

# FIRST INTERIM PROGRESS REPORT ON MARINE SCOTLAND SCIENCE SEABED SURVEY WORK AROUND FAIR ISLE 2010



## Background

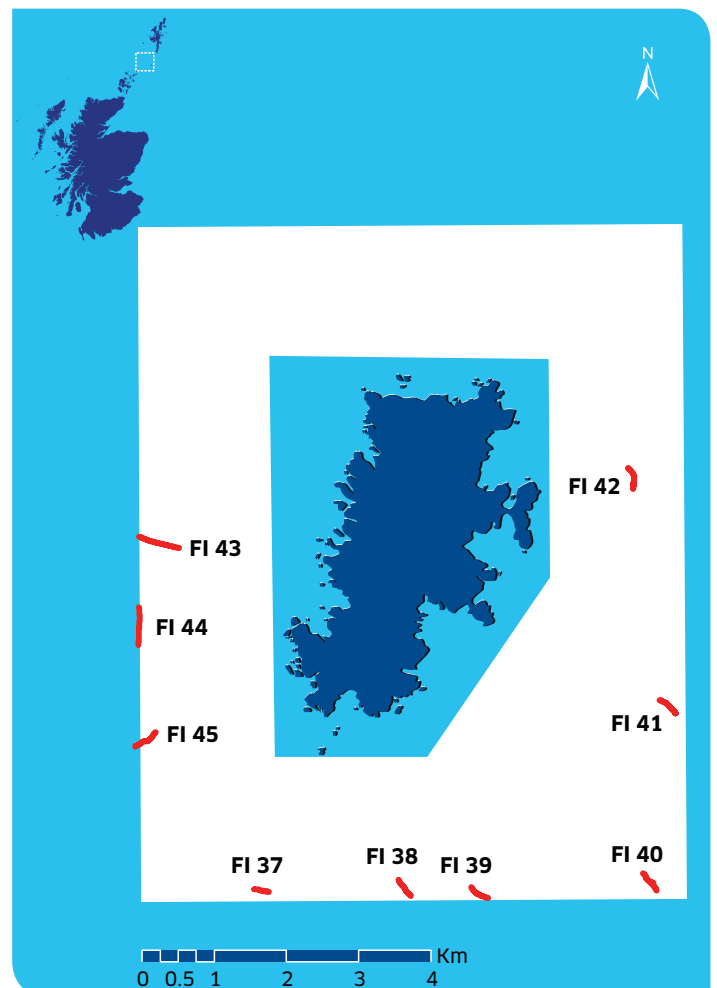
Marine Scotland Science has collaborated with Scottish Natural Heritage (SNH) to assist in the identification of Marine Protected Areas, integral to the recently enacted Marine Bill (Scotland) 2010. Marine Scotland Science has a history of working closely with SNH on marine projects such as the regional seabed survey work undertaken around St Kilda and cold water coral surveys off Mingulay. FRV Scotia time from cruise 0910S was allocated to complete bathymetric survey work within the proposed extended special protected area surrounding Fair Isle. The area was primarily of interest with regard to seabed habitat mapping and marine conservation.

The cruise has now been completed and this document summarises the scope of the work undertaken.

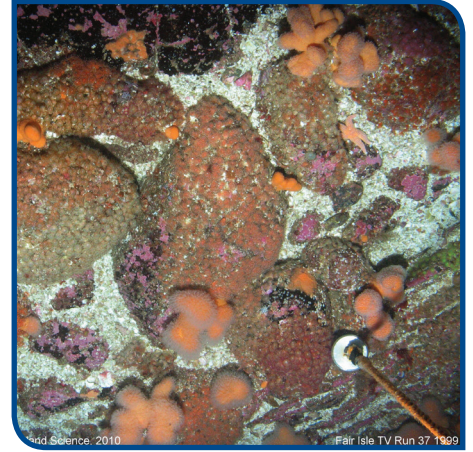
## Duration of Cruise

FRV Scotia, 21st July – 10th of August 2010 (0910S).

The ship was staffed by Marine Scotland scientists.



MULTIBEAM BATHYMETRY SURVEY AREA AND SEABED TV TOWS OF FAIR ISLE UNDERTAKEN BY MARINE SCOTLAND SCIENCE IN JULY/AUGUST 2010.



## Equipment Used

Multibeam echosounder system:  
Reson 7125 and sound velocity profiler

Single beam echosounder system: RoxAnn™  
Drop Frame TV: Digital Video and Stills

The multi-beam echosounder data were corrected for tidal variability using a predicted tide model for the survey area and applied during realtime data collection. The spacing between swathe lines ensured between 50 to 100% overlap between survey lines.

The multibeam echosounder system provides detailed information on the depth and shape of the surface of the seabed. The RoxAnn™ system provides information on the hardness and roughness of the seabed, from which it is possible to infer information about the character (rock, sand, mud, boulders, etc) of the seabed. The Drop Frame TV (Digital Video and Stills) was used in some areas to provide images of the seabed and the associated benthos, and to 'ground truth' the RoxAnn™ data.

## Scope of Survey 0910S

Five blocks of seabed were surveyed using the multi-beam and RoxAnn™ echosounders, and seabed images were obtained from each of these blocks. The total area surveyed amounted to approximately 56 km<sup>2</sup>, and encroached up to the 20 m contour. Areas less than 20 m were considered too high a risk for surveying using the FRV Scotia.

The number of TV tows undertaken during the cruise is nine and accounts for approximately 01:40 hours of video footage. The tows were collected from throughout the survey sites. Digital stills were collected from each of the tows unless problems with the camera were encountered.

The data will be worked up as soon as possible and the results made available through Marine Scotland Interactive (see Topic Sheet no 37).