

R1/3

In Confidence: Not to be quoted without reference to the Laboratory

AR

Charter Cruise Report
Fishing Vessel Valiant FR 259
Skipper: Dennis Sim
Dates: 3 - 15 March 1980

Objectives

1. To survey the sprat population using echo integrator techniques in the Western North Sea between the Moray Firth and the Firth of Forth.
2. To identify echo traces using a pelagic trawl.

General

FV VALIANT sailed from Fraserburgh at 1500 on 3 March, and surveyed the area from Peterhead to the Firth of Forth. Unfortunately adverse weather conditions prevented this survey from being completed. The survey was continued in the Moray Firth, the equipment being calibrated in Burghead Bay on 6 March.

The VALIANT returned to Fraserburgh at 0200 on 7 March.

The second part of the survey started at 2200 on 9 March. The VALIANT sailed south to complete the survey of the area Peterhead to Firth of Forth, returning to the Moray Firth on 13 March to execute a detailed survey of the concentration previously detected north of Fraserburgh. The survey ended at 0100 on 14 March.

Results

Small concentrations of 1-group sprats were located in the area to the north of Bell Rock and in the southern Trench north of Fraserburgh. No sprat concentrations were located in either the upper Moray Firth or the Firth of Forth. The sprat population estimates are summarised on the attached charts.

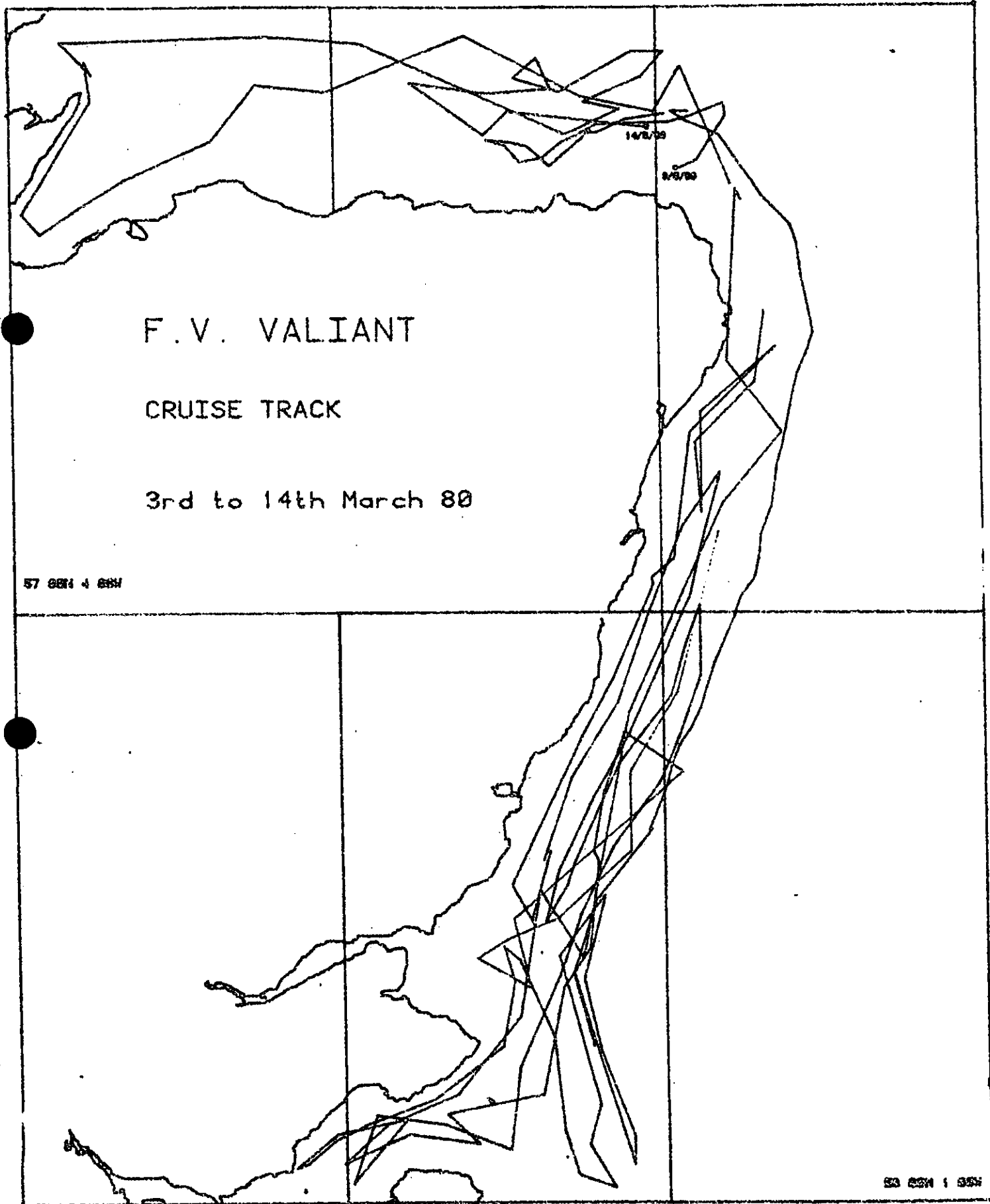
The biomass calculations are based on a table-tennis ball calibration, assuming the table-tennis ball to have a target strength of -42dB. In accordance with standard practice the target strength of sprats is assumed to be -34dB per kilo. A brand new 38kHz Simrad magneto strictive transducer was used on this survey and the resulting constant of 4.6 tonnes per km² for each count per transmission is much smaller than used with previous transducers. However, the appearance of the echo trace and apparent high sensitivity of the EK-38 when using this transducer would confirm that this constant is not unreasonable.

Five midwater trawl hauls were made in positions marked on the attached charts. All hauls resulted in a catch of pure sprats. The size of fish in the catches ranged from a few kilo to 4 boxes. A 10mm codend cover was used.

The sprats in the area north of Bell Rock were predominantly 1 year old with modal length of 7cm approximately 19% of these were 2 years old with a modal length of 9cm. In the area north of Fraserburgh the catches were virtually pure 1 year olds with modal length 4.5cm.

J I Edwards
1 July 1980

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F.V. VALIANT

3rd to 14th March 80
Sprat Concentrations

- ▨ > 1 tonne
- ▩ > 10 tonnes
- > 100 tonnes
- # TRAWL STATIONS

