FS METEOR

M179/2 FjordFlux (GPF 19-1_077)

15.01.2022 - 20.02.2022

Punta Arenas - Montevideo

3. Weekly Report (31.01. - 06.02.2022)

On January 31, the sampling in the inner part of Seno Garibaldi was continued, with METEOR approaching the drift ice boundary to map the gradients of the fjord as far as possible. In order to be able to take additional samples close to shore, the ship's own dinghy was deployed and sailed with three scientists to the shore, where water samples were successfully taken close to shore and mineral samples were taken on land (Fig. 1). During its last deployment that day, a winch mishandle likely damaged the ROV's fiber optic cable, preventing it from being deployed. The fault will be located and possibly repaired in the coming days.

Fig.1: Riparian vegetation at Seno Garibaldi.

In the evening of the same day, the METEOR left the Garibaldi fjord to set course for Ushuaia, where two media escorts were to be dropped off and the Argentine national observer and three scientists, who could not show negative PCR tests due to covid infections during embarkation in Punta Arenas, were to come on board.

Early in the morning of February 1, The METEOR moored at the pier of Ushuaia (fig. 2), where she had to stay a whole day due to administrational complications. After clarification of the matter and the change of personnel, which took place during the day, the METEOR was still not able to sail, because of the bureaucratic procedure of the formal departure, which was necessary because of the pilotage in Puerto Williams, Chile, on February 3, and the Argentine regulations stipulate that the ships have to remain in Ushuaia until the completion of the formalities. In this context, it also became clear that each time the Argentine-Chilean maritime border was crossed, a formal notification of entry or exit with physical presence of the METEOR in Ushuaia would become necessary.

Fig.2: View of Ushuaia from the METEOR, which is not associated with the best memories by most of the participants.

Since a total of five working days had already been lost due to the quarantine in Santiago and a suspected case of covid on board, we did not want to accept any further loss of work time and decided to forego the work in Argentine waters completely and accordingly moved the southeastern transect into the Drake Passage to west of the 67th parallel into the Chilean EEZ (Fig. 3). This change of plan was communicated to the Argentine observer, who was already on board, coupled with an offer to remain on board as a private citizen. The observer let it be known that he personally would have liked to accept the offer, but after consultation with his superiors he decided to leave the METEOR the next morning after breakfast, since the reason for his presence was no longer given.

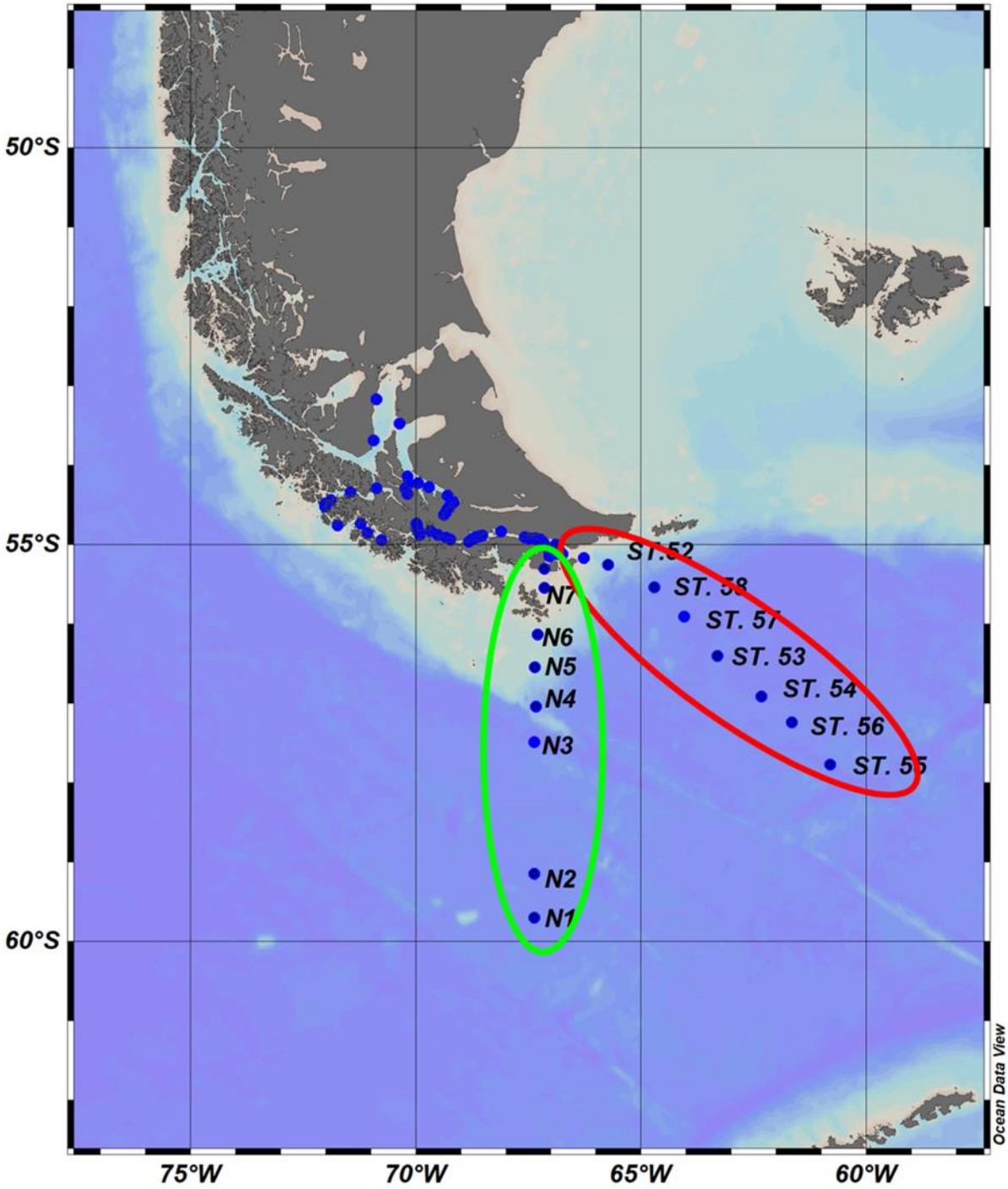

Fig.3: Location of the originally planned transect into Drake Passage (red oval) and that of the new stations (green oval).

At ten o'clock in the morning of February 2, METEOR was finally able to leave Ushuaia and belatedly complete the first station in the eastern Beagle Channel. Another followed in the late afternoon in Paso Picton, which marks the transition from the Beagle Channel into the South Atlantic.

A scientific focus of FjordFlux is to characterize the pelagic ecosystem of the work area. In order to be able to sample an as extensive part of the pelagic organisms as possible, plankton nets with different sizes and meshes are deployed (Fig. 4).

Fig.4: The plankton nets used on the FjordFlux: a phytoplankton net with a mesh size of 20 µm (left), a mesozooplankton net with a mesh size of 200 µm (center) and a Tucker net for larger zooplankton with a mesh size of 300 µm (right).

By combining the different instruments, it is possible to image a very wide size range of pelagic organisms: Marine viruses, bacteria and autotrophic picoplankton by the rosette water sampler, nano- and microplankton by the phytoplankton net, fish larvae, copepods, decapod larvae, munids, jellyfish, arrow worms and hydrozoa by vertical mesozooplankton nets and larger zooplankton and their vertical distribution by horizontal tucker trawls towed at different depths and in day/night rotation.

Early in the morning of February 3, off Puerto Williams, the two Chilean pilots who had accompanied us since leaving Punta Arenas on Jan. 18, were dropped off by pilot boat and two new ones were taken on board at the same time. During the day, two more stations followed in the eastern Beagle Channel.

Since the weather forecast for the upcoming days indicated relatively favorable working conditions for the Drake Passage, we decided to postpone further work in the estuary of the Beagle Channel and immediately set off south after the last station, where we sampled the first station outside the inland waters of Tierra del Fuego on the morning of February 4. The complete work program was completed except for the benthic work. After one more station, we reached the southernmost point of our cruise at 59°44'S on the morning of February 5. Wind and swell had increased a bit overnight, but still almost all instruments could be used. Around noon on our way north, a low pressure system crossed us, which brought higher swell for a short time, so that in the afternoon, for safety reasons, only the CTD with rosette sampler was operated. But already in the morning of February 6 we were woken up by sunshine and with much calmer sea and decreasing wind (Fig. 5) and all planned work could be realized in the course of the day until shortly before southern Cape Horn.

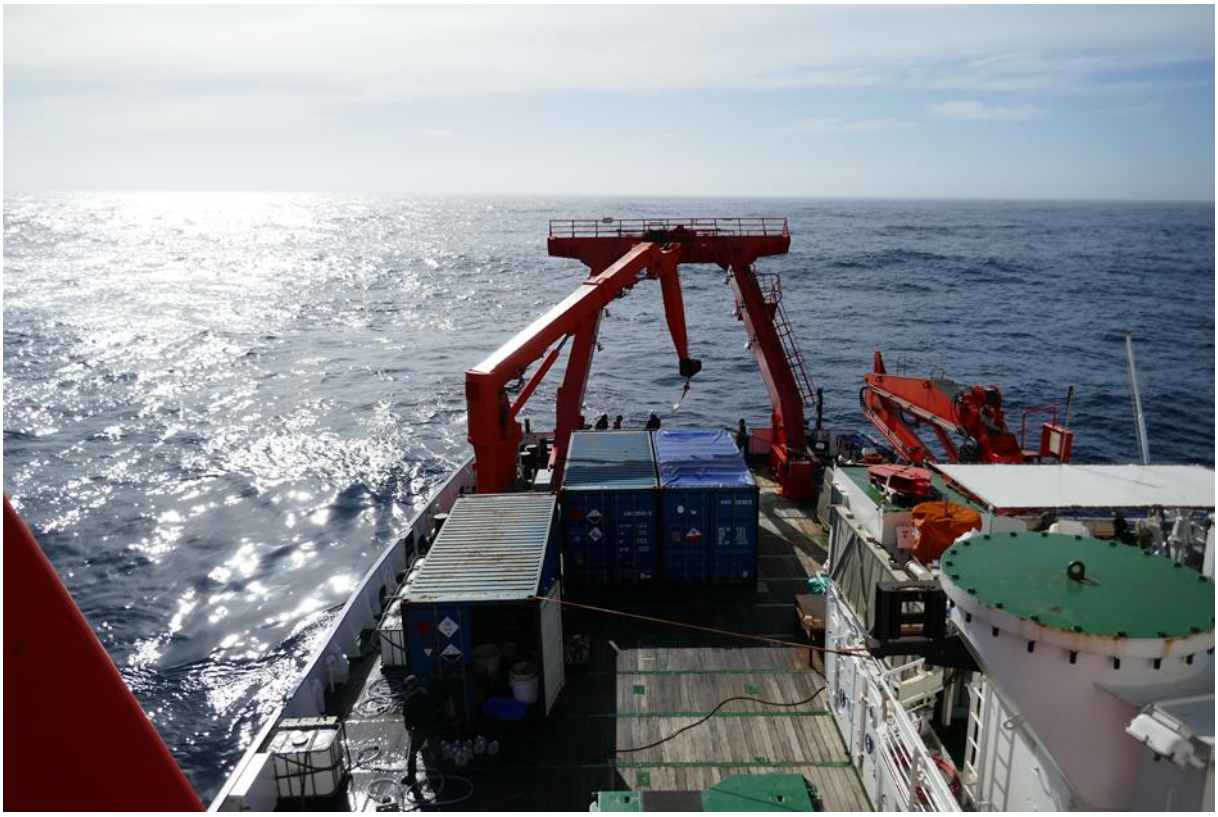

Fig.5: Deck work in glistening sunlight and calm seas in the northern Drake Passage.

All participants are well and send greetings home. They also continue to inform about the research activities and life on board on Twitter (https://twitter.com/ThoelenClaudia) and in blog posts (https://icbm-auf-see.uni-oldenburg.de/).

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