

Biological Studies of Irish Eels

by

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The population studies of yellow eels in Irish lakes begun in 1967 were continued to 1970. As described in a previous report (Moriarty, 1969) the technique was to sample the population of each lake with a standard train of eight fyke nets of cod-end mesh of 10 mm. A full report of the work is in preparation.

Some comparative figures for the lakes in the study are given in Table 1 (p. 2). The unit of effort is the catch for one night's fishing by a single fyke net, the net consisting of a pair of traps joined mouth to mouth by a single leader.

The most interesting conclusion to be drawn from these results is that the stocks of eels in Ireland are in general extremely poor. The one exception found in the survey was the South Sloblands Channel in the south east of the Country in Co. Wexford. This "channel" is a narrow lake, some 4 km in length and with a maximum width of 500 m. It lies in an area of reclaimed land and is separated from the sea by an embankment. It is unusual in having no connection with an extensive river system and therefore elvers which enter it have no opportunity of dispersing over a wide area.

The next highest population was found in the southern basin of Lough Corrib, between 5 and 15 km from the sea. This lake is shallow, less than 3 m in depth over most of its area. All of the other lakes under study were deeper and further upstream. They had smaller populations and the eels showed a lower condition factor. Since the Lough Corrib south basin, Parteen Reservoir, Lough Derg and the South Sloblands Channel were unexploited fisheries at the time of the investigations it would appear that the small populations encountered were the result of a very poor supply of elvers. The entry of elvers to the Shannon system is impeded by hydro-electric dams but there appears to be no major obstruction to elver migration in the Corrib system. The shortage of elvers is therefore rather surprising, especially as these rivers flow into the Atlantic coast. A possible explanation is that both lie at the heads of deep indentations of the coast and, although close to the tidal water limits the river mouths are significantly distant from the sea coast proper. (Approximately 100 km in the case of the Shannon and 35 km for the Corrib).

Another interesting point was the decreasing proportion of small eels found with increasing distance from the sea. This was particularly clearly shown in the case of the Corrib system where 45% of the catch in the south basin of Lough Corrib were less than 40 cm in length. At the head lake of this system, Lough Carra (45 km upstream), this proportion had fallen to 17%. Similarly the upper lakes of the Erne system and Lough Key in the upper part of the Shannon system have populations of large eels. It is clear that in the uncrowded conditions of the Irish lakes there is little pressure on the populations and therefore no tendency for small eels to migrate upstream with any rapidity.

Apparently the stocks of eels could be substantially increased by overland transport of elvers. Other aspects of the current investigations have included age determination and study of the food eaten. These findings will be used to determine the most suitable types of waters for stocking.

Reference

MORIARTY, C. Biological Studies of Irish Eels. ICES, C.M. 1969/M:8 (mimeo).

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Table 1. Measurements and population figures.

	Distance upstream km	Catch per unit effort	% of eels less than 40 cm
<u>River Corrib system</u>			
Lough Corrib south	5 - 15	2.7	45
Lough Corrib north	15 - 35	0.5	36
Lough Mask	35 - 50	1.2	25
Lough Carra	45 - 50	0.6	17
<u>River Fergus system</u>			
Lough Inchiquin	15	1.1	50
Lough George	15	0.3	63
<u>River Erne system</u>			
Killashandra Lakes	75	0.9	19
Cootehill Lakes	90	1.0	3
<u>River Shannon system</u>			
Parteen Reservoir	10 - 15	1.1	20
Lough Derg	15 - 45	1.6	13
Lough Key	100 - 105	1.1	19
South Sloblands	0	12.7	31