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MRV *Alba na Mara*

Survey 0313A

## **PROGRAMME**

12 – 31 March 2013

### **Ports**

Loading: Fraserburgh, 08 March

Depart: Fraserburgh, 12 March

Change-over: Montrose: 22 March

Unloading: Fraserburgh, 31 March

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	
J González	12-22 March
J Dunn	12-22 March
C Greathead	22-31 March

### **Sampling Gear & Equipment**

- Gulf III plankton sampler, flow meters and cradle.
- Seabird CTD, reversing bottles and chlorophyll water sampling kit.
- Dual Bongo net (68µm and 200µm mesh) and flow meters.
- 2m square Methot net and 5m bridles.
- 2 Scanmar depth units.

**Estimated Days per Project:** ST007, 20 days

### **Overview**

The work carried out during this cruise will inform the PICMATOP research project that examines the effects of climate change on forage fish dynamics. Sandeel larvae collected in this cruise - and others later in the year - will be aged and the data used to perform a larval survival analysis. This data will help us determine whether survival in the larval stages is the

dominant process in recruitment of adults to this species and will also provide data for climate based ecosystem modelling.

## Objectives

1. To sample sandeel larvae at 28 sites off the east-coast of Scotland and within the Wee Bankie/Marr Bank PICMATOP study area (Figure 1). Each site will be re-sampled after a lapse of approximately eight days (total sites = 56). Samples will be collected using the Gulf III plankton sampler in a series of oblique tows and will be subsequently preserved in isopropanol (propan-2-ol, 80% conc.). Larval samples will be aged analysed in the laboratory at a later time. Whole larval samples (n=50) will also be collected and frozen at five stations (see Figure 1) for otolith microchemistry. The 2m square Methot net will be used to sample sandeel larvae if it is found that the Gulf III is unable to catch larger larval size classes.
2. To sample plankton communities at each site. Samples will be collected at the 28 sites using a vertically deployed, dual bongo net. These samples will be stored in formalin and will be analysed in the laboratory at a later time for sandeel prey. Bongo samples and associated water samples will also be conducted during the return phase of the survey (total sites = 56).
3. To sample the variation in temperature and salinity in the water column using a Seabird CTD sampler. The CTD will be deployed in conjunction with the dual bongo net.
4. To collect further water samples and chlorophyll samples at each site. Water samples will be taken during the deployment of the dual bongo nets. Sample depths will vary between stations.

## Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 08 March 2013.

Scientists will join the vessel at approximately 0830 hrs on the morning of Tuesday 12 March. The vessel will then proceed to the first sample station to the east of Kinnaird Head. Plankton samples (using the bongo net), water samples, and CTD transects will be taken at each station during a single vertical deployment from the side of the vessel. Further samples of sandeel larvae will then be collected using the GULF III plankton sampler towed in a double oblique pattern. Trial oblique tows using the Methot net will be conducted at the first two stations to determine if this sampling method collects larger sandeel larvae more effectively. Although it is not thought that further deployment will be necessary, larval samples may be collected using the Methot net at additional stations during the survey. Daily scientific sampling will thereafter occur between 0700 hrs and 1900 hrs.

It is the intention to sample at each station, in a north to south order, twice during the survey, with the *Alba* returning to Kinnaird Head at the mid-point. The successful completion of the most eastward stations may require the vessel to lie-out overnight, weather permitting.

It is expected that the vessel will return to Montrose on the late afternoon of the 21 March for the purposes of a half landing. Changes to the scientific staff will be made at this time. The vessel will then leave Montrose as early as is possible after the completion of a 24h rest period.

Work will cease on the morning of the 30 March to allow the vessel sufficient time to return to Fraserburgh for unloading.

Normal contacts will be maintained with the Marine Laboratory.

Submitted:  
P Boulcott,  
20 February 2013.

Approved:  
I Gibb  
01 March 2013.

**Figure 1:** Proposed sampling stations. A vertical deployment of the bongo net and double oblique tow of the Gulf III plankton sampler will be made at each of the stations. Each station will be sampled twice, once in the first half of the cruise and again in the second half. Stations marked with an asterisk denote sites where frozen larvae (n=50) will be collected for the purposes of otolith microchemistry.

