

R1/6

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FRV *Clupea*

8CR90

Cruise 8/90

REPORT

Period 9-21 July 1990

Personnel

M Walsh	SSO (in charge)
F Armstrong	SO
W S Macdonald	SO
K J Peach	ASO

Objectives

1. To carry out an echointegrator survey of the Firth of Clyde.
2. To sample echotraces.

Narrative

The scientists joined *Clupea* in Ardrossan at 1400 on 9 July and sailed at 1600 for Lamlash Bay to calibrate the acoustic equipment. This was completed the same night and the acoustic survey commenced the following day.

A first survey coverage of the Firth of Clyde was completed by 1900 on 15 July. During this period a total of 10 trawl hauls were made using a PT163 pelagic trawl fitted with a 20 mm mesh codend. The survey track and trawl locations are given in Figure 1.

A second survey commenced the following day. The half landing was taken in Ardrossan on 17 July, the second survey being completed at 1630 on 21 July when *Clupea* docked in Ardrossan. A further 11 trawl hauls were made during the second survey. The cruise track and station positions are given in Figure 2. A second acoustic calibration was carried out off Rothesay on the morning of 20 July.

The scientists departed at 1815 on 21 July.

Results

Pelagic fish echotraces were relatively abundant in the Clyde with the highest concentrations east and north of Arran and in the inner Clyde. There was a marked scarcity of echotraces in Kilbrennan Sound and south of 55°20'N. Echointegration data were brought back to the Laboratory for analysis and preparation of a herring stock estimate.

Twenty-one trawl hauls were made during the course of the survey. The species composition for all hauls combined was:

	Weight (kg)	Percentage
Herring	5,489	93
Sprat	370	6
Mackerel	44	1
Gadoids	13	<1
Total	5,916	100

In comparison to recent previous surveys herring made up a higher percentage of catches and sprat a noticeably lower percentage.

Herring were distributed over a wide area of the Clyde with fish of modal length 26-28 cm predominating throughout. As in the previous 2 years juveniles were scarce. 0-group (modal length 8-11 cm) and 1-group herring (modal size 18-20 cm) were only caught in significant numbers in 4 out of 21 hauls, all in the inner Clyde north of 55°35'N.

Amongst adult herring sampled for maturity, 41% were filling (mainly autumn spawners) while 59% were still in recovering spent condition (spring spawners). This was similar to 1989 but in marked contrast to the preceding 10 years when filling fish had predominated. The maturity data indicate differences in composition between the inner and outer Clyde. In the inner Clyde (north of 55°30') recovering spent fish strongly predominated in 6 out of 8 samples while in the outer Clyde filling fish predominated in all 3 samples.

Martin Walsh
28 August 1990

Seen in draft: George B Calder

Figure 1 Cruise track and trawl positions - Clupea 8/90

9-15 July

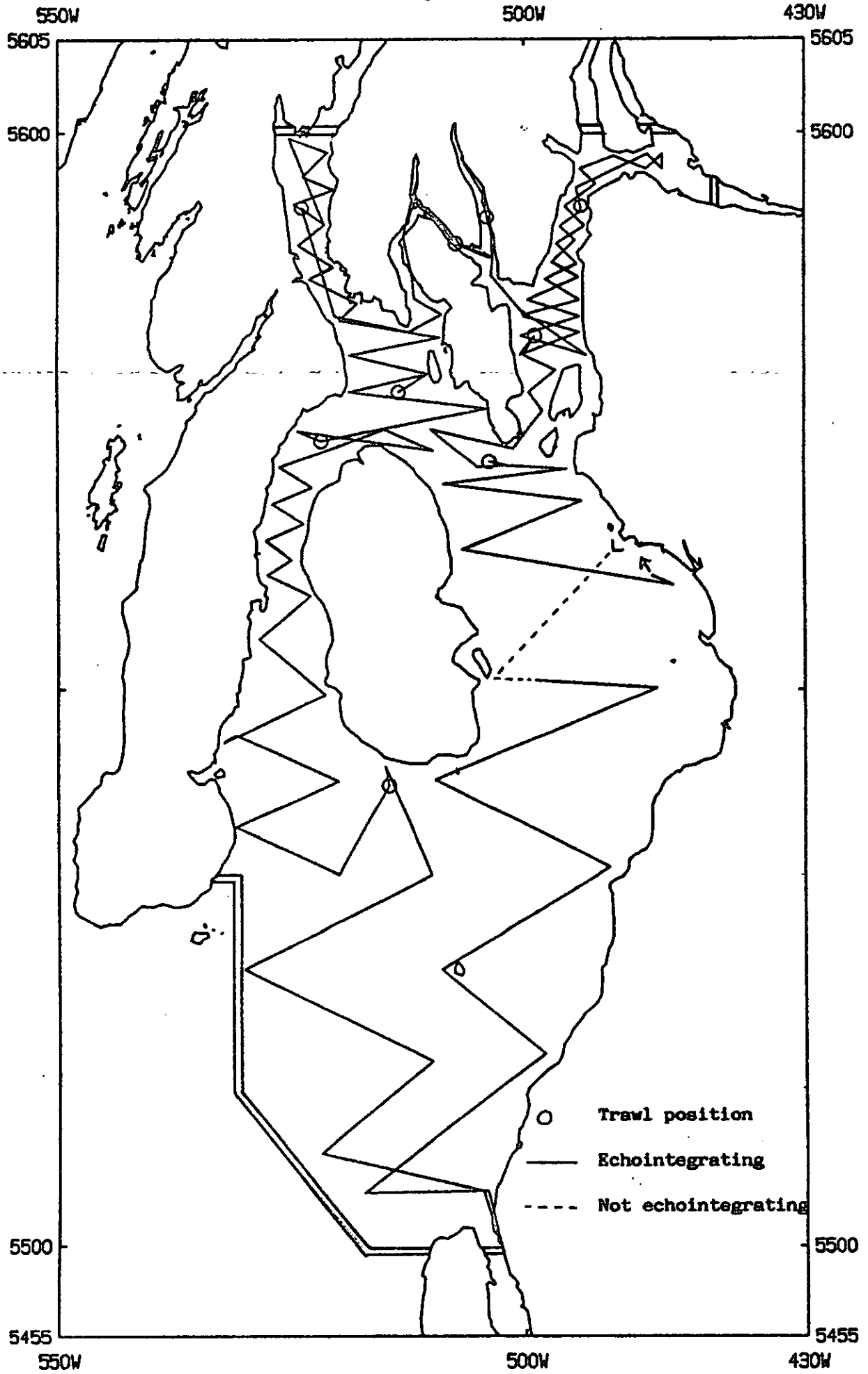


Figure 2 Cruise track and trawl positions - Clupea 8/90
16-21 July

