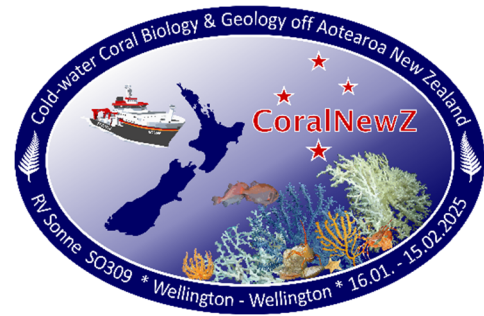


## RV SONNE

### Cruise SO309 CoralNewZ

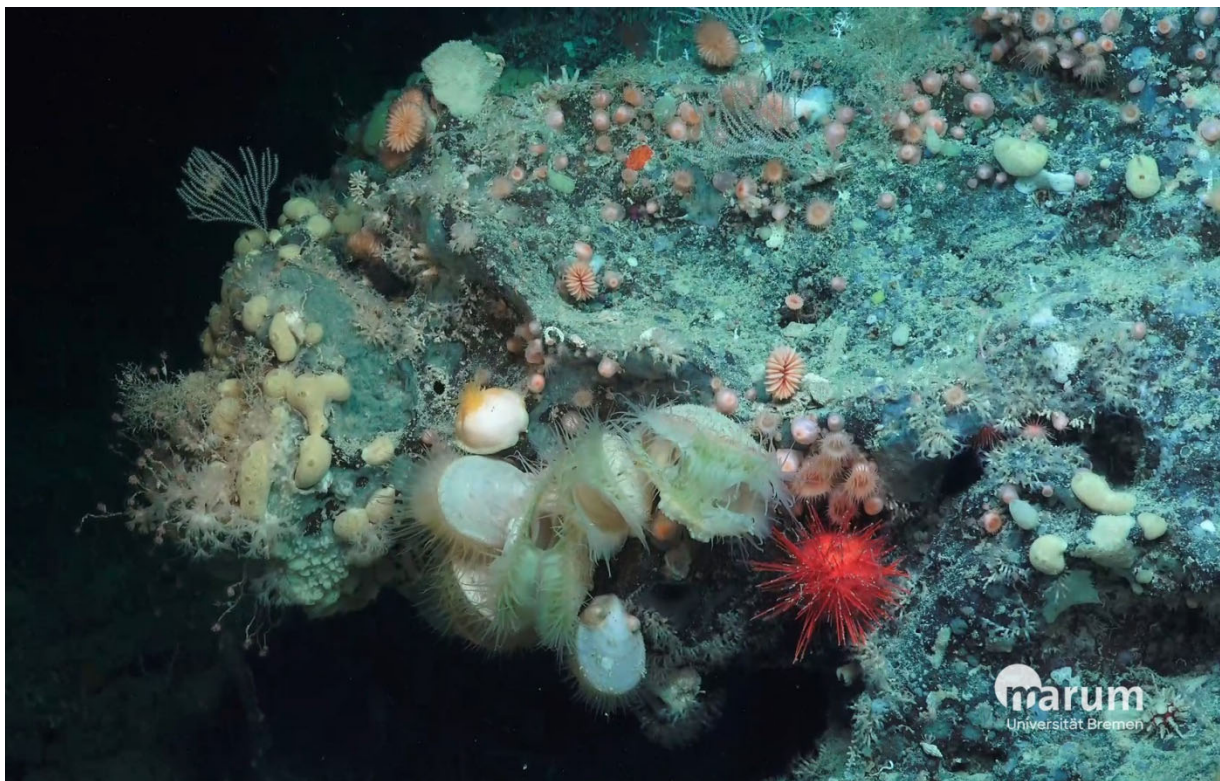
16.01. – 15.02.2025

Wellington – Wellington



### 2<sup>nd</sup> Weekly Report (20.-26.01.2025)

The weather was merciful to us without exception. Short fronts of low pressure moved so quickly over our working area to the east of Stewart Island that all the planned station work could have proceeded as planned. Four successful dives with the MARUM SQUID ROV to the previously surveyed structures (see weekly report 01) were completed. Video recordings and collected debris revealed its volcanic origin. We discovered a previously unknown group of 100-metre-high, currently inactive volcanoes, which can be described as "knolls". The basaltic boulders and lava crusts in particular provide a densely colonised substrate for sponges, octocorals and impressively large solitary corals of the species *Desmophyllum dianthus*.



*Outcropping volcanites densely colonised by filter feeders, including sponges, octocorals and solitary stony corals (Desmophyllum dianthus). Clusters of the large file clam Acesta with its long tentacles are impressive. © MARUM- Center for Marine Environmental Sciences, University of Bremen*

At the foot of a volcano, we discovered numerous occurrences of the framework-forming stony coral *Enallopsammia rostrata* with purple-coloured tissue. Under rocky overhangs we

found large file clams (*Acesta*), close companions of cold-water corals worldwide, with their byssus attached and associated with kleptoparasitic gastropods from the family Capulidae (see illustration). The ROV team, led by Nico Nowald, worked with great skill to fulfil the diverse sample requests of the biologists from Senckenberg, the NIWA and Te Papa National Museum and, of course, rock samples of basalts, crusts and phosphorites for the geologists from MARUM and Senckenberg. The large-box video grab developed by MARUM provided extremely helpful information for selecting suitable locations for sampling loose sediments and the corresponding fauna. Coring with the gravity corer proved to be challenging, but Dierk Hebbeln was able to use the parasound profiles and the backscatter maps to accurately find favourable locations for the gravity corer. As a result, the longest sediment core from this area to date (8.56 metres) was recovered - also rich in fossil cold-water corals. We left this interesting working area on Saturday night and steamed to the pilot station at the entrance to Milford Sound, where we arrived at midday on Sunday. The approach close to the coastline gave us fantastic views of the Fiordland coastal mountains. After picking up the pilot, we steamed back to Thompson Sound, where our 96-hour permit to navigate the working areas in the Sounds began to tick at 18:00. The entrance to the sound proved to be spectacular for everyone present. Before sunset, we were still able to study a terminal moraine at a depth of 160 metres visually via the Ocean Seafloor Observatory System (OFOS) and managed to apply a CTD to study the present water masses.

Everyone on board is safe and well.

André Freiwald

Cruise leader