a photomosaic of seafloor images was constructed for each site and overlaid with chemical data layers in ArcGIS. Redox potential, an indicator of hydrogen sulfide, was found to be slightly higher and dissolved oxygen slightly lower on average at seep-influenced areas. This distinction was particularly pronounced young, active seeps with visible bacterial mats or brine stains on the sediment. The redox potential and dissolved oxygen levels at older seeps inhabited by the symbiotic megafauna of mussels, clams or tubeworms had average values similar to coral-occupied areas, but a more narrow range or variation.

POSTER 37

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Distribution of* Isidella Elongata *in the Deep Waters of the E. Ionian Sea

Isidella elongata specimens caught as by-catch during experimental trawl surveys carried out in the deep waters of the E. Ionian Sea, were recorded using photographs of the catch of each haul. In total, 204 hauls were undertaken at depths ranging between 300 and 1180 m in the framework of the INTERREG II and RESHIO projects from April to September 2000. The aim of the surveys was to explore pristine deep-water grounds and fisheries resources. In total, 199 individual *I. elongata* were caught in 54 of the hauls (26.5%) reacing a catch per unit effort of 18.4 specimens/km2. *I. elongata* was collected at depths ranging between 356 and 1080 m. All were found in hauls characterized by muddy bottoms. In most cases, fragments of live colonies of this coral were collected indicating the potential damage of this fragile coral species, which is known to be vulnerable to trawling. Other deep-water corals caught together with *I. elongata* in the study area were the black coral *Leiopathes glaberrima* and the tall sea pen *Funiculina quadrangularis*. The spatial distribution of the *I. elongata* seemed to be continuous in the deep waters of the E. Ionian Sea, although deeper areas showed a higher occurrence (300-500 m depth: 12.2 specimens/km2, 500-700 m depth: 15.9 specimens/km2, 700-900 m depth: 25.9 specimens/km2, 900-1200 m depth: 22.5 specimens/km2). The protection of this vulnerable species implies new measures for the deep-water fisheries in the Mediterranean Sea.

POSTER 39

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Effectiveness of the Darwin Mounds Marine Protected Area, following eight years of fisheries closure

Pressure on deep-sea ecosystems continues to increase as anthropogenic activities move into ever deeper waters. To mitigate human impacts on vulnerable deep-sea habitats, various conservation measures exist, including the designation of fisheries closures and Marine Protected Areas (MPAs). However, little evidence exists about their effectiveness, nor about recovery rates of these vulnerable ecosystems. Here we present a rare follow-up study assessing the status and recovery of a deep-sea fisheries closure and MPA, eight years after designation. The Darwin Mounds form a unique cold-water coral ecosystem at ~1000m water depth in the northern Rockall Trough, NE Atlantic. Following discovery and initial surveys in 1998-2000, the area was closed to all bottom contact fisheries, especially trawling, in 2003. Our repeat survey in 2011, using high-resolution sidescan sonar data collected by Autonomous Underwater Vehicle (AUV) and video footage from a Remotely Operated Vehicle (ROV), demonstrates the importance of the precautionary principle in deep-sea conservation. It shows that the fisheries closure is relatively well respected, even if some violation still occurs. As a result, the Western Darwin Mounds have been successfully protected, with similar proportions of live coral occurrence in 2011 as observed in 1998-2000. However, the Eastern Darwin Mounds suffered severe damage pre-closure, and so far show no recolonisation and very little regrowth. This underlines once again the low resilience and slow recovery of deep-sea ecosystems. This work was supported by the NERC MAREMAP programme, the ERC CODEMAP project (Starting Grant no 258482), the Lenfest Ocean programme and the Joint Nature Conservation Committee.