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FRV *Scotia*

Cruise 0803S, Part II

REPORT

28-31 May 2003

Personnel

David Bruno (In charge)
Alistair McIntosh
Wendy MacDonald
Mary O'Dea
Elaine Moore
Pamella Steenson
Stuart Wallace
Katy Adamson
Bryan Johnston
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Fishing Gear

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

Objectives

To perform a check monitoring fish disease survey off the Moray Firth, a reference area (east of Orkney), Bell Rock, St Abbs and at several areas in the vicinity of Marr bank and Wee Bankie. Tissues will be collected from common dab for mixed function oxidase activity and PAH bile metabolites. Grab samples will be obtained from each station and analysed for PAH. A variety of species will be sampled to test as vectors for IPNV and the role of wild marine and freshwater fish in the maintenance and spread of this disease. The distribution and prevalence of this virus will be determined and the genetic relatedness of isolates will form future work. Cod, haddock, turbot, halibut and whiting will be sampled for bacteriology, parasitology and virology to record base line pathogens to model possible interactions with farmed salmonids in terms of disease transfer. *Lepeophthirus salmonis* negative plankton samples will be collected and used to 'spike' with known amounts of *L.salmonis* copepodids to determine the lower detection limits of molecular techniques.

Procedure

FRV *Scotia* will work in the Moray Firth, east Orkney, Bell Rock and St Abbs areas obtaining fish samples by trawling. The cruise will start and terminate in Aberdeen.

Out turn days per project: 2.7 days AE11a; 1.3 days AE08o

Narrative/Results

FRV *Scotia* sailed from Aberdeen on 28 May at 0840 hours and commenced trawling in the vicinity of the Beatrice oil platform during the afternoon, and worked south east of Fair Isle

early on 29 May. Sampling was started Bell Rock late on 29 May followed by St Abbs Head. Additional stations were included at Wee Bankie and Marr Bank before docking in Aberdeen 0600 hours on 31 May.

A total of 10 trawls were successfully completed and 8139 common dab, *Limanda limanda* examined for disease by standardised ICES methods and a full data set for the intermediate fish length groups achieved for the long term monitoring positions. The livers from fish >25 cm were examined for tumour development. All cod caught were examined for pseudobranch lesions. Fifty haddock equal to or greater than 26 cm were sampled from individual hauls and examined for vertebral deformities. Histological samples and tissues placed in liquid nitrogen were taken from gill X-cell lesions for future work.

Within each area, 20 common dab (10 male, 10 female) were sampled for mixed function oxidase function activity, PAH bile metabolites and PAH concentration in liver and flesh. A sediment sample was taken from three points along the trawl tract. The sediment will be analysed for PAH. In addition, sediment was sampled for oestrogenic chemical residues at Bell Rock and St Abbs head.

A total of 1889 fish were sampled to determine the prevalence of infectious pancreatic necrosis virus (IPNV) from 11 fish species. The genetic relatedness of isolates will form future work. Fish kidney was pooled from 10 fish, one sample was placed in RNA later for molecular analysis and a duplicate sample placed in liquid nitrogen. Additional cod and haddock were sampled for VHSV, IHNV and IPNV, bacterial infection and then frozen for parasitology examination.

Plankton samples were collected and will be used as negative material for later work to determine the lower detection limits of molecular techniques for *Lepeophthirus salmonis* copepodids.

All the main objectives of the sampling programme were successfully achieved thanks to the excellent cooperation of the officers and crew of the FRV *Scotia*.

David Bruno
2 June 2003

Seen in draft: Captain Peter Barrett, OIC *Scotia*