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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1987 RESEARCH VESSEL PROGRAMME

REPORT CHARTERED COMMERCIAL VESSELS : SILVER HARVESTER 1/87

STAFF:

J Casey
S Warnes

DURATION:

Left Lowestoft Sunday 1st February 1987
Arrived Lowestoft Monday 9th February 1987
(All times are GMT)

LOCATION:

Western Channel

AIMS:

1. To undertake mesh selection experiments for mackerel using experimental 80mm and 70mm square mesh-cod-end pelagic trawls.

2. To collect and preserve gonads from mature mackerel for fecundity studies (M Greer Walker).

3. To collect specimens of mackerel for use in a tagging demonstration (G Howlett).

NARRATIVE

Staff and equipment travelled to Falmouth by road on Sunday 1st February, joining SILVER HARVESTER at 0830h on Monday 2nd. All gear was stowed and rigged by the time SILVER HARVESTER put to sea at 1830h. A course was set for the area 30 miles ESE of Start Point, where catches of mackerel had been taken in the previous 48 hrs and where 8 Scottish purse seine vessels were still working. Searching was carried out during the steam to the area and continued until 0355h on Tuesday 3rd Feb when the trawl was shot for the first time. No further marks were found until 1800h on Tuesday 3rd Feb, when a second haul was made in the same general area as the first. Sea conditions were good although visibility was poor. Searching resumed at 2000h and SILVER HARVESTER headed eastwards to the area approximately 18 miles south of Portland Bill where the Scottish fleet was now working. Two further hauls were made in this vicinity and at 2000h on Wed 4th Feb, a course was set for Falmouth to land the catch and to pick up a second experimental codend from Truro railway station. SILVER HARVESTER docked in Falmouth at [illegible] Thursday 5th February. 30 tonnes of mackerel were landed to Cornish [illegible] (Shipphams) and the second experimental codend was collected from Truro.

SILVER HARVESTER put to sea in deteriorating weather conditions at 1430hrs on 5th February and a course was set for the area 20 miles south of Portland Bill, searching on the way. Conditions continued to deteriorate with the

arrival of a SW gale force 8. Two large mackerel concentrations were located at 0930h on Friday 6th Feb. Conditions at this time were too poor to shoot the trawl and SILVER HARVESTER dodged in the general area until 1830hrs when searching resumed. Good mackerel marks were located at 2100h and four further hauls were made by 0845h on Saturday 7th Feb.

By this time the limitations of the gear under test had been realised and with a further adverse weather forecast it was clear that any further fishing would be wasteful and uneconomic. SILVER HARVESTER therefore headed for Falmouth, docking at 1930h on Saturday 7th Feb.

A second landing to Cornish canners of 16 tonnes was made on the morning of Sunday 8th Feb, and the charter was terminated at 1200hrs that day. Staff travelled from Falmouth by road, stopping overnight in Andover, and arriving back at the laboratory at 1415h on monday 9th Feb.

RESULTS:

AIM 1. Two square mesh experimental codends were tested, a 80mm (nominal) mesh and a 70mm (nominal) mesh. Each of the codends was used with a 40mm cover and a 36' - 80mm square mesh extension piece (sleeve) was used to join the codends to the main belly of the trawl. The gears were used with SILVER HARVESTER's usual commercial midwater trawl and all fishing was carried out under commercial conditions. In other words, the skipper was instructed to work as if he were fishing commercially, and the trawl was shot only when dense concentrations of mackerel were located. Four hauls were made using the 80mm codend and cover and three hauls were made using the 70mm codend and cover. A further haul using the 70mm codend was also made but the cover was left open in order to investigate the possible effect of fish retained in the cover preventing further escape of fish from the codend. Approximate fishing positions are shown in Fig 1.

Selection was observed on all hauls using both 70mm and 80mm square mesh codends, although variation in selectivity between hauls was considerable. A large part of this between haul variation could be attributed to the design of the gear. The most obvious problem was concerned with the fact that large quantities of fish retained by the cover, prevented further escape of fish through the codend meshes, thereby reducing the apparent selectivity of the gear at high catch rates. It was also apparent that the overall dimensions of the codend were too small for use in conjunction with SILVER HARVESTER's commercial trawl and that the size of the cover, at 1.5 times the length and width of the codend was also too small for the size of the catches taken. Nevertheless, the experiment produced encouraging results which are sufficient to justify a further experiment adopting an alternative approach or using an improved gear design.

AIM 2. Samples of gonads for fecundity studies were collected. Conditions on board were not suitable for dissection and working with formalin.

AIM 3. Approximately 50 mackerel were collected and brought back to the lab for use by Mr Howlett in a tagging demonstration.

J Casey
18 March 1987

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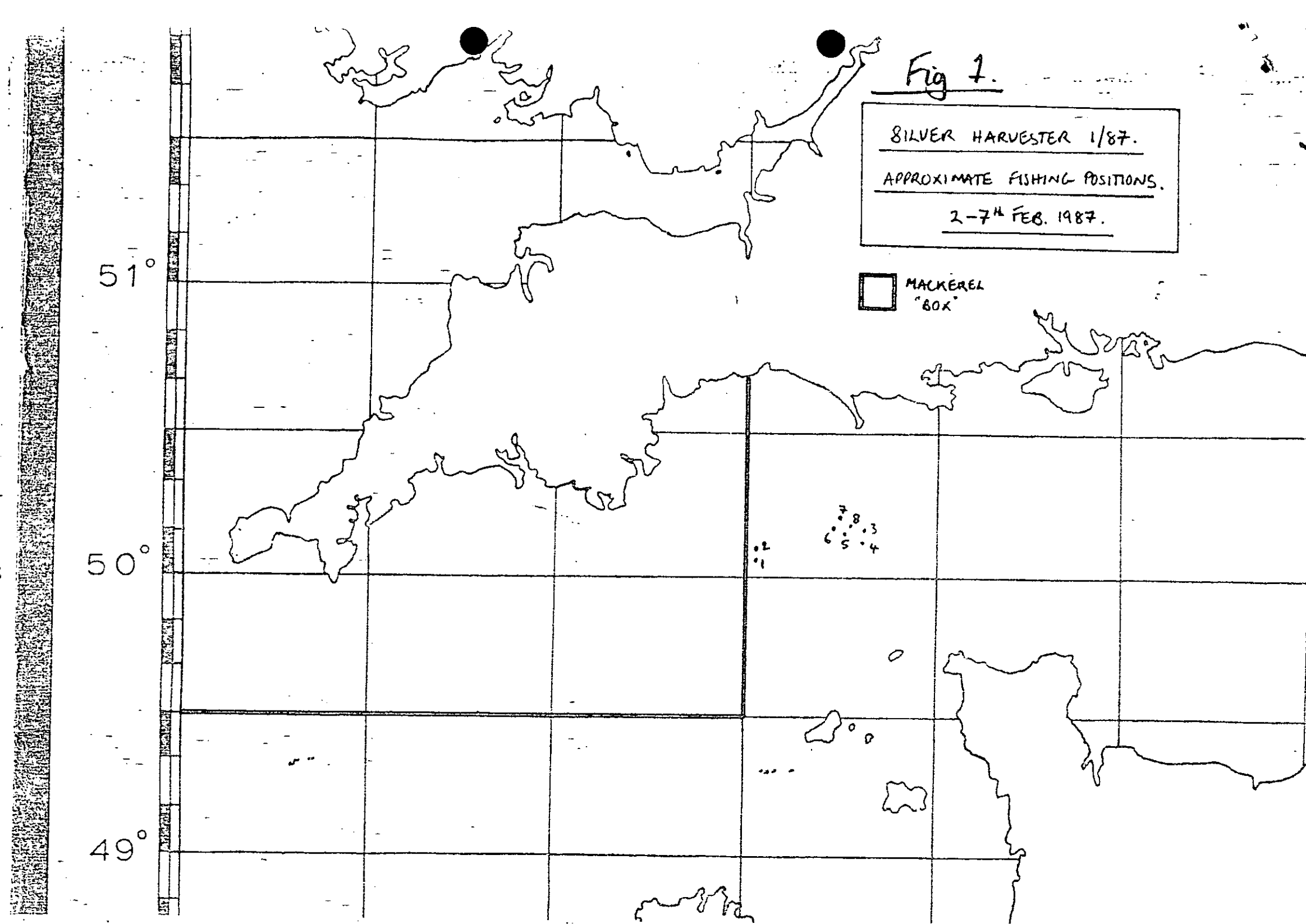
Fig 1.
SILVER HARVESTER 1/87.
APPROXIMATE FISHING POSITIONS.
2-7TH FEB. 1987.
MACKEREL "BOX"
51°
50°
49°
1
2
3
4
5
6
7
8