

R1/6

Not to be cited without prior reference to the Laboratory

FRV *CLUPEA*

8CR89

CRUISE 8/89

REPORT

3-18 July 1989

Personnel

J Gauld	HSO (in charge)
W MacDonald	SO
F Armstrong	SO
Miss J Simpson	ASO

Objectives

1. To carry out an echointegrator survey of the Firth of Clyde.
2. To sample echotraces.
3. To collect samples of herring for fecundity estimations.

Narrative

The scientific staff joined *Clupea* at Buckie at noon on 3 July and the vessel sailed at 1400 for the survey area. En route water samples for radio caesium analysis were collected off Buckie and off Cape Wrath. The acoustic equipment was calibrated on 4 July in Tobermory Bay and on 16 July in Lamlash Bay. The acoustic survey was carried out over 5-17 July except for 11 July when *Clupea* put into Troon for a mid-cruise break. A total of 13 trawl hauls were made, the positioning of the net being determined using *Clupea's* new headline transducer/sounder system. During the cruise measurements were made of fluctuations in the vessel's 240V electrical system. The survey finished at Troon in the evening of 17 July and scientific staff returned to Aberdeen the following day.

Results

Few large fish marks were observed on the echosounder. Echointegrator data were returned to the Laboratory for further analysis. Catches consisted predominantly of either herring, sprats, or a mixture of the two. Large numbers of jellyfish were taken in the southern part of the survey area. In total weight, jellyfish comprised approximately 50% of the total catch. The overall catch composition by weight for fish species, all hauls combined, was:

	Weight	%
Herring	1021 kg	84.9
Sprat	163 kg	13.6
Mackerel	12 kg	1.0
Gadoids	6 kg	0.5

Large numbers of small herring (length range 6.5-10 cm, mode 8.5 cm) were taken in only one haul, in shallow water in the upper reaches of the survey area. Compared with previous years the overall weight and numbers of small herring <20 cm, in all hauls combined, was less than in 1987 and 1988.

	% by weight	% by number
1987	17.5	54.1
1988	0.6	8.5
1989	0.1	7.4

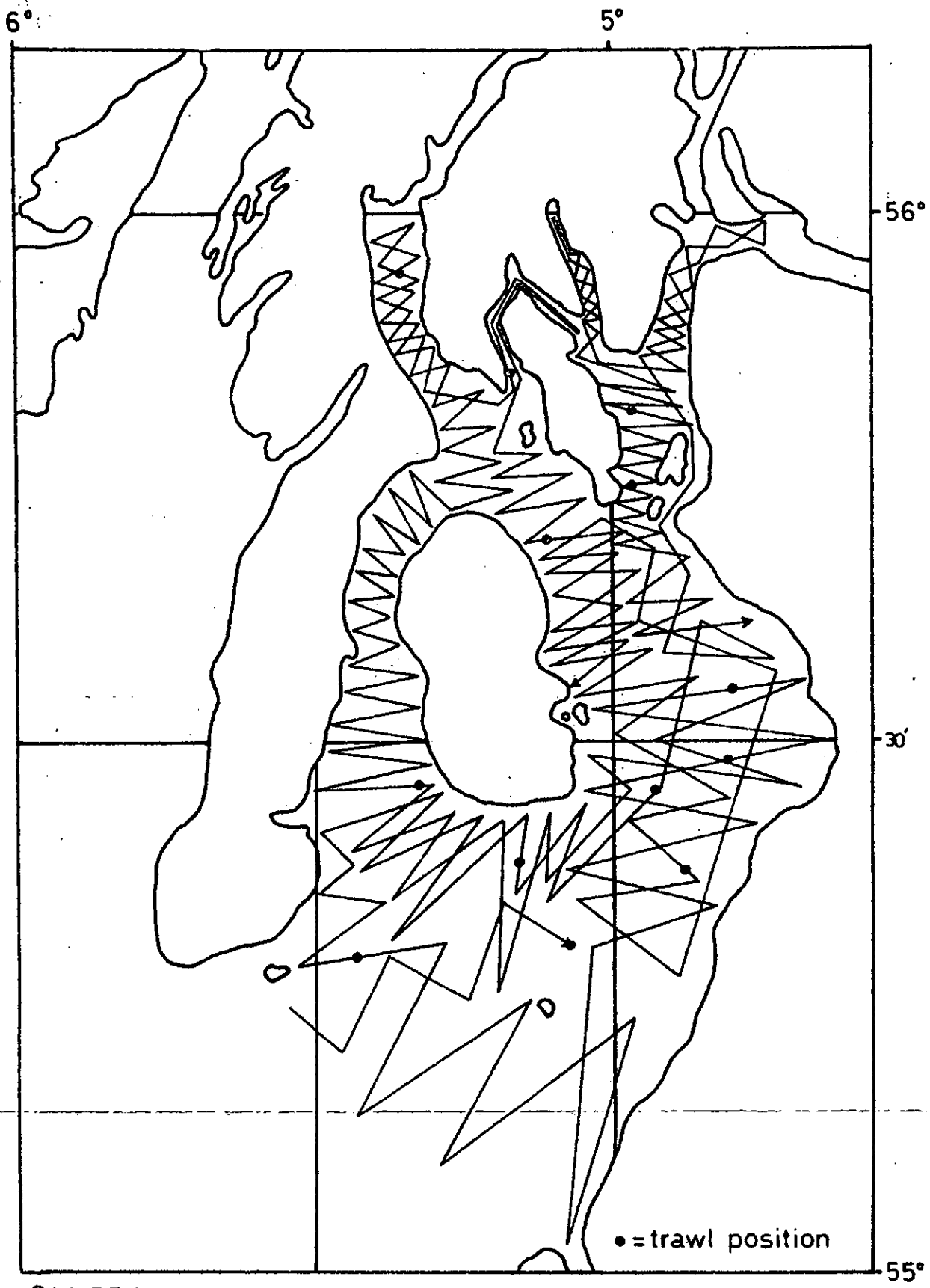
Large herring (>20 cm) were located mainly to the north and east of Arran. The overall modal length of these fish was 27 cm. Amongst those adult fish examined for maturity, gonads were predominantly at the recovering spent or early filling stages (maturity stages VIII or III) and few stage IV gonads were observed.

Sprat distribution was patchy, ranging from 0 (in 4 hauls) to >2000. Length ranges in individual hauls ranged from 7-15.5 cm.

In addition to the above, herring gonads were collected for fecundity determination and samples of gonads preserved for histological analysis. Samples of sprat, mackerel and herring were also preserved for parasitological investigations in the Laboratory.

J A Gauld
15 August 1989

Seen in Draft: W Smith



CLUPEA

3-18.7.89