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The proportional occurrence of salmon tagged in the U.K. and in Canada in some offshore drift-net catches made in the West Greenland area, 1B, in 1968.

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With the helpful co-operation of the Greenland Fisheries Office, Charlottenlund, Denmark, some information is now available on the proportional occurrence of tag recaptures in certain high seas catches in the Store Hellefishe Bank (1B) area made during the 1968 catching season. Four fishing vessels are concerned, for which landed tonnages of salmon are known (or estimated) and from which a total of 19 tags have been returned. Table I shows the data available:

TABLE I

Ship	Tonnage	Metric tons landed	No. of fish (1)	Recaptured tags		
				English	Scottish	Canadian
ENA WEST	34.33	25	7,856	0	0	2
BARSØ	?	35	11,000	0	0	1
DOLLI-ANN	96.00	44	13,510	0	3	1
BAKUR	394.02	70 (2)	22,010	0	1	3
Not known (3)				2	1	5
Totals	524.35 (+ BARSØ)	174	54,376	2 (1 smolt, 1 kelt)	5	12

- Notes:
- (1) Calculated numbers from assumptions (a) that landed fish were "gutted, head on" and that fresh weight = landed weight x 1.1
 - (b) that average individual fresh weight of fish caught was 3.5 kilos.
 - (2) Estimated by Danish Authorities
 - (3) Tags in "Not-known" category were most probably from either ENA WEST or BARSØ. (Danish Authorities).

If the recaptures in the "Not-known" category are grouped with those of the ENA WEST and BARSØ, in accordance with Note (3), the data is as shown in Table II for recaptures of salmon tagged as smolts only (one of the English

recaptures was tagged as a kelt).

TABLE II

Ship	Tonnage	Metric tons landed	No. of fish	Recaptured tags		
				English	Scottish	Canadian
ENA WEST BARSØ, and Not known	34.33 + BARSØ	60	18,856	1	1	8
DOLLI-ANN	96.00	44	13,510	0	3	1
BAKUR	394.02	70	22,010	0	1	3
Totals	524.35 (BARSØ)	174	54,376	1	5	12

Thus, the sample of the salmon population in the area fished by the four vessels consisting of approximately 54,376 fish contained 18 salmon which had been tagged as smolts and 1 salmon which had been tagged as a kelt. This is equivalent to 1 tagged fish in 2,967 in the fished population.

The proportion of the total smolt production in the U.K. and Canada which is tagged is, of course, very small. The numbers of smolts tagged in 1967 in Canada, England and Wales, and Scotland are shown in Table III (Data from Table 4, Second Report of the Working Party).

TABLE III

Country	Smolts tagged in 1967			Tags recap'd	% of total smolts re-captured	% of wild smolts re-captured
	Hatchery	Wild	Total			
Canada	111,488	15,683	127,171	12	0.0094	0.076
England & Wales	18,522	4,218	22,740	1	0.0044	0.024
Scotland	4,451	20,993	25,444	5	0.019	0.024

It will be seen that if percentage recaptures are calculated for the fishing effort represented by the four vessels, in respect of total smolts tagged the highest percentage is shown by the Scottish figures. However, the known

recaptures, in Greenland, of hatchery-reared smolts from Scotland and England and Wales since the investigations began are 2 and nil, respectively (the extent to which Canadian hatchery-reared smolts have been caught in Greenland is not known to the author) and if the recapture percentages for the four vessels are calculated only on the wild smolts tagged, it will be seen that the highest percentage is shown by the Canadian figures and lower but equal percentages for the other countries.

The total numbers of smolts available for capture in the West Greenland area will, however, be less than the figures shown in column 4 of Table III owing to the high mortality rate of smolts between migration and return to the river. If the natural mortality rate for wild smolts is taken as 90%, allowing a 10% return to the river, and if it is assumed that of this mortality rate the greater part, say 70%, occurs during the early migration period of the small fish on their journey to the North Atlantic, and is similar for the smolts of each country, the numbers of tagged smolts available for capture would be as shown in column 2 of Table IV. These figures do not take into account any additional tagging mortality, nor any differential efficiencies of the various types of tag used in the 1967 smolt tagging, (Canadian type tags were not adopted by the U.K. until 1968).

If these assumptions are valid, the percentage recaptures, for the four vessels together, are as shown in Column 4 of Table IV if all the Canadian recaptures were of wild smolts.

TABLE IV

Country	Wild smolts available for recapture at W.Greenland.	Tags recaptured	Percentage of available wild smolts recaptured
Canada	4,705	12	0.25
England & Wales	1,366	1	0.07
Scotland	6,298	5	0.08

The number of tags involved are, however, very small and the significance of this analysis will be correspondingly low, but for these four vessels, all of which made their catches in the same offshore area, it is suggested that the numbers of tags

taken give an indication of the frequency with which tagged fish were occurring in the population in the fishing area (or that part of the population which was at hazard from the fishing effort) and also, perhaps, some preliminary indication of the proportions of fish from Canada and the United Kingdom which were present at that time in that area.

With regard to the single tagged kelt recaptured by the four vessels, this fish was one of 188 tagged on the River Axe research installation, in Devon in 1968. A second kelt from this tagging was taken by the inshore fishery at W. Greenland.