

R1/6

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FRV *Clupea*

Cruise 1803C

REPORT

28 October – 11 November 2003

Loading: Fraserburgh

Unloading: Fraserburgh

Personnel

Alistair McIntosh	(In charge)
Matt Gubbins	28 October – 5 November
Stephen O'Neill	5-11 November
Margaret McKenzie	
Gill Packer	

Fishing gear: BT 158; beam trawl; Agassiz trawl.

Objectives

1. To undertake fish and sediment sampling in the Clyde and Minch areas in support of the temporal trend and biomarker monitoring studies.
2. To sample *Buccinum* for the DEFRA TBT effects survey proposed for this year.
3. To undertake sampling of flounder from upper Clyde on behalf of SEPA West.
4. To sample fish livers for Glasgow Caledonian University macroarray assay.
5. To undertake sampling of flounder in St Andrews Bay (provisional).
6. To undertake biota sampling in support of the MV *Jambo* monitoring programme (provisional).

Out-turn Days per Project: 15 days AE11p

Narrative

Following loading, *Clupea* sailed at 1100 on 28 October and made passage for St Andrews Bay where fishing for flounder, sediment sampling and fish processing for biological effects measurements was successfully completed by 0030 on 29 October. Passage was made for Broad Bay, anchoring overnight in Loch Eribol. On completion of the Broad Bay sampling by 1600, passage was made across the Minch to Lochinver to shelter from the increasingly inclement weather and for repairs to be carried out on the satellite TV system. Due to severe weather, *Clupea* did not leave Lochinver until 0600 on 1 November when passage was made south. Sediment sampling in support of the *Jambo* monitoring programme was conducted at the Summer Isles. Passage then continued south to Colonsay, anchoring overnight in Salen Bay. Fishing for plaice and sediments associated with the trawl were successfully completed by 1600 on 2 November. Agassiz trawls for *Buccinum* in this area were not productive. Passage was then continued into the Clyde estuary anchoring overnight in Campbeltown Bay. Over the next five days, sampling of fish and sediments was undertaken from a number of sites in the Clyde estuary. Agassiz trawls for *Buccinum* were conducted at the same sites and additionally at selected anchorage sites and in the main

Firth of Clyde shipping channel. Flounder, obtained from the upper Clyde by SEPA West were transferred to *Clupea* for processing, on Wednesday 5 November. S O'Neill joined *Clupea* on the evening of 4 November and M Gubbins disembarked on the morning of 5 November. On 7 November passage was made south to the Ailsa Craig area where two one hour trawls returned four plaice and therefore further attempts were abandoned and passage made north, anchoring overnight in Loch Tarbert. Over the next two days, passage was continued north, anchoring overnight in Applecross and Dunnet Bay. *Clupea* docked in Fraserburgh at 1500 on 10 November. All scientific gear and samples were transferred to the ML on 11 November.

Results

Samples for:	Hepatic EROD determination		Plasma vitellogenin	Bile metabolites	Microarray assay ⁽¹⁾	Hepatic Metallothionein
	Male	Female				
Objective 1						
Broad Bay	10	10	20	4 x pools of 5	20	-
Colonsay	9	11	9M;11F	4 x pools of 5	20	-
Garroch Head	10	10	10 male	4 x pools of 5	20	-
Cloch Point	6	14	6M;4IF	4 x pools of 5	20	-
Skelmorlie	9	11	9M;11F	4 x pools of 5	20	-
Hunterston	9	11	9M;11F	4 x pools of 5	20	-
Ailsa Craig	-	-	-	-	-	-
Sediment was sampled for PAH, CB and PSA analyses from the start, mid and end points of the trawl tracks						
Objective 3						
Upper Clyde	12	8	20	20	20	20
Objective 5						
St Andrews Bay	10	10	20	20	20	20
Sediment was sampled for PAH, CB and PSA analyses from the start, mid and end points of the trawl tracks						

Objective 2	Buccinum	<i>Neptunea</i>	
Garroch Head	< 100		From bottom trawl
Anchorage A4	62		3 Agassiz trawls
Anchorage A5			
Anchorage A7/8	28		2 Agassiz trawls
Clyde Shipping channel - upper	13	77	1 Agassiz trawl
Clyde Shipping channel - mid	7	13	2 Agassiz trawls
Clyde Shipping channel - lower	21	16	3 Agassiz trawls
Sediment was sampled for TBT and PSA analyses from the start, mid and end points of the trawl tracks			

⁽¹⁾ Objective 4

Objective 6 - sediment was collected from a number of sites as advised by the Environmental Monitoring Group.

Analyses of these samples will be carried out at the FRS ML and elsewhere and the results made available in due course.

A McIntosh
11 November 2003

Seen in draft: A Nicol (OIC *Clupea*)