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FRV EXPLORER

11ERC1

CRUISE 11/81

REPORT:

23 December 1981

OBJECTIVES

1. To survey the stocks of spurdogs (Squalus acanthias) to the north and west of Scotland.
2. To tag spurdogs.
3. To collect data on the feeding and fecundity of spurdogs.

NARRATIVE

Scientific personnel joined FRV 'Explorer' at Leith on the evening of 8 December 1981. Sailing on 9 December was delayed due to frozen harbour lock gates till 1100 hrs; 'Explorer' then proceeded to the Orkney area where work began the following day. Throughout the cruise work on any one day was concentrated within a limited area and passage to the next area was made at night. Superimposed on such a work pattern adverse wind and sea conditions necessitated some time to be spent on passage to more sheltered areas or at anchor. Some 72 hours were lost by such actions, 48 hours being spent sheltering at Dunnet Bay on 20-22 December 1981.

A total of 20 trawl hauls, including 4 foul hauls, were made covering the area from Orkney to the South Minch. Work was directed specifically at the spurdog and data on catch rates, sex ratios, length distributions and feeding were collected for each haul. Whenever present spurdogs in apparently healthy condition were double tagged with Hewitt tags attached by nylon-T-fasteners applied through the bases of the dorsal fins.

Work undertaken in addition to that in spurdogs included the tagging and release of 76 specimens of the underutilised dogfish species (Scyliorhinus caniculus) - at Gruinard Bay on 14 December, 1981, and the collection of various whitefish samples for the Parasitology Section. 2 requests for material by Dr J. Sergeant of NERC Institute of Marine Biochemistry were met by supplying (1) 141 deep frozen spurdog renal glands and (2) 41 live specimens of Scyliorhinus.

The cruise terminated at Aberdeen where 'Explorer' docked on the morning of 23 December.

RESULTS

1. Distribution of Spurdogs

26 valid trawl hauls were made over the survey area. Adverse weather conditions prevented work in the Stanton Bank and Sulisker-North Ronar areas

The greatest densities of spurdogs were recorded off Hoy (46E6) and to the south of the North Minch (44E3). The former area comprised almost entirely mature males; in the latter area, however, immature males and females comprised 82% of the catch. Moderate catches of mature males were taken in the South Minch (42E3, 43E3). Mature female spurdogs (≈ 84 cms) were scarce throughout the survey area a total of only 5 being caught, all in the Hoy area.

A total of 5 recently whelped baby spurdogs (25--29cms) still bearing internal yolk sacs were taken. - 4 off Tiree and 1 off Hoy. It may be assumed that these were taken in areas where whelping had occurred but more evidence is required to ascertain the precise whelping grounds. A summary by statistical rectangle of catch rates and catch composition is given in Table 1 below:

TABLE 1

Stat Rect.	No. of Hauls	Catch Rate Nos/hour	% by Sex		Mean Length (cms)		% ♂s immature	% ♀s immature
			♂	♀	♂	♀		
41E2	1	45	100	-	72.8	-	2	-
41E3	3	58	99	1	72.5	55.0	3	100
42E2	1	131	98	2	74.4	60.7	0	100
43E3	2	114	100	-	75.6	-	1	-
44E3	3	329	62	38	60.5	56.1	71	100
44E4	3	53	82	18	70.9	61.1	8	100
45E4	4	69	72	28	66.3	53.5	30	100
46E5	1	33	98	2	72.4	70.0	0	100
46E6	3	420	98	2	74.1	70.4	1	80
46E7	2	2	-	-	-	-	-	-
47E6	1	68	74	26	72.7	67.5	2	86
47E7	2	53	72	28	69.1	67.1	17	90
	<u>26</u>	<u>133</u>	<u>84</u>	<u>16</u>	<u>70.0</u>	<u>57.2</u>	<u>20</u>	<u>99</u>

2. Tagging

A total of 1475 spurdogs were measured, sexed, double tagged and released in the areas listed below. In addition 76 Scyllirhirus were tagged and released off Gruinard Bay in the North Minch.

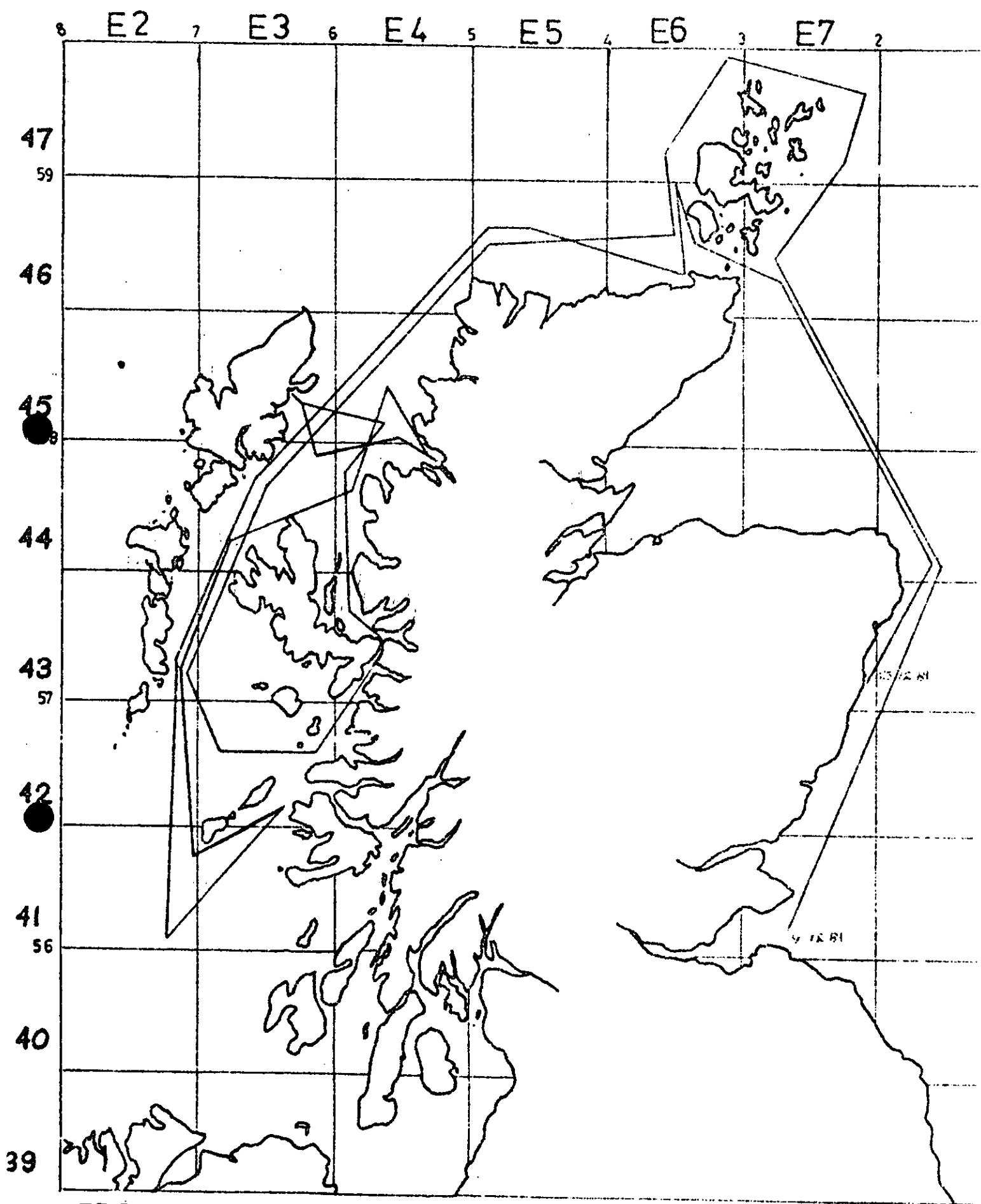
<u>Area</u>	<u>Number of Spurdogs tagged</u>
Orkney	604
North Coast	30
North Minch	411
South Minch	430
	<u>1475</u>

3. Feeding

Of a total of 1059 stomachs examined 583 (55%) were empty. The remaining stomachs contained a variety of prey groups ranging from ctenophores to various fish groups and/or quantities of clear water-like liquid. Only 3 stomachs contained more than 1 type of prey groups, namely a combination of fish and euphausiid species. The stomach of one recently whelped juvenile (28cms) in addition to its internal yolk sac also contained food of a planktonic nature indicating that spurdogs of this age/size are capable of feeding independently.

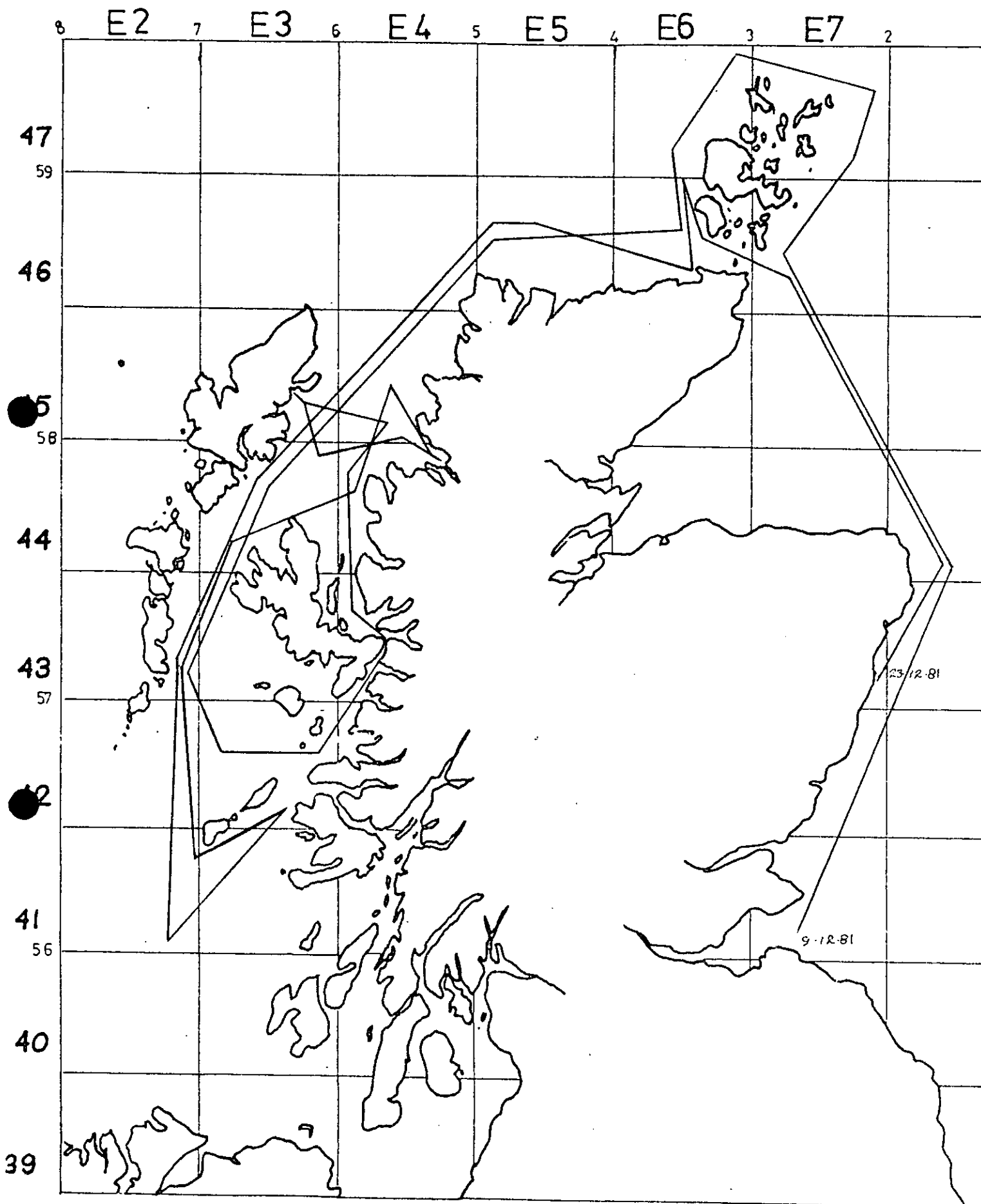
J. GAULD
21 January 1982

Seen in draft: T.H. Henderson



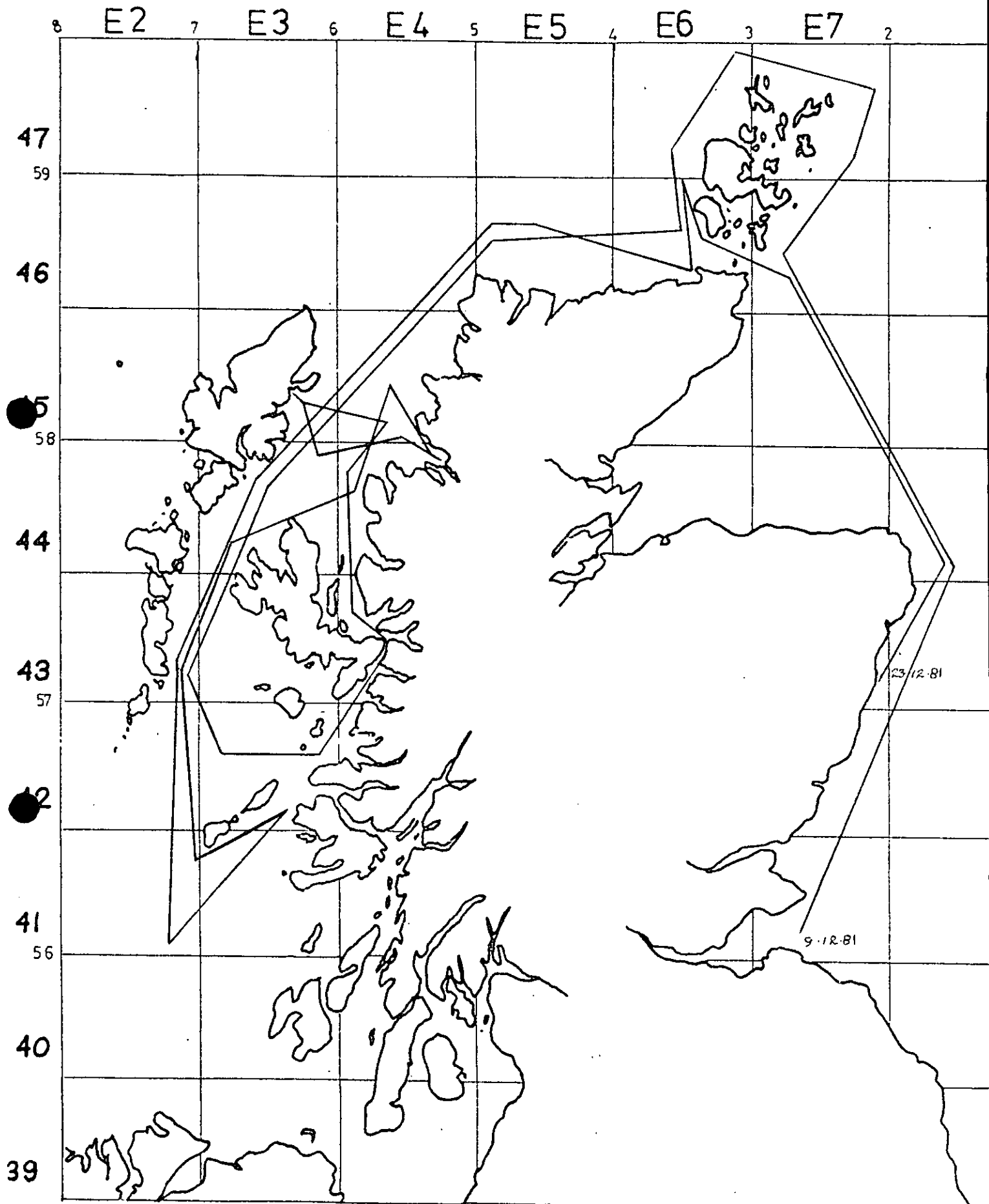
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FRS Explorer 9/12 — 23/12/81

11ER81



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