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MRV *Alba na Mara*

Survey 0814A

PROGRAMME

21-28 May 2014

Loading: Leith, 20 May 2014
Unloading: Fraserburgh, 28 May 2014

In setting the cruise 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 cruise with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Cruise Report, to I Gibb and the Cruise Summary Report (old ROSCOP form) to M Geldart, within four weeks of a cruise ending. In the case of the Cruise Summary Report a nil return is required, if appropriate.

Personnel

M Russell (SIC -MSS)
S Nowacki (SEPA)
L Raposo (Aberdeen University)

Fishing Gear
2.7m beam trawl with 90mm main mesh then 50mm cod-end; (SEPA to Supply heavy duty non-draining fish boxes, fish measuring board, camera) ;

Sediment Sampling
Day grab and Auto-siever (SEPA to supply sieves for auto-siever (1mm and 0.5mm), pre-labelled sample buckets, PSA corer, PSA sample bags, camera, formaldehyde, borax)

Seawater Sampling for Micro-plastic Litter
Catamaran hulls and neuston net.

Objectives

1. WFD – grabbing for biology/PSA at Kirkwall, Scapa Flow, Stonehaven and St. andrews Bay.

2. WFD/CSEMP – grabbing for biology/PSA/contaminants in the Lower Forth Estuary.

3. WFD – trawling in the Lower forth Estuary.

4. WFD/CSEMP - record all litter brought aboard in all trawls.

5. ST014 - deploy catamaran/neuston trawl to collect litter, in support of ROAME ST014 (MSS).

Estimated Days: 8 days.

Procedure

Detailed sampling protocol, grab locations and equipment list in appendix

Sediment Grabs

At 25 Grabbing sites (MED INV 09 – Kirkwall Bay, MED INV 10 – Scapa Flow, MED INV 08 - Stonehaven, MED INV 04 – St Andrews Bay, MED INV 01 - Forth) sediment will be sampled using a Day Grab.

At each Grabbing Site two grabs will be taken:

1 Day Grab for biology invertebrates

1 Day Grab for biology PSA*

*At the Lower Forth Estuary site contaminants will also be sampled from this grab.

Fishing

Beam trawling will be undertaken at 3 sites in the Forth Estuary

Micro-plastic litter sampling

Net will be deployed on passage between main sampling areas. Intensive sampling will take place off Aberdeen Bay and Stonehaven Bay (Nigg WWTP outfall area).

General Arrangements

Formaldehyde will be carried aboard for the preservation and storage of biological material.

Approximate Schedule

The consultation with the skipper, the vessel will depart Leith am on 21 May to undertake grab and fishing samples in the Firth of Forth. The vessel will then undertake sampling in St Andrews Bay, Stonehaven and Orkney as per the positions below.

The vessel will dock on the evening of 27 May, ready for unloading the following morning.

Normal contacts will be maintained with the laboratory.

Submitted:	Approved:
M. Russell	I Gibb
8 May 2014	19 May 2014

APPENDIX 1

Sampling Locations: (Approximate depth and number of sample discards in 2011 also shown).

ORKNEY - Kirkwall **Day Grabbing (1mm sieve) (Survey Code MED INV 09)**

Depth	discard	Site Description	Location Code	Latitude	Longitude
15m	1	Kirkwall UWWTD E	301053	N 58 59.700	W 2 49.868
12.5m	2	Kirkwall C SE of Broad Taing	301055	N 59 2.014	W 2 59.722
12m	3	Kirkwall B	301056	N 59 1.281	W 2 58.329
7m	1	Kirkwall @ Point of Backaquoy	337230	N 59 1.126'	W 3 2.855
11m	2	Kirkwall UWWTD B	348712	N 59 0.864	W 2 57.872

- Station UWWTD E on live maerl bed – suggest site moved 100m north or east or west

ORKNEY - Scapa Flow **Day Grabbing (1mm sieve) (Survey Code MED INV 10)**

Depth	discard	Site Description	Location Code	Latitude	Longitude
48m	4	Scapa Flow W of Houton Head	301059	N 58 54.576	W 3 13.902
27m	0	Scapa Flow @ Near Middle	337251	N 58 53.458	W 3 3.091
41m	0	Scapa Flow NE of Calf of Cava	337258	N 58 54.194	W 3 9.038
34m	0	Scapa Flow @ South of Kirkwall	337259	N 58 55.209	W 3 0.695
30m	0	Scapa Flow @ Near Howequoy Head	337306	N 58 53.150	W 2 58.464

- Station W of Houton Head too stony – suggest site moved 100m south or west

Stonehaven **Day Grabbing (1mm sieve) (Survey Code MEA INV 08)**

Depth	discard	Site Description	Location Code	Latitude	Longitude
29m	1	Coastal survey Stonehaven North	300975	N 56 59.992	W 2 8.097
39m	0	Coastal survey @ Findon Ness	300976	N 57 4.391	W 2 3.598
39m	3	Stonehaven North @ E of Crawpeel Shore	336893	N 57 5.805	W 2 2.517
36m	0	Stonehaven North @ E of Portlethen	336894	N 57 3.125	W 2 4.791
32m	0	Stonehaven North @ E of Newtonhill	336896	N 57 1.533	W 2 6.427

St Andrews **Day Grabbing (1mm Sieve) (Survey Code MEE INV 04)**

Depth	discard	Site Description	Location Code	Latitude	Longitude
23m	1	St Andrews Bay @ Babbet Ness	337880	N 56 19.228	W 02 35.675
20m	3	St Andrews Bay @ surveillance site 1	470960	N 56 21.806	W 02 37.838
10m	3	St Andrews Bay Plankton Station 15	307530	N 56 26.292	W 02 39.591
11m	7	St Andrews Bay @ surveillance site 2	473688	N 56 24.361	W 02 44.846
10m	1	Firth of Tay Ladies Buoy	300952	N 56 27.320	W 02 43.903

Lower Forth Estuary **Day Grabbing (0.5mm Sieve) (Survey Code MEE INV 07)**

Depth/discard		Site Description	Location Code	Latitude	Longitude
9m	0	FORTH ESTUARY FEEAP STATION 7 (SAME AS STATION KC) (LFEFEEAP07)	307024	N 56 1.396	W 03 32.982
14m	0	GC LOWER FORTH ESTUARY (LFEGC)	307436	N 56 0.948	W 03 29.184
9m	0	EB LOWER FORTH ESTUARY (LFEEB) "New EB" – moved NE in 2011 to deeper water – Location Code not changed	307445	N 56 1.192	W 03 31.127
15.5m	1	DB LOWER FORTH ESTUARY (LFEDB)	307463	N 56 0.840	W 03 26.460
12m	0	E42 FORTH ESTUARY AT CROMBIE	301028	N 56 1.794	W 03 31.830

Appendix 2

Sampling Sites

Figure 1: Sites used to classify the Kirkwall water body for macro invertebrates.

Figure 2: Sites used to classify Scapa Flow water body for macro invertebrates.

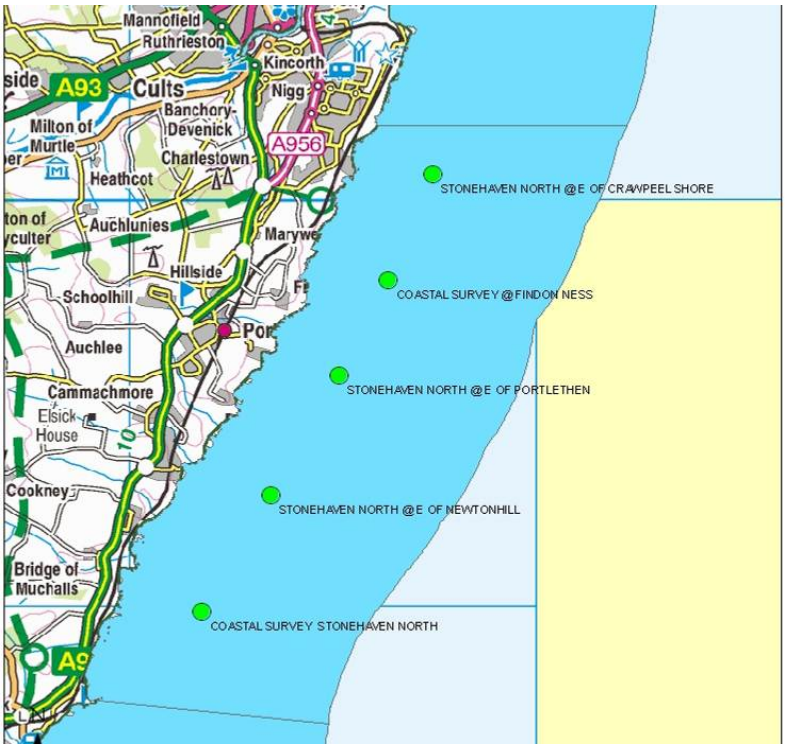

Figure 3: Sites used to classify Stonehaven (Souter Head to Garron Point) for macro invertebrates.

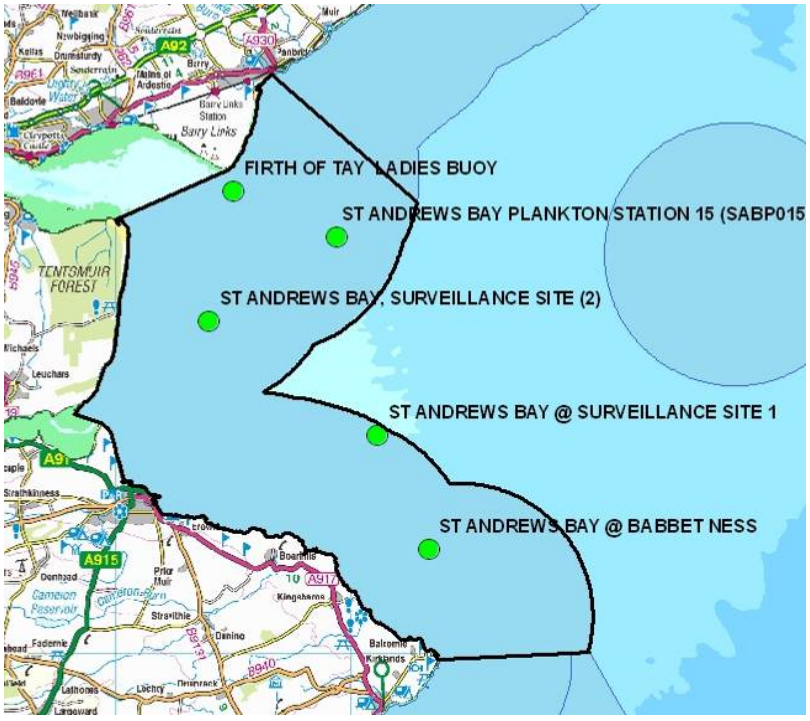

Figure 4: Sites used to classify St. Andrews Bay (Carnoustie to Fife Ness) for macro invertebrates.

Figure 5: Sites used to classify Lower Forth Estuary for macro invertebrates.