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

MRV *Sir John Murray*

Survey 0114SJM

PROGRAMME

10-18 November 2014

Ports

Loading: Troon, 6 November 2014
Sailing: Troon, 10 November 2014
Unloading: Troon, 18 November 2014

In setting the survey programme and specific objectives, 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 (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

C Robinson (SIC)
K MacNeish
F Gunn-Folmer

Sampling Gear

SEPA-provided 2 m beam trawl with 50 mm cod-end
SEPA-provided bottom trawl with 50 mm cod-end
SEPA-provided Day grab and table
MSS-provided Catamaran and manta neuston net

Estimated Days per Project: 5 days ST03n (OSPAR & MSFD D8); 3 days ST014 (MSFD D10).

Objectives

1. To undertake flatfish and sediment sampling in the Clyde and Solway in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD);

2. To undertake sample preparation for subsequent eco-toxicological analyses;

3. To undertake survey of sea-surface litter in the Firth of Clyde and Solway Firth;

4. To take adventitious samples of fish and shellfish for micro-plastics.

Procedure

Scientific gear will be loaded on to the *Sir John Murray* in Troon on 6 November. Scientific staff will join the vessel in Troon on 10 November.

Five sediment samples will be collected for contaminant analysis from each of two water bodies in the Firth of Clyde and one in the Solway Firth. Flatfish (dab, plaice or flounder) will be collected for determination of contaminants and their biological effects from the Bowling, Holy Loch, Hunterston (contaminants only), Garroch Head and Solway Firth fishing stations.

The manta neuston net will be towed on passage at five knots in order to survey and sample sea-surface litter from the Solway, the Clyde estuary and the inner, middle and outer Firth of Clyde. On completion of the survey, passage will be made to Troon where MSS scientific gear and staff will unload and return to Aberdeen.

Rest Day Provision

This is an eight-day survey programme, after which one rest day will be taken.

General Arrangements

Liquid nitrogen and other chemicals (e.g. formalin, methanol) will be carried aboard for the preservation and storage of biological materials.

Normal contacts will be maintained with the Laboratory.

Submitted:
C Robinson
04 November 2014

Approved:
I Gibb
04 November 2014.

Table 1
Intended sediment sampling locations.

Region	Area	Site	Lat	Long
Clyde	Largs Channel	Hunterston - FRS	55.764	-4.885
Clyde	Largs Channel	Hunterston2	55.777	-4.890
Clyde	Largs Channel	Hunterston3	55.786	-4.891
Clyde	Largs Channel	Hunterston4	55.792	-4.889
Clyde	Largs Channel	Hunterston5	55.741	-4.904
Clyde	Middle Offshore	Garroch Head - FRS	55.660	-4.986
Clyde	Middle Offshore	5km SW of Lady Isle	55.507	-4.815
Clyde	Middle Offshore	Middle Offshore	55.507	-4.901
Clyde	Middle Offshore	East of Brodick, mid channel	55.588	-4.960
Clyde	Middle Offshore	Middle Offshore South	55.434	-4.968
Irish Sea	Solway	Solway Firth @ NMMP site 25	54.750	-4.000
Irish Sea	Solway	Solway Firth BP1	54.767	-3.835
Irish Sea	Solway	Solway Firth BP2	54.757	-3.863
Irish Sea	Solway	Solway Firth BP3	54.750	-3.916
Irish Sea	Solway	Solway Firth BP4	54.727	-3.960

Table 2
Intended fishing locations and fish requirements.

Region	Area	Site	Lat	Long	Species	Effects	Chemistry
Clyde	Outer estuary	Bowling	55.925	-4.480	Flounder	50	25
Clyde	Inner Firth	Holy Loch	55.971	-4.892	Dab	50	25
Clyde	Largs Channel	Hunterston	55.787	-4.884	Plaice	-	20
Clyde	Middle Offshore	Garroch Head	55.660	-4.986	Plaice	25	25
Irish Sea	Solway	Balcary Point	54.673	-4.134	Dab*	50	25

*plaice to be taken if dab not available.

Table 3
Intended manta neuston trawl locations*.

Region	Area	Approx		Manta net tows	
		Lat	Long	No.	Duration
Clyde	Estuary (above Greenock)	55.92	-4.48	2	30 mins
Clyde	Estuary (below Greenock)	55.97	-4.80	4	45 mins
Clyde	Loch Long	56.03	-4.88	2	60 mins
Clyde	Inner Firth	55.97	-4.89	3	60 mins
Clyde	Kyles of Bute / Loch Striven	55.88	-5.06	3	60 mins
Clyde	Largs Channel	55.78	-4.88	3	30 mins
Clyde	Middle Offshore	55.66	-4.98	2	60 mins
Clyde	Irvine Bay	55.58	-4.80	1	60 mins
Clyde	Ayr Bay	55.50	-4.74	1	60 mins
Clyde	Outer Offshore	55.25	-5.00	2	120 mins
N Channel	North Channel	54.85	-4.82	2	120 mins
Solway	Luce Bay	54.75	-4.75	1	45 mins
Solway	Wigton Bay	54.75	-4.30	1	45 mins
Solway	Balcary Point	54.75	-3.90	1	60 mins
Solway	Offshore	54.65	-4.20	1	60 mins
Solway	Offshore 2	54.63	-4.60	1	60 mins

*Manta net to be used as weather allows, this table allows for optimal conditions.