



TOBI SIDESCAN SONAR MAPPING OF CARBONATE MOUND PROVINCES AND CHANNEL HEADS IN THE PORCUPINE SEABIGHT, W OF IRELAND

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A large-scale sidescan sonar survey, using the 30 kHz TOBI system of the SOC, was carried out in summer 2002 over the carbonate mound provinces of the Porcupine Seabight and Rockall Trough, W of Ireland (EASSS III contract HPRI-CT-1999-00047, survey partly on behalf of the Porcupine Studies Group). The survey in the Porcupine Seabight focused on the Hovland-Magellan province in the north and the Belgica province on the eastern flank of the basin. Furthermore a reconnaissance track was added over the canyon heads of the Gollum Channel System further south in the Seabight.

Each area has different characteristics. The Hovland-Magellan province shows a very homogeneous backscatter in the sidescan mosaics, indicating a quiet depositional environment. Mounds appear as sharp features with a strong backscatter and an acoustic shadow. Some Hovland mounds form multiple, ridge-like structures of more than a km in length. The Magellan mounds are nearly all buried, but leave subtle topographic effects at the seafloor.

The Belgica mound province is characterised by much less homogeneous backscatter and a steeper seafloor slope. The mounds are placed en echelon along the slope and are bound to the W by a blind channel. Smaller down-slope channels are also found between the mounds. Many small, high-backscatter features, interpreted as incipient ('Moirá') mounds have been found in this province. Striations in the blind channel, and higher up on the slope of the Belgica province indicate the influence of high

current speeds. Pockmarks have been found just south of the Belgica province. The Gollum Channels are steep-flanked, U- or V-shaped channels of ca. 200 m deep. Their steep walls are cut by gullies and feeder channels, and evidence of slope failures is present. Lineations and high-backscatter patches are found on some of the channel floors.