

Tagging of Halibut (*Hippoglossus vulgaris* Fleming)  
in Norwegian Waters 1956-1959 and at Bear Island 1958.

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Methods and Material.

Before the war tagging of halibut was carried out by Devold and Thor Iversen on several localities (Devold 1943). In 1956 the halibut taggings were started again in North Norway, and each year since some tagged halibut have been released. A complete record of these experiments is given in Table I.

The fish tagged in January and February were caught with gill nets. Because of the gear selectivity and the difficulties in bringing on board large fish uninjured, practically all matured fish tagged were males except for seven females released in 1956. The halibut tagged at Bear Island, in Hadsselfjord and near Gåsøy were all immature fish.

In all experiments Lea tags were used. The tag was attached to the flesh on the dark side of the fish near the dorsal fin, with double monofilament nylon of 0.50 mm diameter in a similar way as described by Dannevig (1953).

In 1956 a small, yellow plastic flag was attached to the Lea tag to make it more conspicuous; and the same year at Silda each fish was also tagged with a strap tag in the opercular bone.

Discussion.

On the map of Fig. I the tagging areas are indicated by circles of 8 nautical miles radius, and the recoveries made outside these areas are plotted.

It would appear that no large mature halibut tagged on the spawning grounds in anyone area is recaptured outside this area during the spawning time (Nov. -March) in the following years. It is particularly noticed that no fish tagged at Folda has been recaptured during the spawning time at Salten or vice versa, although the distance between these localities is only 30 nautical miles,

As already suggested by Devold (1943) this would indicate that the stock of mature halibut is composed of separate units which do not intermingle on the spawning grounds. However, the two recaptures (No 19952 and No 29099) in October in Finnmark at considerable distances east of the tagging area, might indicate that this is not strictly true; and this important question should therefore be more carefully studied.

The material also show that after spawning the halibut migrate off shore, but some fish may remain in the fjords and coastal waters during the summer.

The taggings of young immature halibut have shown that these fish, which grow up in the fjords and coastal waters are not stationary; and may migrate over great distances along the coast.

Some of the returned Lea tags with flag have been examined. The plastic flags were found to be more or less destroyed, and in some cases the flag was missing altogether. The usefulness of this method to make the tags more conspicuous is therefore doubtful.

From the fish tagged in 1956 with both Lea and strap tags, more Lea tags than strap tags were returned in 1956 and 1957, but in the third and fourth year of liberation only strap tags have been returned. Thus for the first two years the Lea tag appears to be more effective. However, the Lea tag will probably not remain fastened to the fish for any longer period of time when attached in the way mentioned above.

#### References:

- Dannevig, G. 1953: Tagging experiments on cod, Lofoten 1947-1952: Some preliminary results.  
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- Devold, F. 1938: The North Atlantic Halibut and Net Fishing  
Rep. Norweg. Fish. Invest. 5 (6) : 1-47.
- Devold, F. 1943: Notes on Halibut (*Hippoglossus vulgaris* Fleming).  
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TABLE I

Record of tagging experiments.

| Years and months | Locality     | N   | Gear         | Size range<br>cm | Recaptures |      |      |      |
|------------------|--------------|-----|--------------|------------------|------------|------|------|------|
|                  |              |     |              |                  | 1956       | 1957 | 1958 | 1959 |
| 1956             |              |     |              |                  |            |      |      |      |
| Jan. -Feb.       | Near Silda   | 114 | Gill-net     | 90-210           | 8          | 8    | 4    | 1    |
| April-May        | Near Gåsøy   | 50  | Long lines   | 50-110           | 7          | 4    | -    | -    |
| 1957             |              |     |              |                  |            |      |      |      |
| Jan. -Feb.       | Near Silda   | 145 | Gill-net     | 70-135           | -          | 8    | -    | -    |
| "                | Folda-Salten | 55  | "            | "                | -          | 9    | 6    | -    |
| 1958             |              |     |              |                  |            |      |      |      |
| Jan. -Feb.       | Near Silda   | 44  | "            | 90-150           | -          | -    | 3    | 1    |
| April-Dec.       | Hadsselfjord | 54  | Shrimp trawl | 25- 55           | -          | -    | -    | 3    |
| Sept. -Dec.      | Bear Island  | 30  | Long lines   | 50- 90           | -          | -    | 1    | 1    |
| 1959             |              |     |              |                  |            |      |      |      |
| Jan. -Feb.       | Near Silda   | 136 | Gill-net     | 50-135           | -          | -    | -    | 7    |

TABLE II

Records of halibut recaptured, tagged near Silda  
 $70^{\circ}23'N-22^{\circ}00'E$ , 1956, total number tagged: 114.

| Tag no                     | Date marked | Size cm | Locality of recovery            | Date of recovery | Final size | Gear used | Nat. of vessel |
|----------------------------|-------------|---------|---------------------------------|------------------|------------|-----------|----------------|
| N-17-A 406<br>N-Lea 19906) | 12/1        | 121     | Near Silda                      | 28/1-57          | -          | G. N.     | N.             |
| N-Lea 19917                | 14/1        | 126     | " "                             | 4/2-57           | -          | G. N.     | N. x)          |
| N-17-A 424<br>N-Lea 19924) | "           | 121     | $72^{\circ}23'N-17^{\circ}20'E$ | 13/5-56          | 123        | O. T.     | G.             |
| N-17-A-425<br>N-Lea 19925) | "           | 124     | Near Silda                      | 25/1-57          | -          | G. N.     | N.             |
| N-17-A 446<br>N-Lea 19946) | 18/1        | 127     | $70^{\circ}35'N-21^{\circ}40'E$ | 2/3-56           | 127        | L. Ins.   | N.             |
| N-17-A 452<br>N-Lea 19952) | 20/1        | 114     | $70^{\circ}53'N-25^{\circ}16'E$ | 16/10-56         | -          | L. Ins.   | N.             |
| N-17-A 454<br>N-Lea 19954) | "           | 121     | Near Silda                      | 28/1-56          | -          | L. Ins.   | N.             |
| N-Lea 19962                | "           | 120     | " "                             | 26/2-57          | -          | G. N.     | N.             |
| N-Lea 19974                | 25/1        | 130     | " "                             | 28/1-57          | -          | G. N.     | N.             |
| N-17-A 476<br>N-Lea 19976) | "           | 127     | " "                             | 17/1-57          | -          | G. N.     | N.             |
| N-Lea 19984                | "           | 119     | " "                             | 9/2-57           | -          | G. N.     | N. x)          |
| N-Lea 19986                | "           | 129     | $72^{\circ}50'N-16^{\circ}30'E$ | 3/5-56           | -          | O. T.     | G.             |
| N-17-A 488<br>N-Lea 19988) | "           | 116     | $72^{\circ}48'N-17^{\circ}31'E$ | 22/4-56          | -          | O. T.     | R.             |
| N-Lea 19996                | 3/2         | 131     | $69^{\circ}27'N-34^{\circ}15'E$ | Aug. 56          | -          | O. T.     | R.             |
| N-17-A 418                 | 14/1        | 131     | Near Silda                      | 31/12-58         | -          | G. N.     | N.             |
| N-17-A 429                 | "           | 125     | $70^{\circ}15'N-22^{\circ}20'E$ | March 1959       | -          | G. N.     | N.             |
| N-17-A 432                 | 16/1        | 130     | Near Silda                      | Dec. 1958        | -          | G. N.     | N.             |
| N-17-A 433                 | "           | 122     | $70^{\circ}41'N-30^{\circ}40'E$ | 20/4-58          | -          | O. T.     | N.             |
| N-17-A 450                 | 20/1        | 137     | $70^{\circ}32'N-23^{\circ}03'E$ | 4/10-57          | -          | L. Ins.   | N.             |
| N-17-A 475                 | 25/1        | 133     | Near Silda                      | 20/12-56         | -          | G. N.     | N.             |
| N-17-A 492                 | 1/2         | 129     | " "                             | 18/2-58          | 132        | G. N.     | N.             |

Tagging 1958, total number tagged: 44.

|             |      |     |                                 |         |     |         |    |
|-------------|------|-----|---------------------------------|---------|-----|---------|----|
| N-Lea 29056 | 16/1 | 97  | $70^{\circ}38'N-21^{\circ}48'E$ | 2/5-58  | -   | L. Ins. | N. |
| N-Lea 29063 | 28/1 | 80  | $71^{\circ}08'N-23^{\circ}53'E$ | 24/5-58 | -   | L. Ins. | N. |
| N-Lea 29091 | 17/2 | 123 | Near Silda                      | 12/3-59 | -   | G. N.   | N. |
| N-Lea 29099 | 20/2 | 131 | Laksefj. -Finnmark              | 1/10-58 | 137 | L. Ins. | N. |

TABLE II cont.

Tagging 1959, total number tagged: 136

| Tag no      | Date marked | Size cm | Locality of recovery | Date of recovery | Final size | Gear used | Nat. of vessel |
|-------------|-------------|---------|----------------------|------------------|------------|-----------|----------------|
| N-Lea 29470 | 24/1        | 125     | 70°06'N-23°05'E ?    | " ?              | -          | ?         | N.             |
| N-Lea 29477 | 26/1        | 80      | 70°47'N-21°55'E      | 27/4-59          | 81         | O. T.     | N.             |
| N-Lea 29483 | 29/1        | 90      | 70°34'N-21°44'E      | 14/4-59          | -          | G. N.     | N.             |
| N-Lea 29499 | "           | 75      | Near Silda           | 11/3-59          | 76         | G. N.     | N.             |
| N-Lea 48840 | 31/1        | 73      | 70°44'N-22°23'E      | 4/6-59           | 74         | L. Ins.   | N.             |
| N-Lea 48444 | "           | 76      | 70°23'N-19°35'E      | 6/3-59           | 76         | G. N.     | N.             |
| N-Lea 48464 | "           | 135     | Stjernfoten-Silda    | "                | -          | G. N.     | N.             |

Records of halibut recaptured, tagged at Folda  
67°35'N-14°56'E, 1957, total number tagged: 42.

|             |      |     |                 |          |     |         |    |
|-------------|------|-----|-----------------|----------|-----|---------|----|
| N-Lea 29002 | 10/1 | 127 | 67°26'N-13°55'E | 12/7-58  | -   | L. Ins. | N. |
| N-Lea 29009 | 16/1 | 116 | Folda           | Dec. 57  | -   | G. N.   | N. |
| N-Lea 29014 | 19/1 | 132 | Folda           | 20/11-58 | -   | G. N.   | N. |
| N-Lea 29022 | 28/1 | 111 | Folda           | 7/2-57   | -   | G. N.   | N. |
| N-Lea 29028 | 30/1 | 130 | Folda           | 4/2-57   | -   | G. N.   | N. |
| N-Lea 29029 | "    | 121 | 67°33'N-15°40'E | 19/12-57 | -   | L. Lns. | N. |
| N-Lea 29031 | 31/1 | 128 | Folda           | 12/12-57 | -   | G. N.   | N. |
| N-Lea 29032 | "    | 117 | 68°35'N-14°52'E | 12/3-57  | -   | -       | N. |
| N-Lea 29048 | 20/2 | 114 | Folda           | 3/12-58  | 120 | G. N.   | N. |
| N-Lea 29051 | "    | 107 | Folda           | 3/11-58  | 109 | G. N.   | N. |
| N-Lea 29054 | "    | 128 | Folda           | 22/2-57  | -   | -       | N. |

Records of halibut recaptured, tagged at Salten  
67°13'N-14°00'E, 1957, total number tagged: 13

|             |      |     |                 |          |     |         |    |
|-------------|------|-----|-----------------|----------|-----|---------|----|
| N-Lea 29038 | 11/2 | 127 | Salten          | 13/3-57  | -   | G. N.   | N. |
| N-Lea 29042 | "    | 112 | Salten          | 20/11-58 | -   | G. N.   | N. |
| N-Lea 29045 | "    | 95  | 67°50'N-13°45'E | 13/3-57  | -   | L. Ins. | N. |
| N-Lea 29046 | 19/2 | 108 | 65°20'N-11°53'E | 24/7-58  | 108 | -       | N. |

TABLE II cont.

Records of halibut recaptured, tagged near Gåsøy  
 $71^{\circ}04'N-24^{\circ}25'E$ , 1956, total number tagged: 50

| Tag no      | Date marked | Size cm | Locality of recovery            | Date of recovery | Final size | Gear used | Nat. of vessel |
|-------------|-------------|---------|---------------------------------|------------------|------------|-----------|----------------|
| N-Lea 19803 | 26/4        | 67      | $71^{\circ}06'N-26^{\circ}10'E$ | 18/5-56          | 69         | L. lns.   | N.             |
| N-Lea 19802 | 27/4        | 66      | Gåsøy-Hjelmsøy                  | 9/5-57           | -          | L. lns.   | N.             |
| N-Lea 19806 | 27/4        | 63      | $71^{\circ}24'N-24^{\circ}40'E$ | 5/12-56          | 65         | L. lns.   | N.             |
| N-Lea 19809 | 27/4        | 61      | $71^{\circ}17'N-24^{\circ}43'E$ | 5/6-56           | 63         | L. lns.   | N.             |
| N-Lea 19820 | 1/5         | 64      | $71^{\circ}30'N-24^{\circ}43'E$ | 23/11-56         | 80         | -         | N.             |
| N-Lea 19828 | 3/5         | 64      | $70^{\circ}58'N-25^{\circ}58'E$ | 22/10-56         | 67         | -         | N.             |
| N-Lea 19836 | 8/5         | 67      | $71^{\circ}05'N-26^{\circ}14'E$ | 15/5-57          | -          | D.S.      | N.             |
| N-Lea 19839 | 8/5         | 59      | $71^{\circ}28'N-24^{\circ}38'E$ | 4/12-56          | 63         | L. lns.   | N.             |
| N-Lea 19847 | May         | -       | $70^{\circ}35'N-31^{\circ}00'E$ | 3/6-57           | 75         | O.T.      | -              |
| N-Lea 19850 | May         | -       | $71^{\circ}15'N-25^{\circ}02'E$ | 17/11-56         | 63         | L. lns.   | N.             |
| N-Lea 19853 | May         | -       | $70^{\circ}28'N-31^{\circ}06'E$ | 7/6-57           | 75         | L. lns.   | N.             |

Records of halibut recaptured, tagged in Hadsselfjord  
 $68^{\circ}28'N-14^{\circ}42'E$ , 1958, total number tagged: 54.

|             |      |       |                                 |         |       |      |    |
|-------------|------|-------|---------------------------------|---------|-------|------|----|
| N-Lea 29221 | 24/4 | 41    | $62^{\circ}55'N-06^{\circ}44'E$ | 16/3-59 | 53, 4 | O.T. | N. |
| N-Lea 29234 | 10/5 | 42    | $69^{\circ}05'N-14^{\circ}45'E$ | 27/4-59 | -     | -    | N. |
| N-Lea 29240 | 27/5 | 46, 5 | $69^{\circ}55'N-06^{\circ}49'E$ | 8/4-59  | 55    | G.N. | N. |

Records of halibut recaptured, tagged at Bear Island,  
 1958, total number tagged: 30.

Liberated at  $74^{\circ}01'N-18^{\circ}30'E$

|             |      |    |                |          |   |   |    |
|-------------|------|----|----------------|----------|---|---|----|
| N-Lea 29314 | 6/11 | 66 | SW Bear Island | 12/11-58 | - | - | E. |
|-------------|------|----|----------------|----------|---|---|----|

Liberated at  $74^{\circ}14'N-16^{\circ}12'E$

|             |       |    |                                 |         |   |   |   |
|-------------|-------|----|---------------------------------|---------|---|---|---|
| N-Lea 29321 | 18/11 | 55 | $71^{\circ}14'N-27^{\circ}45'E$ | 21/3-59 | - | - | - |
|-------------|-------|----|---------------------------------|---------|---|---|---|

Abbreviations: G.N. = gill net                      E = English                      x) The fish is liberated  
 L. lns. = long line                              G = German                      again.  
 O.T. = trawl                                      N = Norwegian  
 D.S. = Danish seine                            R = Russian

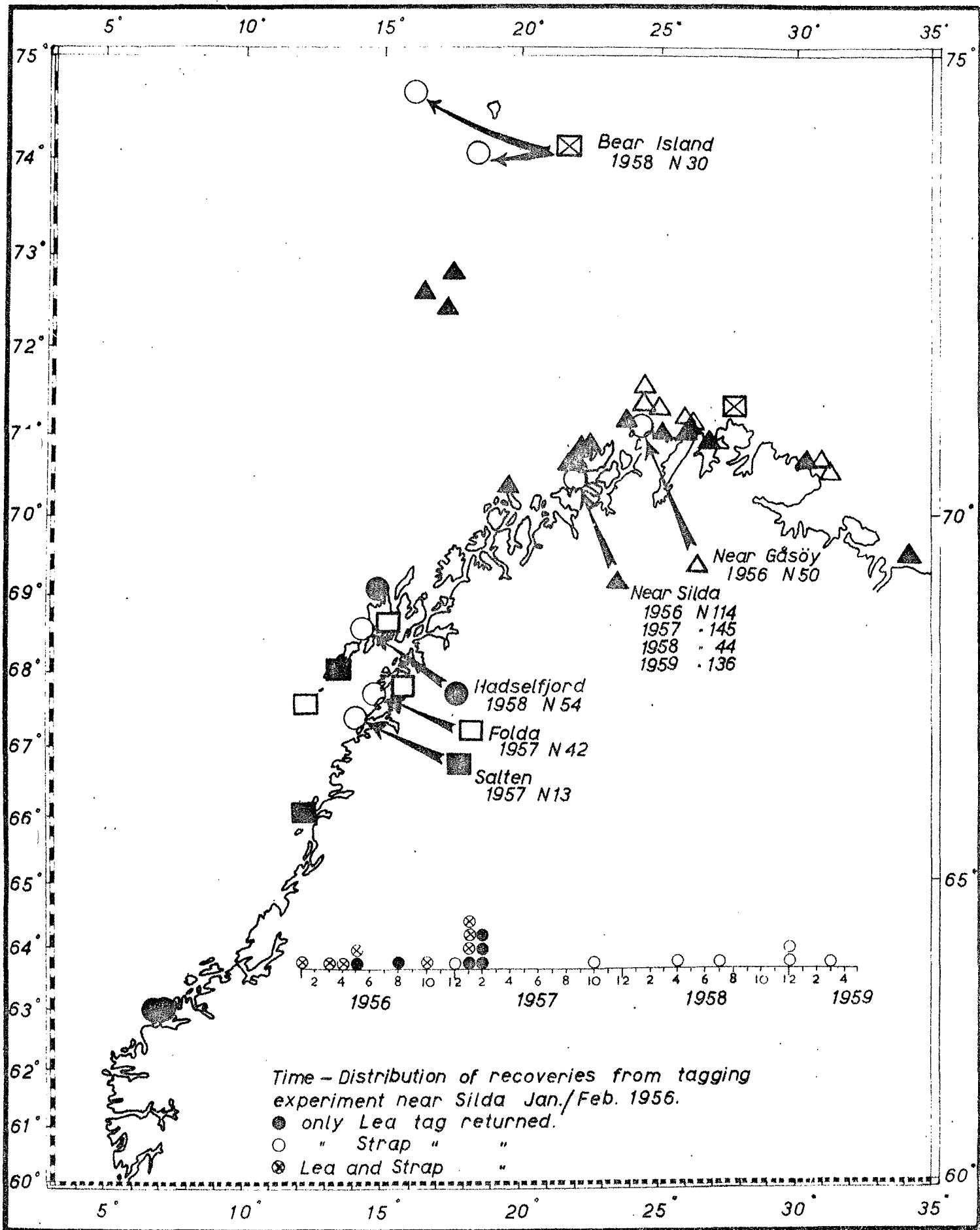


Fig. I. Norwegian tagging of halibut.