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MRV *Alba na Mara*

Survey 0720A

PROGRAMME

16-24 November 2020

Ports

Loading: Fraserburgh 12 November 2020

Sailing: Fraserburgh, 16 November 2020

Unloading: Fraserburgh, 24 November (TBC)

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.

Sampling Gear:

Day grab and table

Catamaran and neuston net

Objectives

1. To undertake sediment sampling in the St Andrews Bay, Inner Firth of Forth, East Coast, Outer Firth of Forth and the Forth estuary in support of the Clean Seas Environment Monitoring Programme (OSPAR and MSFD).
2. To undertake survey of sea-surface litter in surface waters of the Forth and Tay (MSFD D10).
3. To undertake sediment sampling in support of the microplastics ROAME (ST014).

Estimated Days per Project: 7 days ST04a (OSPAR & MSFD D8); 1 day ST04c (MSFD D10) and 1 day ST014

Procedure

Due to the recent COVID-19 pandemic, details for this survey are still highly changeable. Fishing operations won't be possible on-board the *Alba* due to a lower number of personnel allowed to work on-board the ship. Only sediment samples and micro-plastics from surface catamaran neuston trawl will be collected. However, this has also led to greater availability of the *Alba* which has allowed the sampling areas to be increased. Six different sampling areas for sediment are considered for this survey, depending on where the *Alba* will operate from. Suitable ports include Fraserburgh, Invergordon, Montrose and Leith. In each sampling area (Moray Firth, St Andrews Bay, Lower Firth of Forth, Inner Forth estuary, Outer Forth and East Coast), 5-10 sediment stations will be sampled. At each station two grabs will be taken: one

for contaminants and one for micro-plastics. The neuston trawl (catamaran) will also be deployed in the Forth estuary and Moray Firth according to steaming restrictions and weather conditions, for a number of 30 minute tows. Specific coordinates have been provided for the tows. The order in which the sampling will be undertaken will be weather dependent and agreed in consultation with the master.

Table 1 and Map 1 list the sediment sites. Map 2 shows the planned locations for catamaran neuston trawls.

Possible sampling plan

See Appendix 1 for details of distances between port and sediment sampling sites.

	Leaving	Jobs	Arriving	Comments
Mon 16th	Fraserburgh	Moray Firth sediment	Invergordon	
Tues 17th	Invergordon	Moray Firth sediment	Invergordon	
Wed 18th	Invergordon	Moray Firth Cat tows	Invergordon	Tows 8–10 lower priority, can be done on Scotia Jan 2021
Thurs 19th	Invergordon	Moray Firth Cat tows	Fraserburgh	
Fri 20th	Fraserburgh	East Coast sediment (and 1 cat tow, weather permitting)	Montrose	Depends if Eric is on boat
Sat 21st	Montrose	St Andrews and Inner Forth sediment	Leith	
Sun 22nd	Leith	Lower Forth sediments and Inner Forth cat tows	Leith	
Mon 23rd	Leith	Outer Forth sediment and cat tows	Leith	
Tues 24th	Leith	Contingency for bad weather	Fraserburgh	

Rest Day Provision

This is planned to work over the weekend, with at least nine working days, therefore, one rest day will be allocated for this survey in compliance with SG WTD guidelines.

General Arrangements

Transport of additional equipment and chemicals will be arranged if required when the location of the *Alba* overnight berths are confirmed.

Normal contacts will be maintained with the Laboratory.

Submitted:

G Hermann/H. Anderson
12 November 2020

Approved:
I Gibb
13 November 2020

Table 1: Sediment sampling locations.

Region	Area	Site	Dec Lat	Dec Long	Lat	Long
Forth	Inner Offshore	Kingston Hudds	56.097	-2.923	56 05.80N	002 55.40W
Forth	Inner Offshore	Fairway Buoy	56.05	-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	56.08	-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	56.03	-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
Forth	Outer Offshore	Forth (E of Isle of May)	56.199	-2.410	56 11.96N	002 24.57W
Forth	Outer Offshore	Forth (N of Wheat Stack)	56.000	-2.250	55 59.99N	002 14.98W
Forth	Outer Offshore	Forth (NE Torness)	56.100	-2.340	56 6.00N	002 20.42W
Forth	Outer Offshore	Forth (Rath Grounds)	56.159	-2.659	56 9.56N	002 39.56W
Forth	Outer Offshore	Forth (S of Isle of May)	56.133	-2.535	56 8.01N	002 32.11W
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	-2.66	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
E Scotland	East Coast	EC1.1	56.626	-2.385	56 37.56N	002 23.10W
E Scotland	East Coast	EC1.2	56.597	-2.3880	56 35.82N	002 23.28W
E Scotland	East Coast	EC1.3	56.548	-2.4140	56 32.88N	002 24.84W
E Scotland	East Coast	EC1.4	56.540	-2.5210	56 32.40N	002 31.26W
E Scotland	East Coast	EC1.5	56.696	-2.1540	56 41.76N	002 9.24W

Moray Firth	Moray Firth	MF1.1	57.6840	-3.8610	57 41.04N	003 51.66W
Moray Firth	Moray Firth	MF1.2	57.6990	-3.8670	57 41.94N	003 52.02W
Moray Firth	Moray Firth	MF1.3	57.8990	-3.4200	57 53.94N	003 25.20W
Moray Firth	Moray Firth	MF1.4	57.9580	-3.8480	57 57.48N	003 50.88W
Moray Firth	Moray Firth	MF1.5	57.9090	-3.3840	57 54.54N	003 23.04W
Moray Firth	Moray Firth	MF2.1	57.8660	-2.8880	57 51.96N	002 53.28W
Moray Firth	Moray Firth	MF2.2	57.9120	-3.0590	57 54.72N	003 3.54W
Moray Firth	Moray Firth	MF2.3	57.9700	-2.8090	57 58.20N	002 48.54W
Moray Firth	Moray Firth	MF2.4	57.7800	-2.4100	57 46.80N	002 24.60W
Moray Firth	Moray Firth	MF2.5	57.9550	-2.7450	57 57.30N	002 44.70W
Moray Firth	Moray Firth	MF2.6	57.9790	-2.9130	57 58.74N	002 54.78W
Moray Firth	Moray Firth	MF2.7	57.8380	-3.2860	57 50.28N	003 17.16W
Moray Firth	Moray Firth	MF2.8	57.8400	-1.7240	57 50.40N	001 43.44W
Moray Firth	Moray Firth	MF2.9	57.8780	-3.3970	57 52.68N	003 23.82W
Moray Firth	Moray Firth	MF2.10	57.9250	-2.8730	57 55.50N	002 52.38W
Moray Firth	Moray Firth	105se	58.0500	-3.0000	58 3.00N	003 00.00W
Moray Firth	Moray Firth	95se	57.6667	-3.8167	57 40.00N	003 49.00W

Note: Greyed sites are addition from last year, as possible sampling sites depending on where ALBA is operating from

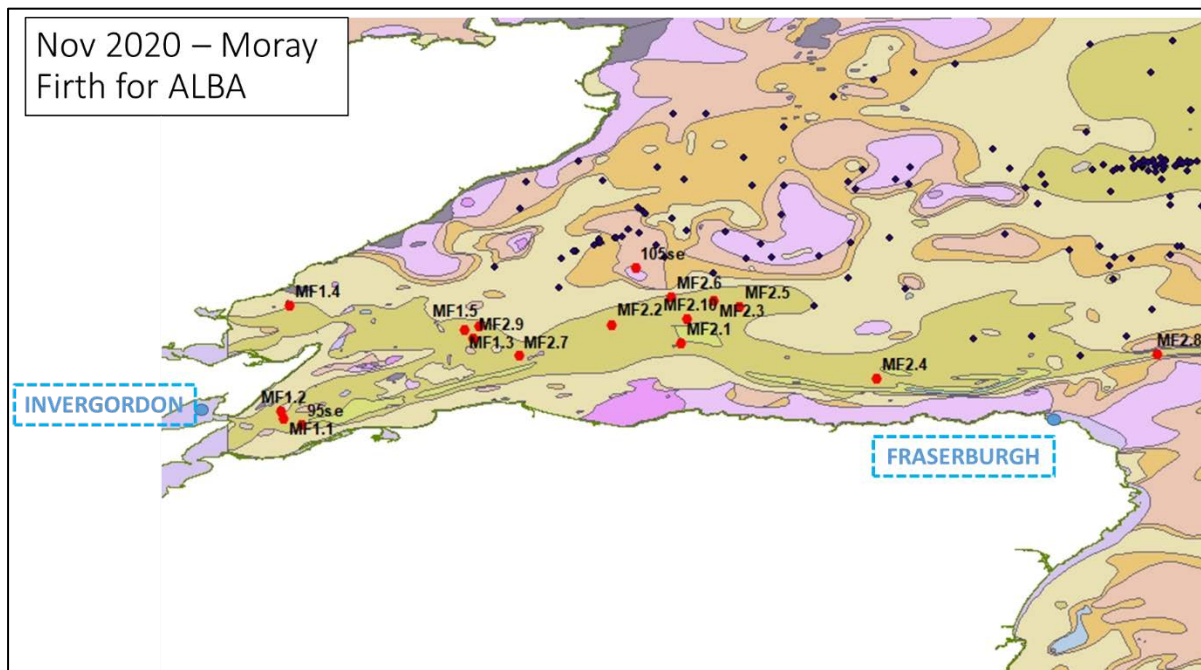
Table 2: Proposed Catamaran Tows starting locations, weather permitting.

Area	Dec Lat	Dec Long	Lat	Long
Forth 1	56.025	-3.551	56 1.50N	003 33.06W
Forth 2	56.011	-3.448	56 0.66N	003 26.88W
Forth 3	56.008	-3.382	56 0.48N	003 22.92W
Forth 4	56.02	-3.098	56 1.20N	003 5.88W
Forth 5	56.111	-2.848	56 6.66N	002 50.88W
Forth 6	56.081	-2.981	56 4.86N	002 58.86W
Forth and Tay 1	55.994	-2.35	55 59.64N	002 21.00W
Forth and Tay 2	55.905	-2.035	55 54.30N	002 2.10W
Forth and Tay 3	56.186	-2.434	56 11.16N	002 26.04W
Forth and Tay 4	56.52	-2.543	56 31.20N	002 32.58W
Forth and Tay 5	56.702	-2.224	56 42.12N	002 13.44W
Montrose Bank	56.488	-1.492	56 29.28N	001 29.52W
NE Coast 1	56.882	-2.116	56 52.92N	002 6.96W
NE Coast 2	57.064	-1.901	57 3.84N	001 54.06W
NE Coast 3	57.185	-1.891	57 11.10N	001 53.46W
NE Coast 4	57.252	-1.841	57 15.12N	001 50.46W
NE Coast 5	57.386	-1.739	57 23.16N	001 44.34W
NE Coast 6	57.741	-1.861	57 44.46N	001 51.66W
Moray Firth 1	57.792	-2.142	57 47.52N	002 8.52W

Moray Firth 2	57.762	-2.421	57 45.72N	002 25.26W
Moray Firth 3	57.761	-2.626	57 45.66N	002 37.56W
Moray Firth 4	57.827	-3.01	57 49.62N	003 0.60W
Moray Firth 5	57.852	-3.406	57 51.12N	003 24.36W
Moray Firth 6	57.701	-3.786	57 42.06N	003 47.16W
Moray Firth 7	57.928	-3.724	57 55.68N	003 43.44W
Moray Firth 8	58.132	-3.57	58 7.92N	003 34.20W
Moray Firth 9	58.277	-3.252	58 16.62N	003 15.12W
Moray Firth 10	58.558	-3.022	58 33.48N	003 1.32W

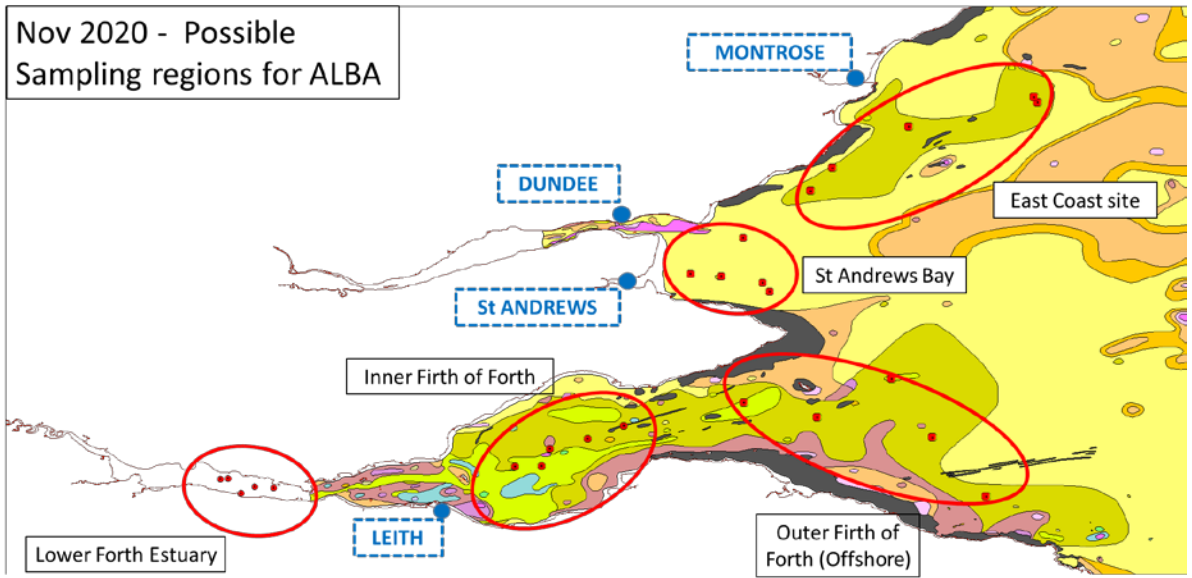
Note: Greyed sites are addition from last year, as possible sampling sites depending on where ALBA is operating from

Map 1a: Sediment sampling locations – Moray Firth (primary and secondary sites)

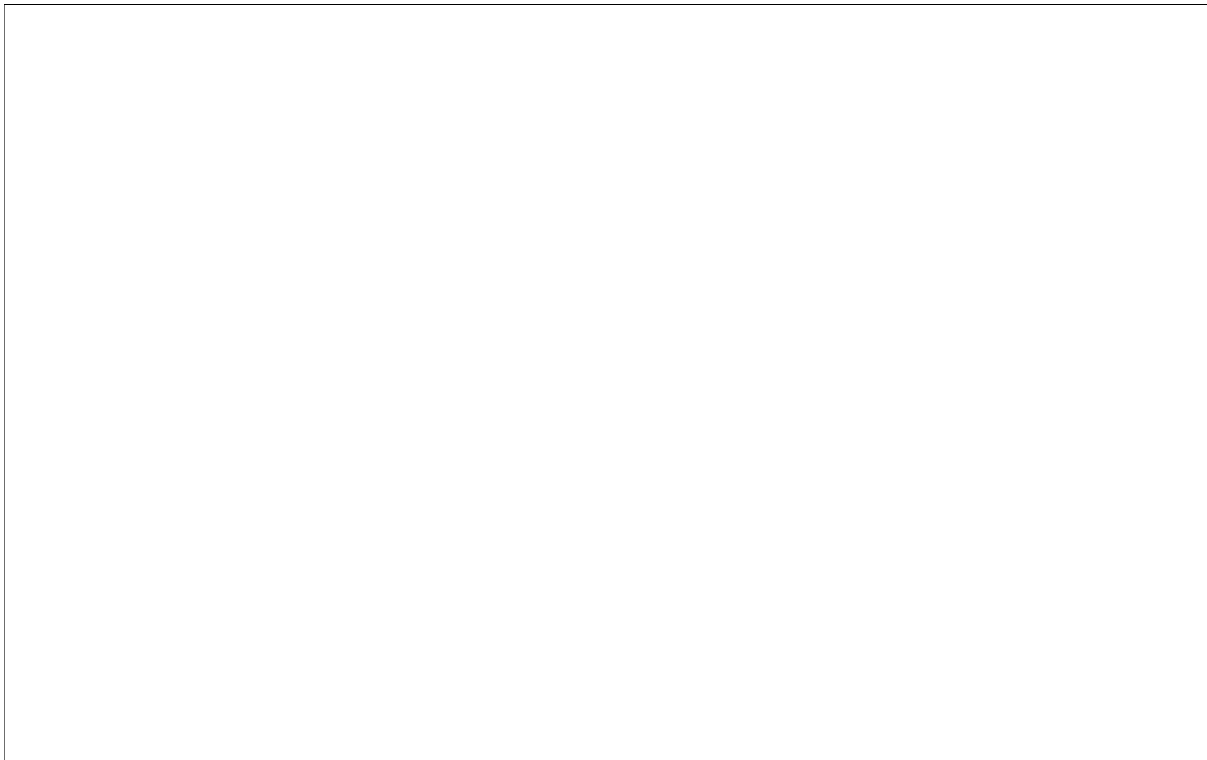


Map 1b: Sediment sampling locations – East Coast and Firth of Forth

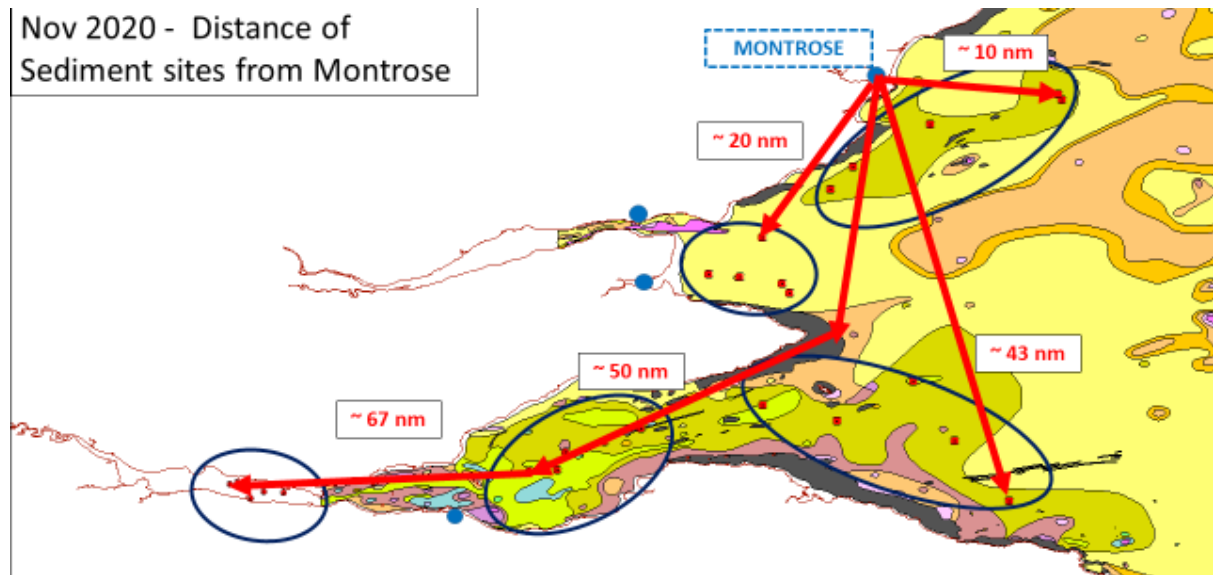
Nov 2020 - Possible
Sampling regions for ALBA



Map 2: Proposed neuston net (sea surface litter) sampling locations.



APPENDIX 1: Maps of travel distances depending on where ALBA is operating from



Nov 2020 - Distance of Sediment sites from Leith

