

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

1977 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 1

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

M G Pawson  
J P Bridger  
A J Burridge  
P M Hudson  
P Witthames  
P O Johnson )  
A Fordham ) Part time  
J W Read )  
J A Swainson )

DURATION

Left Grimsby 1700h 5 January  
Arrived Yarmouth 1415h 25 January

LOCALITY

North Sea, Western Channel and Western Approaches

AIMS

1. To make an acoustic survey of the wintering and pre-spawning concentrations of mackerel in the Western English Channel, and to the edge of the continental shelf, from 47°N to 54°N.
2. To identify echo traces in this area.
3. To service JONSIS 1 and JONSIS 2 current meter stations.
4. To take biological samples of mackerel, blue whiting, anchovy, and any deep-water demersal fish species caught.
5. To land approx 100 live mackerel at Yarmouth.
6. To land 2-5,000 live plaice eggs from Channel spawning areas.

NARRATIVE

CIROLANA sailed at 1700h 5 January and steamed to JONSIS 2 position, where she lay until daylight. The meters were recovered by acoustic release and a new rig laid on position by 1100h. CIROLANA steamed to JONSIS 1 and located the rig acoustically at 1630h. After laying during darkness the rig was quickly recovered by grapnel at 0909h 7 January. An acoustic and grapnel search was made for previously unrecovered rigs, before relaying the station at 1620h.

CIROLANA steamed to Start Point, putting ashore Messrs Read and Swainson at 1010h 8 January by pilot boat at Dover. The inshore mackerel

survey commenced at 0355h 9 January over the area shown in Figure 1. Very good weather enabled a detailed survey to be made by 2050h 12 January. Echo traces were identified by feathering from CIROLANA, or from information obtained from vessels fishing in the area. Gales delayed the interchange of Mr Fordham for Dr Johnson, by pilot boat at Falmouth, until the morning of 14 January, when a BBC cameraman briefly filmed our survey equipment. CIROLANA continued to dodge or lie near Falmouth until 16 January when the offshore survey was commenced south of the Lizard at 1108h.

The grid covered by the offshore survey is shown in Figure 2 together with fishing stations. Thirteen hours were lost on 17 January due to gales, but the survey was completed at 0800h 23 January without further delay, despite winds of force 5-8 for the greater part of this period. CIROLANA then steamed to station 12.9 to feather for mackerel, before leaving for Yarmouth at 1700h. En route a 2m plankton net was streamed at  $49^{\circ}52.5'N$ ;  $03^{\circ}15'W$  for 1 hour, and  $50^{\circ}22.5'N$ ;  $00^{\circ}15'W$  for  $1\frac{1}{2}$  hours in order to catch plaice eggs. CIROLANA arrived at Yarmouth 1415h 25 January.

## RESULTS

Aims 1 & 2 Figures 1 and 2 show the areas acoustically surveyed by CIROLANA, with main grid tracks and extent of main echo traces indicated. The close, inshore grid revealed only one large mackerel aggregation east of Manacles, a moderately dense shoal 6-7 miles long and  $1\frac{1}{2}$ -2 miles wide. The entire commercial fishing effort was concentrated in its vicinity. Echo traces 5-6 miles offshore between Mevagissey and Looe were reported to be mainly pilchard, and small shoals between  $04^{\circ}45'W$  and  $04^{\circ}05'W$ , extending south to  $49^{\circ}54'N$  were of the pilchard/anchovy type. A larger trace southwest of Start Point was probably horse mackerel.

The offshore survey revealed no echo traces comparable to those given by the Manacles mackerel aggregation, and trawl samples consisted of small pouting, a few small mackerel, and myctophids. Unfortunately some echo traces could not be sampled in the weather encountered, but the few fishing boats observed during this survey were French or Portuguese side trawlers.

Aim 3 Although the surface toroid of the rig at JONSIS 2 was missing, the pellets attached to the sub-surface buoy were located following acoustic determination of the rig's position. The rig at JONSIS 1 had no surface indication and was detected acoustically 2-3 miles N of its laid position. The toroid was missing, and the top meter was superficially damaged and tangled with the sub-surface buoy when recovered. New rigs were relaid at both stations. An unsuccessful search for previously unrecovered rigs at JONSIS 1 was terminated after 6 hours, in view of the large amount of trawling activity in the area.

Aim 4 Muscle samples of mackerel (16-45cm) and anchovy (11-18cm) were taken from trawl and feather catches, for the investigation of the effect of ageing on myofibrillar ATPase. Otoliths were collected from all fish sampled.

Aim 5 Approximately 150 live mackerel were retained in deck tanks before steaming to Yarmouth where 73 fish were transferred to a lorry.

Aim 6 Attempts to collect live plaice eggs at two spawning foci in the Channel resulted in only 100-150 eggs after  $2\frac{1}{2}$  hours collecting.

M G Pawson  
2 February 1977

SEEN IN DRAFT: T H Finn  
W J Saxby

INITIALLED: AJL

DISTRIBUTION:

Basic List

M G Pawson  
J P Bridger  
A J Burridge  
P M Hudson  
P Witthames  
P O Johnson  
A Fordham  
J W Read  
J A Swainson  
S J Lockwood

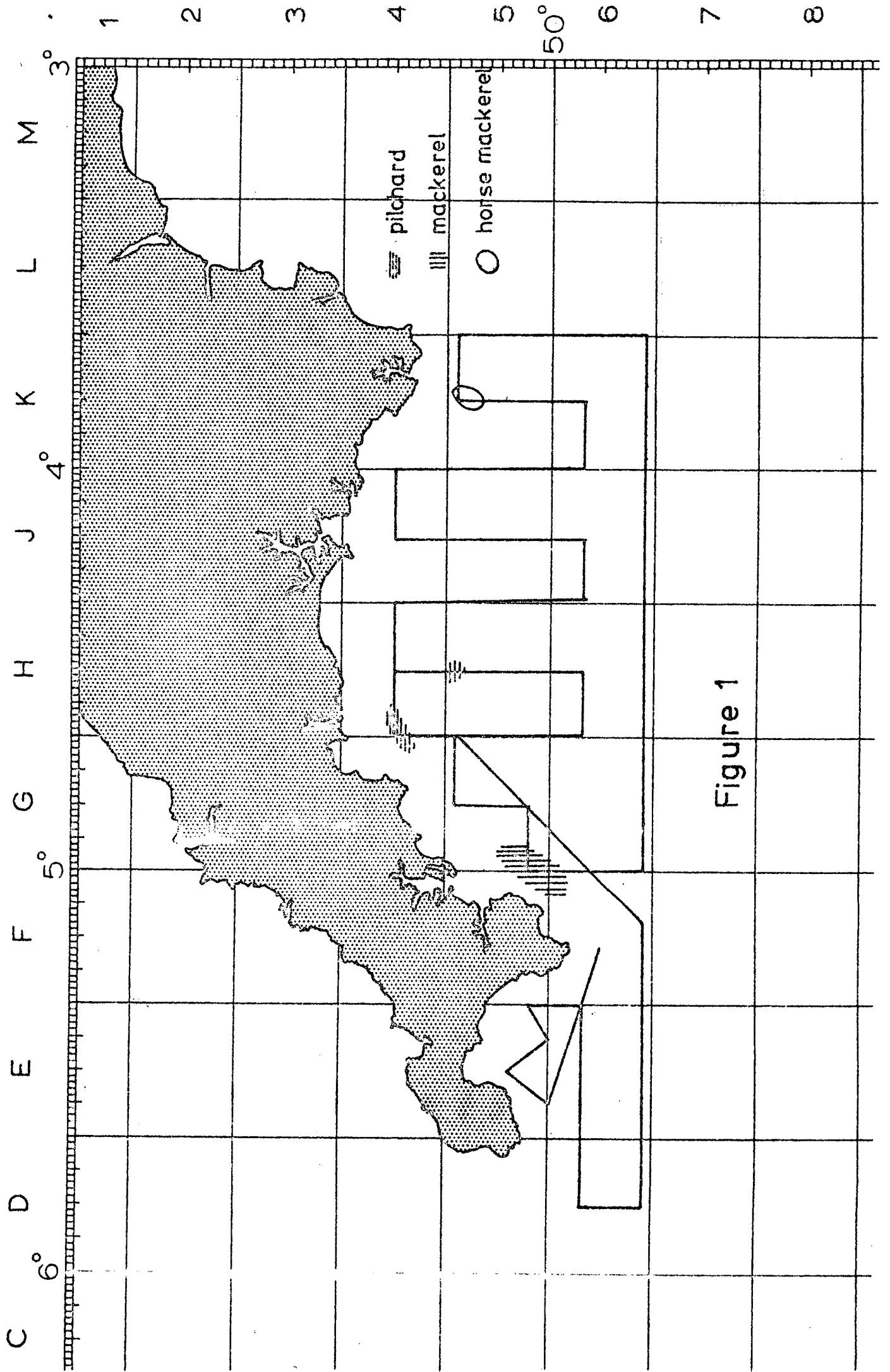


Figure 1

