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MRV Scotia

Survey 0723S

## **PROGRAMME**

19-26 June 2023

**Ports:** Aberdeen

**Loading:** Aberdeen, 14 June 2023

**Unloading:** Aberdeen, 26 June 2023

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:** 8 days – C44800/20571

### **Equipment:**

- 4 x Day grab's
- 1 x MSS Hamon grab
- 1 x Van Veen grab
- 1 x MSS sieving table (wood)
- 1 x JNCC sieving table (with 2 small accompanying tables)
- Multibeam echosounder system
- SVPs

### **Background:**

Nature Conservation Marine Protected Areas (NCMPAs) are designed to meet conservation objectives under the Marine (Scotland) Act (2010). These sites will contribute to an ecologically coherent network of Marine Protected Areas (MPAs) across the north-east Atlantic, as agreed under the Convention for the Protection of the Marine Environment of the north-east Atlantic, or Oslo-Paris Convention (OSPAR) and other international commitments to which the UK is signatory.

The Central Fladen (CFL) MPA was designated in July 2014 to protect the Burrowed mud (seapens and burrowing megafauna and tall seapen components) habitat feature and Sub-glacial tunnel valley (representative of the Fladen Deep Key geodiversity area) geomorphological feature. The site has an area of 925 km<sup>2</sup> and a depth range of 100-280 m.

0723S will monitor CFL, which has been identified for monitoring survey effort following discussion between JNCC and the Marine Directorate of the Scottish Government, considering the Scottish MPA Monitoring Strategy (Marine Scotland, 2017)

prioritisation principles and the draft Scottish offshore benthic habitats four year monitoring plan.

The aim of the 0723S survey is to acquire a robust infauna community dataset of the burrowed mud feature inside the CFL, before any fisheries management measures are implemented. This will contribute to the development of a sentinel monitoring (Type One) timeseries for CFL, which will allow any changes in infaunal communities over time to be monitored.

An additional aim, should time allow, is to acquire infauna datasets from areas of the Fladen ground outside of the MPA before any fisheries management measures are implemented at CFL. This will contribute to and add to the development of an investigative monitoring (Type Three) time series for CFL. This will monitor change in infaunal communities over time and before/after fisheries management measures are put in place inside and outside the MPA features.

### **Objectives:**

1. Acquire quantitative macrofaunal data using a Day Grab within the MPA to determine the biological structure and function: key and influential species and characteristic communities. Along with determining the extent of the protected feature habitat.
2. Acquire quantitative macrofaunal data using a Day Grab from outside CFL MPA to determine the biological structure and function: key and influential species and characteristic communities.
3. Acquire multibeam (MBES) data of the Sub-Glacial Tunnel Valley walls in Central Fladen MPA.

### **Procedure**

All equipment will be loaded on *Scotia* when the previous survey returns to Aberdeen harbour. Marine Scotland personnel will set up equipment and prepare the vessel for surveying in the days leading up to 19 June. All personnel will join the vessel at least one hour prior to sailing on 19 June (ETD 06:00hrs BST). *Scotia* will first transit to Stonehaven Bay to undertake a multibeam patch test, before transiting towards the CFL MPA where, weather permitting and in consultation with ship officers, operations will begin.

The objectives above are listed in priority order and will be addressed sequentially on survey. These are further described in Table 1 and depicted in Figures 1 and 2 below.

A port call may be required to facilitate a crew transfer in Lerwick during the survey (TBC)  
The vessel will return to Aberdeen for unloading on the morning of Monday 26 June in Aberdeen.

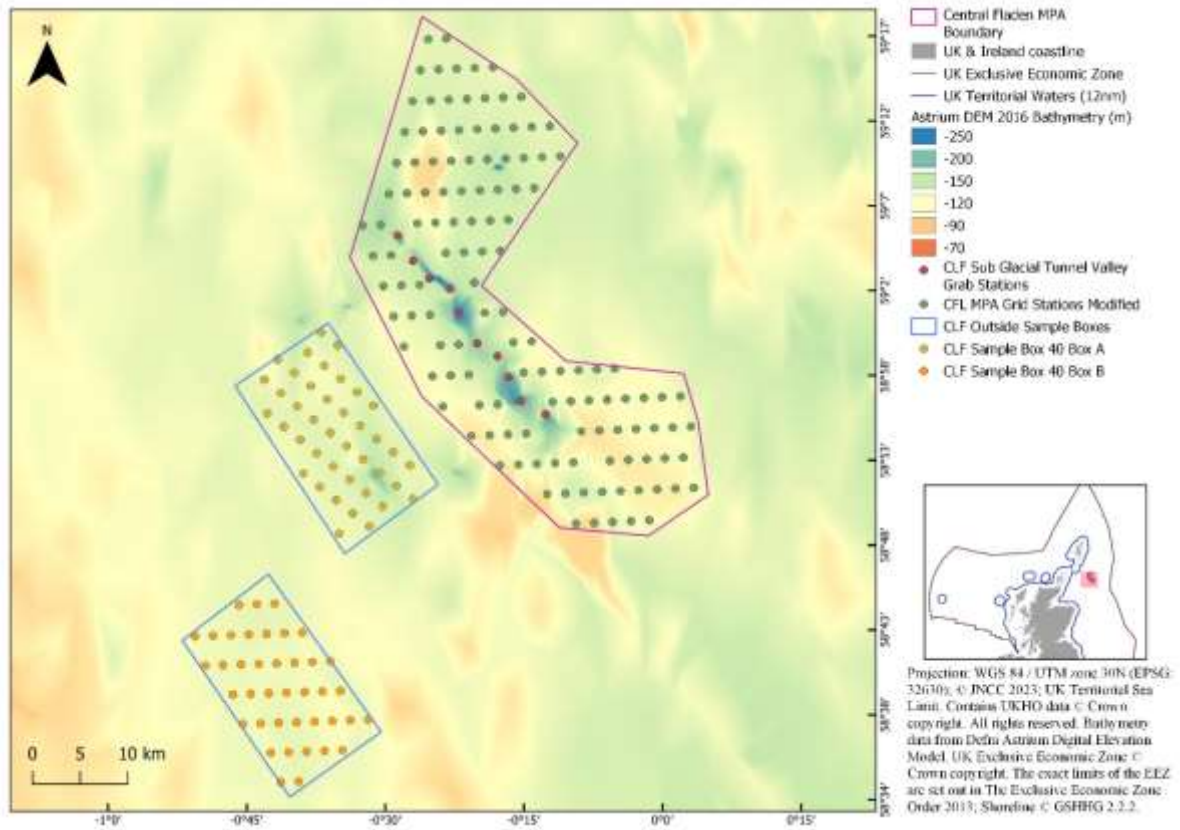
Normal contacts will be maintained with the laboratory.

Submitted:  
D Stirling & J Albrecht  
15 June 2023

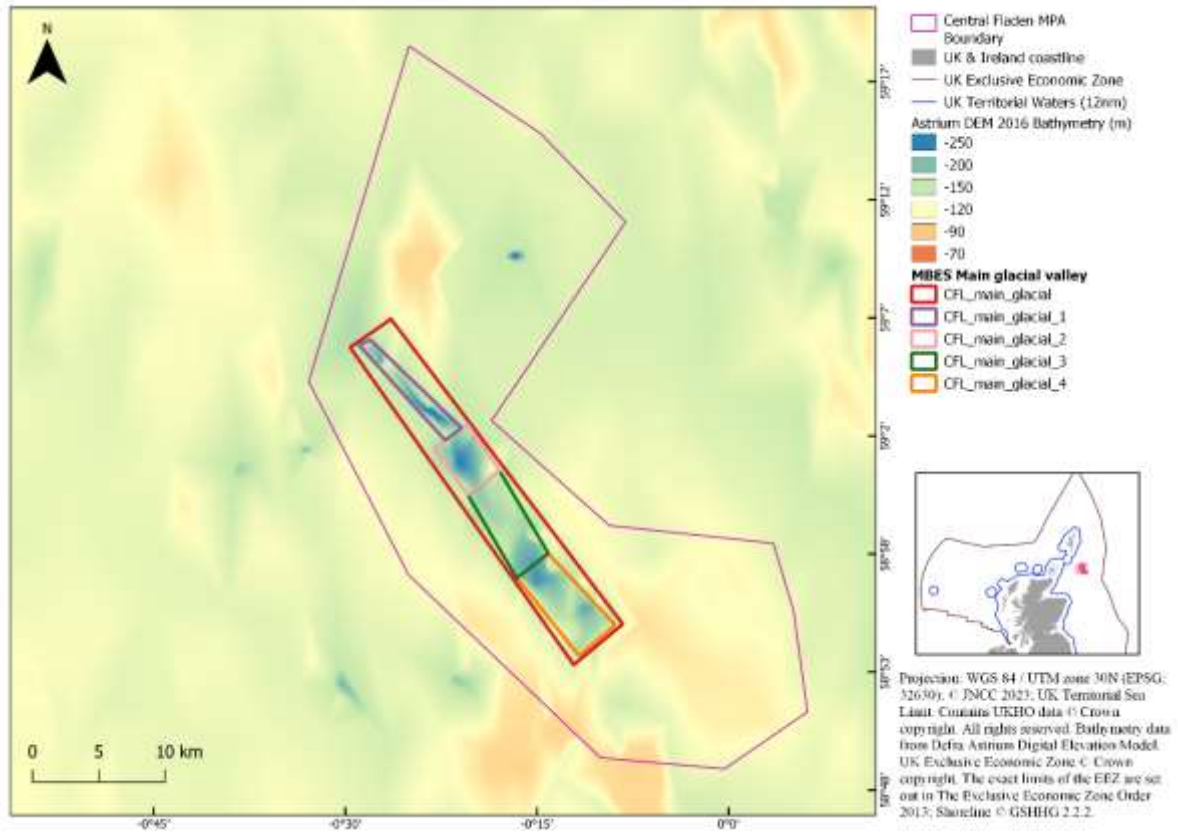
Approved:  
I Gibb  
16 June 2023

**Table 1:** Prioritised survey objectives and the monitoring objective they are designed to address are shown with the equipment and number of samples needed to address them.

<b>Survey Priority</b>	<b>Survey objective</b>	<b>Monitoring objective</b>	<b>Equipment</b>	<b>Reason for priority</b>	<b>Sample number</b>
<b>1</b>	Acquire 125 grab and PSA samples from Inside CFL MPA	1	Day grab	To acquire physical samples	125
<b>2</b>	Acquire 10 grab and PSA samples from the Sub Glacial Tunnel Valley floor	3	Day grab	To acquire physical samples	10
<b>3</b>	Acquire 40 grab and PSA samples from Outside CFL MPA, Box A	2	Day grab	To acquire physical samples	40
<b>4</b>	Acquire 40 grab and PSA samples from Outside CFL MPA, Box B	2	Day grab	To acquire physical samples	40
<b>5</b>	Acquire MBES of the Sub Glacial Tunnel Valley	3	MBES system	To acquire good quality MBEs data of valley walls	



**Figure 1:** Map of locations to be sampled and surveyed.



**Figure 2:** Map showing MBES survey boxes of the glacial valley inside the Central Fladen MPA boundary. The box has been subdivided into four smaller boxes that could be surveyed if there is not enough time to multibeam the whole feature.