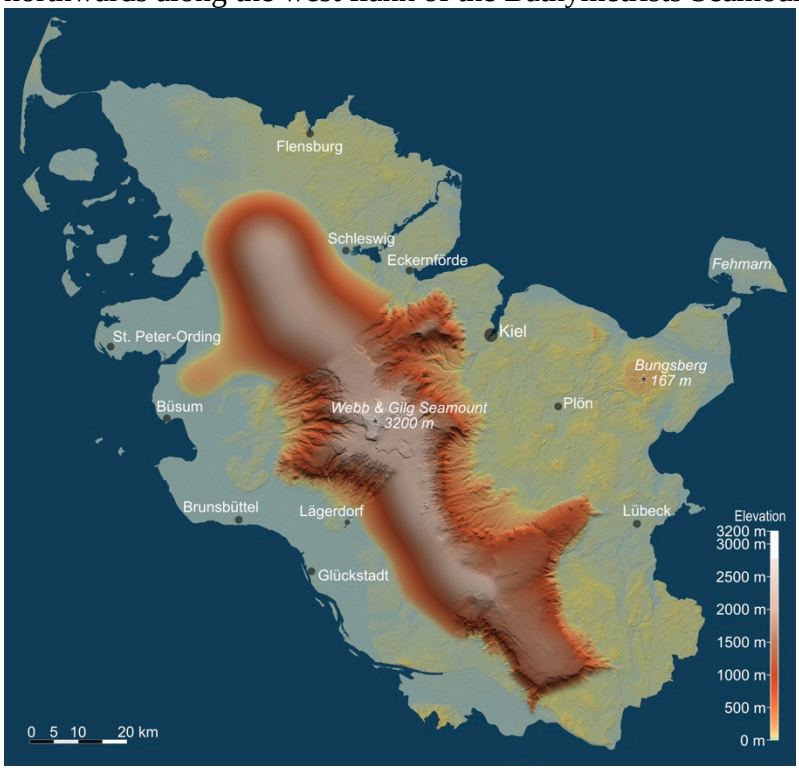
Maria S. Merian **Expedition MSM70**: BATHYCHEM - Bathymetrists Seamounts

3. Weekly Report

Atlantic 6°52' N/ 21°32' W, 14th January 2018

In the third week of our expedition we worked our way slowly in the direction of the southern Bathymetrists Seamounts and started mapping and sampling on the central and eastern Seamounts of our working area 3. This group of eight, partially morphologically connected seamounts we completely mapped and sampled with a total of eight dredge-tows. Many of the dredges were successful, as we could collect relatively fresh looking basalt samples – of course we also collected with those samples the ever-present manganese crusts. In the middle of our working area we took a sound velocity profile in order to have the exact sound velocity over the complete depth of the water column to calibrate our bathymetric measurements.

Two days ago, we started to work at the south-eastern volcanoes in our 4th working area. With the first seamount we directly had a large mountain to work with. With a length of roughly 140 km, a diameter of up to 50 km and a height of 3200 m, the Webb & Gilg Seamount is the largest volcanic complex in our working area. This mountain could fit just in the federal state of Schleswig-Holstein and be an amazing skiing area in Northern Germany. Because of its large size, the mapping of this volcano (including some dredges in between) takes now already 2 days and will take the same amount to finish. However, after we finished the work on the eastern part of this seamount, we will first move towards the southernmost seamounts in order to get from all working areas bathymetric data and rock samples. After that we will return northwards along the west flank of the Bathymetrists Seamounts.



The Webb & Gilg Seamount placed for comparison, on a bathymetric model from Schleswig-Holstein, shows the dimensions of the volcanic complexes in our working area. Also good visible is the improvement in resolution of our mapped area in comparison to the areas not mapped yet.

With the end of the third week we also reached the middle of our expedition and therefore can make a first evaluation of what we got so far. We mapped more than 31.000 km^2, an area larger than the German federal states Berlin and Brandenburg together. The area that is still to be mapped has a size of roughly 20.000 km^2, which means that time wise we are well in schedule. Also the geological sampling is going effective with 36 dredge tows performed out of 65 originally planned dredge tows. From almost all samples seamounts we could recover basalt samples and with that we cover well the so-far studied area.

The petrologists work on the volcanic rock samples that were recovered with a full dredge from Webb & Gilg Seamount.

Motivated and excited, we look forward to the second half of the expedition, to many new discoveries and to more (volcanic) samples.

Best greetings from Maria S. Merian in name of all expedition participants,

Froukje van der Zwan