R1/12

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FRV *Scotia*

Cruise 0608S

Report

29 May - 2 June 2008

Personnel

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Fishing Gear

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

Objectives

Conduct an annual fish disease monitoring survey at Moray Firth, Fair Isle, Bell Rock, Marr Bank, Montrose Bank, Wee Bankie, St Abbs using standard ICES protocols for external fish diseases of haddock and dab (i.e. lymphocystis, ulcers, X cell, hyperpigmentation, fat cell necrosis and epidermal hyperplasia). Collect dab liver samples a fix for light microscopy (30 per station, 20-24cm group). A histological examination of the tissues will be carried out in the laboratory. Carry out an internal examination of >25cm dab for indication of liver neoplasia. Disease prevalence data will be prepared and data submitted to MERMAN on return to FRS.

Collect tissues from common dab for mixed function oxidase activity and PAH bile metabolites in line with current monitoring programme. Additional haul and grab samples are planned at the East Buzzard site.

Sample tissue from dragonet, *Callionymus lyra* in connection with joint histopathology study with Cefas.

Conduct survey of external diseases of whiting (*Merlangius merlangus*) for potential monitoring including epidermal hyperplasia, *Lernaeocera branchialis, Diclidophora merlangi* and *Clavella adunca.*

Collect 10-15 whiting and dissect gall bladders into 100% ethanol. If time is short, whole fish with be frozen.

Collect samples of *Lereonocera branchialis*. 10-20 specimens each from haddock, whiting and cod (A section from the protruding part of the parasite is suitable). Store in 100% ethanol.

Examine cod, haddock, herring and whiting for evidence of anisakids parasites present in the vent; linked to a current study examining red vent syndrome in wild Atlantic salmon.

Collect live common for laboratory investigation involving hyperpigmentation.

Collect and freeze a selection of squid, sprats, sand eels and prawns for aquarium fish feed.

Procedure

Scotia will work in the Moray Firth, east Orkney, Buzzard field, St Abbs, Wee Bankie Bell Rock, Marr Bank and Montrose Bank obtaining fish samples by trawling. The cruise will start and terminate in Aberdeen. Permission to take a liquid nitrogen container on board will be submitted.

Out turn days per project: 3 days AE11a; 2 days AE08o

Narrative

FRV Scotia sailed from Aberdeen on 29 May and commenced trawling in the Moray Firth in the vicinity of the Beatrice oil platform during the late afternoon. Sampling was undertaken at Fair Isle on the 30 May. Seven mud grab samples and a haul were completed in the East Buzzard field on the evening and early morning of 30-31 May. The sampling at St Abbs and Wee Bankie were completed on 31 May. Trawling began in the evening of 31st May at Bell Rock. Marr Bank and Montrose Bank were trawled on 1 June. Scotia berthed in Aberdeen on the morning of 2 June.

All common dab, *Limanda limanda* were examined for external disease by standardised ICES protocols (n=5077). Sufficient fish were present in the middle length classes (19-24 cm) and a data set completed for the long term monitoring positions. A single reversed (mirror image) common dab was recorded at Fair Isle and represents the second report in over 20 years. Liver tissue was fixed for light microscopy from 30 common dab (20-24 cm) from each area for examination in the laboratory for evidence of neoplasia and pre-neoplastic lesions. Market-sized haddock caught in Moray Firth, Fair Isle, St Abbs, Bell Rock, Marr Bank and Montrose Bank were examined for vertebral anomalies.

External disease assessment according to ICES recommendations for whiting, *Merlangius merlangus* i.e. epidermal hyperplasia, and parasitic infections due to *Lernaeocera branchialis*, *Diclidophora merlangi* and *Clavella adunca* were recorded.

Fifty market-sized haddock were randomly selected from each haul, measured and examined for attached stages of the parasite *Clavella adunca*. All tissues from male and female dragonet, *Callionymus lyra* were sampled for light microscopy for examination in the laboratory.

At each area, 20 common male dab were sampled for mixed function oxidase function activity, PAH bile metabolites and PAH concentration in liver and flesh. Liver and flesh was collected from 20 male common dab per area which will be examined for brominated flame retardants in the laboratory. Seven grab samples were taken in connection with flame retardants at Buzzard site and adjacent control site. This year an additional 10 hyperpigmented (category 3) fish were also sampled for mixed function oxidase function activity, PAH bile metabolites and PAH concentration in liver and flesh.

Mixed normal and pigmented dab were collected and held alive on board. These fish will form part of an experiment to access pigmentation development under a controlled environment.

Samples were collected from 10-15 whiting and gall bladders, dissected into 100% ethanol to support a study on *Myxidium* taxonomy in gadoid fish and to look at host and geographical range.

Samples of *Lereonocera* were collected for laboratory analysis from haddock and whiting to support molecular taxonomy work on this parasite infecting these species in the North Sea.

Cod, haddock, herring and whiting were examined macroscopically for evidence of anisakids parasites presence in the vent. The vent region was dissected and fixed for light microscopy examination.

A selection of squid, argentine and sprat for were frozen for renewing the FBU aquarium feed stock.

Daily progress meetings were held and the programme aims were achieved. Excellent cooperation and support was received from officers and crew of FRV Scotia.

David Bruno
24 November 2008