

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

MRV *Scotia*

Survey 1220S

## **PROGRAMME**

22 August - 07 September 2020

### **Ports:**

**Loading:** Aberdeen, 18 August 2020

**Unloading:** Aberdeen, 7 September 2020

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.

**Project Code: 44800/20571**

### **Gear (full survey)**

Dropframe with HD camera system  
USBL positioning system with two beacons  
JNCC Hamon Grab (0.1m<sup>2</sup> and 0.25m<sup>2</sup> buckets)  
Sieving table  
2 x Day grabs  
RESON Seabat 7125 multibeam system  
EdgeTech 4200 series side scan system

### **Chemicals**

Formaldehyde  
Borax

### **Introduction**

The present Survey Plan outlines the MPA monitoring survey requirements for Pobie Bank Reef (PBR) Special Area of Conservation (SAC). PBR is located in the North Sea, approximately 20 km east of Shetland, Scotland. The site has an area of 4,083 km<sup>2</sup> and a depth ranging of 70 m to 100 m. PBR was designated in September 2017 to protect the Annex 1 Reef feature within the site and has been identified for monitoring survey effort following discussion between JNCC and MSS, considering the JNCC MPA monitoring survey prioritisation process, the Scottish

MPA Monitoring Strategy (Scottish Government, 2017) prioritisation principles and logistical considerations.

SACs are designed to meet conservation objectives under the EC Habitats Directive (1992) (transposed into UK law by the Conservation of Offshore Marine Habitats and Species Regulations 2017 and the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) (territorial waters)). 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.

## **Main Objectives**

### **Pobie Bank Reef**

1. Acquire full coverage side scan sonar from the prioritised survey boxes (and ~50% multi-beam coverage) (Figure 1 Boxes A-E).
2. Acquire video and still imagery from sampling stations inside the acoustic survey boxes (Figure 2).
3. Acquire video and still imagery from sampling stations outside acoustic survey boxes (Figure 2).
4. Ground truth sites inside area of newly acquired acoustic data using drop camera (time permitting).
5. Acquire full coverage multi-beam from the prioritised survey boxes (time permitting).

### **Contingency:**

6. Acquire grab samples from stations where seabed is deemed suitable.
7. Test Git hub camera system.
8. acquire grab samples from the Unst Basin for PSA and relate this to the Roxann hardness and roughness index.
9. SNH contingency sampling.

### **General**

The survey will be undertaken from the Marine Scotland (MS) MRV *Scotia* with 16 days at sea from 22 August to 7 September 2020. After sailing and all safety drills have been undertaken, the vessel will head to the acoustic patch test site at Stonehaven. On completion the vessel will head for Pobie Bank and commence the survey. The captain, fishing master and SIC will meet on a daily basis to arrange the survey plan. Two 12-hour shifts will be used to cover each 24 hour period. The main objectives of the survey are centred around acoustic and imagery data acquisition:

### **Acoustic Survey**

A patch test will be required to calibrate the multi-beam system before the acoustic survey begins. The preferred location for the patch test is near Stonehaven. Both multi-beam and side scan sonar have previously been used at Pobie Bank to identify areas of Annex I Reef. During 1220S, multi-beam and side scan will be used to map areas of Annex I Reef in areas where acoustic data has not previously been collected. To facilitate this, a survey box approach will be used for the collection of acoustic data. Ideally, boxes will be visited to collect 100% coverage of

both multi-beam and side scan simultaneously. However, if time is limited the spacing of multi-beam swaths can be increased while maintaining 100% side scan cover. Boxes A - E (Figure 1) have been drawn around all the areas where no acoustic data currently exists. A contingency box, Box F (estimated survey time of 3.5 days) has been added over an area where multi-beam data has previously been collected during SEA SAC 2006 but resurveying this area would mean a habitat map could be produced for the entire SAC using datasets from two surveys rather than three and side scan data would be available for the entire site.

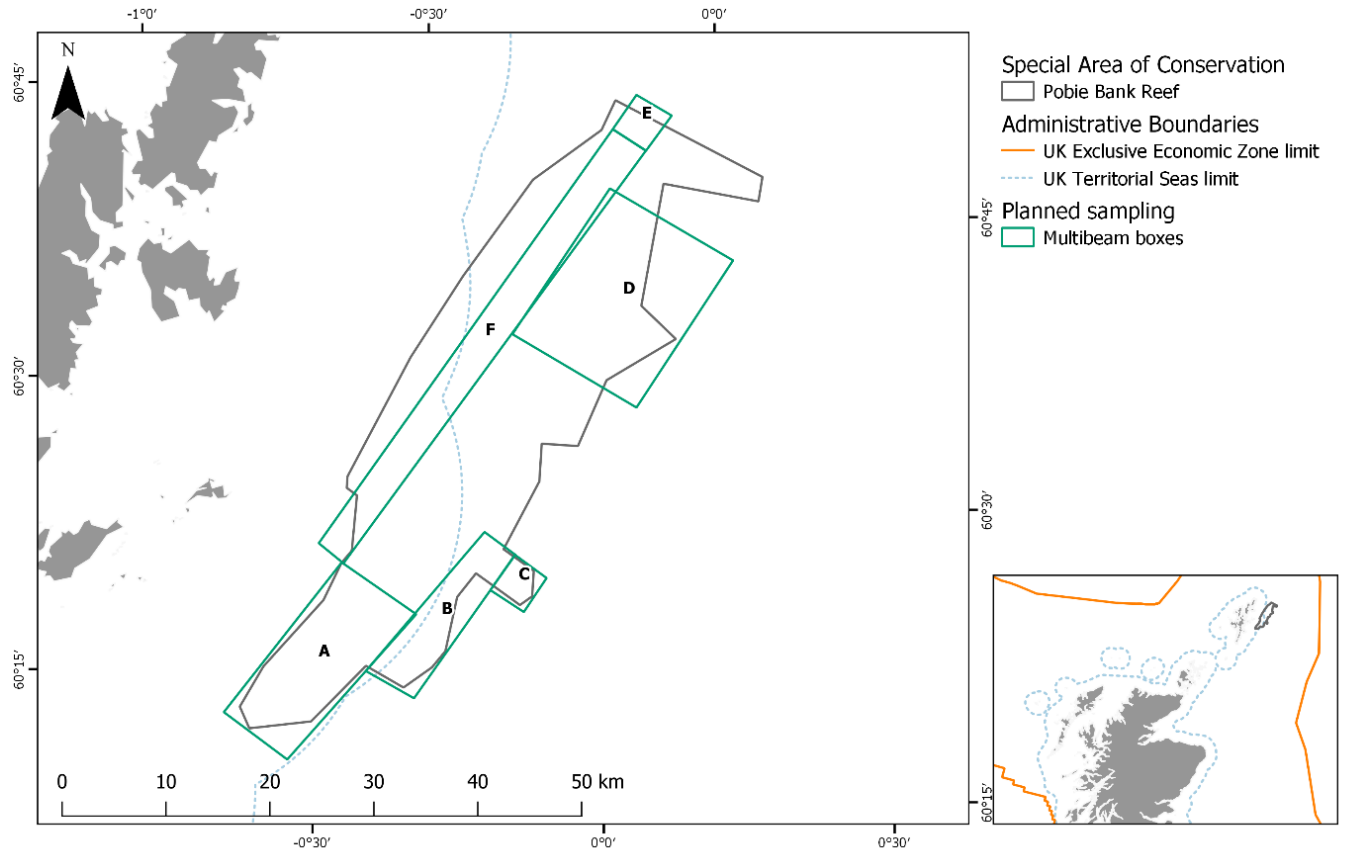
### **Monitoring Stations for Imagery**

100 sampling stations have been selected within the Pobie Bank Reef SAC boundary using an equidistant triangular grid, resulting in an inter-station spacing of approximately 3.3 km (Figure 2). When overlaid on the Annex I Reef habitat map, 68 stations intersect the predicted areas of Annex I Reef. The remaining 32 stations will be used to understand the distribution of Reef and non-reef habitats within the SAC. Monitoring stations inside the acoustic survey boxes will be prioritised over the stations outside the acoustic survey boxes as they can also be used to ground-truth the acoustic data. Further ground-truthing stations may be added if necessary.

Normal contacts will be maintained with the laboratory.

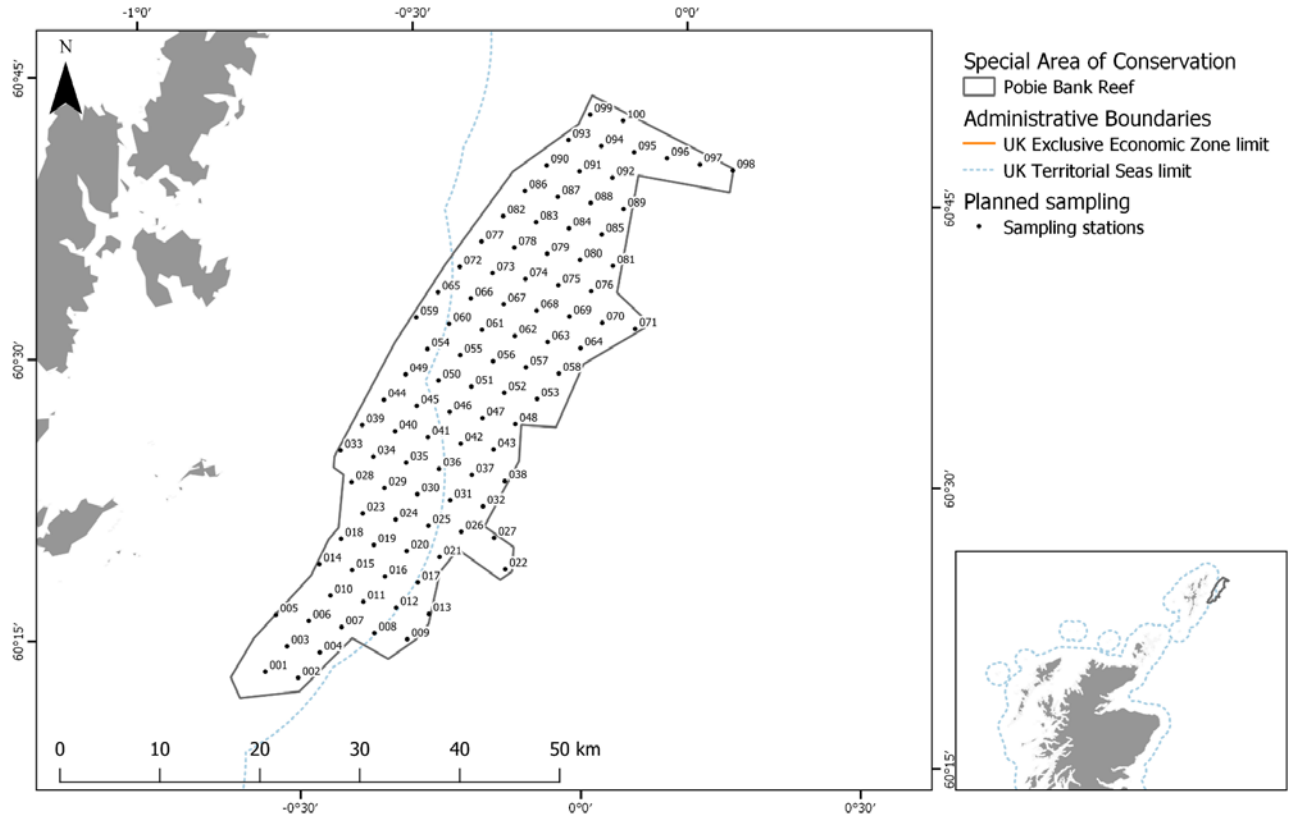
Submitted:  
D Stirling & J. Albrecht  
12 August 2020

Approved:  
I Gibb  
17 August 2020



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**Figure 1:** Acoustic survey boxes (A-F) to fill in gaps in acoustic data coverage at Pobie Bank Reef SAC.



**Figure 2:** Monitoring stations for imagery (n=100).