

SO292 ICECARB

Towards an understanding of carbonate platforms in the icehouse world

RV SONNE

15. May – 21. June 2022

Nouméa – Nouméa (New Caledonia)



2nd Weekly Report

16. – 22.05.2022

R/V SONNE began her voyage for cruise SO292 at 22 UTC the 14th of May in Nouméa and headed NW on the transit to the southern flank of the Tregrosse Reefs carbonate platform located on the Queensland Plateau (NE Australia). The boundary of the Australian EEZ was crossed at 05.45 UTC on May 17th. Weather condition in general were quiet, with exception of a thunderstorm in the early morning of the 17th.

On the morning of the 18th of May (20.19, 17:05. UTC) the vessel entered the first working area and after visual controls by the four mammal observers accompanying the cruise, hydroacoustic measurements started. Later a CTD profile was measured in a water depth of 950 m and a box core sample retrieved at a location previously determined with multibeam and sub-bottom profiler. Starting in the afternoon, hydroacoustic measurements were reinitiated which ended May 18th at 00:13 UTC. The University of Hamburg's digital streamer and seismic sources with a small primary volume of 15 and 45 cubic inches were lowered in the water. Following the Australian national guidelines for whale and dolphin watching 2017 and the guidelines expressed in the Australian Marine Park Activity Permit PA2021-00122-1 the seismic soft-start procedure (ramp-up procedure) of the seismic sources was initiated at 05.16 UTC and the first seismic survey of the research cruise started. The ramp-up procedure ensures that mammals, which potentially are nearby the vessel, move away and are therefore not further affected by the sound sources. During the seismic surveys of this cruise the presence of mammals will be continuously monitored, and in case that such animals are sighted in the ship's neighborhood at determined distances the sound sources will be shut off and data acquisition halted until the animals move away.

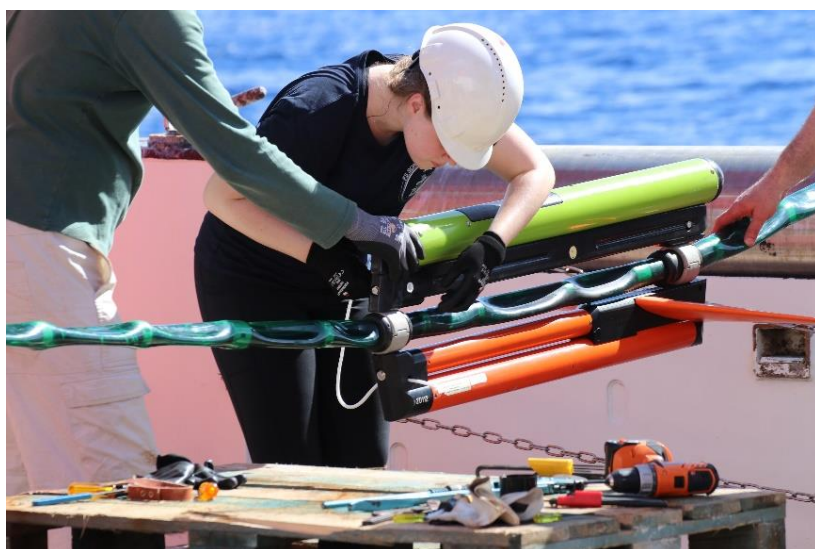


Fig. 1: The seismic team prepares the multichannel streamer. "Birds" are used to keep the streamer at a certain water depth during data recording (Picture: T. Wasilewski).

The survey proceeded the 20th with a short interruption for maintenance of the seismic sources. The same day, the ship's doctor gave us the good news that the individual PCR tests which were performed the same morning were negative, which means that social distancing and bearing of protective masks came to an end. Seismic measurements were continuously accompanied by the hydroacoustic data recording, which will also be used for sea floor observation with the shipboard OFOS or the ROV Mohawk to determine adequate sediment sampling locations. At 02:00 UTC on the 22nd the seismic gear was retrieved, and we headed for a previously determined location for sediment sampling.

The weather conditions continue to be good with wave heights not exceeding 2.5 m, and therefore not restricting our research activity. Red-footed booby, which usually breed in the *Pisonia* forest and *Argusia* shrublands on the islands of the nearby carbonate platforms, are our faithful companions circling near and ahead of the vessel for some fish catch.



Fig. 2. Red-footed booby (Sula sula) accompanying RV SONNE (Picture: Thomas Wasilewski).

Everyone is in good health and sends his greetings home.

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