

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

MRV *Alba na Mara*

Survey 1815A

## **PROGRAMME**

26 November – 1 December 2015

### **Ports**

**Loading:** Leith, (23 November 2015)

**Sailing:** Leith, (26 November 2015)

**Unloading:** Leith, (01 December 2015)

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 White

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

Bongo net

### **Objectives**

1. To undertake flatfish sampling in St Andrews Bay, and Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
2. To undertake sediment sampling in St Andrews Bay, Outer Firth of Forth and Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
3. To undertake sample preparation for subsequent eco-toxicological 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 micro-plastics.

6. At two sites in the Forth estuary and Firth of Forth, to sample sediments, benthic infauna, benthic epifauna, demersal fish, phytoplankton and zooplankton in support of PhD project on trophic transfer of contaminants.

**Estimated Days per Project:** 4 days ST03n (OSPAR and MSFD D8); 2 days ST014 (MSFD D10)

### **Procedure**

Fishing and scientific gear will be loaded in Leith prior to *Alba na Mara* sailing on 26 November. Flounder and five sediment stations will be sampled in St Andrews Bay and in the Forth estuary (Tancred bank), five sediment stations will be sampled in the outer Firth of Forth. 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 five knots, or less, for 30-90 minutes in order to collect and sample micro-plastics floating on the sea surface. In the Forth estuary and the Firth of Forth additional sediment grabs will be collected for benthic invertebrates. Crabs and other epibenthos will be adventitiously sampled from Tancred bank beam trawls; additional fishing will be undertaken to collect dab and invertebrates (*Nephrops*, crabs, etc.) as may be found in the Firth of Forth. Six bongo net hauls will be undertaken in the Forth estuary and six in the Firth of Forth in order to obtain plankton samples.

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 six day survey over a weekend, and takes place over the St Andrew's Day holiday. Staff will, therefore, have a day off *in lieu* of the public holiday (to be taken on Wednesday 2 December) and a REST day due on Thursday 3 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  
11 November 2015

Approved:  
I Gibb  
12 November 2015

**Table 1:** Sediment sampling locations.

Region	Area	Site	Lat	Long
EScotland	St Andrews Bay	St Andrews Bay @ surveillance site 1	56.362	-2.628
EScotland	St Andrews Bay	St Andrews Bay Plankton Station 15	56.438	-2.660
EScotland	St Andrews Bay	St Andrews Bay @ surveillance site 2A	56.346	-2.616
EScotland	St Andrews Bay	St Andrews Bay	56.373	-2.698
EScotland	St Andrews Bay	St Andrews - mid trawl	56.376	-2.749
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	Flounder		Dab
				Effects	Chemistry	Chemistry
EScotland	St Andrews Bay	56.360	-2.750	50	25	
Outer Firth of Forth	NE Dunbar	56.094	-2.400			25
Forth estuary	Tancred Bank	56.030	-3.560	50	25	

**Table 3:** Proposed litter sampling locations.

Region	No manta tows	Duration (mins)
East Scotland coast	~5	60
Outer Firth of Forth	5-10	45-60
Inner Firth of Forth	5-10	30-45
Forth estuary	4	30

