

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

MRV *Scotia*

Survey 1218S

PROGRAMME

21 August - 15 September 2018

Ports:

Loading: Aberdeen, 17 August 2018

Half landing: Ullapool 6 September 2018

Unloading: Aberdeen, 15 September 2018

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.

Personnel

J Drewery	(Part 1, SIC part 1)
P Boulcott	(Full Survey, SIC Part 2)
F Burns	(Part 1)
R Kynoch	(Part 1)
E Dalgarno	(Part 1)
T Regnier	(Part 1)
D Stirling	
J Hunter	
I Young	
J Taylor	(JNCC)
D Edwards	(JNCC, part 1)
J Albrecht	(JNCC, part 1)
H Hinchin	(JNCC, part 2)
J O'Connor	(JNCC, part 2)
H Van Rein	(JNCC, part 2)
C McCabe	(JNCC, part 2)
A Jesus	(JNCC, part 2)
E Last	(JNCC, part 2)

Project Code: 26 days - SP02Q / 20113

Gear (Full Survey)

VMUX towed video chariot with HD camera system and integrated CTD
Dropframe with HD camera system and integrated CTD
Ranger 2 USBL positioning system
Large Van Veen grab

Gear (Part 1)

2 x Jackson BT 184 bottom trawl
2 x ground-gear bag nets (centre section only)
2 x pairs Morgere ovalfoil trawl doors.
2 x Agassiz benthic sampling trawl
Scanmar trawl sensors
Bottom contact sensor
Conductivity/depth/temperature logger (CTD DST logger)
Aquatracker

Gear (Part 2)

2 x 0.1m² Hamon grabs
1 x 0.25m² Hamon grab
Large Van Veen grab

Chemicals

Ethanol
Formaldehyde
10% Formo-saline
Borax

Introduction

The present Survey Plan outlines the MPA monitoring survey requirements for three MPAs in Scottish waters; Faroe-Shetland Sponge Belt NCMPA (FSSB), Wyville Thompson Ridge SAC (WTR) and Rosemary Bank Seamount NCMPA (RB) – see Map 1. These sites have been identified for monitoring survey effort following discussion between JNCC and MSS, and taking into account the 2018/19 JNCC MPA monitoring survey prioritisation process, Scottish MPA Monitoring Strategy prioritisation principles and logistical considerations.

Nature Conservation Marine Protected Areas (NCMPAs) and Special Areas of Conservation (SACs) are designed to meet conservation objectives under the Marine (Scotland) Act (2010) and EC Habitats Directive (1992) respectively. 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

FSSB

1. Undertake Type 1 monitoring (measures rate and direction of long-term change) using VMUX and Dropframe fitted with HD cameras.
2. Update and extend coverage of previous demersal trawl time series in vicinity of FSSB.

3. Obtain samples of sponge community from FSSB for classification, molecular studies, identifications, and to provide baseline data on hydrocarbon levels in FSSB sponge tissue.

RB

4. Undertake Type 1 monitoring on north, east, and south slopes of RB using VMUX and Dropframe fitted with HD cameras.
5. Update demersal trawl time series on RB on historical stations between 600-1100 m depth plus another at 2100 m, time permitting.
6. Obtain samples of sponge community for classification, molecular studies, identifications, and to provide baseline data on hydrocarbon levels in RB sponge tissue.

WTR

7. Undertake Type 1 monitoring effort using Dropframe fitted with HD cameras.
8. Scope out and undertake a series depth stratified trawls on suitable grounds to the west of the SAC taking in the North Rockall Basin, Wyville Tomson Ridge and Faroe-Bank Channel.

Secondary Objectives

9. Trial and assess performance of Aqua-tracker.
10. Obtain tissue of selected fish for barcoding.
11. Sample benthic fauna using Agassiz using trawl ground-gear bags in selected areas.

General

The survey will consist of two legs. The first leg will consist of 12 hour shifts of visual survey using VMUX chariot and dropframe interspersed with 12 hour shifts of trawling or other sampling. This leg will start at FSSB (projected duration four days), continue at RB (five days) then WTR (three days). Fishing and Agassiz trawl sampling operations will be generally carried out between 1200-2400 and camera work between 0000-1200. There will be a landing in Ullapool on approximately 6 September for staff and equipment changeover. The second leg will consist of round the clock visual surveying with the dropframe and will take place again at WTR (three days) and finally back to FSSB (four days). *Scotia* will dock in Aberdeen on the morning of 15 September.

Objectives 1, 4 and 7: In the FSSB the first TV transects will be made with the chariot. These will consist of 9 km runs perpendicular to the depth contours within the 400-600 m depth range (where the sponges are expected to occur) to ascertain distribution and extent of the feature. A further set of 200 m runs will be made with dropframe during the second leg to provide high definition footage for species and density analysis. At RB the chariot will again be used to elucidate the distribution and extent of the sponge feature on the northern and southern slopes. Time permitting, other seamount communities may be targeted with the chariot. A further set of 200 m drop-frame runs will be made at the site of the 2014 MoreDeep visual survey on the eastern slope of RB for high definition footage as above. At WTR where this work is a continuation from that already achieved during cruise 1517S last year this objective will be met by 200m dropframe runs only.

Objectives 2, 5 and 8: Demersal trawl data will be used as baselines to assess the future status of the protected area. All demersal trawls will be away from sponge aggregations and other vulnerable marine ecosystem (VME) habitats. Trawling will take place on stations in Faroe-

Shetland Channel over a depth range of 300-1500 m. These will mainly be outside FSSB, however, two (providing timeseries data) are inside. These are deliberately placed well away from the spongebelt and have historically negligible bycatch of VME indicator species. At RB, demersal trawling will take the form of historical fixed stations which provide important timeseries data and which again have historically demonstrated little or no VME bycatch. A potential new site to begin a depth-stratified timeseries data will be sought out to the west of WTR; this will include hauls on suitable sediments in the Faroe-Bank Channel (Faroese waters), Wyville-Tomson Ridge, and North Rockall Basin. Map 2 shows an idealized version of how these trawl sites may look. Reality will depend on what sites are available to trawl. All demersal haul durations are expected to be a maximum of 30 minutes. The ground-gear net will be attached and deployed on an opportunistic basis during demersal trawling to obtain samples of the invertebrates.

Objectives 3 and 6: Short (nominally three minute) hauls with 2 m Agassiz trawl will be undertaken in FSSB and RB to obtain samples of the sponge community. Trawls will be away from areas of type one monitoring.

A summary of expected demersal and Agassiz trawl deployments is presented in Table 1.

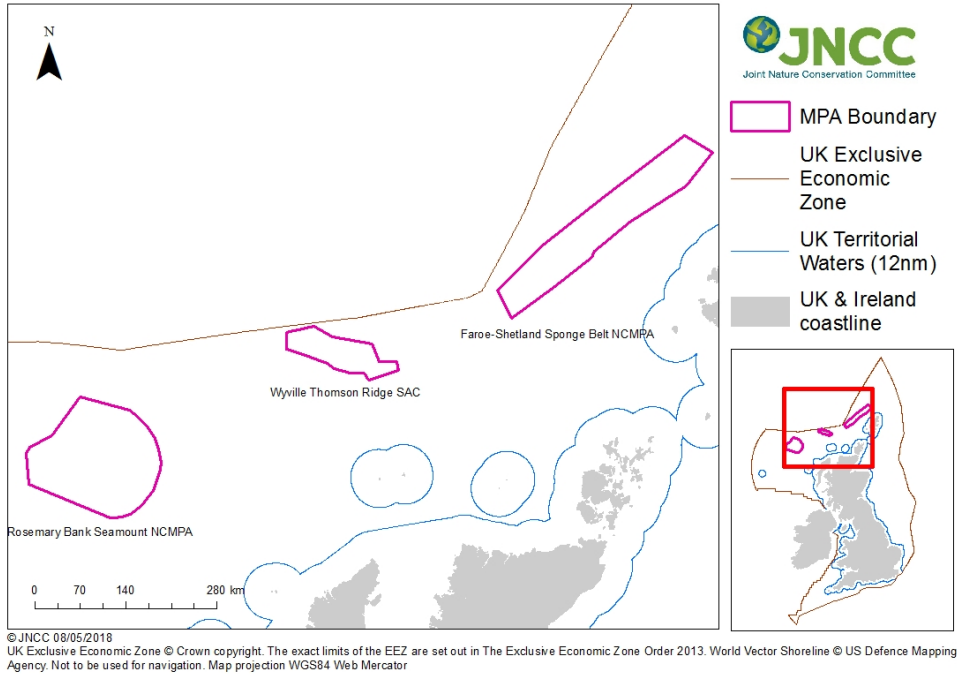
All fish species will be identified, weighed and measured. Invertebrate species will be identified and counted and/or weighed.

During leg 1 the Aquatracker and large Van Veen Grab will be deployed on an opportunistic basis.

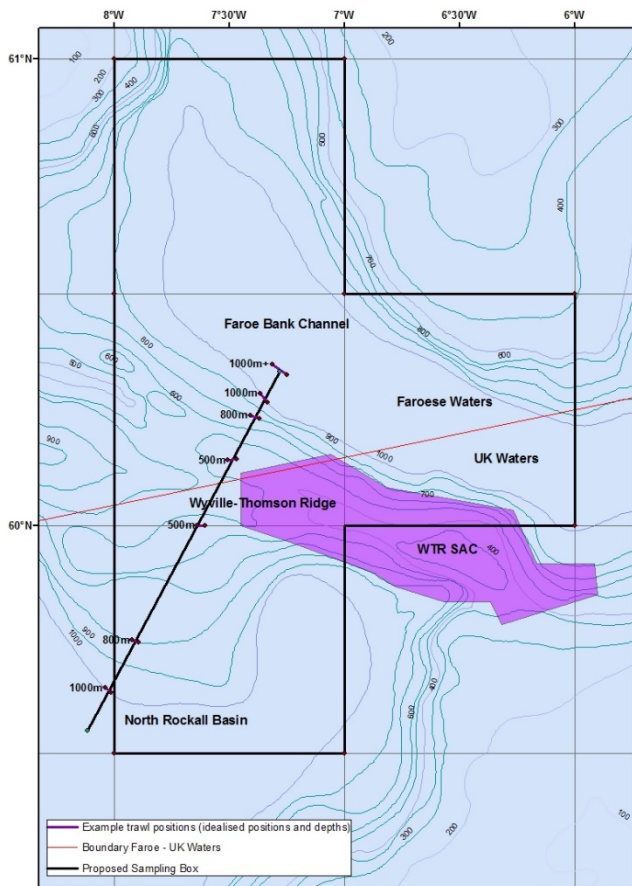
Normal contact will be maintained with the Laboratory.

Submitted:
J Drewery
20 August 2018.

Approved:
I Gibb
28 August 2018



Map 1: Location of 1218S survey areas.



Map 2: Idealised illustration of trawl stations to west of WTR SAC.

Area	Method	Historical haul no.	Shot lat	Shot lon	Haul Lat	Haul Lon	Approx. depth	
Faroe-Shetland Channe	30 min demersal	S14363	61.1980	-2.7010	61.1802	-2.7468	1000	
Faroe-Shetland Channe	30 min demersal	S14364	61.2172	-3.2265	61.2018	-3.2723	1200	
Faroe-Shetland Channe	30 min demersal	S14365	61.2072	-2.9943	61.1940	-3.0288	1100	
Faroe-Shetland Channe	30 min demersal	S14366	60.9328	-2.3938	60.9145	-2.4375	350	
FSSB	30 min demersal	S14367	61.0727	-2.7482	61.0633	-2.7777	700	
Faroe-Shetland Channe	30 min demersal	S14368	61.1275	-2.8598	61.1097	-2.9053	900	
FSSB	30 min demersal	S14369	61.0813	-2.8755	61.0628	-2.9205	800	
Faroe-Shetland Channe	30 min demersal	-	Various others outside MPA as appropriate					
FSSB	nominal 3 min Agasizz	-	Positions decided during survey					
West of WTR SAC	30 min demersal	-	Various,positions to be decided during survey					
RB	30 min demersal	S16378	58.9148	-10.0700	58.9060	-10.1118	2100	
RB	30 min demersal	S16379	59.1027	-9.8695	59.0860	-9.9125	1100	
RB	30 min demersal	S16380	59.2188	-9.8830	59.1950	-9.9075	700	
RB	30 min demersal	S16381	59.3193	-10.5685	59.3043	-10.5738	1000	
RB	30 min demersal	S16382	59.4415	-10.1385	59.4438	-10.0862	850	
RB	30 min demersal	S16383	59.3752	-10.1378	59.3703	-10.0860	600	
RB	30 min demersal	S16384	59.1085	-9.9162	59.0860	-10.0057	900	
Elsewhere	30 min demersal	-	Various, outside boundaries of RB, time permitting					
RB	nominal 3 min Agasizz	-	Positions decided during survey					

Table 1: summary of demersal and Agassiz trawls for 1218S.