

RV MARIA S. MERIAN – MSM110 „ECOTIP”

06. - 29.08.2022, Reykjavik - Reykjavik

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Arctic biodiversity change and its consequences: Assessing, monitoring, and predicting the effects of ecosystem tipping cascades on marine ecosystem services and dependent human Systems (ECOTIP, H2020 project)

Cruise MSM110 will lead RV MARIA S. MERIAN into three selected fjords along the coastline of East Greenland in August 2022, i.e. during late summer with minimal ice coverage, as an important element of the HORIZON-2020 supported project ECOTIP.

ECOTIP aims at improving our understanding of anthropogenic changes in the biological production and diversity in the Arctic marine regions, and their effects on the ecosystem services. Special emphasis is put on evaluating whether a change in the lower trophic levels due to the increased temperature and freshwater outflow or other physico-chemical conditions can trigger an ecosystem tipping cascade that ultimately will change benthic-pelagic coupling, carbon sequestration and fisheries production.

The first days were spent with arriving and setting up, which was started by a small vanguard on August 4 2022. Most of the cruise participants were confronted with the spectacle of a volcano erupting on August 3 2022 during the approach to Reykjavik, but this apparently did not lead to any noticeable stress. Equipment and cargo were in place on time, so the ship was ready to depart on schedule to begin expedition MSM110. Unfortunately, however, for one participant who had been in Greenland prior to the cruise, the weather had other plans and made it impossible for her to leave Greenland and thus to arrive in Reykjavik for several days. The departure from Reykjavik was therefore postponed by one day, so that cruise MSM 110 left Reykjavik at about 11am on August 7 2022 and is now on the approach to the first station. This station is located in an area central to the global climate, the *Denmark Strait Overflow Water*, which is one of the crucial links between the Arctic deep water formation areas and the southward currents of the deep North Atlantic.

Greetings on behalf of all cruise participants,

Helmuth Thomas

(Helmholtz-Zentrum Hereon)