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## **MRV *Alba na Mara***

Survey 2119A

### **PROGRAMME**

28 November – 02 December 2019

### **Ports**

**Loading:** Leith, Tuesday 22 November 2019

**Sailing:** Leith, Thursday 28 November 2019

**Unloading:** Leith, Monday 02 December 2019

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 per Project:** 3 days ST04a (OSPAR & MSFD D8); 1 day ST04c (MSFD D10) and 1 day ST014

### **Sampling Gear:**

BT 158 with 50 mm cod-end

2 m beam trawl with 50 mm cod-end

Day grab and table

Catamaran and neuston net

### **Objectives**

1. To undertake flatfish sampling in St Andrews Bay, Inner Firth of Forth and the Forth estuary (Tancred) in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
2. To undertake sediment sampling in the St Andrews Bay, Inner Firth of Forth and the Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
3. To undertake survey of sea-surface litter in surface waters of the Forth and Scottish east coast and record seabed litter collected by the trawls (MSFD D10).
4. To undertake fish, shellfish and sediment sampling in support of the microplastics ROAME (ST014).

## **Procedure**

Fishing and scientific gear will be loaded in Leith at the end of the previous survey, prior to *Alba na Mara* sailing on 28 November. After all drills have been undertaken, the vessel will steam to the first sampling station, the order of which will be decided by the SIC in conjunction with the master and will be influenced by prevailing weather conditions. Flounder will be sampled in St Andrews Bay and in the Forth estuary (Tancred bank), Dab will be sampled in the Inner Firth of Forth. Five sediment stations will be sampled at each of the St Andrews Bay, Inner Firth of Forth and the Forth estuary, and at each station two grabs will be taken: one for contaminants and one for microplastics. The neuston trawl (catamaran) will be deployed in the Forth estuary, the Firth of Forth, and off the east coasts of Fife and East Lothian, whenever possible according to fishing activities and weather conditions. This net is to be towed at five knots, or less, for 30 minutes in order to collect and sample microplastics floating on the sea surface. A variety of fish species will be adventitiously sampled from the trawls and frozen for work-up in the laboratory as part the microplastics ROAME (ST014). Records will be made of seabed litter caught by the trawls.

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 five day survey over a weekend and public holiday. One rest day will be allocated for this survey in compliance with SG WTD guidelines. Public Holiday will be taken at earliest possible convenience.

## **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:**

G Packer  
19 November 2019

### **Approved:**

I Gibb  
25 November 2019

**Table 1:** Sediment sampling locations.

Region	Area	Site	decLat	decLong	Lat	Long
Forth	Inner Offshore	Kingston Hudds	56.097	-2.923	56 05.80N	002 55.40W
Forth	Inner Offshore	Fairway Buoy	56.050	-3.002	56 03.00N	003 00.09W
Forth	Inner Offshore	Firth of Forth 49	56.119	-2.862	56 07.14N	002 51.74W
Forth	Inner Offshore	Firth of Forth 38	56.080	-2.987	56 04.79N	002 59.22W
Forth	Inner Offshore	Firth of Forth 33	56.049	-3.046	56 02.95N	003 02.74W
Forth	Lower Forth Estuary	LFE GC	56.016	-3.486	56 00.96N	003 29.16W
Forth	Lower Forth Estuary	Tancred	56.005	-3.509	56 00.28N	003 30.54W
Forth	Lower Forth Estuary	Crombie	56.030	-3.531	56 01.80N	003 31.86W
Forth	Lower Forth Estuary	LFE FEEAP station 7 (from 2011)	56.028	-3.543	56 01.68N	003 32.58W
Forth	Lower Forth Estuary	LFE EB (from 2012)	56.014	-3.454	56.00.84N	003 27.24W
E Scotland	St Andrews Bay	St Andrews Bay @ surveillance site 1	56.362	-2.628	56 21.72N	002 37.68W
E Scotland	St Andrews Bay	St Andrews Plankton Station 15	56.438	-2.660	56 26.28N	002 39.60W
E Scotland	St Andrews Bay	St Andrews Bay @ surveillance site 2A	56.346	-2.616	56 20.76N	002 36.96W
E Scotland	St Andrews Bay	St Andrews Bay	56.373	-2.698	56 22.38N	002 41.88W
E Scotland	St Andrews Bay	St Andrews Bay – mid trawl	56.376	-2.749	56 22.56N	002 44.94W

**Table 2:** Proposed fishing locations and fish requirements.

Region	Site	decLat	decLong	Lat	Long	Species	Gear	Bio-effects	Chemistry
E Scotland Coast	St Andrews Bay	56.360	-2.750	56 21.60N	002 45.00W	Flounder	Bottom trawl	50	*25
Inner Firth of Forth	Kingston Hudds	56.130	-2.901	56 07.80N	002 54.06W	Dab	Bottom trawl	50	*25
Lower Forth Estuary	Tancred Bank	56.030	-3.560	56 01.80N	003 33.60W	Flounder	Beam Trawl	50	*25

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

Region	No neuston net tows	Duration (mins)
East Scotland coast	<5	30
Forth Estuary	<5	30
Inner Firth of Forth	<5	30

## Maps of sampling regions



