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FRV *Alba na Mara*

Cruise 0412A

PROGRAMME

15 - 24 March 2012

Ports

Loading: Fraserburgh, 12 March 2012

Change-over: Montrose, 19 March 2012

Unloading: Fraserburgh, 24 March 2012

In setting the survey programme and specific objectives, etc the Scientist-in-Charge needs to be aware of the restrictions on working hours and the need to build in adequate rest days and rest breaks as set out in Marine Scotland's Working Time Policy (Lab Notice 34/03). In addition, the Scientist-in-Charge must formally review the risk assessments for the survey with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Survey Report, to I Gibb and the Survey Summary Report (old ROSCOP form) to M Geldart, within four weeks of a survey ending. In the case of the Survey Summary Report a nil return is required, if appropriate.

Personnel

P Boulcott	SIC
J Clarke	
T Reilly	
B Turrell	15-19 March
R Dinsdale	15-19 March
M Stewart	19-24 March

Sampling Gear

- International Young Gadoid Trawl PT154 with 6 mm Codend;
- Two x 4' Sandeel dredges with 6mm cover and 6" teeth, spare tooth bars;
- Dual Bongo net and flow meters.

Equipment

Seabird CTD, Day Grab and Table, 2mm sieves (x 2)

Estimated Days per Project: ST007, 10 days

Objectives

1. To sample sandeel larvae at sites off the east-coast of Scotland and within the Wee Bankie/Marr Bank study area (Figure 1). Samples will be collected using a dual bongo net in a series of 15 minute double oblique tows. These samples will be aged and have their otolith microchemistry analysed in the laboratory at a later time.
2. To sample 1+ aged sandeels at previously established stations on the Wee Bankie, Marr Bank, Berwick's Bank, and St Andrew's Bay (Figure 2) using the sandeel dredge.
3. To sample 0 group sandeels at each visited dredge station by means of random drift Day grab survey.
4. To undertake an acoustic survey of clupeid fish (and sandeels if present) in the water column using 38 and 120 kHz signals. The acoustic survey will be undertaken in the Firth of Forth and off St. Andrews Bay as indicated in Figure 3 and along the return east-coast route to Fraserburgh (see Stations 18-22 in Figure 1). Concentrations of fish will be sampled using the pelagic trawl.
5. To conduct a RoxAnn survey of substrate type along all acoustic survey tracks (Figure 3).
6. To sample opportunistically the variation in water temperature and salinity in the water column using a Seabird CTD sampler.

Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 12 March 2012.

Scientists will join the vessel at approximately 1000 on the morning of Thursday 15 March. The vessel will remain in Fraserburgh through the day-time period to switch to a night-time working mode, working between 1800 and 0600 (all times are UTC). Passage will be made at 1800 for the study site visiting pre-determined stations for sandeel larvae en route (see Stations 1-5 in Figure 1). The majority of each larval sample will be stored in ethanol, with a small subsample frozen, to allow their otoliths to be analysed at a later date. On arrival at the study site the vessel will commence the dredge/grab sampling programme on the evening of Friday 16 March. During the next three nights *Alba na Mara* will sample as many of the dredge stations on the Wee Bankie, Marr Bank, Berwick's Bank, and St Andrew's Bay indicated in Figure 2 as is possible. The CTD will be deployed at each dredge station prior to deploying the dredge. At each station the dredge will be deployed twice. Total catch size will be determined and sub-samples examined to assess length-frequency distribution, weight-at-length and age-at-length relationships. Further sub-samples will be retained and frozen for subsequent sex, maturity, and condition analysis in the laboratory. *Alba na Mara* will then drift across the dredge station before the wind three to five times, deploying the Day grab repeatedly. Between 50 and 80 adequate grab samples will be collected at each station. All sandeels collected will be weighed, measured, have their otoliths extracted, and then frozen and retained for subsequent analysis in the laboratory. Further larval samples may be collected opportunistically at this time using the bongo net.

The vessel will return to Montrose early in the morning of 19 March. Scientific staff changes and a reversion to a day-time working mode will take place at this time. The vessel will then leave Montrose as early as is possible on 20 March to begin the acoustic survey. The acoustic survey will continue over the next two days covering the track indicated in Figure 3. Whilst undertaking acoustic survey, the vessel will start work at 0600 and finish at 1800. Larval samples will again be collected opportunistically at this time. Concentrations of pelagic fish will be sampled using the pelagic trawl for species composition, length-frequency

distribution, weight at length and age at length analysis. Samples will be retained and frozen for subsequent sex, maturity, and condition analysis in the laboratory. It is hoped that there should be sufficient time to fish once on route south to the main study area, and two to three times each of the following days. The CTD will be deployed each time that the vessel stops to fish.

Work will cease on the evening of Thursday 22 March to allow the vessel sufficient time to return to Fraserburgh for unloading. The vessel will continue the acoustic survey on the return track (see stations 18-22 in Figure 1). Further larval samples will be collected if time allows.

Normal contacts will be maintained with the Marine Laboratory.

Submitted:
P Boulcott
5 March 2012

Approved:
I Gibb
6 March 2012

Figure 1: Proposed tows for sandeel larvae using the dual bongo net. Stations 1-5 will be visited during the outward leg of the trip.

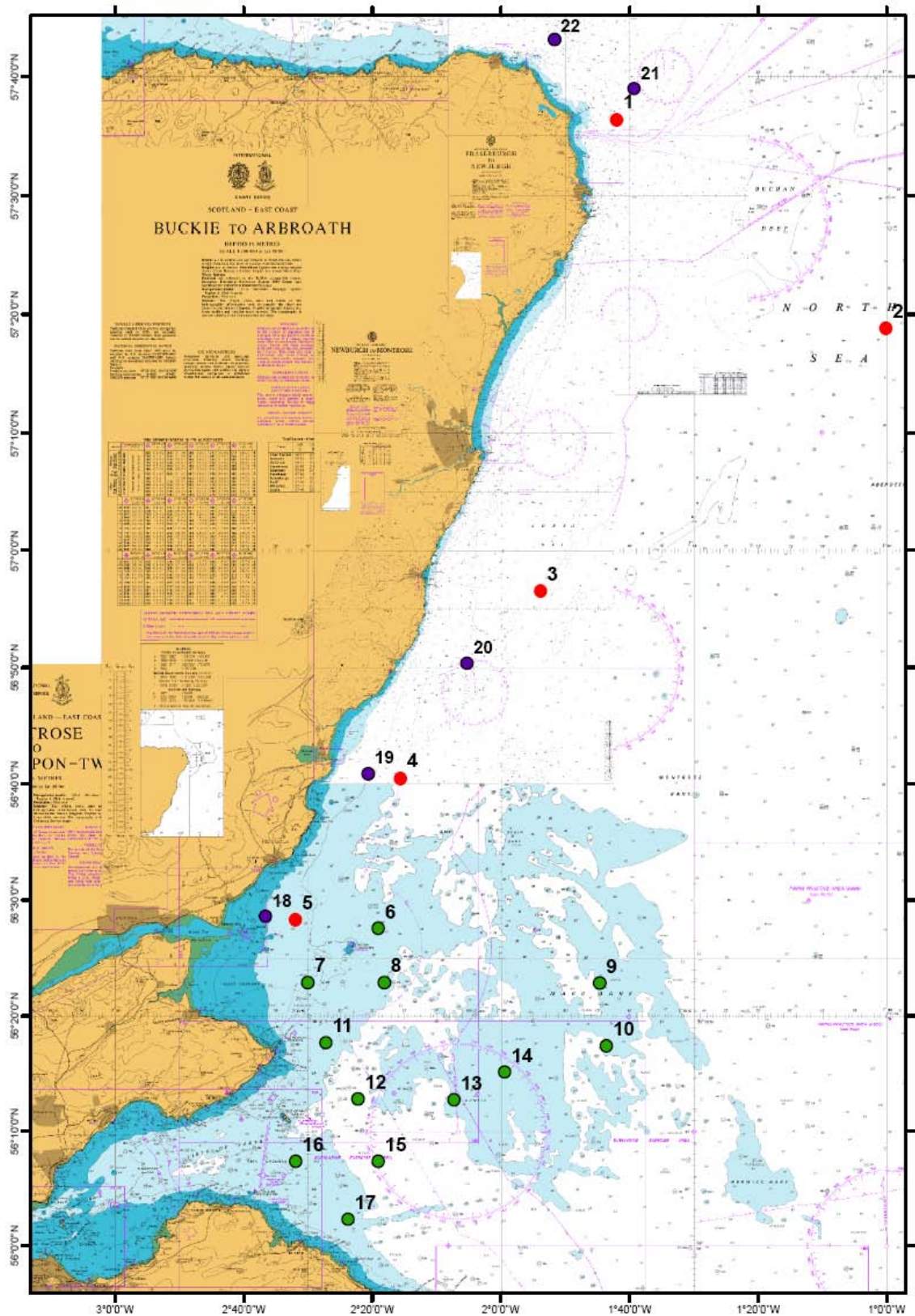


Figure 2: Sandeel dredge and grab stations (red boxes)

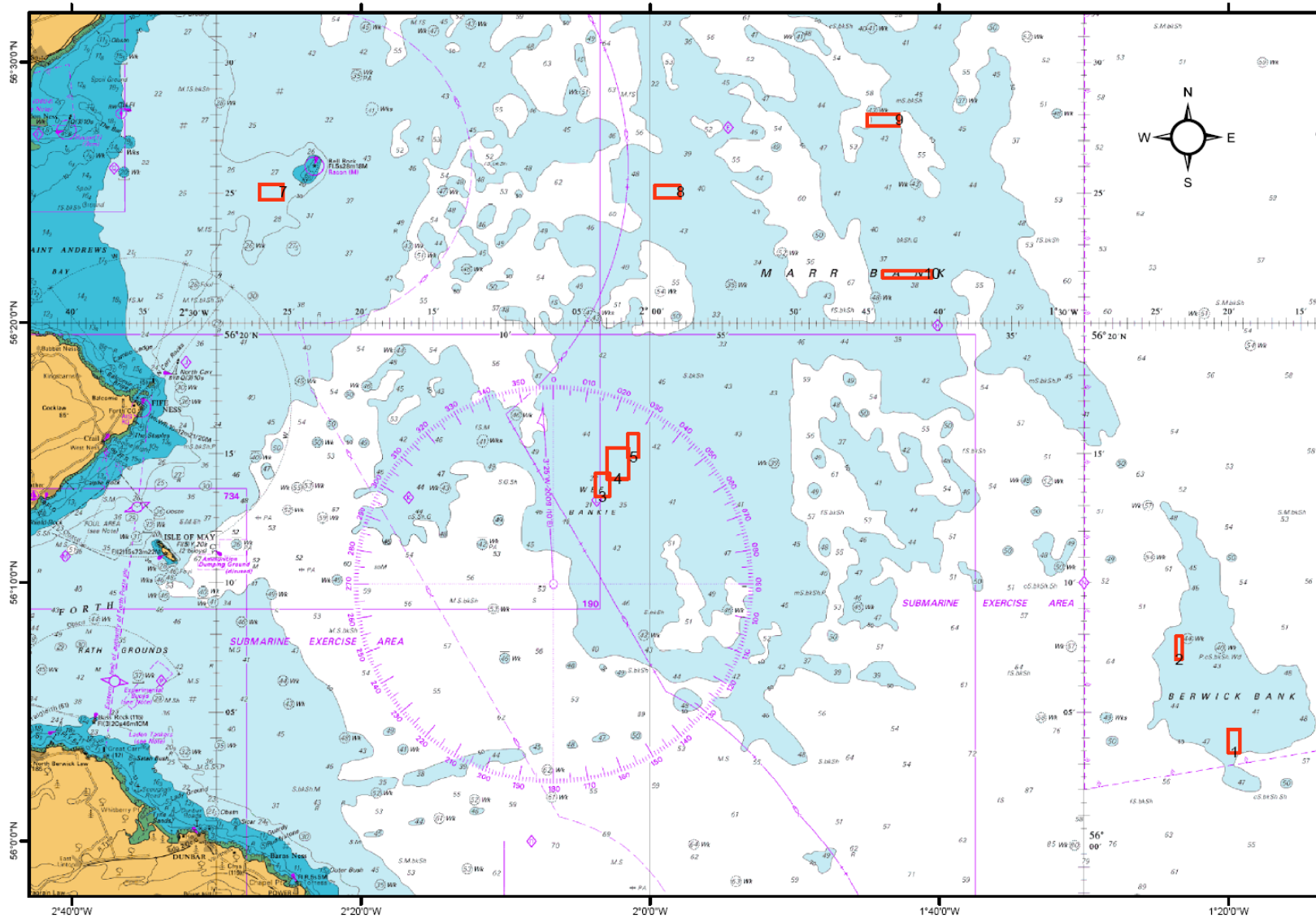


Figure 3: Wee Bankie / Marr Bank / Firth of Forth / St Andrews Bay acoustic track (red line)

