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FRV *Scotia*

Cruise 0501S

REPORT

17-28 March 2001

Ports

Loading:	Aberdeen
Port call:	Stavanger
Unloading:	Aberdeen

Personnel

A McIntosh	(In charge)
C Hall	
G Packer	
A Bjornstad	Visitor, RF, Norway
I Cancio	Visitor, University of Basque Country, Spain
B Chesman	Visitor, PML
G Jones	Visitor, Weymouth, CEFAS
A Tobiesen	Visitor, NIVA

Fishing Gear: PT 154; PT160; BT 101; Methot net

Project Code: AE10n, (12 days)

Objectives

This cruise was one of seven participating in an ICES/IOC seagoing workshop on biological effects of contaminants in pelagic marine ecosystems (BECPELAG).

1. To sample fish, plankton and water along a transect from the Statfjord oilfield and a reference station in the North Sea.

2. To sample fish, plankton and water along a transect in the German Bight and a reference station east of the Dogger Bank.

Narrative

All sampling and scientific equipment was loaded and secured before departure at 0930 hours on 17 March. Passage was made for the Statfjord oilfield, taking in a 'clean' sampling station *en route* where water samples were taken, instrument calibrations and trials with Methot net deployment were carried out.

Scotia arrived at the first sampling site, 10 km SSE of the Statfjord platform, on 18 March. Over

the following three days, three sites were sampled. At each station a CTD cast and a sediment sample was taken. Water samples for microzooplankton and bacterial studies were taken at the 500 m station only. Bottom trawls provided samples of fish species. The PT 160 was damaged on its first deployment and not used again. The Methot net was successfully employed to obtain samples of fish larvae and a 1 m plankton net for zooplankton. On completion at these sites, *Scotia* moved south to the North Sea reference site and a similar suite of samples were taken.

Following discussion with the workshop coordinator, it was decided that in the best interests of the scientific programme, *Scotia* should call in at Stavanger while on passage to the German Bight, to offload samples and pick up more liquid nitrogen and some further scientific equipment. *Scotia* berthed in Stavanger for three hours on 22 March before continuing passage to the German Bight. With a break down in the good weather experienced earlier, *Scotia* did not arrive at the inner German Bight station until 1800 hours on 23 March. Over the next three days, a similar suite of samples to that described above were taken at four sites.

The scientific programme was completed by 2300 hours on 26 March when passage was made for Aberdeen. With a strong s'easterly wind and generally worsening weather, *Scotia* made good speed and docking was completed by 1700 hours on 27 March.

Results

Statfjord Area

Nine bottom trawls and one pelagic trawl were taken in support of the investigations associated with the Statfjord sampling area. The predominant species sampled was saithe.

Statfjord area		Numbers of samples taken							
Station	species	liver[1]	gonad[2]	otolith	plasma	bile	kidney	spleen	liver chemistry
S1	saithe	120	20	20 (x2)	20	19	10	10	20
	herring	30	9	-	9	2	9	-	-
S2	saithe	108	17	17 (x2)	17	17	10	10	15
S3	saithe	155	20	20 (x2)	20	18	15	15	9
S4	saithe	115	20	20 (x2)	(20)	20	10	10	20
	herring	90	30	-	20	16	10	10	10 pools[3]

[1]total number of liver aliquots taken from number of fish constituting sample
[2]gonads excised and weighed - some taken for histochemical analysis
[3]to provide the necessary amount of material, 10 pools of 10 livers were excised from additional fish

Water samples were taken at the S1 station for bacteria and microzooplankton studies.

The Methot net was deployed on 12 occasions and provided samples of fish larvae species for a number of investigations. In addition, instrumentaion attached to the Methot frame provided CTD and fluorescence measurements in the water column. The 1 m vertical dip net was

deployed at the four stations to provide samples of zooplankton.

German Bight

Ten bottom trawls were taken in support of the investigations associated with the sampling along the transect in the German Bight. The predominant species at all stations was juvenile herring.

German Bight		Numbers of samples taken							
Station	species	liver[1]	gonad[2]	otolith	plasma	bile	kidney	spleen	liver chemistry
G1	herring[4]	65	2	-	-	-	-	-	[3]
G2	herring	115	2	-	13	18	20	20	[3]
G3	herring	120	-	-	28	40	11	11	[3]
G4	herring	91	13	-	28	2	9	9	[3]

[1]total number of liver aliquots taken from number of fish constituting sample
[2]gonads excised and weighed (where possible)
[3]to provide the necessary amount of material, 10 x 10 livers were excised from additional fish
[4]94 fish sampled to provide sufficient material (average size of fish ~10 cm)

Water samples were taken at the G1 station for bacteria and microzooplankton studies. The Methot net was deployed on 20 occasions providing samples of fish larvae species for a number of investigations. In addition, instrumentaion attached to the Methot frame provided CTD and fluorescence measurements in the water column. The 1 m vertical dip net was deployed at the four stations to provide samples of zooplankton.

In summary, this cruise was very successful and provided around 2,500 samples for various end point analyses which will be carried out in laboratories thoughout Europe and reported at a conference in March 2002.

A McIntosh
23 April 2001

Seen in draft: R Walton, Master

Cruise Track and Trawl Sampling Locations - 0501S (BECPELAG Cruise II)