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FRV *Clupea*

Cruise 1601C

**REPORT**

15-26 November 2001

**Ports**

Loading: Fraserburgh  
Unloading: Fraserburgh

**Personnel**

A D McIntosh (In charge)  
L Campbell  
G Packer

**Fishing Gear**

BT 158 and light beam trawl

**Objective**

To undertake fish and sediment sampling in the North Minch, Colonsay, Pladda, and a number of sites in the Firth of Clyde in support of the temporal trend and biomarker monitoring studies.

In addition to the original cruise programme, there were requests to collect live plaice from the Minch for experimental work and 5 kg each of plaice and haddock wet muscle tissue from the Minch, together with the associated livers, to be used as reference material by QUASIMEME.

**Out-turn days per project:** 11 days AE11p; 1 day AE11a

**Narrative**

All scientific gear and personnel joined *Clupea* on the morning of 15 November and after everything was secured, *Clupea* sailed at 1300 hours and made passage for the North Minch, arriving at the first trawling site by 1000 hours on 16 November. Fishing and related sediment sampling was completed at the North Minch sampling site by 1500 hours on 17 November when passage was made to Kyle to offload live plaice for transportation to Aberdeen.

The live plaice were dispatched at 0800 hours on 18 November, when passage was made south to Colonsay, where a trawl was taken in the evening. Passage was then made to Holy Loch on 19 November and this site sampled on 20 November.

During the morning of 20 November, the SEPA West RV *Endrick* transferred live flounder that had been caught in the upper Clyde. These were processed aboard the *Clupea*. During the period 20-23 November, sampling of fish and sediment was successfully carried out at Skelmorlie, Hunterston, Garroch Head, Irvine Bay and Pladda (attached track chart). On completion of the sampling programme, *Clupea* made passage for Fraserburgh. There was a two hour stop in Gairloch after water was found in the gearbox oil. The oil and water were removed and the gearbox refilled. Docking was completed in Fraserburgh by 1000 hours on 25 November. All scientific equipment and samples were unloaded and transferred to the Laboratory on 26 November.

## Results

A total of twenty trawls were taken. Bottom temperature was recorded at each sampling location.

One hundred and sixty plaice were processed for hepatic biomarker analysis, polycyclic aromatic hydrocarbon (PAH) concentration and composition and chloro-biphenyl (CB) determination. Muscle tissue from plaice will also be analysed for PAH and CB.

Between sixty and seventy plaice were caught at Broad Bay and kept live aboard *Clupea* for transfer to Aberdeen for experimental work.

Sufficient plaice and haddock were processed to provide ten pools of 500 g of wet muscle tissue and ten pools of liver tissue from each species. This material will be used by QUASIMEME to produce standard material for distribution to participating laboratories.

Twenty five flounder were processed for hepatic biomarker analysis, PAH concentration and composition and CB determination. Muscle tissue from the flounder will also be analysed for PAH and CB.

Sediment samples were taken at the start, mid and end points of each of the trawling locations. A total of twentyfour sediment samples will be analysed for PAH concentration and composition.

A McIntosh  
10 December 2001

*Seen in draft: A Nicol, OIC Clupea*

# 1601C - track chart

15 - 25 November 2001

