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

MRV *Alba na Mara*

Survey 1318A

PROGRAMME

25 August – 10 September 2018

Ports

Loading: Fraserburgh, 22 August 2018
Sailing: Fraserburgh, 25 August 2018
Half landing: Fraserburgh, 2 September 2018 (TBC)
Unloading: Fraserburgh, 10 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

K. Boyle (SIC Part 1)
G. McAllister (SIC Part 2)
A. Weetman
M. Watson

Project: RV1811, 20505 (17 days)

Gear

80 mm prawn trawl BT 201
2 x Day grabs and 1 x sieving table
Towed TV sledge,
2 x 600m umbilical towing cable and cameras
TV drop frame (large version)
Lasers and large bracket for drop frame
Prawn sorting table
Go Pro housing

Objectives

- To obtain estimates of the distribution and abundance of *Nephrops* burrows in the Firth of Forth and the Moray Firth using underwater cameras.

- To use the TV footage to record the occurrence of other benthic fauna and evidence of commercial trawling activity.

- To collect trawl caught samples of *Nephrops* for comparison of reproductive condition and morphometrics in each of the different survey areas.

- To collect samples of *Nephrops* for a PHD student from NUI Galway for a study on density-dependent effects on *Nephrops* maturity using morphometric relationships among body structures.

- If time permits, deployments of the sledge followed by the drop frame will be carried out on the same ground to compare *Nephrops* burrow density estimates obtained by using the two different methods.

Procedure

Where possible, a random stratified approach will be adopted to investigate *Nephrops* burrow density in different regions of the study areas. A list of proposed stations for the survey will be made available to the ship prior to sailing.

1. TV Observations:
At each station a video camera mounted on the TV sledge will be towed across the seabed, into the tide and for approximately 10 minutes at approximately one knot. *Nephrops* burrow abundance, other benthic fauna and signs of anthropogenic activity will be recorded on to DVD. Distance traveled by the sledge, the depth at which the sledge is at and camera height from the seabed will be monitored and recorded automatically.

2. Trawling:
Fishing trawls of approximately 60 minutes duration will be made within each sediment type and within each survey area. A range of biological and morphometric data will be collected on *Nephrops* caught.

3. Drop Frame:
The drop frame will be used where conditions are not suitable for using the TV sledge, recording similar data as to that of the TV sledge.

4. Comparative work:
Following on from work carried on previous surveys, on known *Nephrops* grounds the sledge will be towed along parallel tracks approximately 200m in length (10 minutes towing time) and 100m apart. Video footage and all observed data will be recorded as usual. Following this, the drop frame will then be drifted across the same area at 90^{o} to the sledge tracks. The frequency of this operation will depend on the weather and available time.

5. Nephrops sample collection:
Once all data needed by MSS has been collected from the fishing trawls, 5 *Nephrops* individuals per mm carapace length ranging from the smallest to the largest will be collected. Samples will be stored in plastic bags labeled with the length and haul information then frozen. Samples will be sent to Ireland for inclusion in a PHD study.

General

TV work will normally take place during daylight hours.

There will be a requirement for trawling to take place in the evening. On days where trawling will take place, work patterns will be arranged so not to exceed WTR recommendations.

It is proposed that work will initially commence in the Moray Firth and then the Firth of Forth. The exact date of the half landing will be weather, location and work dependent.

Normal contact will be maintained with the Laboratory.

Submitted:
K. Boyle/ G. McAllister
02 August 2018

Approved:
I. Gibb
03 August 2018

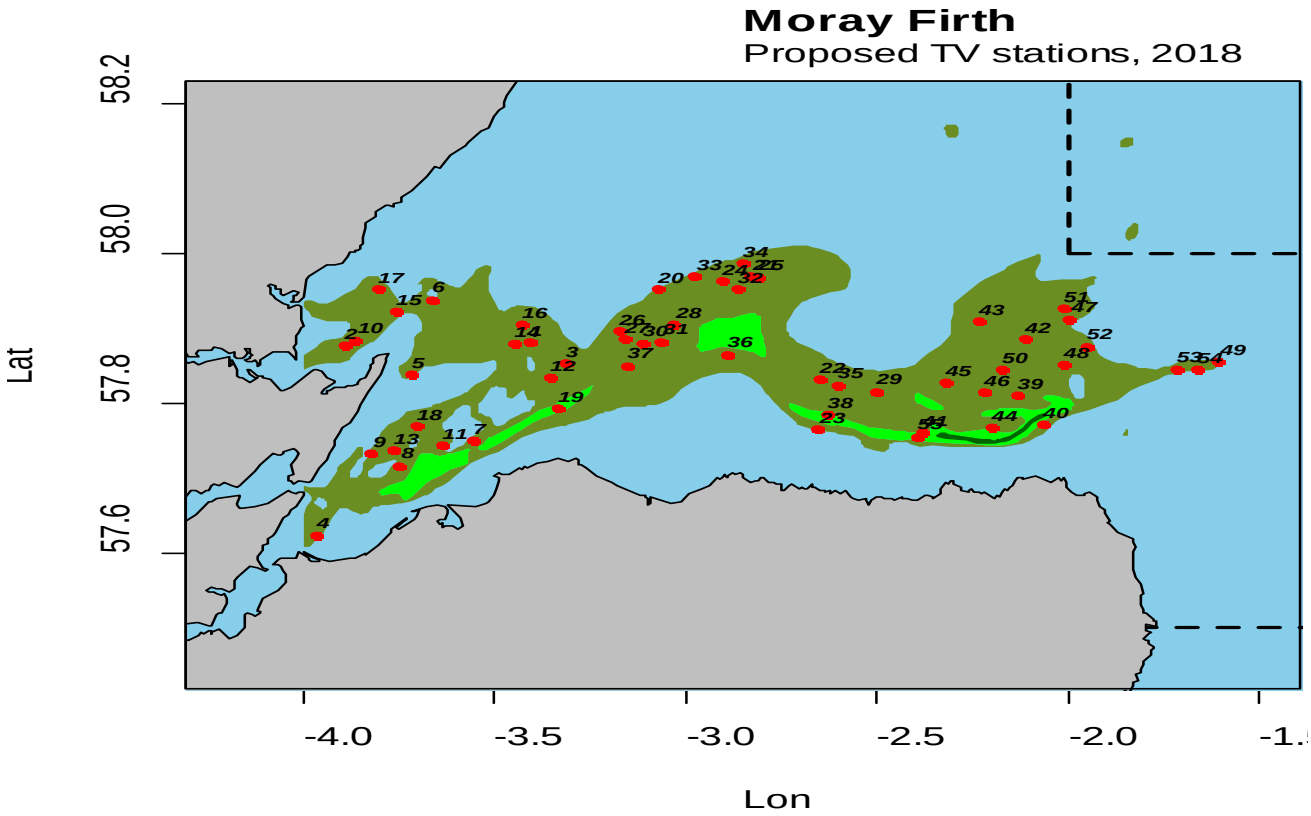

Figure 1: Proposed Moray Firth underwater TV (UWTV) stations for survey 1318A.

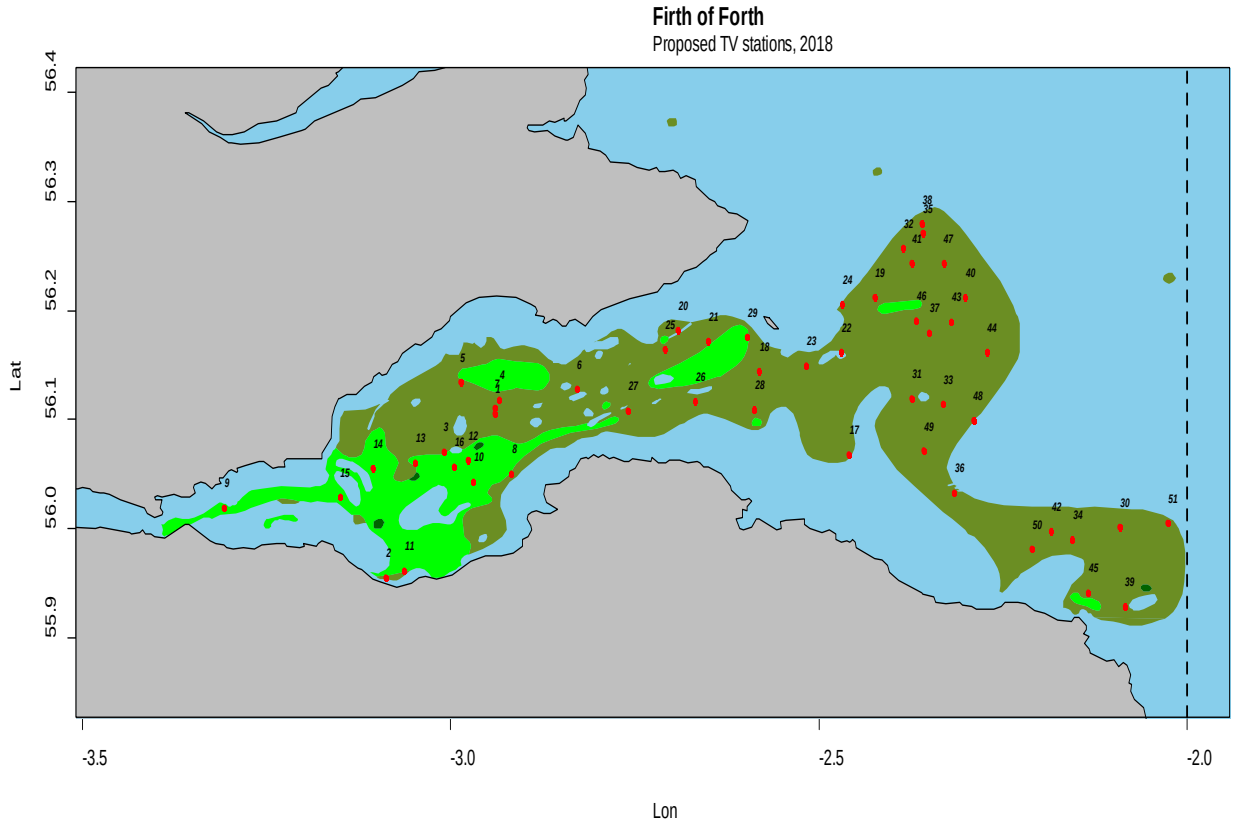

Figure 2: Proposed Firth of Forth underwater TV (UWTV) stations for survey 1318A.