



Sedimentology of a carbonate mound area on the SW margin of the Rockall Trough

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Carbonate mound provinces form an extended belt along the continental European margin. One of the most intensively studied sites is the Rockall Bank west of Ireland, where several mound provinces occur in water depths between ~550 and 1200 m. Base diameters of single mounds can be up to 2 km and elevations up to 350m above the surrounding seafloor. Thickets of living cold-water corals species *Lophelia pertusa* and *Madrepora oculata* overgrow many of the exposed mounds.

Carbonate mound sediments are strongly influenced by biological, hydrographical and geological processes and also by climate changes. In order to understand carbonate mound formation more information on the influence of the environmental controls, their expression in the sediment and variation in time is needed.

In this study we divide between three types of area; an off-mound, upper slope with NW-SE orientated sediment waves, a carbonate mound area with NW-SE elongated carbonate mounds and an off-mound, lower slope with slump and slide scars.

Surface sediments (including living corals) within the mound area already display a wide variety of depositional settings revealed by x-ray diffraction, grainsize analyses and detailed (microscopic) description of selected intervals. Cementation of sediments was observed in box and pistoncores, indicating an early stage of hardground formation.

Off-mound, upper slope surface samples provide a quantitative measure for material derived from the (upper) water column. Combined with the on-mound and lower slope

data this allows differentiation between on-mound and off-mound produced sediments of the carbonate mounds.