

Indexed JAR.

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R1/6

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

FRV "Clupea"
Cruise 1/86

1CR86 MB

REPORT
3-21 January 1986

Personnel

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K A Ballantyne
K MacKenzie (Jnr)

Objectives

- 1) To determine trawl catch rates and Nephrops size and sex composition on grounds in the Moray Firth, and the North and South Minches.
- 2) To study variations in Nephrops catch at different times of the day and night.
- 3) To study Nephrops distributions and population parameters in relation to sediment characteristics.

Narrative

Fishing and most scientific gear having been loaded on board before the Christmas holiday, "Clupea" left Buckie at 13.30 hrs on 3 January and made passage to the North Minch. Trawling commenced on the following morning and 6 stations in the Minch were completed by 6 January. Grab samples were collected from 4 stations. On 7 January 8 trawl hauls were made at different times (between 07.00 - 18.00 GMT) on the same ground off Loch Gairloch (57°40.8'N, 05°55.3'W) in 150 m depth. On the following day grab samples were collected in this area and one additional trawl station was sampled. In deteriorating weather conditions no further grab sampling was possible and "Clupea" proceeded to Stornoway for the first half-landing on 9 January.

Storm-force winds prevented any work between 10 - 12 January. By the afternoon of the 12th the wind had moderated and in view of a further gale warning it was decided to utilize the "lull" to return to the Moray Firth. "Clupea" left Stornoway at 20.00 hrs and in rapidly deteriorating weather conditions arrived in Buckie at 1345 hrs on 13 January. In view of the weather prospects the second half-landing was brought forward to 14 January. Westerly gales prevented any work on 15 January but by early the following morning the wind had moderated sufficiently to allow work to start on the west side of the Moray Firth. "Clupea" left Buckie at 0545 hrs and commenced trawling on grounds off Forres where the net was badly torn. A shallow ground off Nairn (57°38.7'N, 03°53.5'W, depth 25 m) was selected for day/night fishing and 8 hauls were made there on 16/17 January. A further 7 Moray Firth stations were trawled and grab samples were collected from each track. "Clupea" returned to Buckie at 15.00 hrs on 20 January. Gear was off-loaded on the following morning and the scientific staff returned to Aberdeen by minibus.

Because of the loss of 4 days through bad weather no work was possible in the South Minch.

Results

a) Trawling. Thirty two hauls were made during the cruise of which half were conducted on 2 grounds at various times in daylight and darkness as part of objective 2). In deep water (150 m) in the North Minch catches of Nephrops varied from 6-55 kg/hr with the highest catch obtained around midday. There was very little diel variation in the mean size of Nephrops in these catches. In shallow water (25 m) in the Moray Firth the catches varied from 2-60 kg/hr with 2 peaks around sunrise and sunset. These catch fluctuations were accompanied by marked variations in the size composition of Nephrops, with the smallest mean size occurring at the times of peak catch ie sunrise and sunset. On other grounds catches of Nephrops varied from 10-80 kg/hr in the North Minch and from 0-86 kg/hr in the Moray Firth. Ovary maturation and the frequency of Nephrops showing pre-moult pleopod stages was determined for samples in most areas.

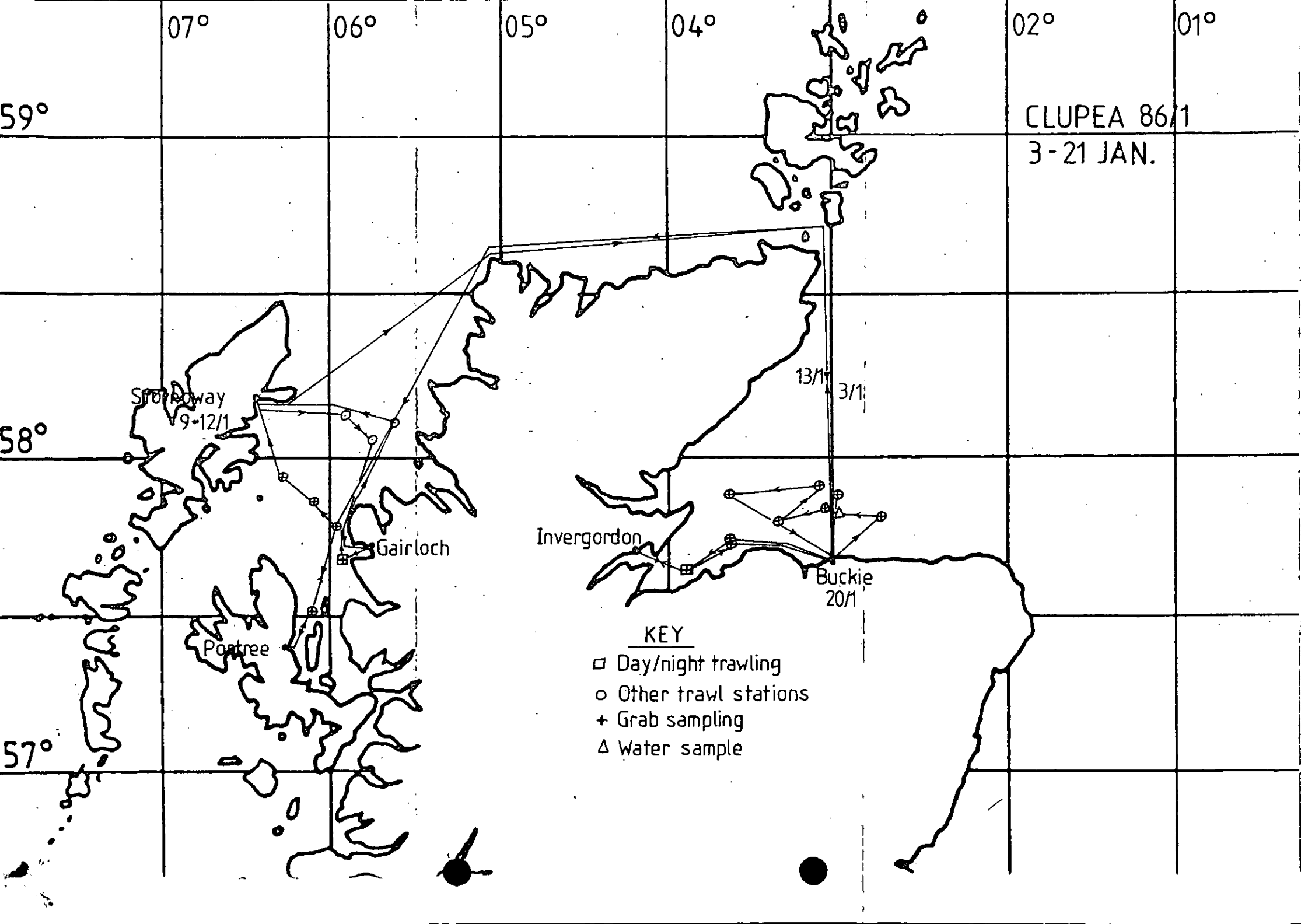
The availability of Nephrops to trawling on the Moray Firth grounds declined markedly towards the end of the cruise.

b) Grab sampling. Twenty eight samples of mud were collected close to the track of 14 trawl stations. Sub-samples of these sediments were posted to a commercial firm for particle size and organic carbon analysis and preserved for faunal analysis.

C J Chapman

18 February 1986

Seen in draft: W Smith



07°

06°

05°

04°

02°

01°

59°

CLUPEA 86/1
3-21 JAN.

58°

Spornaway
9-12/1

13/1
3/1

Gairloch

Invergordon

Buckie
20/1

Portree

KEY

- Day/night trawling
- Other trawl stations
- + Grab sampling
- △ Water sample

57°

