

R1/12

Not to be cited without reference to the FRS Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 0405S

REPORT

11-31 March 2005

Personnel

K J Peach
R Kynoch
I Penny
O Goudie
M Gault Part1
C Sellar Part1
J Mills Part2
M Harding Part2
P Serafino Msc

Out-turn days: 21 RV0502

Fishing Gear: GOV Trawl (BT 137) fitted with ground gear C

Objectives

1. Demersal trawling survey of the grounds off the north and west coasts of Scotland and Irish Sea.
2. To obtain temperature and salinity data from the surface and seabed at each trawling station.
3. Trial and evaluate the NOAA Bottom Contact Sensor.
4. Collect additional biological data in connection with the EU Data Directive 1639/2001.
5. To collect squid tissue for genetic analysis.
6. Collection of various ad hoc preserved tissue samples, live and frozen fish.
7. Identify, quantify and record all Benthic species caught.

Narrative

Scotia sailed from Aberdeen at 1000 on Tuesday 11 March and proceeded to make passage to the first trawling station at position 58.42°N 04.26°W. *Scotia* arrived on station at 0600 on 12 March, a gale force north westerly wind accompanied by a heavy swell prevented any fishing operations until the afternoon of 13 March when fishing commenced in the North Minch. Trawling continued for the next 8 days with 38 hauls being completed prior to the mid trip break. *Scotia* docked in Dublin at 0630 on 22 March for the half landing and to facilitate personnel changes. On sailing from Dublin at 1000 hours on 23 March, *Scotia*

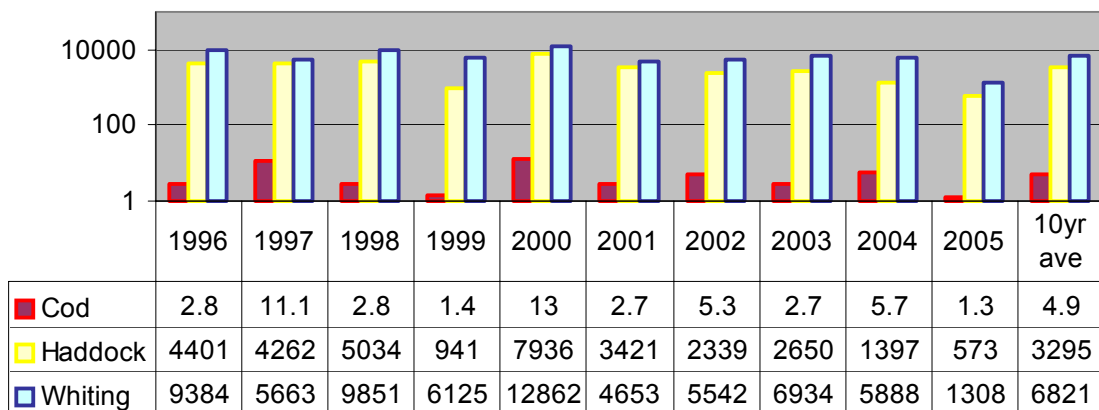
completed the two remaining Irish Sea stations. With all stations in the southern part of the survey area completed, the opportunity was taken to steam 150 miles overnight to the north of Ireland. A further nine hauls were completed in South Minch, Stanton Bank areas prior to fishing operations ceasing at 1630 on 25 March. Whilst deploying the trawl gear a crewman received a serious head wound, the medical advice from shore side was to proceed to Oban and land the injured man by small boat. *Scotia* arrived at the north side of Oban bay at 2045, the small boat launched and the casualty taken ashore. *Scotia* returned to the trawling position 5626N 0621W by 0600 on 26 March and fishing recommenced. Trawling continued in the Tiree, Skerryvore, Stanton Banks, Summer Isles, Butt of Lewis and West Orkney regions until 1430 on 30 March. With the survey completed *Scotia* made way for Aberdeen and docked at 0600hrs on the morning of 31 March.

Results

- All survey stations were completed, with four additional stations on the northern edge of the survey area, two off the north west of Ireland and a further three in the South Minch totalling 67 hauls, of which two were foul due to trawl damage Map 1. Fishing commenced at 0630 each day with all but one haul being carried out in daylight. The herring, mackerel and sprat otoliths collected were aged at sea, demersal otoliths were mounted at sea and returned to the laboratory for age determination. All haul summary data, length frequency and pelagic age data were punched at sea and stored on computer disk.

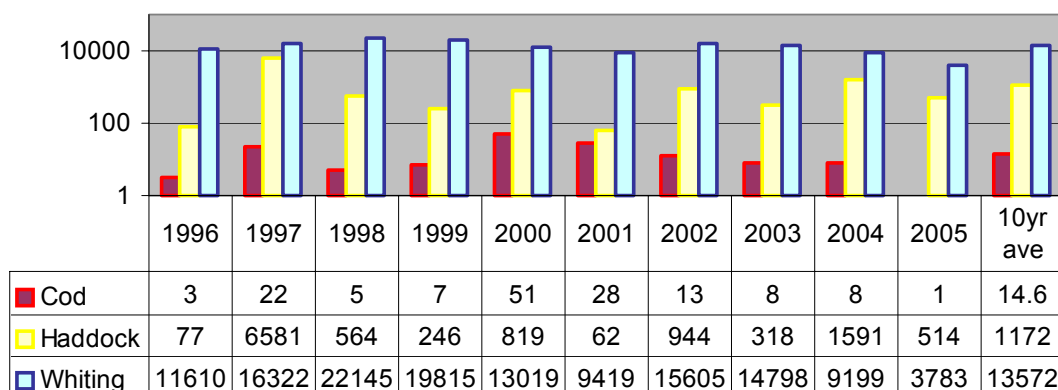
The indices for age-1 cod, haddock and whiting for ICES Area 6A and for the Irish Sea are shown in Figures 1 and 2 respectively.

Fig.1 ICES Area 6A Numbers caught per 10 hours fishing Age 1



Haddock and whiting have by far the lowest values seen in the past 10 years, both species are well short of the 10year average. Cod numbers are well down on last year and the 10 year average with 17 fish being caught in 47 trawls of 30minute duration in Area VIa.

Fig.2 Irish Sea Numbers caught per 10 hours fishing Age 1



A total of 32 cod were caught in the 16 Irish Sea hauls, all fish were mature 1+ fish with no juveniles caught, the cod index is the lowest seen. Haddock catches showed a marked decrease on last year and less than 50% of the 10year average. Whiting catches followed the same trend returning the lowest value for the duration of the time series.

Mackerel was the only species to show a marked improvement in recruitment, with large catches being made all along the western edge of the survey area. A total of 23 tonnes of mackerel was caught in 39 hauls the overwhelming majority of which (90%) were 1year old fish.

As was the case last year Anchovy continues to invade from the south, a total of 63 fish were caught in 13 hauls across the survey area from the Irish Sea to the West of Orkney.

2. The Thermosalinograph was run continuously throughout the survey, a CTD was deployed at every trawling station with surface and seabed water samples collected. Individual CTD casts for each trawling station were stored electronically, all data was processed at sea.
3. The NOAA Bottom Contact Sensor was deployed at every trawling station with mixed results. The Sensor is a dual-axis inclinometer, which records the angle between itself and the seabed as it is towed along. The sensor is attached to a 200mm steel bar positioned in the centre of the bosum bobbin section, whilst on the deck the sensor gives a reading of 33~38°. The recording increment of the sensor was varied from 1, 2 & 4-second intervals, 30 useful data sets were collected with the remaining 37 either becoming fouled up on the gear or due to instrument failure. The data collected will be presented to the FTFBWG in April.
4. Additional biological information on length, total weight, gutted weight, sex and maturity collected in connection with the EU Data Directive 1639/2001 extended programme see Table 1.

Table 1

Species	Number Collected	Species	Numbers Collected
Cod	49	Horse Mackerel	136
Haddock	1029	Ling	7
Whiting	790	Turbot	1
Saithe	36	Brill	1
Norway Pout	147	Black Angler	3
Megrim	57	Cuckoo Ray	22
Angler	31	Thornback Ray	39
Hake	276	Skate	7

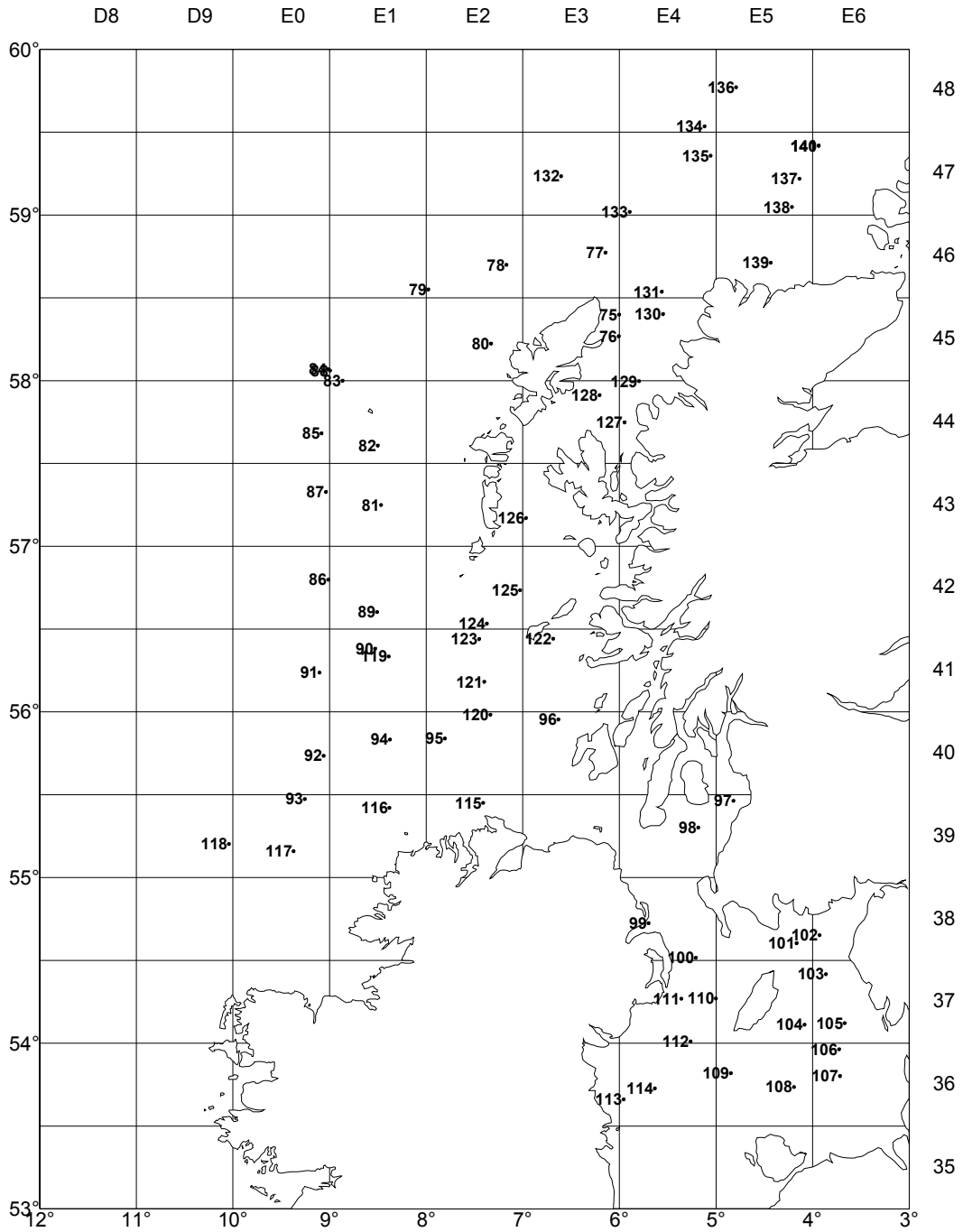
5. Squid

As part of the UOA's Zoology Department's participation in the Eurosquid Research Programme, all squid species caught were frozen and returned to Aberdeen for analysis.

6. Summary of Samples Live, Frozen and Preserved

- 6.1 Skate: (5 species, 10 fish) collected live for Macduff aquarium
 - 6.2 Haddock: 600 gill rakers preserved for genetic analysis FRS
 - 6.3 Saithe: 20 gill rakers preserved for genetic analysis FRS
 - 6.4 Cod: 32 fin clips for genetic analysis Hull University
 - 6.5 Mixed Species: 8 x 10kg boxes for Macduff aquarium fish food
 - 6.6 Mixed Species: 100 specimens frozen Aberdeen University
7. Were possible all benthic species caught were identified and quantified, several species were frozen and returned to Aberdeen for inspection. Benthic data collection on bottom trawl surveys is a fairly new procedure with ongoing staff training in species identification key to its' success.

Map 1. Trawl Positions 2005



Kevin Peach
1 July 2005

Seen in draft: Captain Peter Ramsay