Not to be cited without prior reference to Marine Scotland, Marine Laboratory, Aberdeen.

MRV *Alba na Mara*

Survey 1314A

PROGRAMME

25 July – 5 August 2014

Ports
Loading: Ullapool, 22 July
Depart: Ullapool, 25 July
Change-over: Mallaig: 30 July
Unloading: Ullapool, 5 August

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	
D Stirling	
D Medrano	
J Hunter	25-31 July

Sampling Gear and Equipment

Water sampling carousel with Seabird CTD, and water sampling kit.
Large Bongo net (2 x 200µm mesh) and flow meters.
2 x Ocean sampler.
2 x Scanmar depth units.
Drop camera/video frame
Day Grab and table (on for 1414a)

Estimated Days per Project: SP0040, 12 days

Overview

The work carried out during cruise 1314a will inform SP0040, a project that examines the ability of marine spatial planning measures to aid the protection of vulnerable habitats and species. The programme of plankton sampling conducted in this cruise will target the collection of larvae of (UK Biodiversity Action Plan) priority marine species. A secondary aim

is to survey areas that may serve as potential suitable habitats post-settlement using a drop camera system.

Objectives

1. To sample plankton communities using the large bongo net at 43 stations (Figure 1). Circumstances allowing, double oblique tows will be performed at each station. Collected samples will be stored in isopropanol and will be analysed in the laboratory at a later time for the presence of *Atrina fragilis* and other priority marine species.

2. To collect depth-stratified larval and water samples in the Sound of Canna over a 48 hour period using MSS's Ocean Sampler (Figure 2). Collected samples will be stored in isopropanol.

3. To sample the variation in temperature and salinity in the water column at each sample station using a Seabird CTD sampler. The CTD will be deployed in conjunction with a multi-bottle water sampler.

4. To collect water samples at each site for the purposes of calibration. Water samples will be taken prior to the deployment of the large bongo nets. Sampled depths will vary between stations.

5. To retrieve and redeploy the McLane Zooplankton Sampler (ZPS) within the Sound of Canna (Figure 2).

6. To investigate, time permitting, areas that may provide potentially suitable habitats for various priority marine species using the drop-camera frame (Figures 2 and 3).

7. To collect 0-group sandeels (*Ammodytes marinus*) from two banks in the North Minch for later analysis. Samples will be frozen in order to preserve aspects of their otolith chemistry (Fig. 4).

Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 22 July 2014.

Scientists will join the vessel in the afternoon of Thursday 24 July, with the vessel proceeding to the first sample station and then onwards to the Small Isles the following day. Daily scientific sampling will occur between 04:00 and 16:00 hours (all times UTC). Plankton samples (collected using the large bongo net), water samples, and CTD transects will be taken at each station during the transit to the Small Isles.

A depth-stratified survey of plankton in the Sound of Canna will be conducted using the Ocean Sampler over the next two days. The retrieval and redeployment (the next day) of the McLane Zooplankton Sampler (ZPS) within the Sound of Canna will also be conducted during this phase of the cruise. Three drop camera surveys will be conducted in the waters surrounding the Small Isles as will the collection of further plankton samples using the large bongo net. It is anticipated that the vessel will make way for Mallaig on 30 July to facilitate the transfer of scientific staff.

On the morning of 31 July, the vessel will resume the programme of plankton sampling using the large bongo net, sampling from the wider area of the Minch. In addition, 0-group sandeels will be collected from two banks in the North Minch using a modified scallop dredge.

It is expected that the vessel will finish the programme of plankton sampling on 4 August during transit to Ullapool. Unloading will occur on the morning of 5 August.

Normal contacts will be maintained with the Marine Laboratory.

Submitted:
P Boulcott,
27 June 2014.

Approved:
I Gibb
21 July 2014.

Figure 1: Proposed sampling stations (green circles) for the large bongo net**.** CTD transects and water samples will also be taken.

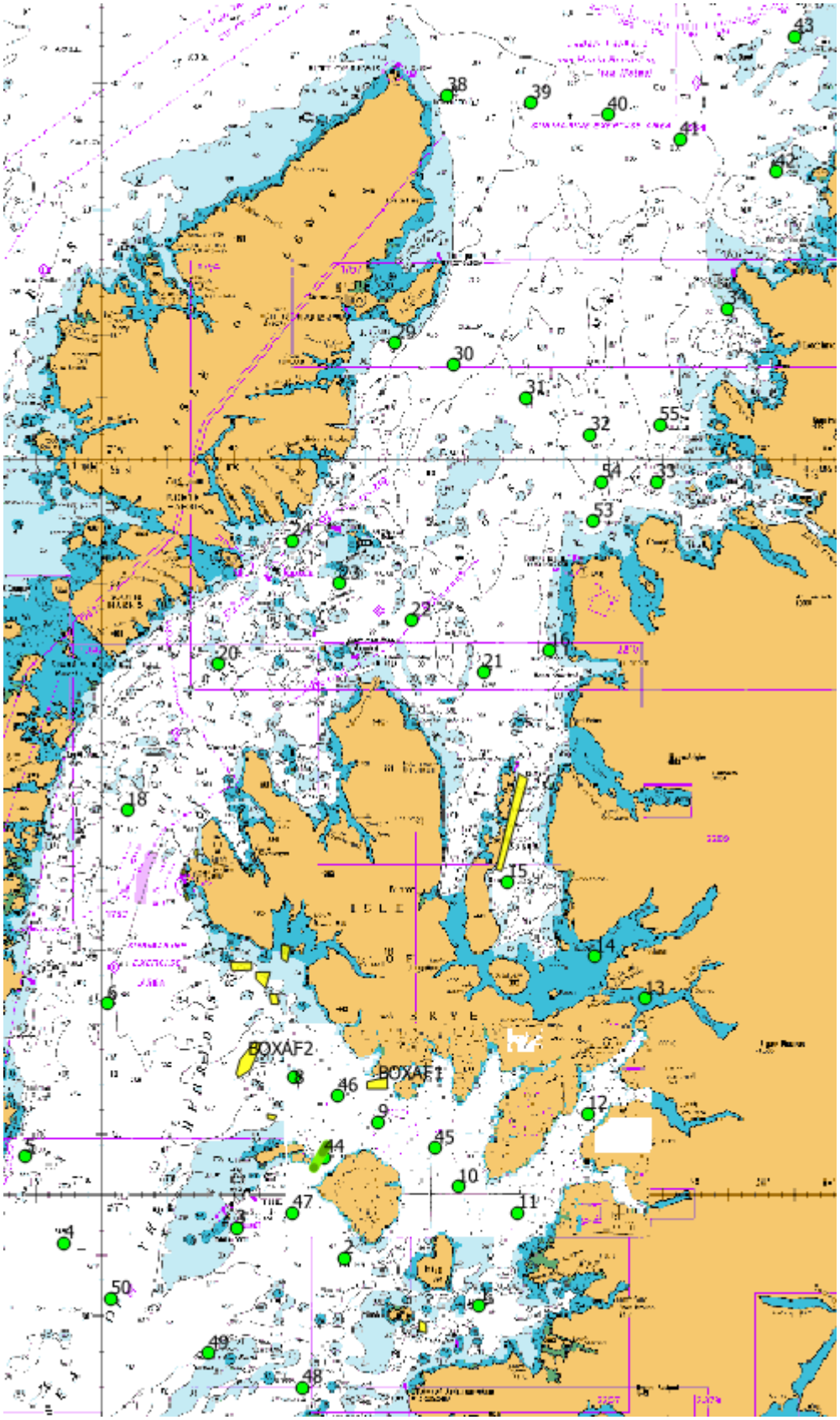

Figure 2: Position of ocean sampler transect (green dashed line) to obtain depth stratified larval samples; recovery position of ZPS (red star); and possible drop camera survey boxes (green hatched) in the Sound of Canna.

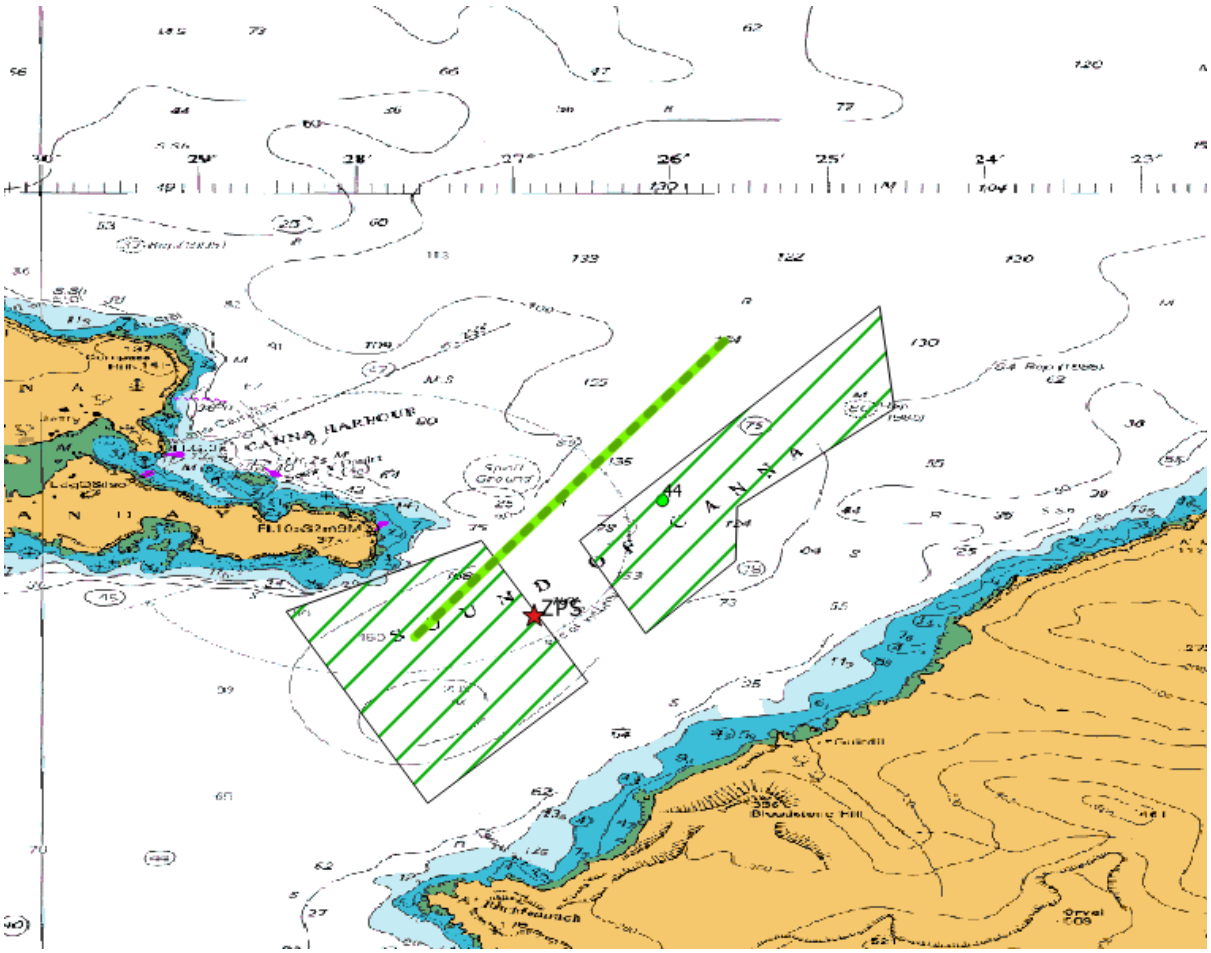

Figure 3: Position of two possible drop camera survey boxes (BOX AF1 and BOX AF2) in to the waters north of Canna.

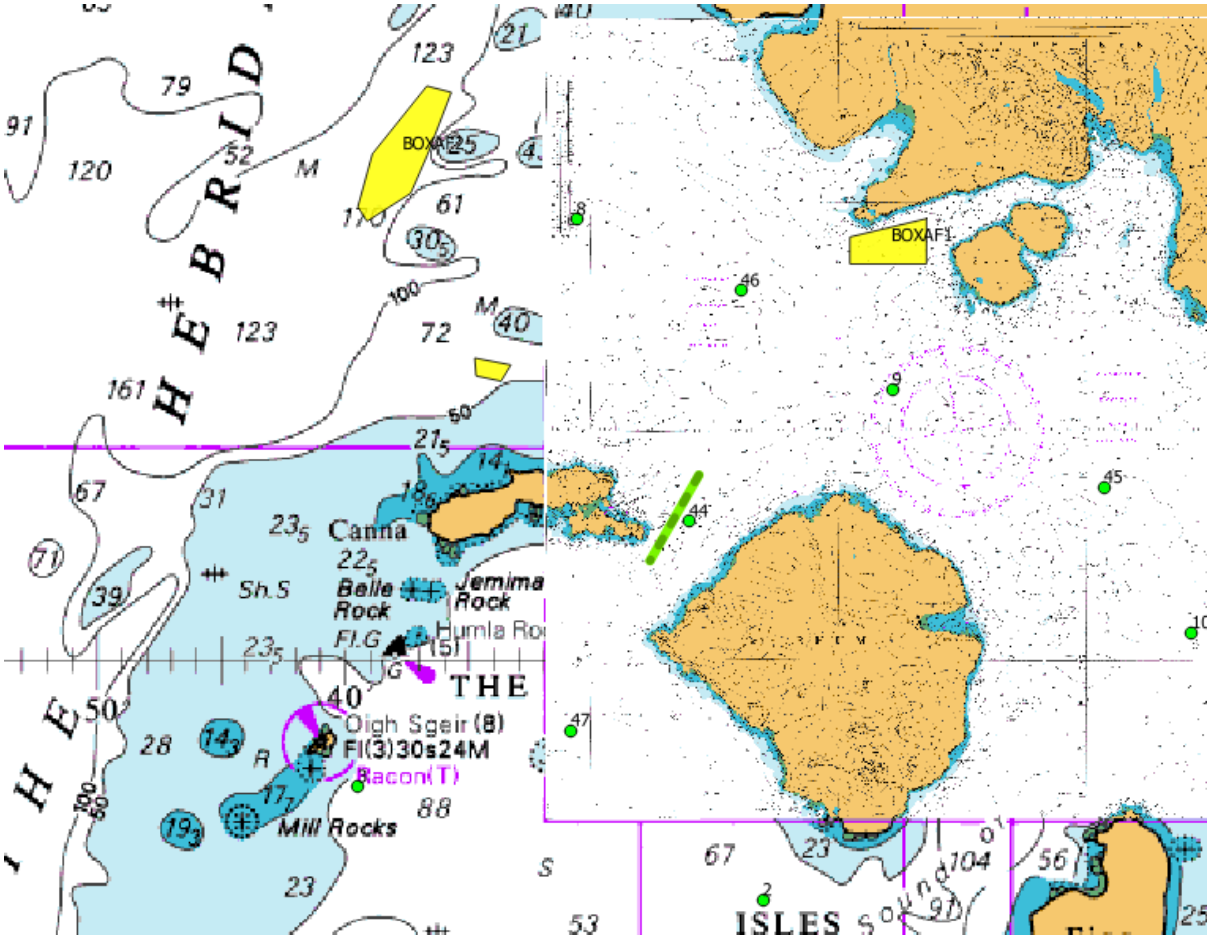

Figure 4: Position of two sandeel dredge boxes (DREDGE1 and DREDGE2)