

P17/15

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

FRV *Scotia*

Cruise 0998S

REPORT

29 May - 8 June 1998

Personnel

Alistair McIntosh	B2	(in charge)
Rodney Payne	B2	
Tom McInnes	B2	
Pam Cruickshank	B1	
Colin Megginson	B1	
Eric Dalgarno	A3	
Jane Hall	A3	
Gill Packer	A1	

Fishing Gear

Granton 48' Trawl (BT 101) with monk gear and tickler chains

Objective

1. To deploy caged mussels and absorbent traps on moorings in the vicinity of two offshore oil installations.
2. To sample fish and shellfish by trawl along gradients from known discharge points for sensory assessment and tissue PAH determination.
3. To sample fish by trawl along gradients from known discharge points for biomarker determinations and organ-specific histopathological analyses.
4. To sample sediments, in the same areas as the trawls are taken, for hydrocarbon concentrations.
5. To sample *Nephrops* from the Burra Haaf, and a reference site, in relation to the on-going *Braer* monitoring programme.
6. To sample fish and shellfish by trawl on the western shelf to extend our knowledge of the distribution of petrogenic hydrocarbons in biota and sediments in this area.
7. To collect and maintain live samples of fish and shellfish for processing by NCIMB.
8. To facilitate the production of video and still photography describing the use of scientific sampling equipment and subsequent processing of samples aboard *Scotia*.

Out-turn per project: 10 days AE10n

Narrative

After loading all necessary sampling and scientific equipment, *Scotia* departed from Aberdeen at 1430 on 29 May and passage was made north to the Thistle "A" platform. On the evening of 30 May, a mooring with mussel cages was successfully deployed at 2 km west of the platform. Between 0800 and 1100 on 31 May, a further four moorings were deployed at 150 m, 250 m, 350 m and 500 m on a bearing of 155° from Thistle "A". Two bottom trawls were taken on a transect south from the Thistle platform and sediment sampled from the start, middle and end of the trawl positions. The weather overnight freshened which precluded an early start on 1 June. *Scotia* dodged slowly south while waiting for the weather to moderate and allow continued sampling. Worsening weather and a forecast for the area suggesting no imminent improvement, *Scotia* made passage for Shetland where it was to be hoped that work could be done on the western side of the southern mainland on 2 June. A number of trawls were taken over the 12 hours between 0700 and 1700 without successfully sampling *Nephrops*. Samples were taken to fulfil other criteria. *Scotia* spent overnight in the Burra Haaf and a further trawl was taken at 0700 on 3 June but did provide a sample of *Nephrops*. Sediment samples were taken from the trawl site and then passage made for further trawling to the west as the weather forecast suggested more inclement weather in the east. Following a request from the Shetland Coastguard rescue helicopter crew, *Scotia* obliged by providing a platform whereby practice rescue operations were carried out. They were grateful for our assistance and complemented the vessel on how good and clean she looked.

A trawl, and the sediments associated with it, was taken to the west of Foula. As the ETA at the next sampling site was well after 1900, *Scotia* lay in St Magnus Bay, proposing to sail at about 0300 on 4 June, ready in position at the next station for 0700. Around 2200, there was a power failure as a result of a burned out transformer. Once power had been restored, *Scotia* set off at a slow speed arriving on station for trawling to commence at 0730 on 4 June.

Two further trawls were taken on a south westerly bearing, steaming slowly overnight to the next sampling position.

During 5 June, three trawls and their associated sediments were taken and 60 l of seawater collected at 59° 36.30' N 005° 23.15' W and stored in carboys for experimental work in relation to the PSP/DSP research programme. Passage was made overnight to the next sampling location. Three trawls and their associated sediments were taken during 6 June as *Scotia* worked east along a latitude of approximately 59° 30' N. Overnight on 6th June, *Scotia* made passage due east to a trawling station at longitude 01° 40'E where a trawl was taken on the morning of 7 June. From this location, *Scotia* worked westward, taking in two further trawls and their associated sediment samples, before turning south and making passage for Aberdeen when docking was completed by 1100 on 8 June. Staff and visitors from NCIMB came aboard *Scotia* and dealt with the live samples that had been collected on their behalf. All gear, scientific equipment and samples were transferred to the Marine Laboratory.

Results

Due to information received from the platform operator, BP, one week prior to sailing, the proposed work at the Magnus platform had to be abandoned. The moorings were successfully deployed at the Thistle field.

A total number of 21 trawls were taken covering areas both east and west of Shetland and provided samples for sensory assessment, hydrocarbon chemistry, biomarker determinations and organ-specific histopathological analyses.

A total of 51 sediments were successfully sampled for hydrocarbon determination, three samples being associated with each trawling site.

A number of samples of fish, shellfish, crustaceans and molluscs were kept live for sampling by NCIMB in Aberdeen.

Still and video photography was carried out each day and provided a full record of all the processes undertaken during this cruise.

All fish, shellfish and sediment samples were collected and treated according to standard protocols and stored appropriately for subsequent analysis in the MLA and elsewhere and the results will be presented in due course.

A McIntosh
19 June 1998

Seen in draft: Captain Don Fraser, Master

Cruise Track - Scotia 29 May - 8 June 1998

