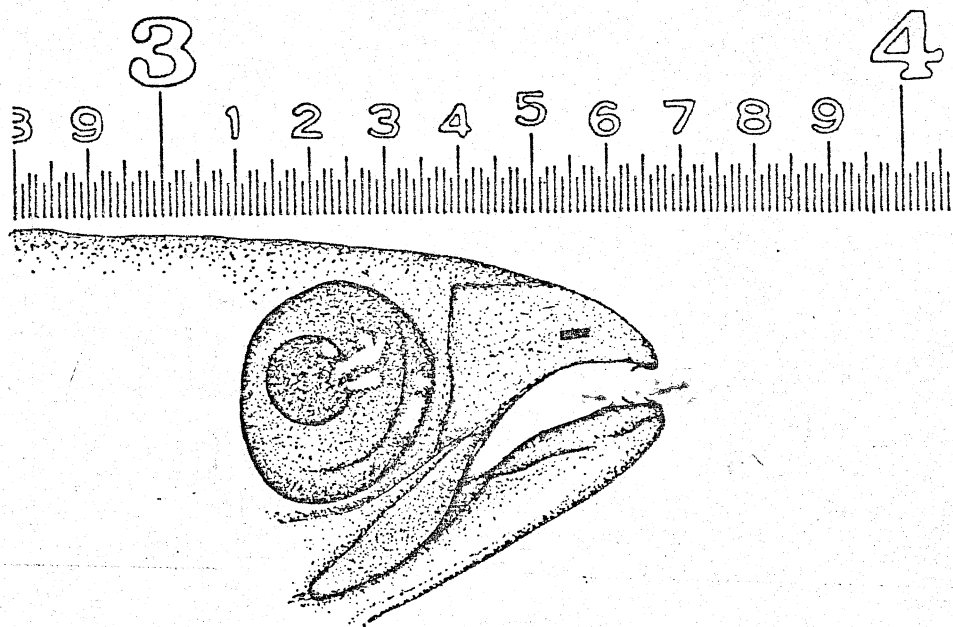


Fig 1. Dissected head of young salmon to show tag in position, scale in centimetres.

The magnetic detector makes a "bleep" sound when a tagged salmon passes through it. A core of about 2 cm in diameter is removed from the head of any fish which gives a positive reaction. The tag is recovered in the laboratory by dissecting the core under a microscope.

## SCALE SAMPLES

Random samples of scales were taken during the sampling period. These were taken to establish the percentage of salmon (2 sea winter fish) and grilse (1 sea winter fish) in the catch. The weight grading used by fishermen for salmon and grilse does not correspond to the scientific definition, since grilse weighing 5.6kg are frequently caught in in July.

## RESULTS

In 1984 salmon smolts were released at 14 locations throughout Ireland (Fig.3). Details of the numbers and locations of release are given in Table 1. The fish released in the Liffey, Bandon, Slaney, Moy and Lennon were hatchery reared at Newport, Co. Mayo.

The tag recovery programme began on the 19th June and continued until the 25th July. During this time a total of 31,574 salmon were examined, 926 clips were recorded and 659 tags were taken. Fish from all the tagging locations were represented in the catch. Details of the number of tags from each location and the raised number of tags for the fishery are given in Table 1. The raised number of tags is derived by multiplying the actual number of tags by a raising factor. Since we do not examine the total catch the raising factor is arrived at by dividing the number of fish actually caught in the area by the number of fish sampled. The raising factor in Mayo in 1985 was 2.75. These results represent only the fish examined in the Mayo area. Mayo fish have also been sampled at Galway and Dublin but these results have not been included.

The scale samples taken over the period showed that 96.4% of all the fish sampled were 1 sea winter fish while 3.6% were 2 sea winter fish. The average weight of fish during June was 2.95Kg while in July it was 3.33Kg.

- 1 Lennon
- 2 Erne
- 3 Moy
- 4 Burrishoole
- 5 Corrrrib
- 6 Shannon
- 7 Bandon
- 8 Lee
- 9 Slaney
- 10 Liffey
- 11 Boyne
- 12 Bush
- 13 Screebe
- 14 Erriff

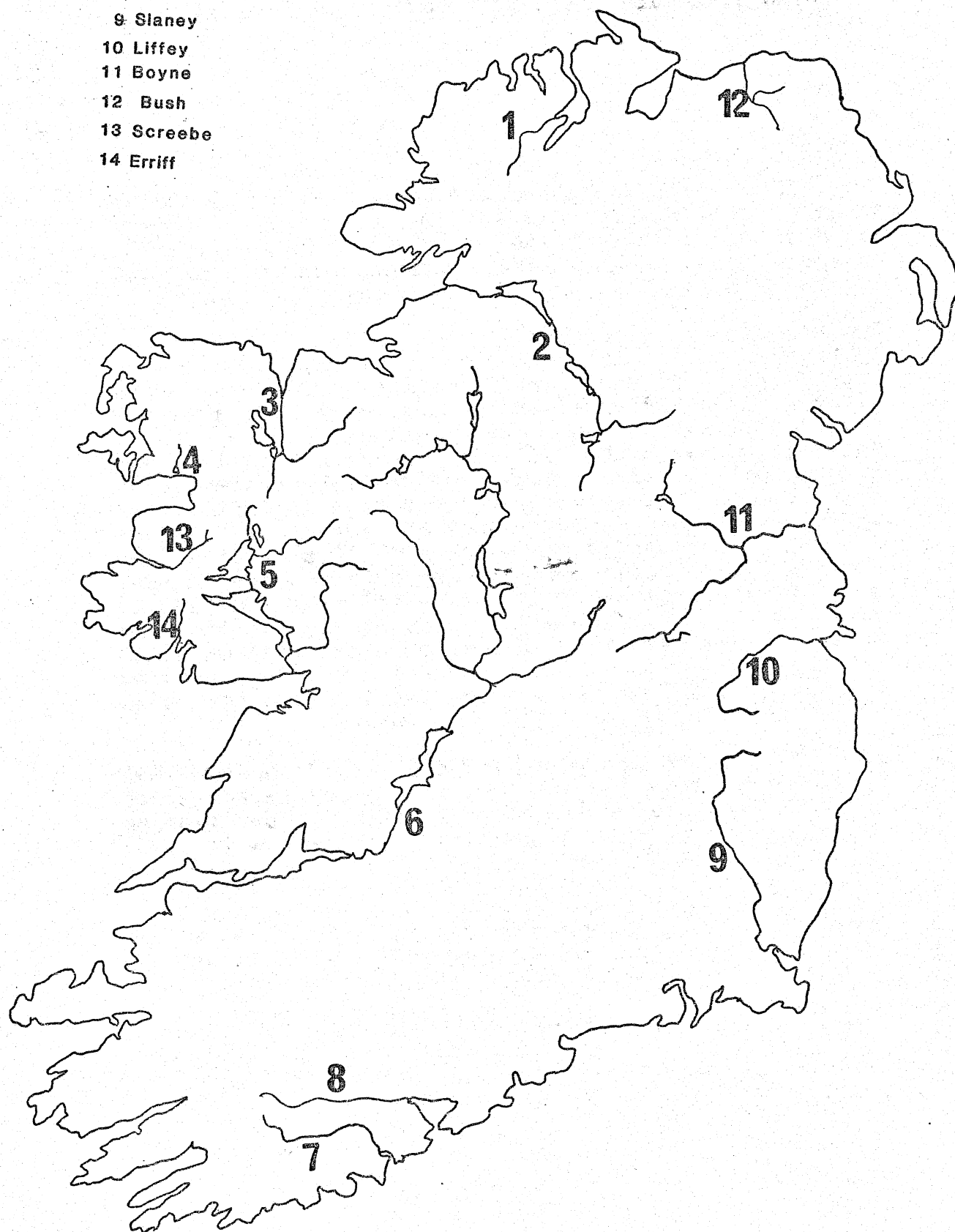


Fig 3 Smolt release locations in 1984

Table 1 Details of tag returns on Mayo coast in 1985

Release	Number released	Number recovered	Raised number	% exploitation
ERNE	21580	53	146	0.68
MOY	9943	43	118	1.19
SLANEY	9967	4	11	0.11
SCREEBE	9903	23	63	0.64
ERRIFF	7293	27	74	1.01
NEWPORT	30477	347	956	3.14
LENNON	8630	8	22	0.25
LEE	19258	6	17	0.09
CONG	30737	53	146	0.47
CORRIB	6870	26	72	1.05
PARTEEN	60924	33	91	0.15
BOYNE	19924	11	30	0.15
LIFFEY	7027	6	17	0.15

### DISCUSSION

The results obtained show the contribution of the various hatcheries to the stock exploited by the Mayo drift net fishermen. As can be seen the Newport rearing facility contributed by far the greatest number of fish to the Mayo drift nets. Just over 3% of all the fish released at Newport were recaptured in the Mayo area. The majority of these were taken in Achill. It can be seen from Fig 2 that the further away from a particular rearing station you get the fewer fish from that location are caught. This is because of the accurate homing instinct of Atlantic salmon.

It is estimated that 3.9% of the total salmon catch in the North Mayo area is comprised of hatchery reared fish. This may seem a very low percentage but it did account for over 1,600 fish in Mayo in 1985. Furthermore this is based on clipped fish samples and not all hatchery smolts are clipped. Therefore these can be regarded as minimum figures. The other major contributors to the North Mayo drift nets were the Moy, Erriff and Erne with a total exploitation of 1.1%, 1.0%, and 0.67% respectively. It is apparent from this work that hatchery reared fish do contribute to the commercial drift net fisheries. However the ideal locations, time of year for release and the effect such stocking has on wild fish must be investigated fully before any extension of stocking is considered. The results of these tagging programmes show that reared fish can contribute significantly to the catch.

## ACKNOWLEDGEMENTS

The success of this programme is due mainly to the assistance of the fishermen, fish processors and dealers. They have co-operated fully in all investigations. I also wish to thank Tom McDermott on whom the tagging program depends, Anne Cullen who co-ordinates the recovery programme and John Browne who supervises the entire programme.