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MRV *Alba na Mara*

Survey 2216A

PROGRAMME

2-6 December 2016

Ports

Loading: Leith, 28 November 2016

Sailing: Leith, 2 December 2016

Unloading: Leith, 6 December 2016

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

C Robinson (SIC)

K Donald

G Packer

Sampling Gear

BT 158 with 50 mm cod-end

2 m beam trawl with 50 mm cod-end

Day grab and table

Catamaran and manta neuston net

Objectives

1. To undertake flatfish sampling in St Andrews Bay, inner Firth of Forth, outer Firth of Forth and the Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
2. To undertake sediment sampling in the Outer Firth of Forth and the Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
3. To undertake sample preparation for subsequent ecotoxicological analyses.
4. To undertake survey of sea-surface litter in surface waters of the Scottish east coast.
5. Adventitious sampling of fish and shellfish for microplastics.
6. At two sites to collect samples of fish and epibenthic fauna in support of PhD project on trophic transfer of contaminants.

Estimated Days per Project: 4 days ST03n (OSPAR & MSFD D8); 1 day ST014 (MSFD D10)

Procedure

Fishing and scientific gear will be loaded in Leith at the end of the previous survey, prior to *Alba na Mara* sailing on 02 December. Flounder will be sampled in St Andrews Bay and in the Forth estuary (Tancred bank), dab will be sampled in the inner and outer Firth of Forth; five sediment stations will be sampled in both the outer Firth of Forth and the Forth estuary. The neuston manta trawl will be deployed in the Forth estuary, the Firth of Forth, and off the east coasts of Fife and East Lothian. This net is to be towed at 5 knots, or less, for 30-90 minutes in order to collect and sample microplastics floating on the sea surface. An additional sediment sample to be collected by Day grab from the course of each catamaran tow for subsequent microplastics determinations. Epibenthos and samples of a variety of fish species will be adventitiously sampled from the trawls in the Forth estuary and the Firth of Forth and frozen for work-up in the laboratory as part of a PhD investigating trophic transfer of contaminants.

Tables 1, 2 and 3 list the sediment, fishing and sea surface litter survey sites, respectively.

On completion of this survey, passage will be made to Leith from where all scientific gear and samples will be transferred to MSS (Aberdeen).

Rest Day Provision

This is a 5 day survey over a weekend. Assuming staff have worked all of the week before the survey, then a rest day will be taken on Wednesday 7th December.

General Arrangements

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

Normal contacts will be maintained with the Laboratory.

Submitted:
C Robinson
3 November 2016

Approved:
I Gibb
25 November 2016

Table 1: Sediment sampling locations.

Region	Area	Site	Lat	Long
Forth	Outer Offshore	E Isle of May	56.199	-2.410
Forth	Outer Offshore	N Wheat Stack	56.000	-2.250
Forth	Outer Offshore	NE Torness	56.100	-2.340
Forth	Outer Offshore	Rath Grounds	56.159	-2.659
Forth	Outer Offshore	S Isle of May	56.133	-2.535
Forth	Lower Forth Estuary	LFE GC	56.016	-3.486
Forth	Lower Forth Estuary	LFE DB	56.014	-3.441
Forth	Lower Forth Estuary	Crombie	56.030	-3.531
Forth	Lower Forth Estuary	LFE FEEAP station 7 (from 2011)	56.028	-3.543
Forth	Lower Forth Estuary	LFE EB (from 2012)	56.020	-3.519

Table 2: Proposed fishing locations and fish requirements.

Region	Site	Lat	Long	Region	Bio-effects	Chemistry
EScotland	St Andrews Bay	56.360	-2.750	Flounder	50	*25
Inner Firth of Forth	Kingston Hudds	56.130	-2.901	Dab	50	*25
Outer Firth of Forth	NE Dunbar	56.094	-2.400	Dab	50	*25
Forth estuary	Tancred Bank	56.030	-3.560	Flounder	50	*25

*5 pools of 5

Table 3: Proposed manta net (sea surface litter) sampling locations.

Region	No manta tows	Duration (mins)
East Scotland coast	<5	60
Outer Firth of Forth	<5	60
Inner Firth of Forth	<5	30-60
Forth estuary	<5	30