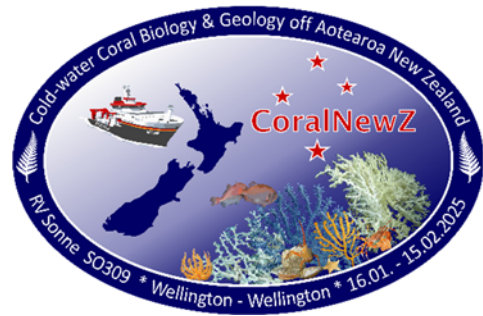


FS SONNE

Voyage SO309 CoralNewZ

16.01. – 15.02.2025

Wellington – Wellington (New Zealand)



Final Report (10.02.-15.02.2025)

We completed the OFOS monitoring profiles for NIWA over the Graveyard and the Diabolical Seamount by 11 February. This cruise was the first combined deployment of night-time OFOS stations for extensive photo mapping with subsequent daytime deployments of the MARUM Squid ROV, with which we recorded targeted 4K videos and carried out sampling for scientific questions. This resulted in unprecedented amounts of data, which pushed the available storage capacity of the RV SONNE to the limit. However, the Scientific Technical Service (WTD) found storage alternatives that prevented the science server from overflowing. Deployments with the epibenthic sledge, gravity corer, CTD and TV box grab rounded off the work programme. Particularly impressive was the relief-rich structuring and species assemblage of another *Solenosmilia*-reef on the southern spur of the Morgue seamount (see image).



Carnivorous sponges growing on dead Solenosmilia framework on the Morgue Seamount in 1081 m water depth.

The last part of the program was dedicated to the shallow Chatham Rise, where we visited a completely different cold-water coral community. The colony-forming *Goniocorella dumosa* can be found growing in large populations on boulders at a depth of 400 metres. The uniform maximum size of the 20 cm high coral skeletons indicates a relatively young age of colonisation of this coral, at least in the study area. Our ROV dive inspected a bank located in a protected area that has been closed to fishing since 2008. In contrast to the partially completely destroyed coral habitats of the Graveyard Seamount complex, *Goniocorella* seems to have successfully re-colonised here. The last ROV dive took us to the eastern extension of the Reserve Bank on the Chatham Rise at a depth of 250 metres. We only encountered isolated and small *Goniocorella* stocks, but more serpulid bioconstructions.

On Thursday afternoon we finished the station work and prepared for the transit to Wellington. In total we completed 18 successful ROV dives, 20 CTD stations, 13 video box grab, 8 epibenthic, 25 gravity corer stations and 31 OFOS transects in addition to the extensive (4173 km) MBES, Parasound and ADCP surveys.

The SO309 CoralNewZ voyage was therefore extremely successful for all the working groups on board, which is also due to the great enthusiasm from the entire crew to support the science during the expedition. Our stay in Fiordland will also remain unforgettable. The weather was also very kind to us, so there was hardly any downtime due to the weather. Finally, on behalf of all the scientists from the German institutes, I would like to thank Kareen Schnabel and the entire NIWA for the great cooperation before and during the trip. We are looking forward to exciting joint publications with new insights.

Everyone on board is well.

André Freiwald

Voyage Leader