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# Using Cold-water coral mini-mounds as analogue for giant mound growth: assessment of environmental drivers and anthropogenic impact

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## Résumé

Cold-water coral (CWC) reefs are mainly formed by framework building scleratinians *Lophelia pertusa* and *Madrepora oculata* that baffle sediment and over time, have the potential to develop into large coral carbonate mounds of up to 300 m high (e.g. Belgica Mound Province, Porcupine Seabight). The detailed mechanisms of initiation and build-up of such large CWC mounds are however not yet fully understood. It is therefore essential to study smaller mounds (often termed "minimounds") that can be interpreted as earlier growth stages that haven't had the time to coalesce and develop into larger mounds. The FWO Minimound project (2013-2016) aims to investigate small fossil CWC mounds within the Bay of Biscay in order to determine the impact of: (1) palaeoceanographic changes related to glacial-interglacial climate change in the last 15 ka (2) hydrocarbon related processes (seepage) and (3) anthropogenic fishing activities on CWC habitats. The project targets three minimound provinces: the Upper Ferrol Canyon (Cantabrian Margin), the Guilvinec Canyon (Armorican Margin) and the Explorer and Dangeard Canyons (Celtic Margin). In order to investigate the initiation, growth and demise of CWC minimounds, 35 m of USBL guided sediment cores and high resolution video data were retrieved from the Explorer and Dangeard Canyons, which were visited during the RV Belgica Minimound campaign in June 2014. We will present preliminary data of palaeoceanographic analyses throughout the cores taken from on and around the mounds and couple this with high-resolution geophysical data. Furthermore, video data analysis allows for habitat mapping of the CWC habitats and assessment of the potential anthropogenic impact on these ecosystems.

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