

Weekly Report POS530 MineMoni

14th– 21th October 2018



The last week of the MineMoni cruise is over and Kiel is right ahead of us. Within the third week we continued with our scientific program and explored the sites in Luebeck Bay with the AUV, subbottom profiler and more grab samples.

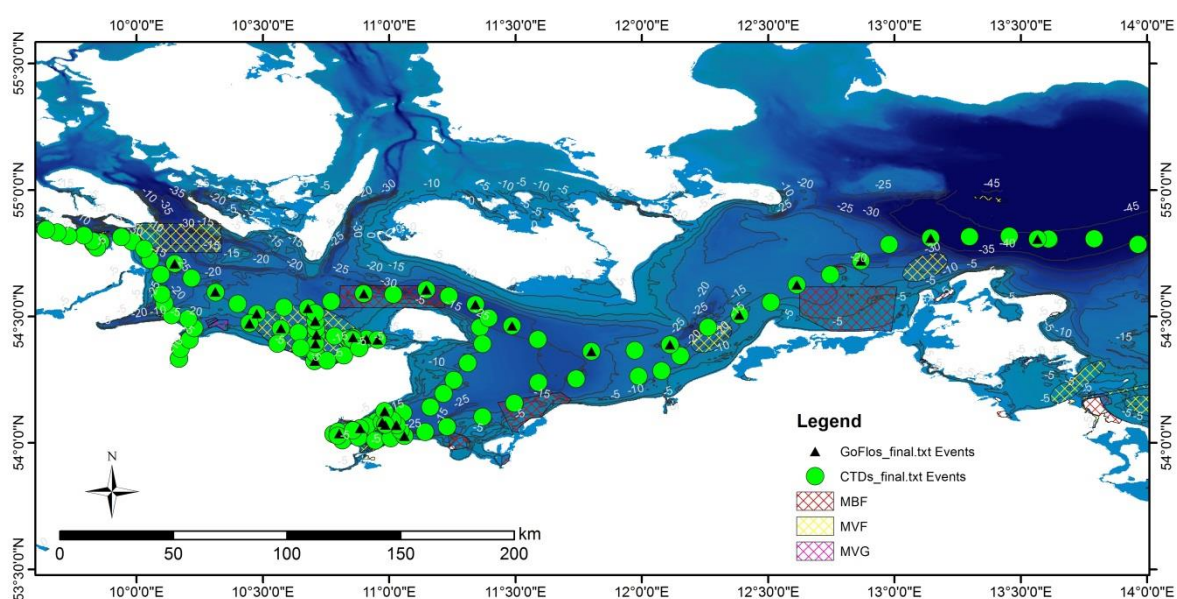


Figure 1: Overview map of the cruise track, with stations already done (green) and those that will follow (red).

The sub seafloor is characterized by outcropping ridges, which are most likely composed of glacial sediments. In between these ridges, well stratified sediments were deposited and show typical blanking effects due to gas. The backscatter corresponds very nicely with the geological structure of the seafloor. The more surprising it was to find only minor changes within the grab sample material. The multibeam map allowed us to locate the 'Gicht' blast furnace dump site and from there we also took sediment samples. They contained a rusty colored top layer, which had already been described by Leipe et al., 2005. Back in Kiel this sediment will be analyzed in respect to its heavy metal contents.

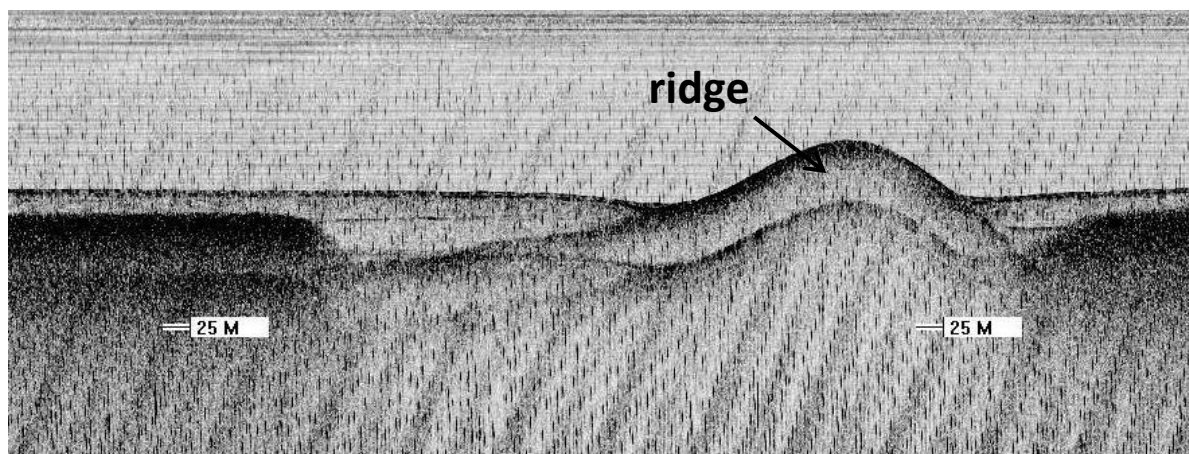


Figure 2: Sub bottom profiler image showing an outcropping ridge and accumulated sediments.

Other interesting findings are several mounds within the southern research site. AUV and Video-CTD surveys reveal that these mounds are composed of munition boxes filled with grenades. We did not detect any ground mines, but at least 3 torpedoes of ca 7 m length. Mapping these areas with the AUV 'Anton' will give us the possibility to estimate the amount of munition, which has been dumped here.

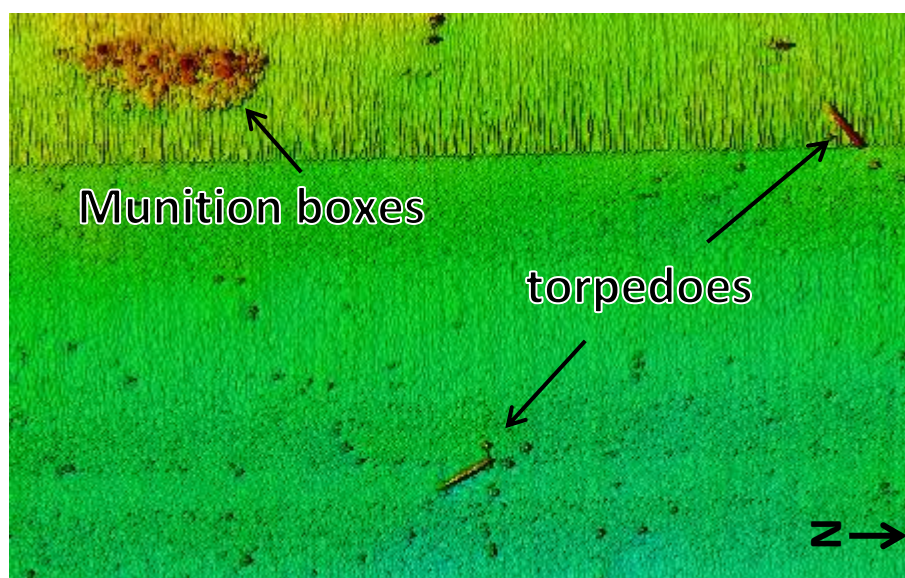


Figure 3: Unprocessed raw multibeam data showing two 7 m size torpedoes and one hill composed of munition boxes.

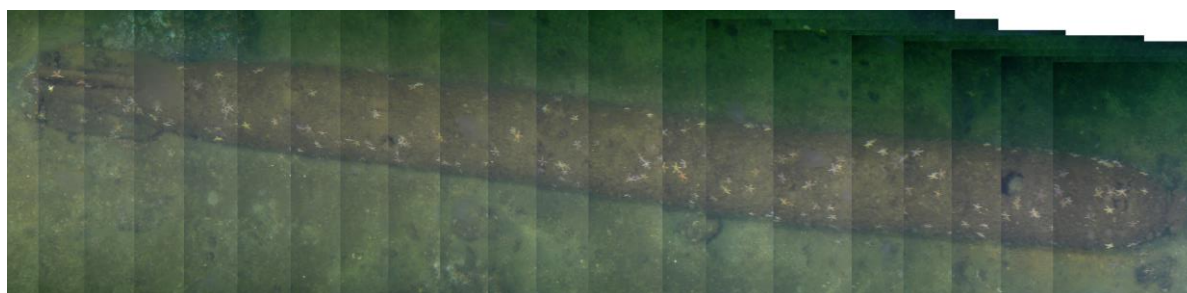


Figure 4: Photo mosaic of one of the torpedos. The photo were acquired by the AUV.

Brought by the German Navy, the scientific diver team came on board for the third time on the 17th of October. Again the weather was on our side, the sea was perfectly calm and the sun was shining.

Two mussel mooring were installed next to the boxes full of grenades and detailed photos were taken by the divers.



Figure 5: The upper photo was taken by the divers and shows boxes with munition resting on the seafloor. The lower photo was taken by AUV 'Anton' and shows even more boxes in another spot of the area.

The day continued with more grab samples until the evening. Around 6 pm the THW boat came for the crew exchange and two students (Ilmar and Christiane) and Claas of the GEOMAR data management team arrived. With the divers, 6 more scientists left and we felt a little bit lonely, being only 7 people left. It didn't last long though, as we started to take CTDs and GoFlos over the night along the eastern shore line of Luebeck Bay until we reached the north of Ruegen on the evening of the next day. Arriving in our last working area we directly started with a 12 hours mapping session. After working in maximum water depths of 25 meters, the 44 meters here, do feel almost like the deep sea. The stations take longer and the multibeam resolution is slightly decreased. The area north of Rügen was chosen, because a Russian mine has been found here during offshore cable laying work. But except of two shipwrecks and many fishing trawl marks, the area is rather uniform with only a few suspicious objects. Due to the poor visibility close to the bottom, we unfortunately had no chance to identify them. One of the wrecks we also surveyed with the video CTD and got very

nice footage of the 30 m long wooden ship. During the night of the 19th to 20th October the mapping went on and we closed our program in this area with a few sub bottom profiler lines and grab samples. Around 5 pm we were ready to head home. At least we headed in that direction. 10 more CTD and GoFlo stations had to be fulfilled and at 8 am in the morning it was finally done. The last station (#249) was taken and everyone was tired, but happy.

The cruise was a big success! Due to the perfect weather conditions we were even able to add some work to our predefined program and are now going home with hard drives full of high quality data. At this point we would like to thank the whole crew of the RV POSEIDON for their great help and support during these 3 weeks. Even after changing the station plan a couple of times, they still were good for having a laugh and were almost as excited about muddy sediment samples as I was (Frankie's sediment oracle needs to be mentioned here: "I guess it will be Modder!").



Figure 6: The team of the before last leg, before the last crew change.

With many greetings from POS530,

Mareike Kampmeier

On behalf of the scientific crew on board RV POSEIDON