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

MRV *Scotia*

Survey 0313S

PROGRAMME

19 February –12 March 2013

Loading: Aberdeen, 15 February 2013
Half landing: Ullapool or Greenock (Flexible)
Unloading: Aberdeen, 12 March 2013

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

F Burns	(SIC – Part 1)
J Drewery	(SIC – Part 2)
R Kynoch	(Part 1)
M Kinghorn	
M Gault	
R Cairns	
A Jaworski	(Part 1)
A Edridge	(Part 1)
P Clark	(Part 2)
E Lynes	(Part 2)
S Wallace	(Part 2)
M Oliver	(Visitor, MI Observer)

Out-turn days: 22 - RV1302

Fishing Gear: GOV Trawl (BT 137) fitted with ground gear D.
Plankton Sampling Gear: Gulf 7, ichthyoplankton sampler.

Objectives

1. Demersal trawling survey of the grounds off the north and west of Scotland in ICES Subarea VIa.

2. To obtain temperature and salinity data from the surface and seabed at each trawling station.

3. Collect additional biological data in connection with the EU Data Collection Framework (DCF).

4. Opportunistic sampling using the Gulf 7 to determine densities of mackerel eggs within the area covered by the trawl survey.

Procedures

General

Loading of the trawl gear and scientific equipment will take place on 15 February with rigging and testing being completed on the same day. *Scotia* will then sail on the morning of 19 February. A training haul will be undertaken during the passage north to ensure all fishing gear/sensors are working effectively. *Scotia* will then proceed north and commence fishing operations the next morning on predefined stations off the north Scottish coast and west of 4'W with weather conditions thereafter determining the route taken on the survey.

Trawling

This is a random-stratified survey design with trawl locations being randomly distributed within ten predefined sampling strata (See Figure1). The intention is for trawls to be undertaken on suitable ground as near to the specified sampling position (See Table 1) as is practicable and where possible within a radius of 5 nautical miles of the sampling position. In the event that suitable ground cannot be sourced to trawl at a particular sample location (or within 5nm of) the nearest 'secondary' or additional station will be used. Hauls will be of 30 minutes duration and in the main fishing operations will be restricted to daylight hours between 0700 and 1800 though exact start and finish times will vary slightly according to geographical location. The Scanmar system will be used to monitor the headline height, wing spread and door spread for each haul. Bottom contact data from each trawl will also be collected using the NOAA bottom contact sensor which will be mounted on a bar in the centre of the ground-gear. In addition to the routine sampling, biological data will be collected for target species in line with the EU data regulation. All fish will be processed in accordance with Standing Instructions.

Hydrography

CTD casts will be taken at each trawl station; in addition the thermosalinograph will run continuously to obtain sea surface temperature and salinity throughout the survey area.

Gulf 7 sampling

Oblique tows will be carried out opportunistically during the hours of darkness using the Gulf 7 Sampler. The intention will be to collect, where possible, one sample within each half statistical rectangle bisected vertically (e.g. 45E1W/45E1E). The daily sampling plan will be discussed and then decided after consultation with the Captain and Fishing Master.

Normal contact will be maintained with the Marine Laboratory.

Submitted:
F Burns
11 February 2013

Approved:
I Gibb
14 February 2013

Figure 1: 0313S - 2013 ICES Subarea VIa Survey Strata and sampling positions

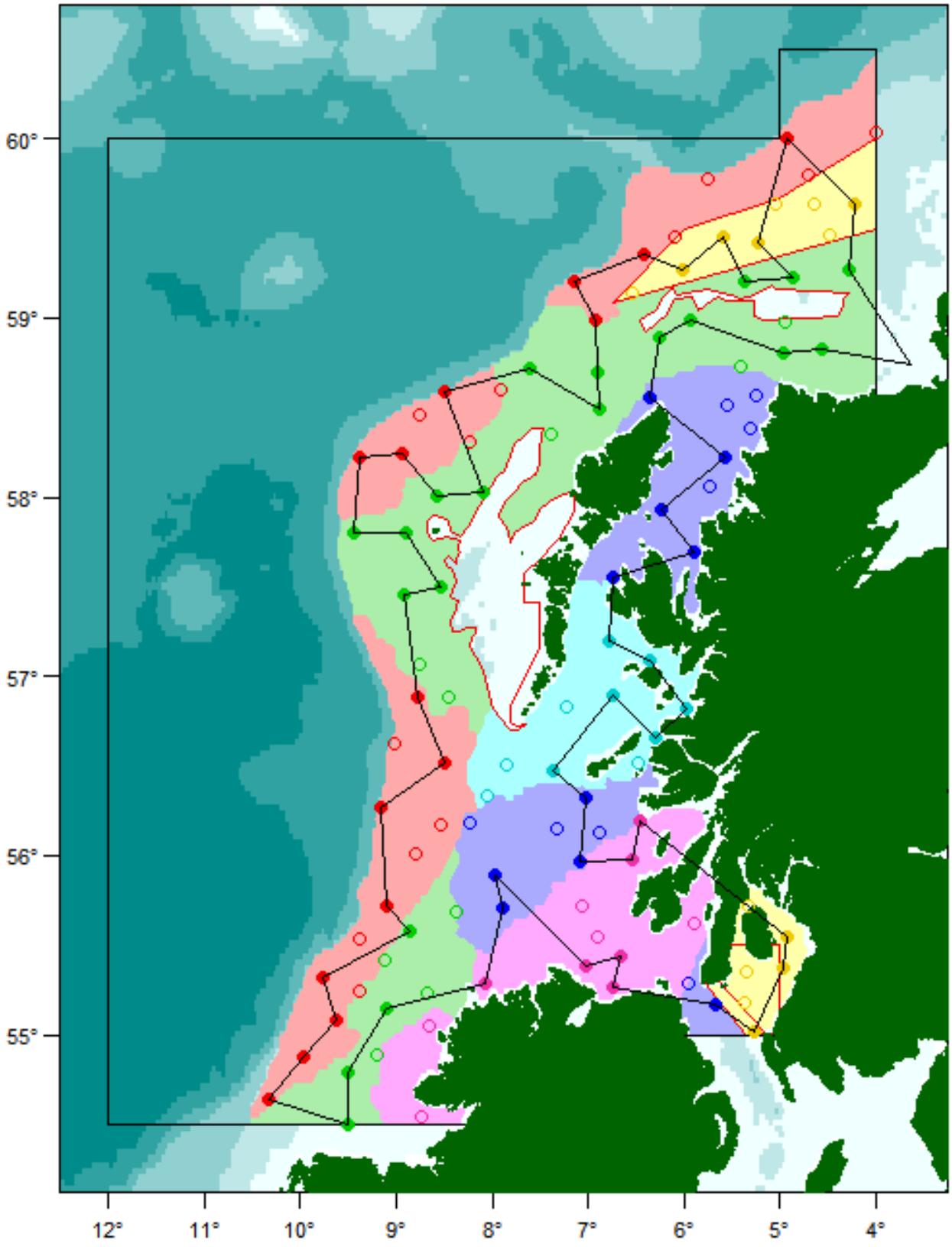

Table 1: 0313S - Sampling Positions

Station	decimal_lat	decimal_lon	deglat	deglon	stratum
1	58.82395	-4.56466	5849.44N	0433.88W	green1
2	58.80754	-4.97582	5848.45N	0458.55W	green1
3	58.98735	-5.94476	5859.24N	0556.69W	green1
4	58.88673	-6.24972	5853.20N	0614.98W	green1
5	58.55191	-6.36186	5833.11N	0621.71W	blue1
6	58.2193	-5.57485	5813.16N	0534.49W	blue1
7	57.93079	-6.232	5755.85N	0613.92W	blue1
8	57.69515	-5.89465	5741.71N	0553.68W	blue1
9	57.55548	-6.73288	5733.33N	0643.97W	blue1
10	57.1986	-6.77932	5711.92N	0646.76W	lightblue
11	57.08841	-6.36712	5705.30N	0622.03W	lightblue
12	56.81944	-5.97436	5649.17N	0558.46W	lightblue
13	56.6607	-6.29026	5639.64N	0617.42W	lightblue
14	56.89113	-6.74303	5653.47N	0644.58W	lightblue
15	56.47686	-7.36999	5628.61N	0722.20W	lightblue
16	56.3204	-7.01914	5619.22N	0701.15W	blue2
17	55.96582	-7.07981	5557.95N	0704.79W	blue2
18	55.9814	-6.54733	5558.88N	0632.84W	pink
19	56.19269	-6.46391	5611.56N	0627.83W	pink
20	55.54433	-4.93277	5532.66N	0455.97W	clyde
21	55.37406	-4.96038	5522.44N	0457.62W	clyde
22	55.01643	-5.27727	5500.99N	0516.64W	clyde
23	55.16782	-5.66887	5510.07N	0540.13W	blue2
24	55.26924	-6.73269	5516.15N	0643.96W	pink
25	55.4363	-6.66218	5526.18N	0639.73W	pink
26	55.38633	-7.03042	5523.18N	0701.83W	pink
27	55.89624	-7.96734	5553.77N	0758.04W	blue2
28	55.70382	-7.8898	5542.23N	0753.39W	blue2
29	55.29185	-8.07046	5517.51N	0804.23W	pink
30	55.14475	-9.10369	5508.68N	0906.22W	green2
31	54.79125	-9.50791	5447.48N	0930.47W	green2
32	54.50103	-9.50922	5430.06N	0930.55W	green2
33	54.64428	-10.3312	5438.66N	1019.87W	red3
34	54.87956	-9.95663	5452.77N	0957.40W	red3
35	55.08178	-9.61296	5504.91N	0936.78W	red3
36	55.31729	-9.75932	5519.04N	0945.56W	red3
37	55.57354	-8.86059	5534.41N	0851.64W	green2
38	55.71514	-9.09234	5542.91N	0905.54W	red3
39	56.27281	-9.16424	5616.37N	0909.85W	red3
40	56.51887	-8.49463	5631.13N	0829.68W	red3
41	56.88947	-8.76869	5653.37N	0846.12W	red3
42	57.45252	-8.92296	5727.15N	0855.38W	green1
43	57.50176	-8.53171	5730.11N	0831.90W	green1
44	57.80513	-8.90689	5748.31N	0854.41W	green1
45	57.79616	-9.44456	5747.77N	0926.67W	green1
46	58.22721	-9.38607	5813.63N	0923.16W	red2
47	58.24066	-8.93868	5814.44N	0856.32W	red2
48	58.00357	-8.56658	5800.21N	0833.99W	green1
49	58.02256	-8.09127	5801.35N	0805.48W	green1
50	58.58971	-8.4904	5835.38N	0829.42W	red2
51	58.71581	-7.60064	5842.95N	0736.04W	green1
52	58.49247	-6.88996	5829.55N	0653.40W	green1
53	58.69544	-6.90187	5841.73N	0654.11W	green1
54	58.98844	-6.92372	5859.31N	0655.42W	red1
55	59.20145	-7.15012	5912.09N	0709.01W	red1
56	59.35916	-6.4117	5921.55N	0624.70W	red1
57	59.27094	-6.01365	5916.26N	0600.82W	windsock
58	59.45636	-5.59155	5927.38N	0535.49W	windsock
59	59.20571	-5.37469	5912.34N	0522.48W	green1
60	59.22831	-4.86268	5913.70N	0451.76W	green1
61	59.42306	-5.22605	5925.38N	0513.56W	windsock
62	59.99768	-4.9208	5959.86N	0455.25W	red1
63	59.6405	-4.22525	5938.43N	0413.52W	windsock
64	59.26938	-4.28777	5916.16N	0417.27W	green1