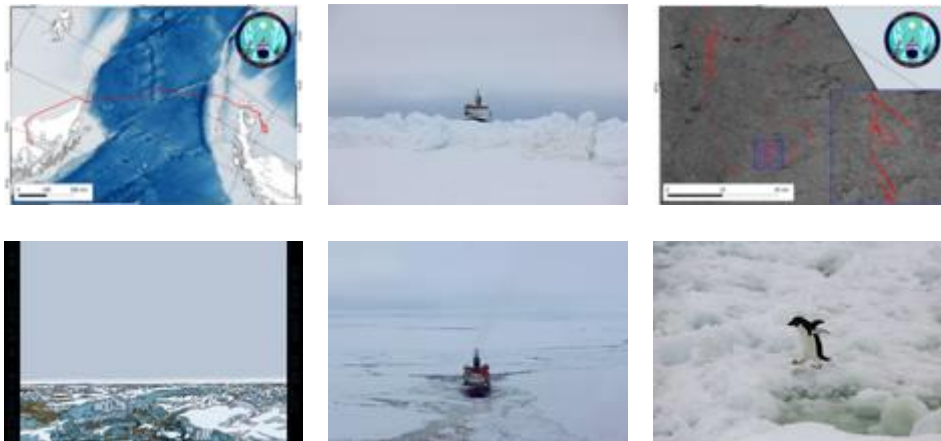


## Step by step

[11. March 2019]

**We are now almost within sight of A68 and a survey to measure the thickness of the sea ice has already crossed A68. Unfortunately, heavy ice conditions made our progress quite cumbersome. During the past week, we literally nudged our way metre by metre through the ice. At times, our progress was so small that it did not even compensate for the displacement of the ice-drift.**



The past week started with us being southeast of Snowhill Island. We were sailing in open water with only 40 m water depth surrounded by icebergs. A chain of icebergs had formed as they grounded in the shallows, blocking the drift of sea ice from the south. Therefore, to the north of the icebergs an area of open water (a polynya) had formed, which led in our direction. To continue our journey, we had to find a way through the chain of icebergs. During a sea ice reconnaissance, a gap in the chain was discovered and we travelled southward through almost fully sea ice-covered waters.

Directed by zones of less resistant sea ice, we zigzagged through the western Weddell Sea steadily in the direction of Larsen C until we unfortunately ended up in a zone of old, extremely compacted sea ice on the 26th of February. It took us almost three days to break through an approximately 100 m wide sea ice barrier. After countless attempts, the ship finally managed to weaken the barrier so that it crumbled and gave way so we were able to continue our journey. When we passed through the barrier, the ice floe was at deck-height indicating an overall thickness of ca. 10 m. However, even after this obstacle, we only made very slow progress. Most of the floes were too thick to break. Moreover, the melange of crumbled sea ice between the floes was quite resistant.



Fig. 2: Polarstern in heavy sea ice. (Photo: E. Allhusen)

Therefore, although we were moving again, progress was painfully slow. Due to the sea ice conditions, the remaining distance to the break-off area of A68, and missing leads through the sea ice in which we could have travelled faster, we decided to abort our mission to reach Larsen C ice shelf on Sunday evening. Since then, we are on our way to conduct work in areas further to the north.

Once again, the western Weddell Sea has lived up to its reputation of being one of the hardest areas to get to and hence least explored areas of the world. We would have very much liked to unlock some of its secrets but we did not get the chance...

Now, we first have to get through this disappointment. On the other hand, preparations for the first benthic sampling stations have started and I am confident that the first seafloor samples on deck will revive our initial enthusiasm. At this point, I am once again very grateful to everybody for keeping spirits up and enthusiastically working towards the success of this expedition.

We send our best wishes from an almost entirely sea ice covered Weddell Sea,

Boris Dorschel on behalf of all PS118 expedition participants



*Fig. 5: Lead and Polarstern. (Photo: A. Roehler)*



*Fig. 6: Stepping on the snow... (Photo: H. Huang)*