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FRV *Alba na Mara*

Cruise 0609A

REPORT

Dates: 10-15 April 2009

Loading: Fraserburgh, 6 April 2009

Unloading: Ullapool, 15 April 2009

Project Code: MF02Q (6 days)

Personnel:

F Neat (SIC)

M Burns

P Boulcott

D Bailey (visitor University of Glasgow)

Gear:

- Jackson Rockhopper BT 158 trawl with Morgere doors and Scanmar sensors.
- Lander frame and underwater video camera kit and current meter.
- Fish tagging equipment and plastic fish tank.

Objectives:

1. To assess suitability of using baited underwater cameras (BUC) to estimate fish numbers in inshore areas.
2. To undertake trawling of adjacent areas for comparison with BUC estimates of fish numbers.

Narrative

Alba na Mara sailed from Fraserburgh at 07.00 hrs on 10 April and arrived at Loch Ewe the following morning. Gale force winds prevented deployment of the BUC until 17.00 hrs when a successful trial deployment was made. Work resumed the next morning and continued uninterrupted by weather for the remainder of the cruise. BUC deployments and trawls were made throughout daylight hours in an area at the mouth of the loch and to the south-west (Figure 1). *Alba na Mara* worked in close contact with a local vessel chartered by the laboratory to deploy fish traps in the same area. On two occasions the charter vessel brought live cod and

saithe captured in the fish traps to *Alba na Mara* for tagging. The vessel docked in Ullapool on the evening of 14 April. The following morning *Alba na Mara* was unloaded with gear and staff transported back to Aberdeen.

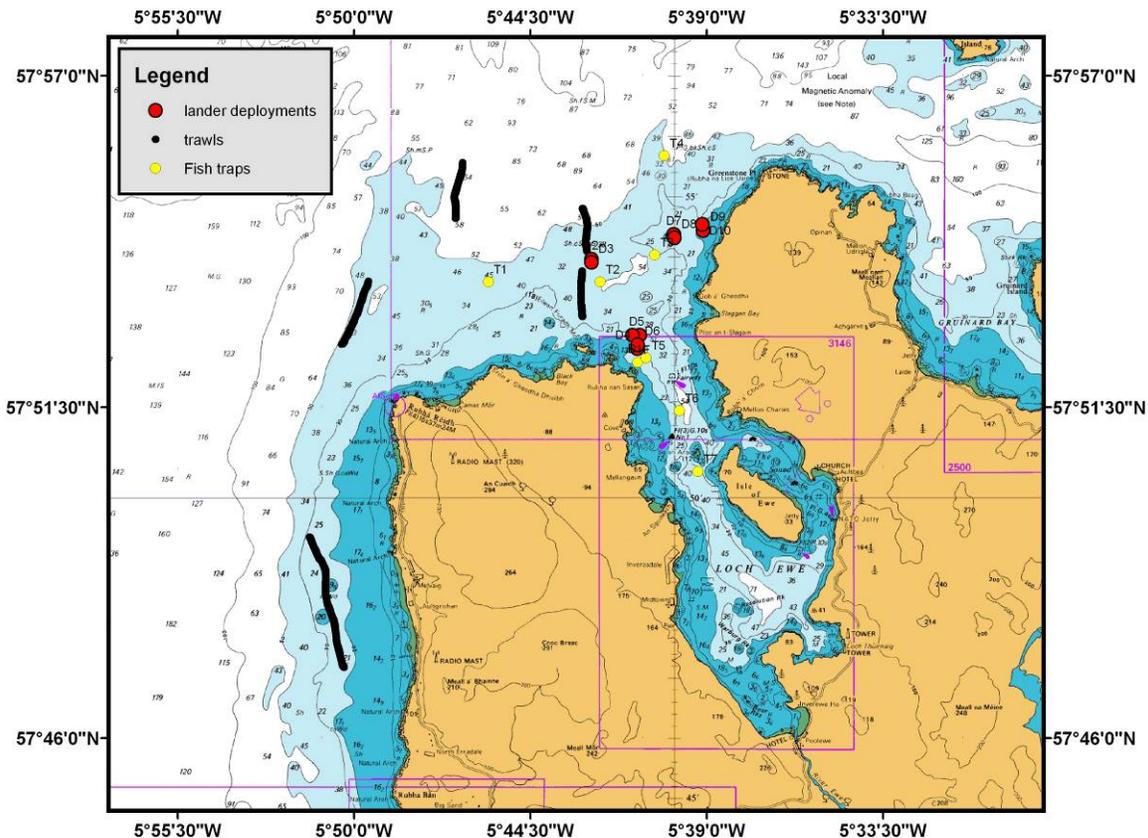


Figure 1. Map of the study area (Loch Ewe) showing trawl paths (black lines), BUC deployment sites (red dots) and fish trap locations (yellow dots).

Results

1. **Trawl hauls.** Five trawls were made in areas adjacent to where the camera and traps were located (Figure 1). Scanmar net sensors were used to monitor gear performance. Catches were very low (less than 10 kg per hr). Species included lesser spotted dogfish, plaice, lemon sole, cod, blond ray, whiting, greater sandeel and poor cod. On one occasion the net came fast, but no significant damage was incurred.
2. **BUC deployments.** The lander frame housing the BUC was deployed from the stern of the vessel by lowering the frame first and paying out the mooring line, flotation and buoys. The system was deployed and retrieved without problem on 10 separate occasions (Table 1). A demonstration video of the deployment was made for future

reference. Deployments were made in depths ranging from 40 to 20 m and at distances of approximately 2 to 0.5 km from the shore (Fig 1). A range of habitats including sand, boulders and reef/bedrock were sampled in this way. Deployment duration lasted between 80 and 240 minutes (Table 1). A digital still photograph was taken each minute during the deployment. Video footage was taken constantly from the digital camera and an additional video camera mounted on the outside of the frame looking out. A Nortec Aquadopp current meter attached inside the frame recorded current velocity and direction, temperature and depth. Bait used consisted of mackerel, squid and a composite fish meal paste. Each evening the images and video were scored for the presence of fauna attracted to the bait. This preliminary analysis suggests fish numbers were very low (1 per hour or less). Species observed included ling, cod, whiting and poor cod. Invertebrate fauna were more commonly observed including large numbers of squat lobster and occasional brown crabs and starfish.

Number	date	depth (m)	latitude (dec)	longitude (dec)	time (UTC)	duration (min)	no. of images
1	12/04/2009	33	57.8783	-5.68495	07:55:00	210	217
2	12/04/2009	32	57.8993	-5.70987	12:00:00	120	147
3	12/04/2009	32	57.89838	-5.70987	14:55:00	210	161
4	13/04/2009	25	57.87455	-5.68602	07:58:00	240	254
5	13/04/2009	24	57.87828	-5.68848	13:50:00	150	158
6	13/04/2009	25.5	57.87565	-5.68596	16:45:00	90	99
7	14/04/2009	30	57.90612	-5.66715	06:50:00	100	117
8	14/04/2009	24	57.89838	-5.70987	09:30:00	100	114
9	14/04/2009	22	57.90724	-5.65195	11:45:00	80	87
10	14/04/2009	20	57.90892	-5.65232	13:40:00	105	115

Table 1. BUC deployment details.

3. **Fish tagging.** Two cod and two saithe were implanted with electronic data storage tags to complement existing research projects on the movements of commercial fish species in Scottish waters.
4. **Fish Traps.** The local vessel chartered by Marine Scotland deployed a series of traps in similar depths in areas adjacent to the trawl and BUC sites. Initial indications suggested the number of species was considerably higher in the traps than was observed by the BUC and sampled by the trawl. This may reflect a nocturnal component of the fish community. The details of these data will be made available in a separate report.

F C Neat
22 April 2009