

Cruise Report Corystes CO 18 2005

MESH Seabed Mapping

3-5-05 - 12-5-05

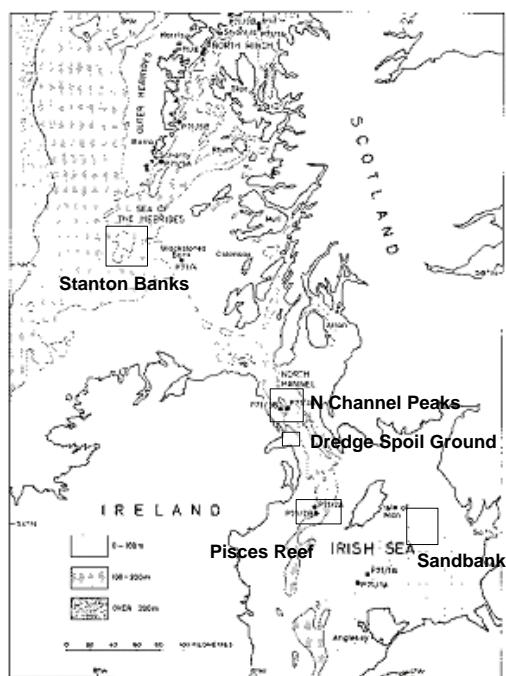
Personnel:

Dr M Service DARD SIC

Dr J Strong QUB

Aims:

To test habitat mapping protocols and ground truth assessment methodology on selected seabed features.



Approximate site locations

Narrative:

Day 1 Monday 2-5-05

Scientists embarked at 19:00h and commenced setting up side-scan and UW video equipment. The vessel steamed at 21:00h to the Pisces Reef in the NW Irish Sea and commenced AGDS mapping at 04:00h.

Day 2 Tuesday 3-5-05

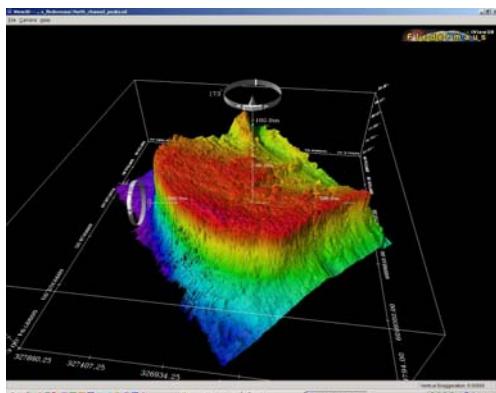
On completion of the AGDS grid the vessel started a series of side scan tracks over two prominent reef features. This identified a number of rocky outcrops projecting through the surrounding deep muds. Subsequent video sledge tows in areas identified by the side scan and AGDS confirmed the presence of rocky (basaltic) outcrops. The westernmost peak and the adjacent deeps muds were grab sampled and sediment samples retained for faunal and granulitic analysis.

Day 3 Wednesday 4-5-05

The vessel then steamed to a sandbank feature in the Eastern Irish Sea and an AGDS grid was commenced at 04:00. (Nb this feature had been previously grab sampled for fauna and granulometry in November 2004 by DARD/JNCC/QUB personnel.) At 09:00 side scan tracks were commenced. A number of prominent sand wave features were readily identifiable. A number of the AGDS and side scan tracks coincided with the grabs stations sampled earlier. At about 15:00 side scan and AGDS were ceased to allow video camera tows to be targeted on selected features. This produced high quality imagery of two distinctive sand wave features. Video tracks were completed at 20:00h and the vessel commenced further AGDS tracks until 00:00h when the vessel moved from this location and made passage to a rock pinnacle in the N Channel.

Day 4 Thursday 5-5-5

The vessel arrived in position over a rocky pinnacle in the N Channel that had previously been surveyed by DARD using Multi-Beam Sonar in 2003 and by the Vickers Submersible in the 1970's. The vessel commenced a series of side scan sonar tracks over the pinnacle until virtually complete coverage had been obtained. Initial interpretation of the sonar imagery was used to select video drops for ground truthing using a drop camera frame. This continued until 20:00 h with mixed results due to high tidal currents.



N CHANNEL PEAK

Day 5 Friday 6-5-5

Operations were resumed at 09:30 when it was hoped slack water would make operations easier. This proved to be the case and a number of successful camera tows were made until 11:30h. After consultation with the ships master it was decided that weather conditions precluded moving onto the N Coast and the vessel steamed south to Belfast Lough. Here a grid was marked out over the dredge spoil disposal site and side scan tracks commenced. This was carried out until Midnight when operations ceased for the night.

Day 6 Saturday 7-5-5

Side scan resumed at 08:00h and continued until 08:40 when the grid was completed. At this point a series of camera tows were made over the ground using the drop camera. This was followed by grab sampling at 5 pre-determined stations. At 16:00h the vessel again began to steam north and sat overnight in Red Bay.

Day 7 Sunday 8-5-5

At 06:00h the vessel left Red Bay and steamed to the Lacuna Bank/Shamrock Pinnacle complex. DARD using multi-beam, side scan and UW Video had previously heavily surveyed this area. It was hoped to obtain samples from the fringing sedimentary areas. After one attempt to use the Day Grab it was concluded that the heavy swell made this operation too dangerous and further sampling was undertaken using a pipe dredge. Nine samples were obtained by this method. The vessel then moved west to the Hemptons Turbot Bank previously surveyed by the Marine Institute and DARD. Four further ground truth samples were obtained by pipe dredge. On completion of this work at 20:00h the vessel made passage north to the Stanton Banks.

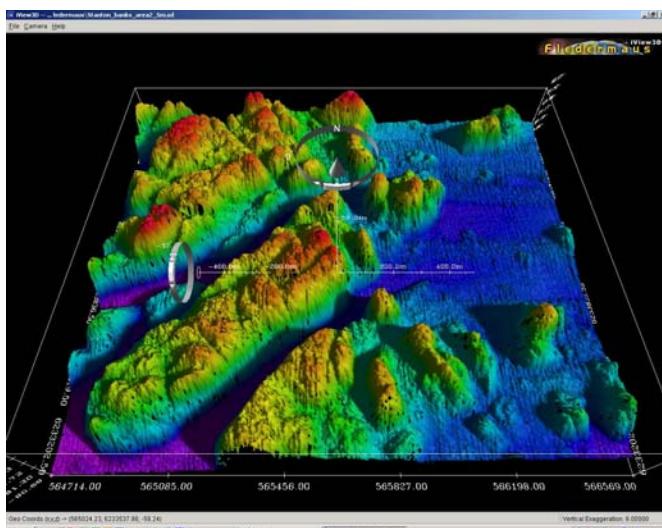
Day 8 Monday 9-5-05

On arrival at station at 08:00 a heavy swell was still running with strong gusts of wind, however, it was decided to attempt to deploy the drop camera at pre-selected stations at Stanton Bank 1. This was based on a re-analysis of previously gathered Multi-Beam data by Dr Craig Brown of the University of Ulster. Due to the wind driving the vessel exact placement of the camera was difficult although a number of

stations were covered. Following completion of drop camera operations a number of Day Grab samples were attempted, however, due to the swell and the nature of the substrate this was only partially successful. The vessel moved on to Stanton Bank 2 where again drop camera stations were attempted. Operations ceased at 20:30h.

Day 9 Tuesday 10-5-05.

The day began with a number of drop camera stations on Stanton Bank 2, the heavy swell and wind had dropped thus allowing the camera to be positioned on the selected stations. Following completion of the drop camera work further Day Grabs samples were collected. After 18:00h a number of speculative camera drops were made in deeper water around Stanton Bank 4. At 21:00 this work ceased and an AGDS grid conducted over the bank.



STANTON BANK 1

Day 10 Wednesday 11-5-5

On completion of the AGDS grid the vessel moved into position over Stanton Bank 3 and using multi-beam imagery supplied by the Marine Institute 5 stations were targeted for drop camera survey. On completion of these five stations one station shown to have soft sediments was selected for the Day Grab and sediment samples collected for faunal and particle size analysis. All scientific operations were completed by 13:30 and the vessel set sail for Belfast.

Day 11 Thursday 12-5-5.

The vessel docked in Belfast at 08:00h and all scientific equipment and scientists were disembarked by 12:00h

Conclusion:

Bad weather during the first half of the cruise meant that a number of sites selected for survey could not be visited and that grab sampling was limited. However, a

thorough survey of the N Channel Peak and the Stanton banks 1 and 2 was conducted. Some exceptionally good seabed images were obtained. The use of the UXBL tracking device proved to be successful and allowed the layback of the camera system and sonar fish to be determined. The RV *Corystes* performed well in the first work of this nature undertaken by DARD from her. A number of minor modifications may make such work easier: such as better bridge to deck communications and proper cabling for side scan sonar and video between the bridge and the conning room.

The crew and the officers are to be thanked for their efficiency and assistance at all times.

M Service SIC

A Niblock Master