

R1/12

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FRV *Scotia*

Cruise 0691S part 1

REPORT

5-10 June 1991

Personnel

A McVicar	PSO
D Bruno	SSO
D Saward	SSO
J McKie	HSO
C Fraser (Miss)	SO
L Goodwin (Miss)	ASO
S Forsyth	ASO
G Begg	Student
F McKendrick	AUMS
S Lumb	Visitor BM (Nat Hist)
M Spencer-Jones (Miss)	Visitor BM (Nat Hist)
A Rowand (Miss)	Student

Fishing Gear

BT 101 (48' Aberdeen trawl) with tickler chain and small mesh cod-end. Day Grab.

Objectives

1. To perform a check monitoring fish disease survey on sewage sludge disposal grounds off the Firth of Forth, at adjacent and distal reference areas (east Orkney) and in areas in the vicinity of oil fields (Moray Firth).
2. To collect samples of sediments from sewage sludge dump sites and adjacent reference areas to investigate chemical and microbial quality and to collect samples of fish from the same areas for the determination of chemical quality with respect to public health standards.

Narrative and Results

Scotia did not leave Aberdeen until 1600 on 6 June because of winch failure. A further 20 hours were lost at sea with the recurrence of the winch problem necessitating the visit of a shore engineer on 7 June. Trawling commenced at 2230 on 7 June at the

St Abb's Head sewage dump ground and finished at 0210 off Montrose on 10 June. A total of 11 trawl and 60 grab stations were successfully completed, a high total made possible by the ship trawling and grabbing throughout 24 hours.

A total of 4615 common dab, *Limanda limanda*, were examined for disease by standardised ICES methods and a full data set for the recommended fish length groups achieved for both the St Abb's Head and Bell Rock dump sites and their adjacent reference areas. All cod caught (146) were examined for pseudobranch lesions and samples taken for tissue nematode analyses. Haddock >26 cm (262) from each haul were examined for vertebral deformities. Samples of a wide range of parasites from representatives of the fish species caught were collected by British Museum staff for reference collections.

At the St Abb's Head sewage sludge disposal site, a total of 91 sediment samples were collected:- 13 for organohalogen analysis, 29 for heavy metal analysis, 20 for particle size analysis and 29 for faecal coliforms, faecal streptococci and *Clostridium perfringens* spore determinations. At St Abb's Head reference site, a total of 4 sediment samples were collected for the same analyses and determinations.

At the Bell Rock sewage sludge disposal site a total of 71 sediment samples were collected:- 13 for organohalogen analysis, 29 for heavy metal analysis and 29 for faecal coliforms, faecal streptococci and *Clostridium perfringens* spore determinations. At the Bell Rock reference site, a total of 3 sediment samples were collected for the same analyses and determinations.

Fifteen cod samples (muscle and liver) were collected from the St Abb's Head disposal site for trace organic analysis, as part of the monitoring requirements of the Joint Monitoring Group (JMG).

Water samples were collected from the south of May Island, off Elie Ness, off Fife Ness and off Anstruther/Pittenweem for identification of toxic dinoflagellates associated with Paralytic Shellfish Poisoning (PSP).

Despite the necessity to severely curtail the proposed programme with the loss of northern sampling areas because of winch failure, the remaining parts were successfully completed thanks to the excellent cooperation of the officers and crew of *Scotia*.

A H McVicar

9 October 1991

Report seen in darft: N McInnes