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FRV *Scotia*

Cruise 0801S, Part II

## REPORT

19-23 May 2001

### Personnel

David Bruno	(SIC)
Alistair McIntosh	
Julie King	
Jill Birrell	
Pam Simpson	
Wendy MacDonald	
Gill Packer	
R Bray	Visitor (BMNH)
P Ostergaard (Ms)	Visitor (BMNH)
Jeni Boyle	Visitor (SEPA)

### Fishing Gear

BT 101 (48' Aberdeen trawl) with tickler chain and small mesh cod-end.

### Objectives

To perform a check monitoring fish disease survey of sewage sludge disposal grounds off the Firth of Forth, a distant reference area (east of Orkney) and in areas in the vicinity of an oil field (Moray Firth). To obtain grab samples at each station and analyse for PAH. Collect tissues from common dab for mixed function oxidase activity and PAH bile metabolites.

### Procedure

*Scotia* will work in the Forth, Moray Firth and east Orkney areas obtaining fish samples by trawling. The cruise will start and terminate in Aberdeen.

**Out turn days per project:** 4 days AE11a, 1 day AE08o.

### Narrative/Results

*Scotia* sailed from Aberdeen on schedule at 1030 hours on 19 May and commenced trawling in the vicinity of the Beatrice oil platform during that afternoon and south east of Fair Isle on the morning of 20 May. Sampling was completed in the Bell Rock and St Abbs Head areas on 21 May and on

22 May. Additional stations were included south of Bell Rock, Wee Bankie, St Abbs and on Marr Bank before docking in Aberdeen during the late evening (2330 hours) 22 May. A total of 16 trawls were successfully completed.

A total of 5,789 common dab, *Limanda limanda* were examined for disease by standardised ICES methods and a full data set for the intermediate fish length groups achieved of the long term monitoring positions. All cod caught (seven) were examined for pseudobranch lesions. Haddock were sampled when present in catches and a total of 257 equal to or greater than 26 cm were examined for vertebral deformities.

At each of nine stations, 20 common dab (10 male, 10 female) were sampled for mixed function oxidase function activity, PAH bile metabolites and PAH concentration in liver and flesh. A sediment sample was taken from the middle of the trawl tract from which fish were sampled. The sediment will be analysed for PAH. In addition, sediment was sampled for oestrogenic chemical residues at Bell Rock and St Abbs head.

Specimens of fish parasites were collected for morphological and molecular studies by staff from the Natural History Museum, London. Particular emphasis was laid in collecting larval stages of Tetracystid cestodes. This group of tapeworm utilises teleost fishes as an intermediate host and elasmobranchs as final hosts. Material was also collected for the national reference collections and interspecific genetic comparisons from a range of parasites from representatives of the fish species caught. Parasitic copepods were collected from a variety of fish to be used for electron microscopy and DNA-analysis. Eggs were collected from ovigenous females of selected species of parasitic copepods and a hatching experiment set up to obtain juvenile stages.

SEPA staff observed and assisted in sampling and analysis of various fish diseases. It is hoped this will prove useful background for similar surveys.

All the main objectives of the sampling programme were successfully achieved thanks to the excellent cooperation of the officers and crew of FRV *Scotia*.

D W Bruno, Chief Scientist  
25 May 2001

Seen in draft: R Walton, Captain of *Scotia*