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Greenland Salmon Catches

Notes On Relevant Scottish Catches And Taggings

1. This fishery has developed well within the last decade and is expanding very rapidly. The weights of salmon exported have been as follows:

<u>Year</u>	<u>Wt. of Salmon Exported</u>	<u>(Corresponding wts. of Salmon caught in Scotland)*</u>
1957	2	954
1959	13	1244
1960	55	960
1961	115	820
1962	290	1015
1963	420	1286
1964	1400	-

So far as is known, all these quantities are expressed in metric tons. In earlier years, we were informed that the amount exported represented about 70% of the catch, but it is not known whether this proportion has been maintained over recent years. It would be expected to rise, since local demand in Greenland may well not be considerable.

2. To date this fishery seems to have been concentrated in the west or south-west of Greenland and is carried on from August to November. The Danes informed us that, last year, fishing had begun rather earlier and more to the south of the original grounds and, as appreciable numbers had evidently been caught, there would seem some prospect of this fishery extending both geographically and in time.

3. Recaptures of fish tagged in Scotland in this fishery are given in the table below.

<u>Date</u>	<u>Tagging</u>		<u>Recapture</u>	
	<u>Place</u>	<u>Stage</u>	<u>Date</u>	
1955	Loch na Croic	Kelt	October	1956
1961	North Esk	Smolt	December	1962
	North Esk	Smolt	November	1963
1962	Garry	Kelt	October	1963
	(Inverness)			
1963	North Esk	Smolt	November	1963
	North Esk	Smolt	September	1964
	North Esk	Smolt	September	1964
	North Esk	Smolt	October	1964
	North Esk	Smolt	October	1964
	North Esk	Smolt	November	1964
	North Esk	Smolt	November	1964
	North Esk	Smolt	November	1964
	Tummel	Smolt	October	1964
1964	Bran	Smolt	October	1964
	Bran	Smolt	November	1964

* Including catches by all methods, but not confined to 2-winter fish, although these form the main bulk of the catch. Final data for 1964 are not available, but the impression is that the total catches were more or less average.

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4. Thus fifteen fish tagged in Scotland have so far been recaptured on the Greenland coast, nearly all of these were tagged as smolts or migrating parr and two-thirds of the total recaptures were recorded during 1964. Most of the tagged fish recaptured were tagged as smolts in the North Esk but this arises because much more smolt tagging has been done on the North Esk than elsewhere during the period under review. All except one of the recaptures from North Esk smolts were wild smolts; the exception was the smolt tagged in 1962 and recaptured in November, 1963. This was one of a small batch of large smolts from Invergarry hatchery which has generally given a much higher recapture rate than any of the other batches of hatchery-reared smolts which have been released in the North Esk.

5. With one exception, all the tagged smolts have been recaptured as they were approaching or beginning their second winter in the sea. There are no records yet of the recapture of fish approaching or beginning their first winter in the sea (i.e. the grilse of the following summer).

6. Comparisons between the numbers of smolts recaptured in Greenland with those taken again in home waters (i.e. in the river of tagging or on the neighbouring coast) are given below.

(a) North Esk Experiment, 1961

<u>No. Tagged</u>	<u>No. Recaptured</u>						
	<u>Home Waters</u>			<u>Total</u>	<u>Greenland</u>		
	1962	1963	1964		1962	1963	<u>Total</u>
5000	158	88	5	251	1	1	2

(b) North Esk Experiment, Large Hatchery Smolts, 1962

<u>No. Tagged</u>	<u>No. Recaptured</u>					
	<u>Home Waters</u>			<u>Total</u>	<u>Greenland</u>	
	1963	1964			1963	<u>Total</u>
1000	31	19		50	1	1

(c) North Esk Experiment, 1963

<u>No. Tagged</u>	<u>No. Recaptured</u>						
	<u>Home Waters</u>			<u>Total</u>	<u>Greenland</u>		
	1964	1965			1964	1965	<u>Total</u>
7600	291	22 ^a		313 ^a	7	0 ^a	7 ^a

a To date

(d) Bran Transport Experiment, 1963

<u>No. Tagged</u>	<u>No. Recaptured</u>						
	<u>Home Waters</u>			<u>Total</u>	<u>Greenland</u>		
	1964	1965			1964	1965	<u>Total</u>
649	12	3 ^a		15 ^a	2	0 ^a	2 ^a

a To date

(These fish were caught in the lower reaches of the Bran and transported by road to a point below the lowermost dam on the Conon River system).

7. Because all the fish caught on the Greenland coast had spent at least 1+ years in the sea, the Greenland recaptures should be compared with the recaptures in home waters the following year. This comparison is only possible for (a) and (b) in para. 6 above and these suggest that the proportion caught on the Greenland coast is small compared with that taken in home waters. It would be unwise, however, to be more specific at this stage because there are a number of factors which complicate the precise evaluation of the results. These include:

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7. (cont'd)

- (a) The fish tagged in the North Esk experiments were also fin-clipped. Some fish lost their tags before recapture but could be identified, as having been tagged, by their fin-clips. This latter identification could, however, only be made in home waters.
- (b) Conditions for noting and recording recaptures of tagged fish in Greenland are unknown so that the chances of a recapture being recorded in Greenland (or, perhaps, later, in Denmark) may well be less than they are in Scotland.
- (c) When the tagging experiments were started on the North Esk various types of tag etc., were used to test their value. This may affect the recapture records from these experiments.

Perhaps the clearest of the four experiments mentioned in para. 6 above are (b) and (d) since, in each of these cases, the fish were uniformly tagged. In both of these cases, however, the numbers tagged were too small to allow firm deductions to be drawn from the results obtained.

8. Further investigations, which should provide more information about the Greenland fishery, are in progress or in an advanced state of preparation, namely:

- (a) A continuation of the smolt tagging programme on the North Esk. A total of 9000 wild smolts were tagged on the North Esk in 1964 and tagging is again in progress there this year, when it is hoped that the number to be tagged will be at least as many as in 1964 and may, depending on discussions now in progress, be substantially more (up to 15,000 smolts).
- (b) In collaboration with the Danish fishery workers, an attempt will be made to tag fish caught on the Greenland coast this year to discover the subsequent distribution of these fish. Initially, attempts will be made to tag fish caught (i) in the commercial gill nets used on this coast (ii) in pound nets (iii) by handlines or snella and, perhaps (iv) by drift nets. The possibilities of using Scottish bag-nets or Northumberland T-nets will also be investigated. It should be emphasised, in connection with this project, that we have received every help from our Danish colleagues, who are contributing substantially to the cost of the equipment required and generously providing many of the facilities needed.