



AN ROINN TALMHAIOCHTA AGUS IASCAIGH
(Department of Agriculture and Fisheries)

FISHERY LEAFLET No.54.

SEA TROUT OF THE RIVER ARGIDEEN.

by

A. E. J. WENT.

Fisheries Division
Dublin.
1973

Sea trout of the River Argideen

by

A.E.J. Went

Abstract. A small collection of material consisting of scales and relevant information obtained in 1964/5 from sea trout of the Argideen River in County Cork was examined and the results compared with these obtained in the years 1954/5.

In a review of the investigations of Irish sea trout (Went, 1962) a short account was given of the sea trout of the Argideen River, based on a small amount of material from the rod catches collected by Lt. Colonel Eaton Travers of Timoleague, Co. Cork, in the years 1954 and 1955. At the time there was some suggestion that the material might not have been fully representative in that there was a tendency for the larger fish to have been selected. In 1964 and 1965 a further small collection of material of about 200 sets of scales with relevant data was made by Colonel Travers, together with some sets of scales from sea trout smolts. As the material covered two additional seasons it was thought worthwhile examining it to see if there were any obvious changes in the life history of the sea trout of the Argideen River. For convenience the 1954/5 results have also been given in some of the Tables.

SMOLT AGES AND TYPES

In 1964/65 only two smolt ages were identified, namely the two and three-year smolt classes, unlike 1954/5 when a few one-year smolts were identified (Table 1). In 1964/5 there were relatively more two-year old smolts than in 1954/5. In both the two and three-year smolt ages in 1964/65 there were more type B smolts than type A smolts, as was the case in 1954/5.

AGE GROUPS AND AVERAGE WEIGHTS AND LENGTHS

In 1964/5 there was a preponderance of finnock (+ sea group) in the catches (Table 2), whereas in 1954/5 fish in their second post migration summer (1 + sea group) were much commoner and predominated in the fish sampled, which was probably due to some extent to selection of the larger (and older) fish, as suggested already.

All the previous spawners in 1964/65, as in 1954/55, had only one spawning mark on their scales. In the 1964/65 catches 3(50%) had spawned first as finnock, 2(33.3%) as 1 + sea group fish, and one (16.7%) as a 2+ sea group fish.

The average sizes of the various age categories were calculated and the results are given in Table 3. As on the previous occasion there was

a steady rise in the average weights and lengths with a rise in the period of sea feeding. The average sizes of the various age groups were, with the exception of the previous spawners, somewhat smaller in 1964/65 than in 1954/55. The ranges in sizes of the various age groups were as follows:-

<u>Age group (period of sea feeding)</u>	<u>Weight in lb.</u>	<u>Length in inches</u>
+	0.19 - 1.13	8.0 - 14.0
1 +	0.63 - 2.12	11.8 - 17.5
2 +	1.00 - 2.50	13.5 - 18.5
With SMS.	0.88 - 3.71	15.8 - 19.5

There was, as can be seen, in 1964/65, as in 1954/55, considerable overlap as between the weights and lengths of fish belonging to different age groups. The largest maiden fish on this occasion weighed $2\frac{1}{2}$ lb., measured 18.5 inches and was taken on 20 July 1964. It had spent two years in the river before going to the sea as a smolt and then just over two full years feeding in the sea. Its total age was, therefore, 4+ years.

GROWTH CALCULATIONS

The scales of the maiden or unspawned fish were used, in the normal way, to determine the growth of the fish, i.e. assuming that the growth of the scale was strictly proportioned to the growth of the fish. The mean lengths for the various smolt classes and smolt types are given in Table 4. In general the fastest growing smolts migrated first but the smolt size of the two-year smolt class was, on average, smaller than that of the three-year smolt class.

The growth rates of the two smolt types in the two smolt classes are given in Table 5. The growth rate of the type A smolts is slightly faster than the type B smolts of the same smolt class. The present figures are fairly close to those calculated from the 1954/55 material (given in brackets) the mean smolt sizes in the various smolt types and classes being as follows:-

Smolt class	Type A	Type B
2	7.2 (6.8)	7.4 (7.7)
3	8.1 (7.8)	8.3 (8.3)

The calculated growth rates of the actual smolts captured in 1964 were as follows:-

<u>Smolt class</u>	<u>No.</u>	<u>Length in inches at end of</u>			<u>At capture</u>
		<u>First year</u>	<u>Second year</u>	<u>Third year</u>	
2	16	3.3	6.3	-	7.0
3	5	2.6	5.2	6.7	7.5

These growth rates were generally slightly lower than calculated from the returning fish in 1964/65 as indicated in Table 5.

The average calculated lengths at the end of the first sea winter of fish returning in their second post migration summer were as follows:-

Two-year smolt class:-	11.5 inches
Three-year smolt class:-	12.0 inches
All smolt classes:-	11.5 inches

The average lengths at the end of the first and second sea winters in fish returning in their third post migration summer were:-

First sea winter	10.7 inches
Second sea winter	13.8 inches

These latter figures were well below those of the 1954/55 material.

The present investigation and that made earlier (Went, 1962) indicates that generally the smolt sizes of sea trout in the Argideen River were about in the middle range for Irish rivers, whereas growth in the sea tended to be less than for most rivers in Ireland.

REFERENCE

Went, Arthur E.J. Went. (1962) Irish sea trout. A review of investigations to date. Sci. Proc. R. Dublin Soc. 1A. No.10. pp. 265 - 296.

Table 1. The distribution (as percentage of maiden fish) of the different smolt classes and types. (Figures for 1954/5 in brackets.)

Smolt class	Smolt type				Total	
	A		B			
1	-	(-)	-	(5.9)	-	(5.9)
2	12.1	(16.9)	71.6	(57.3)	83.7	(74.2)
3	5.8	(10.3)	10.5	(9.6)	16.3	(19.9)
TOTAL	17.9	(27.2)	82.1	(72.8)		100.0

Table 2. The distribution (as percentages of all fish examined) in the various age groups (Figures for 1954/5 in brackets.)

<u>Age Group</u>	<u>Percentage</u>	
First post-migration summer or finnock (+)	78.0	(32.2)
Second post-migration summer (1+)	15.3	(54.8)
Third post-migration summer (2+)	3.6	(6.2)
Previous spawners (With SMs)	3.1	(6.8)

Table 3. Average weight and length in different age categories.

<u>Age Category</u>	<u>Number</u>	<u>Weight (lb)</u>	<u>Length (inches)</u>
2+	127	0.47	9.8
3+	26	0.55	10.7
2.1+	25	1.19	14.1
3.1+	5	1.44	14.7
2.2+	7	1.64	15.8
2+SM+	3	1.23	14.2
2.1+SM+	2	2.09	18.7
2.2+SM+	1	3.00	19.0
+	153	0.48	10.0
1+	30	1.23	14.2
2+	7	1.64	15.8
With SMs	6	1.81	16.1

Table 4. Mean lengths in inches at the end of each year of freshwater life in the different smolt classes.

<u>Smolt class</u>	<u>Length at end of</u>			<u>At</u>
	<u>First year</u>	<u>Second year</u>	<u>Third year</u>	<u>migration</u>
2	3.0	6.6	-	7.4
3	3.0	5.5	7.6	8.3

Table 5. Mean lengths in inches at the end of each year of freshwater life in the different smolt classes and smolt types.

<u>Smolt</u> <u>class</u>	<u>Type A</u>			<u>At</u> <u>migration</u>	<u>Type B</u>			<u>At</u> <u>migration</u>
	<u>First</u> <u>Year</u>	<u>Second</u> <u>Year</u>	<u>Third</u> <u>Year</u>		<u>First</u> <u>Year</u>	<u>Second</u> <u>Year</u>	<u>Third</u> <u>Year</u>	
2	3.3	7.3	-	7.3	3.0	6.5	-	7.4
3	2.9	5.8	8.1	8.1	3.1	5.4	7.2	8.3