



**Fishery Leaflet  
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**an roinn  
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foraoiseachta**

**Salmon movements in  
Galway Bay in  
1978 and 1979**

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In 1978 tagging investigations commenced into the origin of salmon caught in drift nets in Galway Bay. This fishery began in 1969 with a catch of 355 fish and, by 1975 had increased dramatically to 33,607. However the catch declined to less than half the maximum and in 1979 was down to 15,171, see Table 1.

There are 76 drift net licences in the Bay which incorporates two fishery district, Galway and Connemara. The vessels used vary from 5 metre currachs to 20 metre trawlers. The majority of the boats are halfdeckers of between 9 and 11 metres. The fishery starts in mid-May but the bulk of the catch is taken in June and July. The main component of the catch is grilse with an average weight of 3 kg. During the period fishing is carried on over 24 hours daily except for the weekly close season time. The fishery extends from west of a straight line from Spiddal Harbour to Blackhead, Co Clare in the east, and from Slyne Head to Hag's Head, Co. Clare in the west and also incorporates the Aran Islands. Drift nets are shot at right angles to the coastline in roughly a north-south direction, all vessels staying quite close to land, the furthest distance out being 2km. The maximum length of net permitted in the area is 730 metres or 800 yards. The majority of boats fished nets of this length; however some of the smaller craft used nets as short as 300 metres. All nets are 30 meshes deep. Throughout the programme fish were tagged using Lea's hydrostatic tags described by Went (1951). As in previous tagging programmes, recovery baths were used to ensure that only the fittest fish were released after tagging.

### 1978 Tagging

From 16th June to 12th July, 157 salmon were tagged and released in two areas. Station I, Black Head to Hag's Head, Co. Clare ( $9^{\circ}20'W$ ,  $53^{\circ}0'N$ ) 102 fish tagged. Station II, Spiddal Pier to Inverin, Co. Galway ( $9^{\circ}26'W$ ,  $53^{\circ}10'N$ ) 55 fish tagged. Seventeen returns were received or a recapture rate of 10.8% from the two tagging stations. Eight were recaptured by drift nets, four in traps, three by draft nets and two by rod and line.

The distribution of recaptures is shown in Table 2 together with the number of days at liberty and the distances travelled. Five of the eight recaptures by drift nets were made in Galway Bay close to the tagging stations. The recapture of five fish in the drift net fishery or 29% of all returns would indicate a comparatively high degree of efficiency on the part of the drifters in the Bay. The Galway Fishery traps on the River Corrib returned four tags, 23% of the total. The remaining eight returns were from areas outside Galway Bay: six from areas to the south and two from the north.

### 1979 Tagging

From 5th to 29th June 142, fish were tagged and released at the two Stations described in the 1978 programme, 71 fish at each. Nineteen returns were received representing a recapture rate of 13.4%. Eight fish were recaptured in traps, seven by drift nets, three by draft nets while the remaining fish was recaptured by electro fishing in a tributary of the River Corrib in November 1979. Recapture details are shown in Table 2. Four of the seven recaptures in drift nets were from Galway Bay. The Galway Fishery trap returned seven tags or 36% of the total.

### Salmon behaviour

With the incoming tide fish moved in an easterly direction. On the outgoing tide movement was in a westerly direction. During periods of low water no directional trend was detected and fish were observed striking the nets on both sides.

### The salmon fishery

Salmon landings from the drift net fishery since its inception are shown in Table 1. In Figure 1 the catch data from the Galway Fishery traps since 1959 are plotted on a 5 year moving average and compared with the catch data from the Drift net fishery. There has been a marked decrease in catches at the Galway Fishery since drift netting began in the Bay in 1969. In the (1969-1973) to (1975-1979) period the catch has actually dropped by 62%. However catches have been declining since the (1967-1971) period and therefore the Galway drift net fishery cannot be the only cause of reduced catches. Outside influences such as other drift net fisheries, the use of illegal nets, river poaching and pollution must also be considered as factors contributing to the decline in the Galway Fishery catch.

### Discussion and Conclusions

In the two year period, 299 fish were tagged and released from two stations in Galway Bay, Station 1, Clare coast and Station II, Galway coast. Thirty-six fish were recovered or a recapture rate of 12%. This rate compares closely with other tagging programmes. In the West Cork tagging programme (1973-1975) McCarthy (1978) obtained a recapture rate of 12.2%. Moriarty (1968) recorded a rate of 13.3% from the North Mayo Drift Net Fishery (1962-1964). A 6.4% recapture rate was recorded in 1971 from tagging investigations in the Donegal Drift Net Fishery, although over 200 fish were tagged using similar tags. (Inland Fisheries Bulletin. 1971).

In a previous tagging programme however Went (1958) recorded a 12.2% recapture rate from the Donegal Drift Nets (1953-1957) when over 734 fish were tagged. The recapture rates in the Galway Bay programme are therefore consistent with the rates in previous tagging programmes around the coast.

Major river systems adjacent to drift net fisheries have shown in previous tagging studies that they make a substantial contribution to these drift net fisheries. In Went (1958) the Moy the most adjacent river in the North West provided 29 of the 89 recaptures or 32.6% of all returns recovered from the Donegal tagging programme (1953-1957). Moriarty (1968) in his studies of the movement of salmon from the North Mayo Drift Net Fishery (1962-1964) recovered 17 of the 72 tag returns from the Moy or 23% of all returns. Similarly McCarthy (1978) showed that the three major river systems in the south-west, the Shannon, rivers flowing into Kenmare Bay and the Cork Blackwater, accounted for 34% of all returns from the West Cork Drift Net Fishery.

In the Galway tagging programme, 11 of the 36 recaptures were made in the Corrib system, nine from the fishery traps, one by rod and line and one from an electro-fishing survey. These recaptures represent 30.5% of all recaptures in the two year period showing the contribution the Corrib system is making to the Galway Drift Net Fishery.

The 14 recaptures from outside Galway Bay indicate that a considerable proportion of the catch in the Galway Drift Net Fishery are from rivers to the north and south and that the fishery is not solely dependent on salmon from the Corrib System. The furthest migration was to St Johns Point in Co Donegal in the north, and to Youghal Bay in the south, see Figure 2. Finally it is interesting to note that the majority of recaptures from outside the fishery in 1978 were from areas south of Galway Bay. In 1979 this trend was reversed with the majority of the recaptures from areas north of the Bay.

#### Acknowledgements

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Table 1 Salmon Landings Galway Drift Net Fishery (1969-1979)

Year	Number	Tonnes
1969	355	1.1
1970	3,300	9.6
1971	4,475	13.8
1972	7,548	26.3
1973	10,450	36.9
1974	10,712	35.2
1975	32,607	111.5
1976	18,017	56.5
1977	13,631	42.5
1978	11,315	37.2
1979	15,171	48.2

Table 2. Recaptures of Fish Tagged in Galway Bay, Station 1 Clare Coast  
Station 2 Galway Coast, Inveran-Spiddal area.

Area Tagged	Area Recaptured	Number	Method of Recapture	Mean Distance Km	Days at Liberty
Station 1 1978	South of Inishmaan	2	Drift Net	10	8.7
	Inverin Spiddal	2	Drift Net	26	-
	Galway Fishery	3	Trap	44	8.16
	Liscannor Strand	1	Drift Net	24	-
	Loop Head	1	Drift Net	60	3
	Valentia, Co Kerry	1	Rod/Line	85	-
	River Feale	1	Draft Net	80	11
	River Feale	1	Rod/Line	80	-
	Youghal	1	Draft Net	350	15
Station 2 1978	Inveran	1	Drift Net	2	1
	Galway Fishery	1	Trap	20	2
	Dowros River	1	Rod/Line	130	-
	River Moy	1	Draft Net	350	10
Station 1 1979	Spiddal	1	Drift Net	10	16
	Co-op Galway	1	Drift Net	-	-
	Galway Fishery	3	Trap	44	2.10.17
	Grange River (Corrib System)	1	Electro Fishing	65	144
	Killary Harbour	1	Drift Net	12.5	7
	Newport River	1	Draft Net	150	12
	St Johns Point Donegal	1	Drift Net	300	10
	Dingle, Co Kerry	1	Drift Net	150	16
Station 2 1979	Co-op Galway	2	Drift Net	-	25.8
	Galway Fishery	4	Trap	20	6.7 12.13
	Kilcolgan Weir	1	Draft Net	30	14
	Burrishoole Fishery	1	Trap	150	276
	Ballysadare River	1	Draft Net	270	20



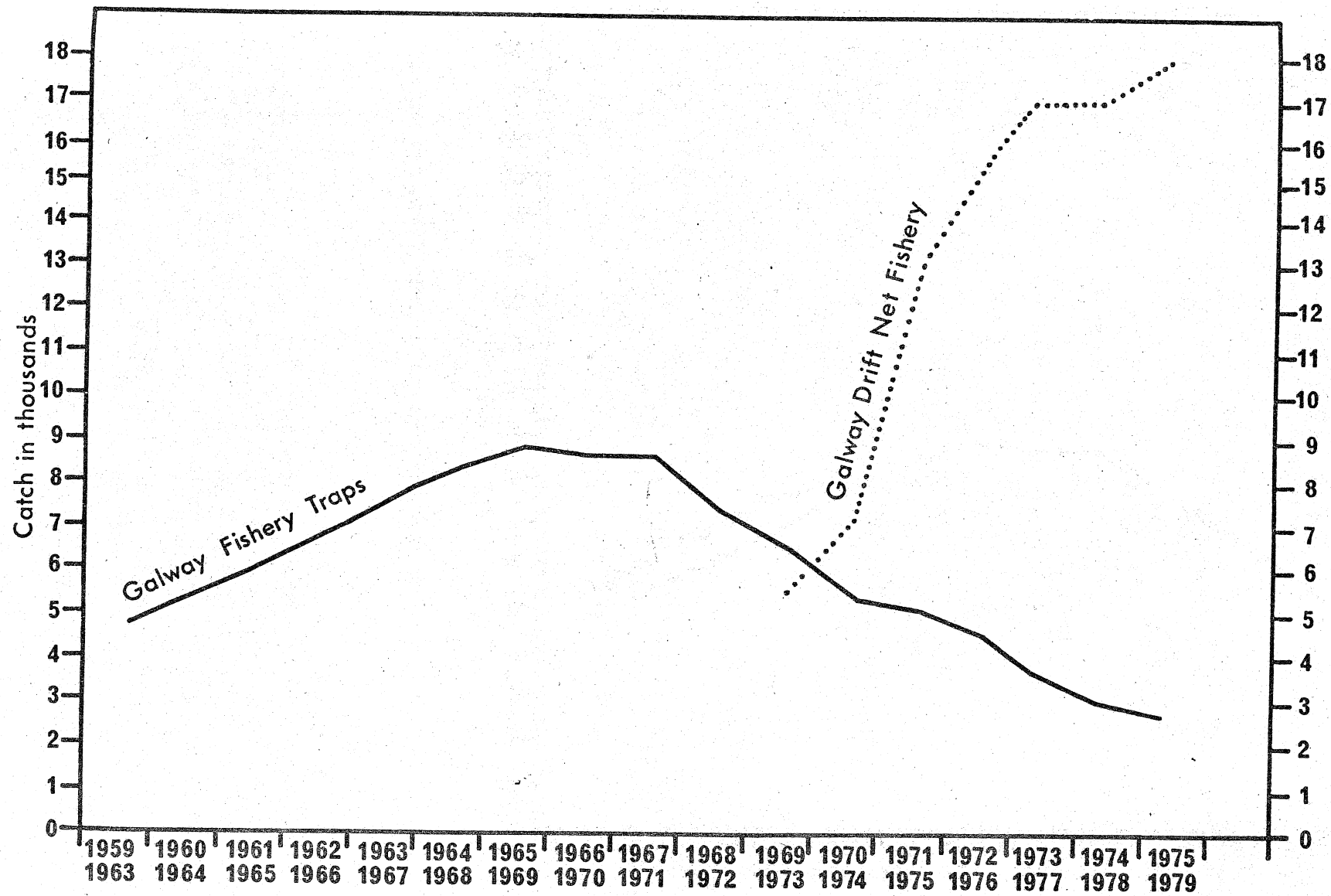


Figure 1 : Five year moving average of the catch in the Galway Fishery traps (1959-1979) and the Galway Drift Net Fishery (1969-1979).

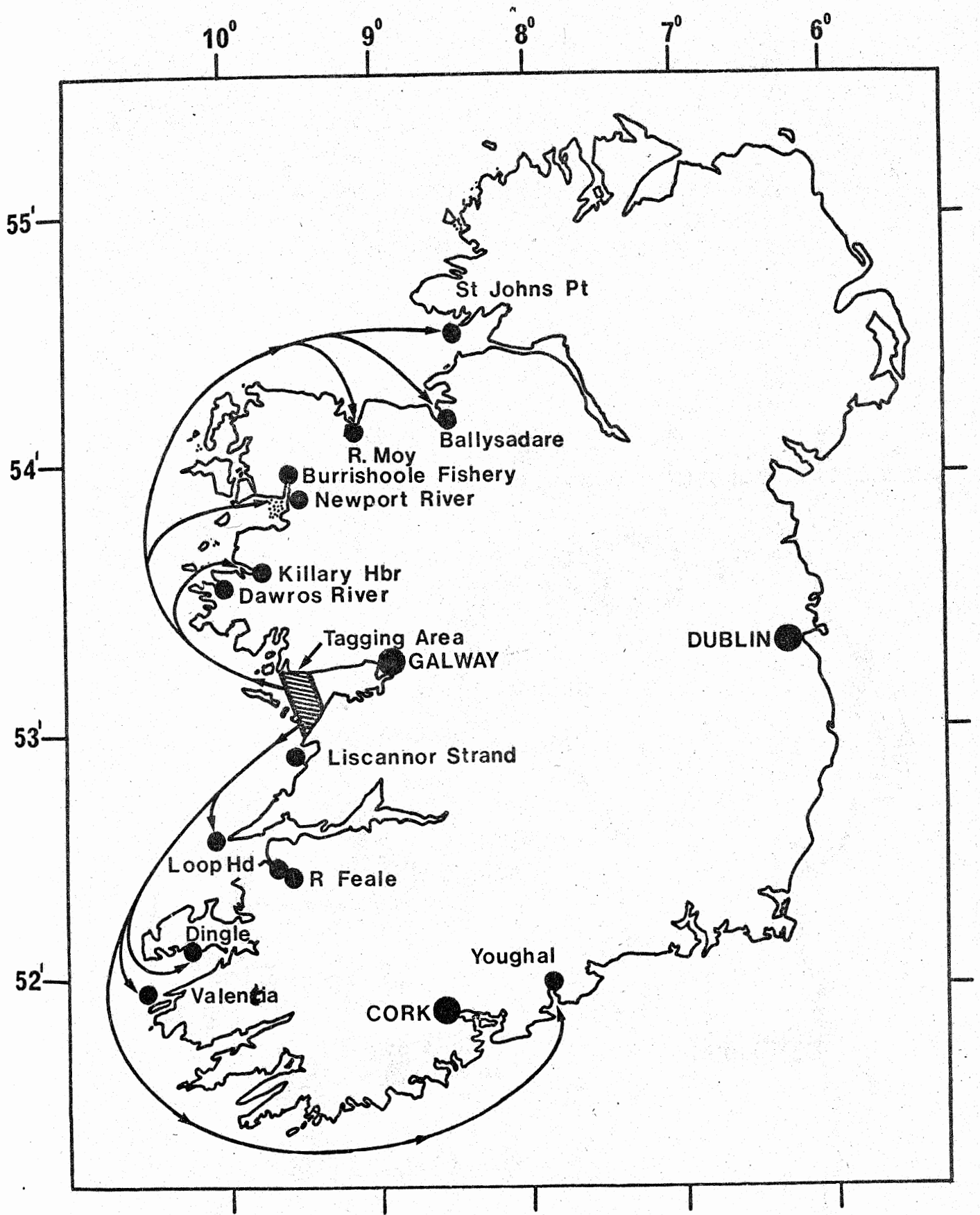


Figure 2 : Distribution of recaptures from outside Galway Bay in 1978 and 1979.