R1/6

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

FRV *Clupea*

Cruise 1699C

REPORT

4-9 October 1999

Ports

Loading: Fraserburgh
Unloading: Fraserburgh

Personnel

P Simpson	(In charge)
N Shepherd	
E Dalgarno	
D Richardson	Visitor

Fishing gear: BT 116; Beam trawl

Objectives

1. To obtain demersal fish by trawl along gradients in the Firths of Forth and Tay.
2. To sample these fish for analysis including polycyclic aromatic hydrocarbon (PAH) metabolites in bile, PAHs in flesh and liver and hepatic function oxidase determination.
3. To sample sediments in association with the trawl sites.

Out-turn Days Per Project: 6 days AE10n

Narrative

Clupea was loaded in Fraserburgh with all necessary sampling and scientific equipment. Sailing was delayed until 0000 hours on 5 October due to adverse weather conditions. *Clupea* made passage overnight to Bell Rock where fishing commenced at 0930 hours on 5 October. Sediments were sampled from the start, mid and end points of the trawl site.

Clupea proceeded into the Firth of Forth to the Kingston Hudds site where one haul was made prior to anchoring overnight in Largo Bay. A number of trawls were made within the Firth of Forth at Longannet, Bo'ness, Tancred, Blackness and Port Edgar on 6 and 7 October. Sediment samples were taken at the start, mid and end points of each of the trawl sites.

Clupea returned to the Kingston Hudds site on 8 October where a further trawl was made. The haul produced no fish. However, *Nephrops* were obtained for chemistry and tasting. On completion of the sampling at this site, *Clupea* made passage for Fraserburgh.

All fishing, sampling, scientific equipment and samples were unloaded and returned to Aberdeen.

Results

All fish samples were treated according to standard protocols and stored appropriately for subsequent analysis in Aberdeen, providing material from 46 male and 43 female Flounder, 5 Plaice and 19 Dab for biochemical measurements, including, PAH in bile metabolites, PAH determinations from liver and flesh samples and organ specific histopathological analyses.

Forty *Nephrops* were obtained providing material for PAH determination and for the taste panel.

A total of 21 sediment samples were collected and stored according to standard protocols providing material for total hydrocarbon concentrations, PAH determination, total organic carbon and particle size analysis. These samples were stored frozen for subsequent analysis in Aberdeen. Results from these analyses will be made available in due course.

This programme was originally designed to target Plaice as being the ubiquitous species in this area, based on earlier surveys. It was found that Flounder were the more abundant species at all the Firth of Forth sites surveyed. The programme was changed to target this species as only five Plaice were found.

Due to a staff illness and numbers of trawls required to obtain adequate fish, it was not possible to survey any sites within the Firth of Tay.

P Simpson
29 October 1999

Seen in draft: OIC, FRV *Clupea*