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PRELIMINARY RESULTS OF SAITHE TAGGING EXPERIMENTS ON THE WEST COAST OF  
NORWAY IN 1972.

by

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INTRODUCTION

Tagging experiments on saithe have frequently been carried out along the coast of Norway, but before 1972 only an insignificant number had been tagged south of N 63°. However, young saithe are seemingly just as abundant along the Norwegian coast between N 58° and N 63° as they are further north. The origin of the 0-group saithe on the west coast is not fully established, but in all likelihood they are carried from the spawning grounds in the northern North Sea (Jakobsen 1974). In 1972 a series of saithe tagging experiments on the west coast of Norway was started to obtain more information about the migration and the stock identity of the immature saithe off western Norway.

MATERIAL AND METHODS

This paper deals with Norwegian tagging experiments on saithe carried out at five localities on the west coast of Norway in June 1972. Hydrostatical tags of Lea's type were used, fastened to the fish with a gut through the flesh in front of the anterior dorsal fin. The liberation data are: Utsira, N 59°19' E 04°53', 15 June, 598 saithe of 34 - 45 cm length released. Espevær, N 59°35' E 05°08'. 14 June, 600 saithe, 31 - 43 cm. Hevrøy, N 60°02' E 05°04', 13 June, 597 saithe, 32 - 46 cm. Bulandet, N 61°18' E 04°37', 19 June, 599 saithe, 31 - 50 cm. Alesund, N 62°28' E 06°08', 20 June, 500 saithe, 27 - 42 cm.

The tagged saithe were 2 - 4 years of age at all localities with 3 year olds as most abundant. The saithe had been kept in a net for a period varying from a few days to a month. The saithe at the two northernmost localities had been caught by purse seine, the rest by beach seine.

## RESULTS

Figs. 1 - 5 show the geographical distribution of the recaptures in 1972, 1973 and 1974 from each experiment. The locality of the recapture was not reported for 31 of the recovered tags and these had to be omitted.

The recoveries from all experiments indicate that a gradual migration away from the tagging area has taken place and the recaptures are distributed both north, south and to some extent west of the tagging area. Recoveries in the North Sea made up a high percentage.

From the Utsira experiment relatively few tags have been recovered (Fig.1). Of the recoveries outside the tagging area 56 % have been made to the south and recoveries near the northwest coast of Denmark are not uncommon. With the exception of one in northern Norway, no recovery has been made north of N 61°.

From the experiment at Espevær (Fig.2) the number of recaptures is considerably higher. 59 % of the saithe recaptured outside the tagging area have migrated to the south, but on the average not quite as far south as the saithe from the Utsira experiment. Of those migrating to the north 36 % were recovered north of N 62°.

The recoveries from the Hevrøy experiment (Fig.3) are more concentrated to the south of the tagging area than those of the Espevær experiment. Only 16 % of the recoveries outside the tagging area were made further north along the coast, and 57 % of these were recovered south of N 62°.

The recoveries from the Bulandet experiment (Fig.4) show a variation in the migration pattern with time which is also to some extent seen in the other experiments. In the year of tagging 1972 there is a clear northward trend in the migration, but in 1973 the recoveries are already most numerous south of the tagging area, and in 1974 the southern recoveries dominate. In the whole period the recaptures on the coast north of the tagging area made up 43 %.

The experiment at Ålesund (Fig.5) has also resulted in relatively few recaptures. The pattern of recoveries is similar to that of the Bulandet experiment, but with only 28 % of the recoveries made south of the tagging area.

## DISCUSSION

The distribution of the recoveries is obviously influenced by the fishing effort. Along the Norwegian coast the fishing effort varies and is probably on the average somewhat higher north of N 63° than further south. The distribution of the fishing effort for saithe in the North Sea is poorly known. Most of the recoveries south of N 60° have been made by vessels from the USSR which during this period have taken about half of the total saithe catches from the North Sea, and high fishing effort of the USSR trawl fleet in this area may give an impression of a more southeasterly distribution of young saithe in the North Sea than the true one.

The variation in numbers of recaptures between the experiments can probably partly be ascribed to different death rates caused by the tagging.

Olsen (1961) stated on the basis of tagging experiments on the Norway coast north of N 63° that the young immature saithe do not migrate over long distances, but that there is a trend of gradual movement to the north and east. Among Norwegian fishermen, however, there exists a widespread opinion that a considerable northward migration of young saithe takes place along the coast.

The recaptures indicate that the young saithe on the west coast are somewhat less stationary than in northern Norway, although a high percentage was recaptured near the tagging locality during the first year after liberation. From the four southernmost tagging localities the vast majority of the recaptures in 1974 were made in the North Sea. It seems probable that also some of those that evidently migrated northwards during the first two years, later have turned south or west towards the North Sea, because if they had migrated further north one would expect higher numbers of recaptures in that area. In the Ålesund experiment the number of recaptures were too low to give significant information about the migration, although the northward trend is clearer than in the other experiments.

The recoveries indicate that the migration away from the coast generally occurs at 3 - 4 years of age, which is in good accordance with age samples from commercial catches.

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The saithe in the North Sea including the Norwegian coast south of N 62° has generally been treated as one stock. The tagging experiments on the Norwegian west coast seem to confirm the view that the west coast of Norway is the nursery ground for a large part of the North Sea stock.

The northern limit at N 62° is not confirmed by these experiments. There is a considerable number of recoveries north of this limit from the four experiments further south and there are recoveries in the North Sea from the Ålesund experiment at N 62°28'. Recoveries in North Norway are on the other hand scarce from all five experiments.

More tagging experiments on the west coast of Norway and northwards to N 68° which already have been carried out will presumably give more information about the stock structure of the young saithe on the Norway coast.

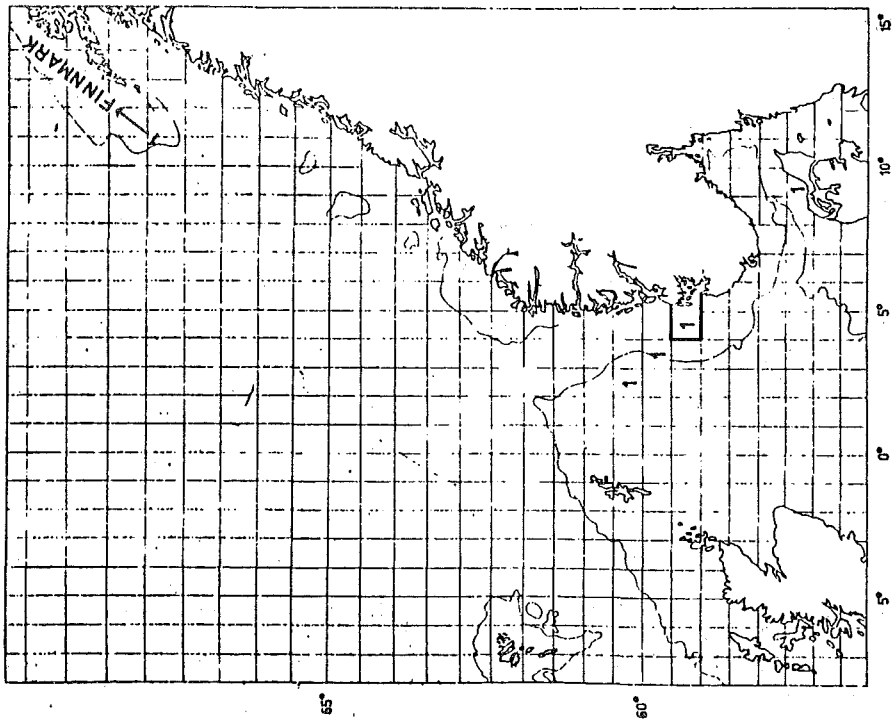
#### SUMMARY

In July nearly 3500 2 - 4 year old saithe were tagged at five localities on the west coast of Norway.

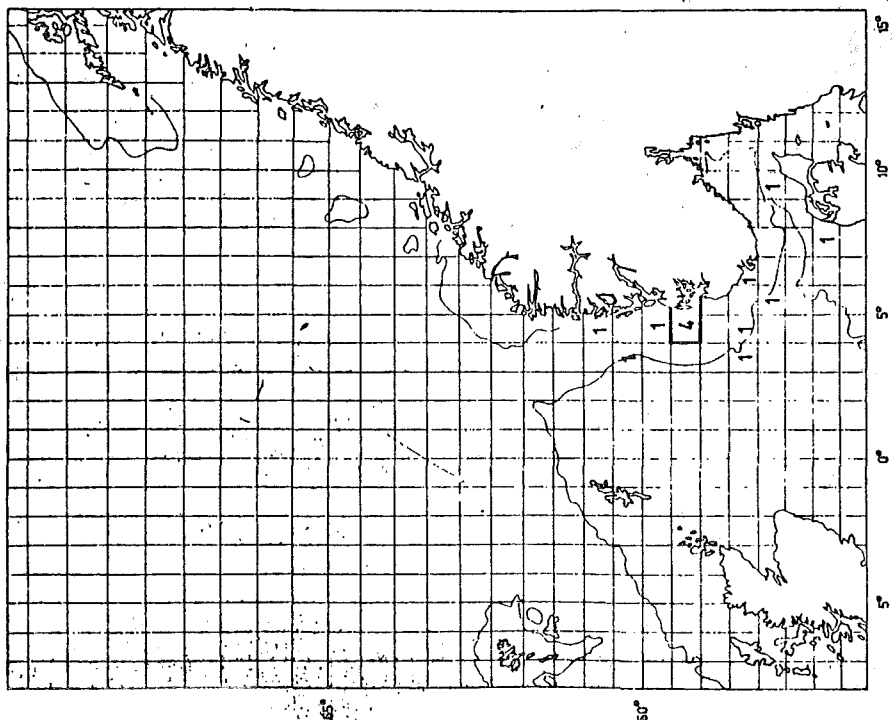
The results indicate that the majority of the saithe at 3 - 4 years age migrate into the North Sea, and this seems to confirm the theory that the west coast of Norway is nursery area for a large part of the North Sea stock of saithe.

#### REFERENCES

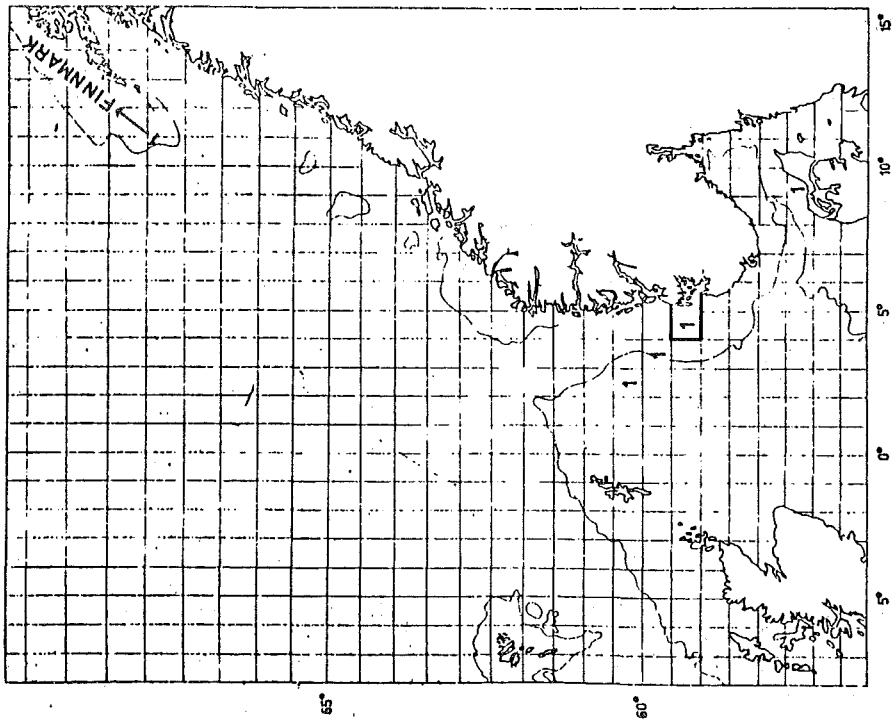
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1972

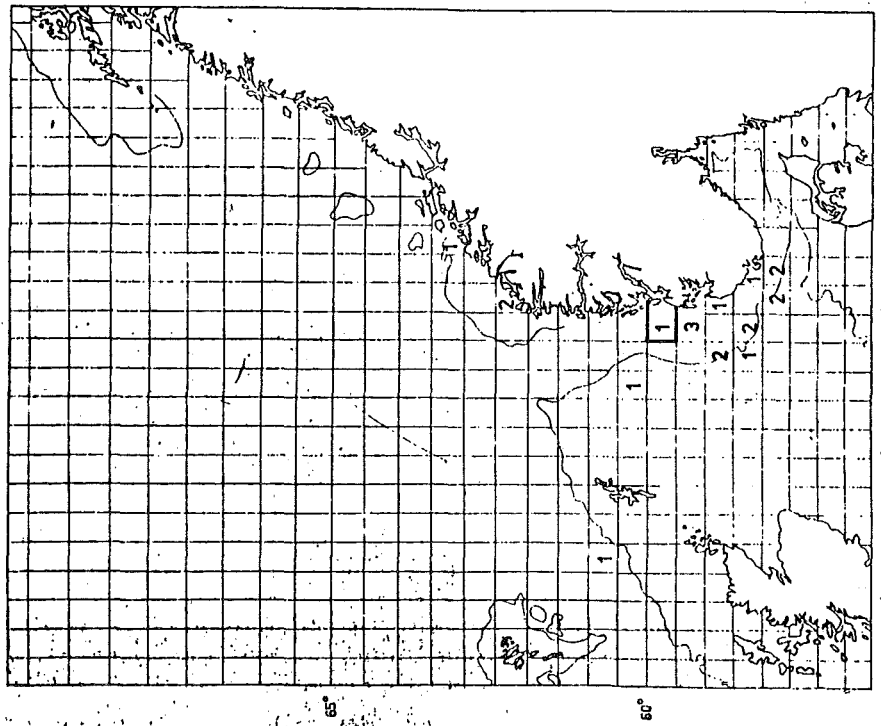


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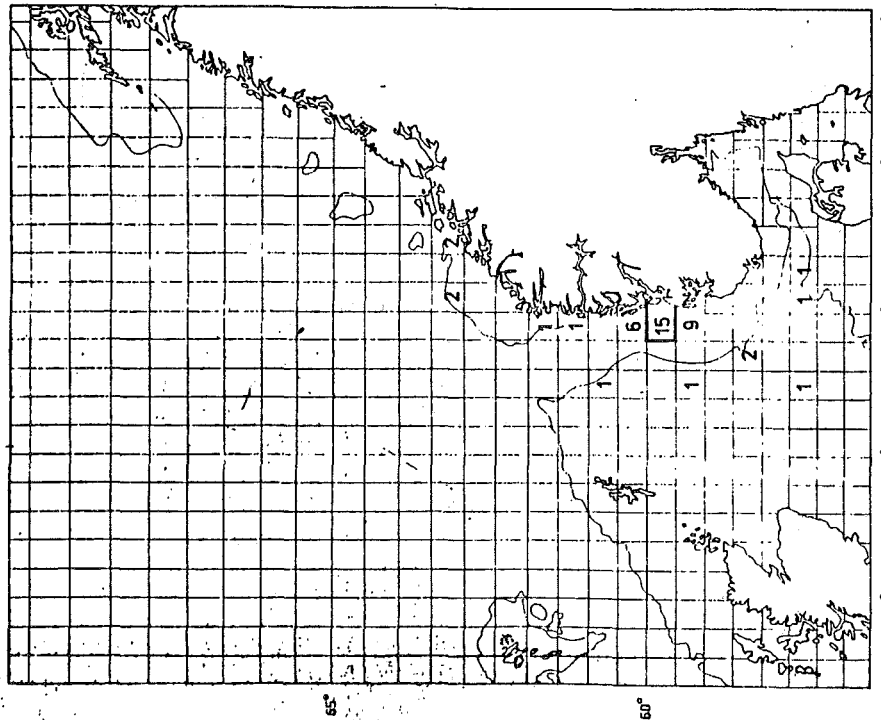


1974

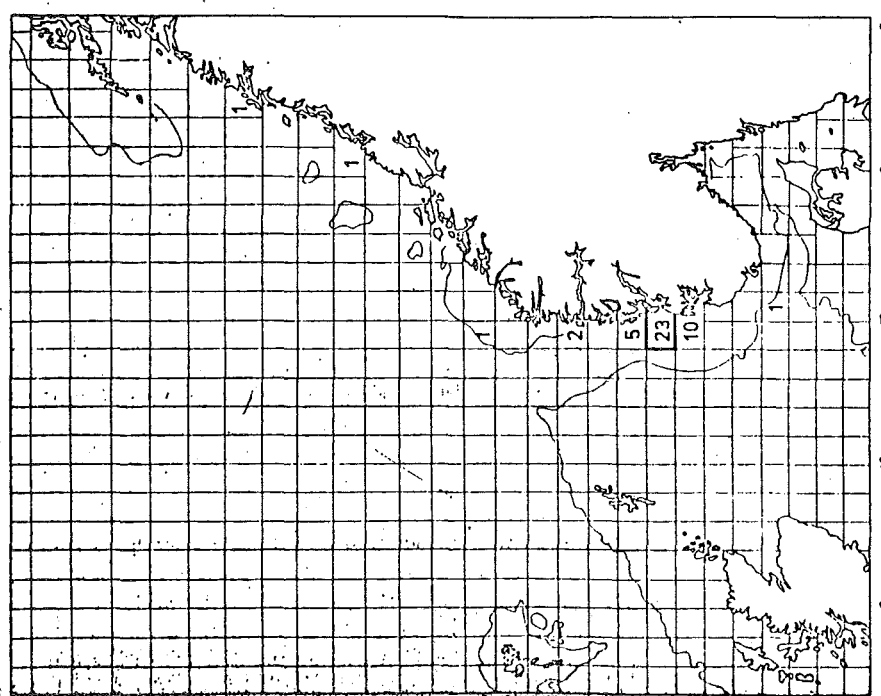
Fig. 1. Recaptures in successive years of saithe tagged at Utsira, Norway 15 June 1972. (Tagging locality indicated by thick border-line).



1972



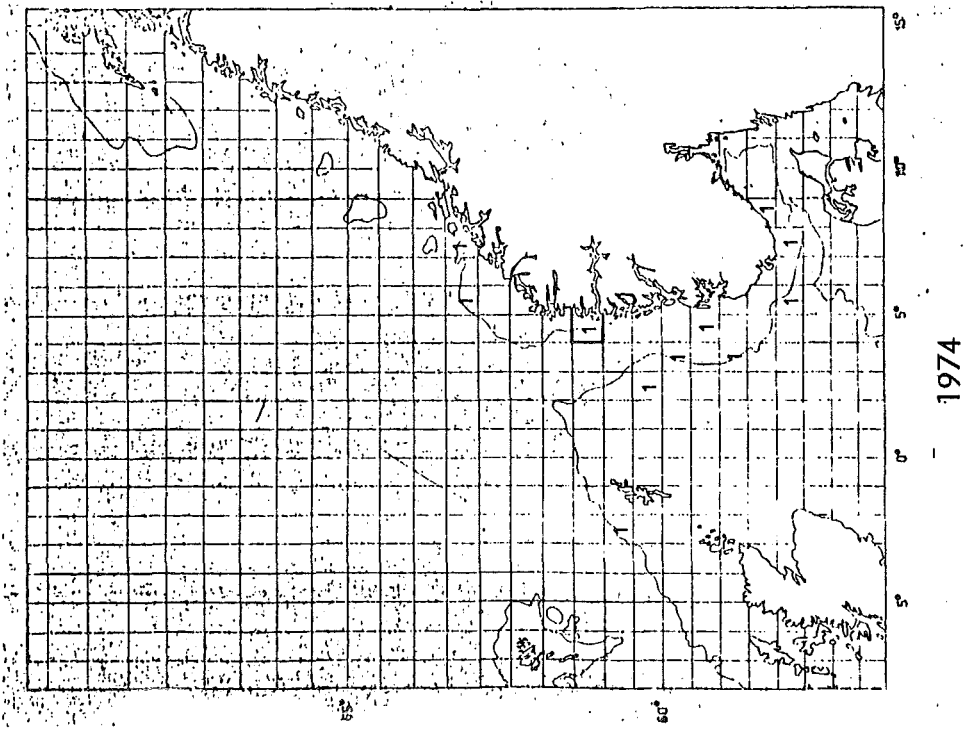
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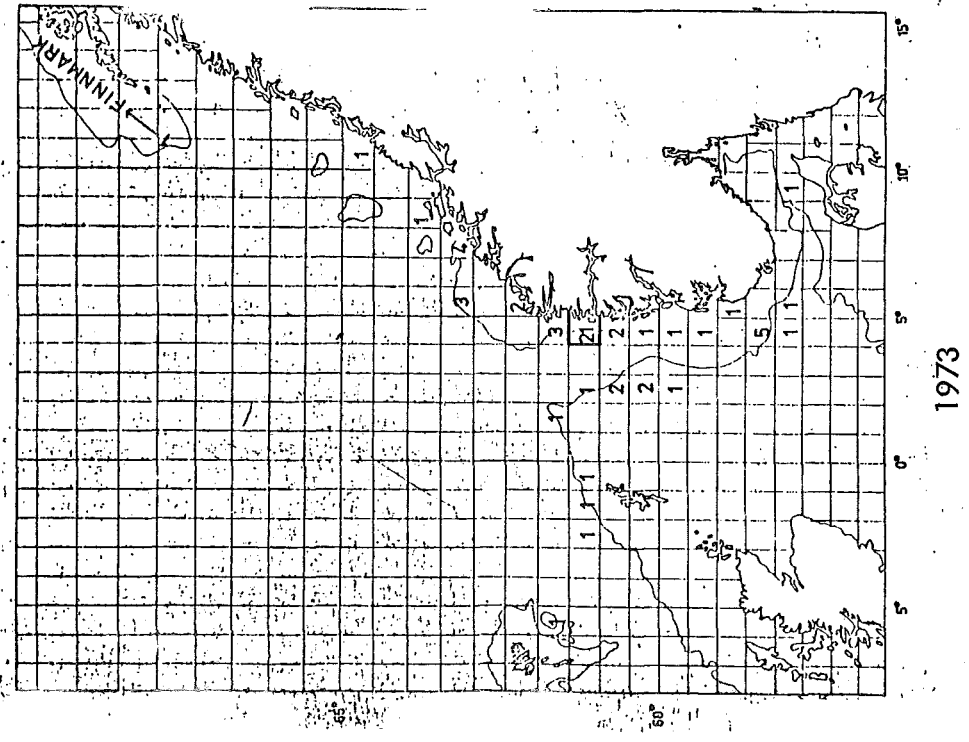
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Fig. 2. Recaptures in successive years of saithe tagged at Espevær, Norway 14 June 1972. (Tagging locality indicated by thick border-line).

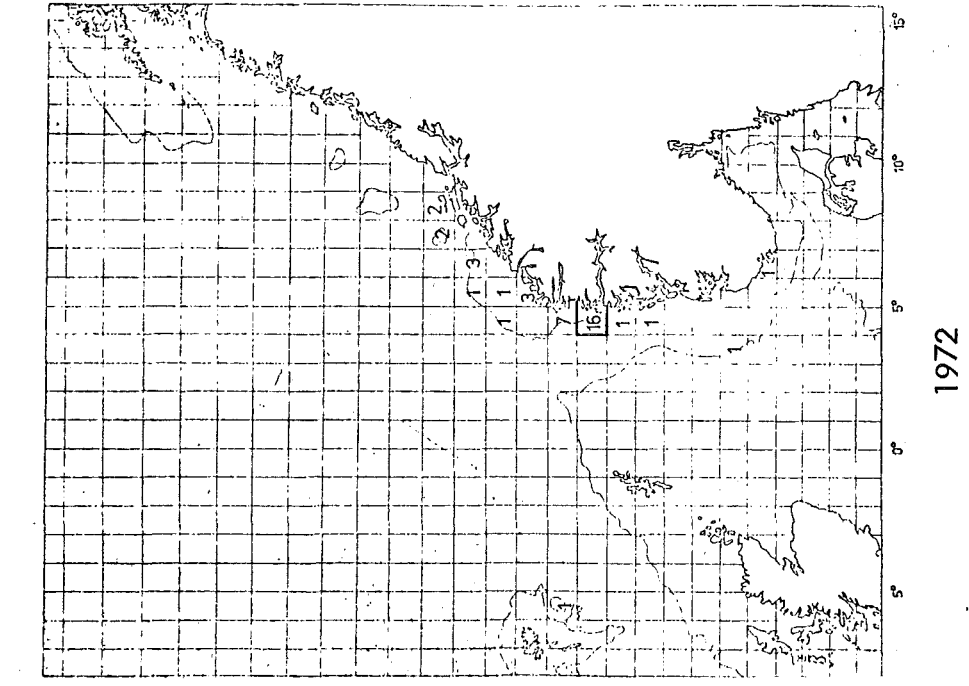




1974



1973



1972

Fig. 4. Recaptures in successive years of saithe tagged at Bulandet, Norway 19 June 1972. (Tagging locality indicated by thick border-line).



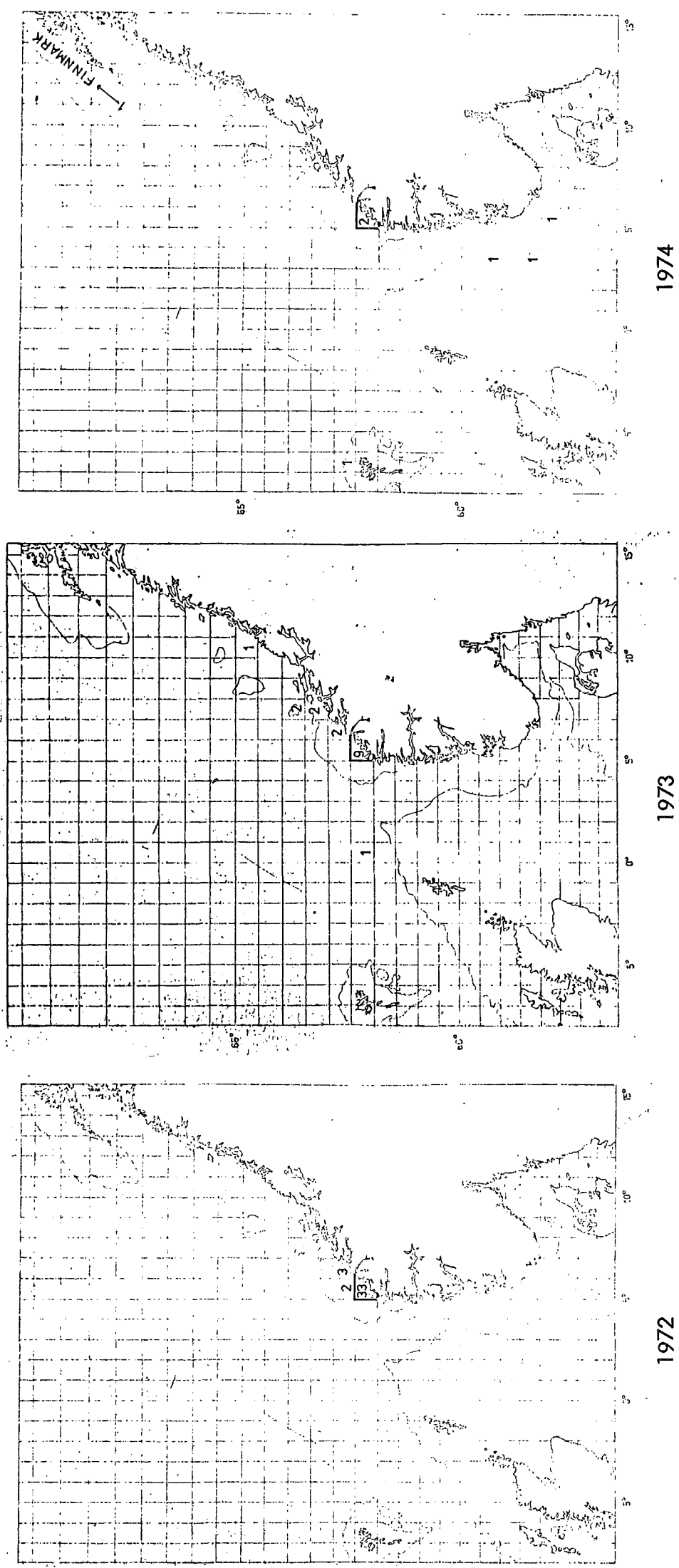


Fig. 5. Recaptures in successive years of saithe tagged at Ålesund, Norway 20 June 1972. (Tagging locality indicated by thick border-line).