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MRV *Scotia*

Survey 1718S

PROGRAMME

12 November - 4 December 2018

Loading: Aberdeen, 8 November 2018
Staff transfer: Ullapool, 14 November 2018 (TBC)
Half Landing: Greenock / Ullapool, 24 November 2018 (TBC)
Unloading: Aberdeen, 4 December 2018

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.

Estimated days by project: 21 days – RV1813 (20507) & 2 days – C80040 (20397)

Fishing Gear

GOV Trawl (BT137) and ground gear D (hoppers).

Objectives

1. To participate in the ICES co-ordinated western division demersal trawling survey.

2. To obtain temperature and salinity data profiles at each trawling position.

3. To collect additional biological data in connection with the EU data collection framework (DCF).

4. Retrieval of Compass moorings deployed during previous survey.

Procedures

The majority of the fishing gear and scientific equipment for 1718S will be loaded on 8 November. *Scotia* will sail on 12 November and (after all safety drills & shakedown trawl) commence fishing operations the following morning on stations to the west of the Orkneys. Weather conditions at the time will determine the exact start area. Survey schedule and operations will be decided by SIC after daily consultation with Fishing Master and Captain. A staff transfer will be required at Ullapool on 14 November. A half landing with be made at Greenock or Ullapool around 23 or 24 November to exchange staff, but the date and port are to be confirmed once the vessel has

commenced operations. The survey will finish in Aberdeen on 4 December with all staff and equipment/fishing gear returning to the Marine Laboratory.

Trawling

This is a random-stratified survey design with trawl stations being distributed within twelve predefined strata covering the sampling area (Figure 1). A more detailed map showing the Clyde trawl stations in relation to the underwater cable installed in 2017 is provided in Figure 2. A total of 60 primary and 38 secondary stations have been generated. The intention is for 60 trawls to be undertaken on suitable ground as near to the specified primary sampling positions (Table 1) as is practicable, and where possible within a radius of five nautical miles of the sampling position. In the event that trawling is not possible within 5 nm of any primary station then the nearest appropriate secondary station will be used. Hauls will be of 30 minutes duration unless circumstances dictate otherwise. Where possible, fishing operations will be restricted to daylight hours. 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 middle 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.

Fish Sampling

All fish will be processed in accordance with the protocols as described in the Manual of the IBTS North Eastern Atlantic Surveys. *Series of ICES Survey Protocols SISP 15. 92 pp. http://doi.org/10.17895/ices.pub.3519.*

Hydrography Sampling

CTD casts will be taken at each trawl station, weather permitting.

Compass Moorings

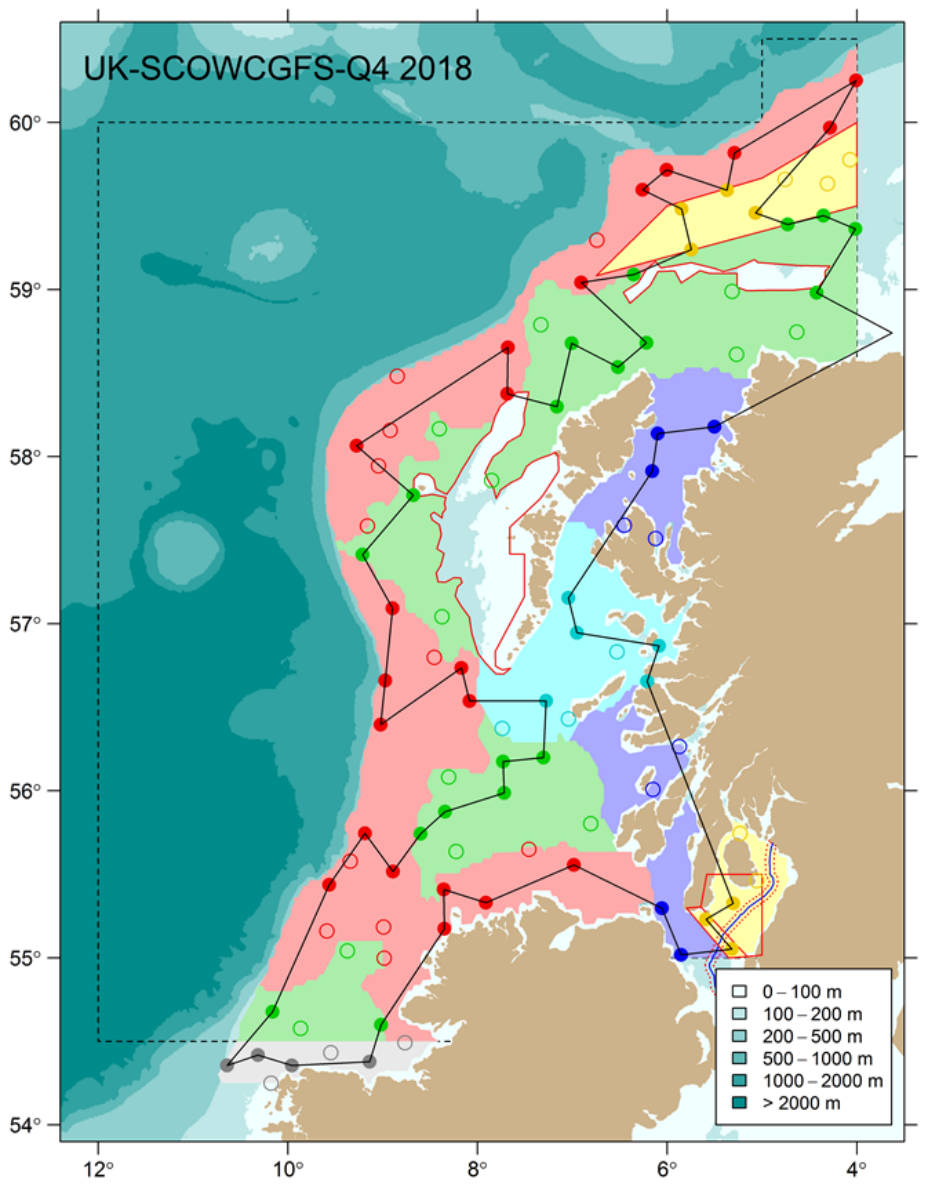
During the survey two days will be allocated to the retrieval of six acoustic moorings deployed during previous surveys. An acoustic release system will be deployed from the vessels side deck to trigger each mooring. A map displaying the mooring locations together with their positions is provided in Figure 3.

Normal contacts will be maintained with MSS.

Submitted:
R J Kynoch
17 October 2018

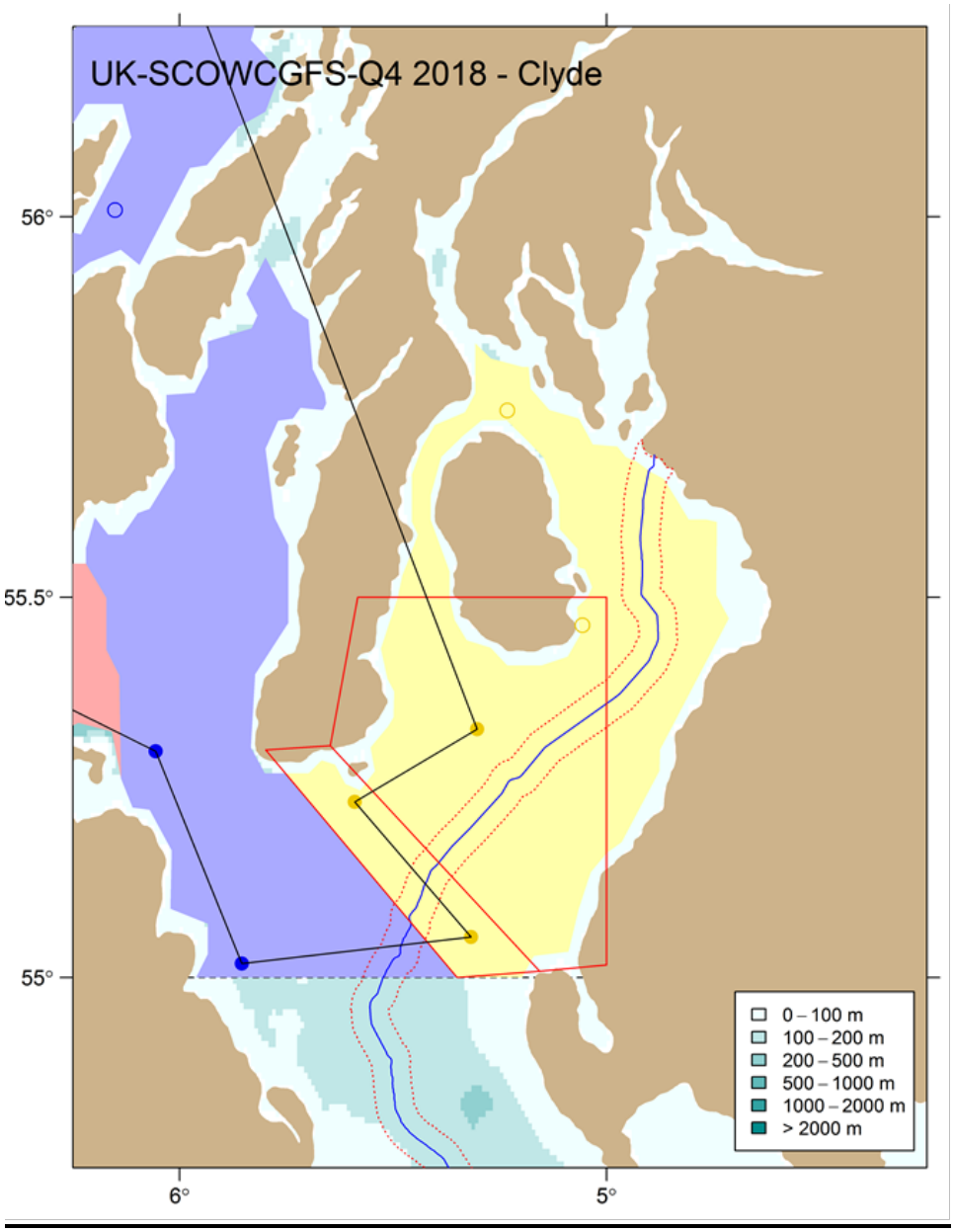
Approved:
I Gibb
05 November 2018

Figure 1: 1718S trawl locations.



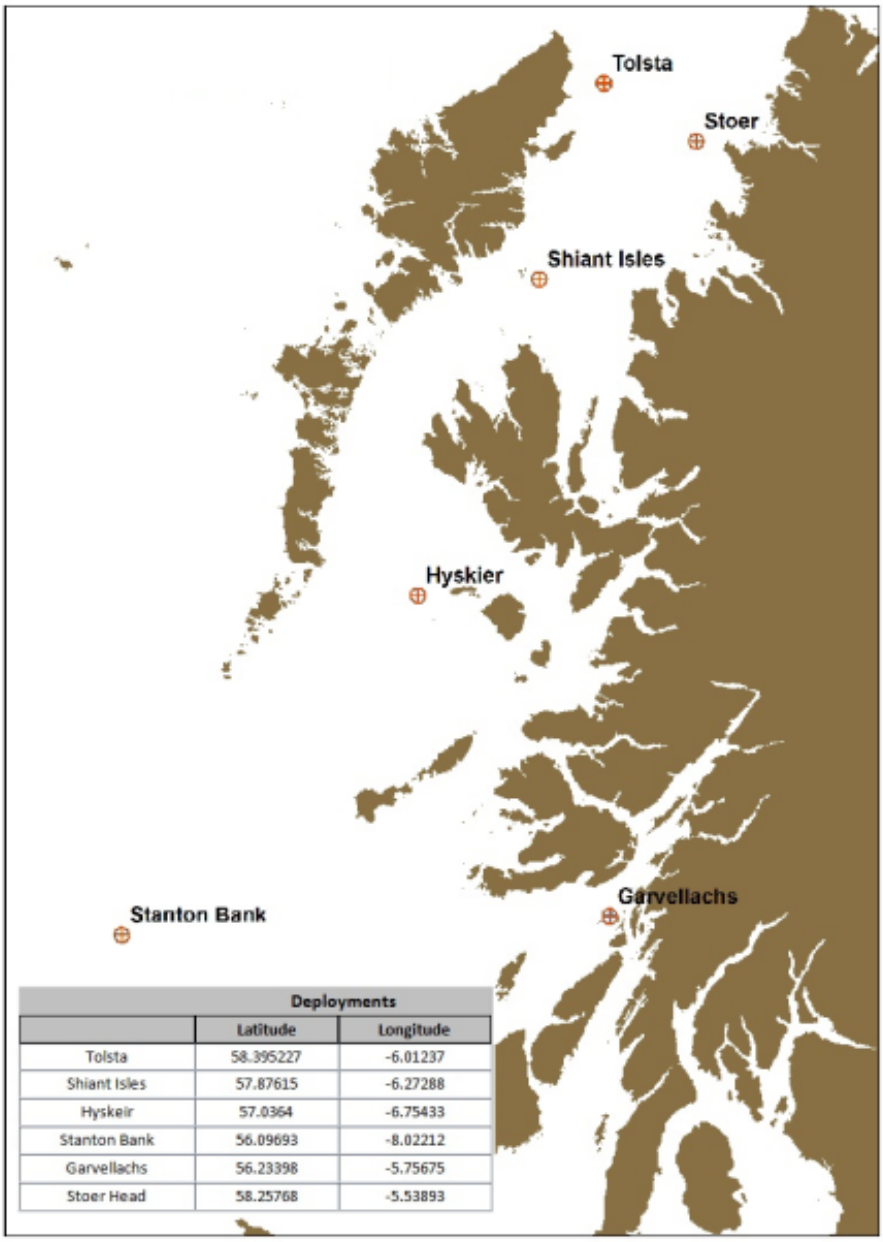
Note - tow positions for each core station (solid circle) and alternative/additional positions (empty circles) will be added as time allows.

Figure 2: Detailed map showing Clyde stations in relation to cable installed in 2017.



Note - The blue line shows the location of the deep-water cable installed in 2017 and the red dotted line shows the ± 1.5 nmi safety area around the cable.

Figure 3: Location and position of Compass moorings.



Deployments		
	Latitude	Longitude
Tolsta	58.395227	-6.01237
Shiant Isles	57.87615	-6.27288
Hyskeir	57.0364	-6.75433
Stanton Bank	56.09693	-8.02212
Garvellachs	56.23398	-5.75675
Stoer Head	58.25768	-5.53893

Table 1: 1718S – Position of primary sampling stations.

Core	lat	lon	deglat	deglon	stratum	Core	lat	lon	deglat	deglon	stratum
1	58.98144	-4.42536	58 58.89N	04 25.52W	green1	31	56.19877	-7.30425	56 11.93N	07 18.26W	green3
2	59.36254	-4.01641	59 21.75N	04 00.98W	green1	32	56.1753	-7.73021	56 10.52N	07 43.81W	green3
3	59.44308	-4.35279	59 26.58N	04 21.17W	green1	33	55.98728	-7.71916	55 59.24N	07 43.15W	green3
4	59.38945	-4.72942	59 23.37N	04 43.76W	green1	34	55.87537	-8.34371	55 52.52N	08 20.62W	green3
5	59.45856	-5.07017	59 27.51N	05 04.21W	windsock	35	55.74283	-8.60113	55 44.57N	08 36.07W	green3
6	59.96872	-4.2822	59 58.12N	04 16.93W	red1	36	55.51651	-8.89112	55 30.99N	08 53.47W	red2
7	60.25118	-4.00839	60 15.07N	04 00.50W	red1	37	55.74518	-9.18827	55 44.71N	09 11.30W	red2
8	59.81734	-5.29078	59 49.04N	05 17.45W	red1	38	55.43685	-9.56439	55 26.21N	09 33.86W	red2
9	59.59446	-5.36947	59 35.67N	05 22.17W	windsock	39	54.67774	-10.162	54 40.66N	10 09.72W	green4
10	59.71638	-6.00708	59 42.98N	06 00.42W	red1	40	54.35557	-10.6416	54 21.33N	10 38.50W	gray
11	59.59716	-6.26029	59 35.83N	06 15.62W	red1	41	54.41882	-10.3158	54 25.13N	10 18.95W	gray
12	59.4816	-5.84877	59 28.90N	05 50.93W	windsock	42	54.35677	-9.95649	54 21.41N	09 57.39W	gray
13	59.23954	-5.74677	59 14.37N	05 44.81W	windsock	43	54.37895	-9.13972	54 22.74N	09 08.38W	gray
14	59.08893	-6.35448	59 05.34N	06 21.27W	green1	44	54.60001	-9.01729	54 36.00N	09 01.04W	green4
15	59.04142	-6.90838	59 02.49N	06 54.50W	red1	45	55.17472	-8.35107	55 10.48N	08 21.06W	red2
16	58.68138	-6.21972	58 40.88N	06 13.18W	green1	46	55.4097	-8.35588	55 24.58N	08 21.35W	red2
17	58.5355	-6.52004	58 32.13N	06 31.20W	green1	47	55.33031	-7.91244	55 19.82N	07 54.75W	red2
18	58.67869	-7.00769	58 40.72N	07 00.46W	green1	48	55.55602	-6.98525	55 33.36N	06 59.11W	red2
19	58.29954	-7.16457	58 17.97N	07 09.87W	green1	49	55.29749	-6.05631	55 17.85N	06 03.38W	blue2
20	58.37568	-7.68622	58 22.54N	07 41.17W	red1	50	55.01851	-5.85448	55 01.11N	05 51.27W	blue2
21	58.65365	-7.68055	58 39.22N	07 40.83W	red1	51	55.0534	-5.31746	55 03.20N	05 19.05W	clyde
22	58.06488	-9.27509	58 03.89N	09 16.51W	red1	52	55.23097	-5.59004	55 13.86N	05 35.40W	clyde
23	57.76944	-8.679	57 46.17N	08 40.74W	green2	53	55.32647	-5.30351	55 19.59N	05 18.21W	clyde
24	57.41293	-9.21349	57 24.78N	09 12.81W	green2	54	56.65457	-6.21187	56 39.27N	06 12.71W	lightblue
25	57.09169	-8.89674	57 05.50N	08 53.80W	red2	55	56.86728	-6.08592	56 52.04N	06 05.16W	lightblue
26	56.66028	-8.9727	56 39.62N	08 58.36W	red2	56	56.94585	-6.95253	56 56.75N	06 57.15W	lightblue
27	56.39541	-9.02336	56 23.72N	09 01.40W	red2	57	57.15495	-7.04253	57 09.30N	07 02.55W	lightblue
28	56.73588	-8.16992	56 44.15N	08 10.20W	red2	58	57.91331	-6.15942	57 54.80N	06 09.57W	blue1
29	56.53717	-8.08532	56 32.23N	08 05.12W	red2	59	58.13784	-6.10132	58 08.27N	06 06.08W	blue1
30	56.53911	-7.27827	56 32.35N	07 16.70W	lightblue	60	58.1783	-5.50245	58 10.70N	05 30.15W	blue1