



Dr. Anke Kremp
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*"It was very exciting
in those days.
We were explorers."*

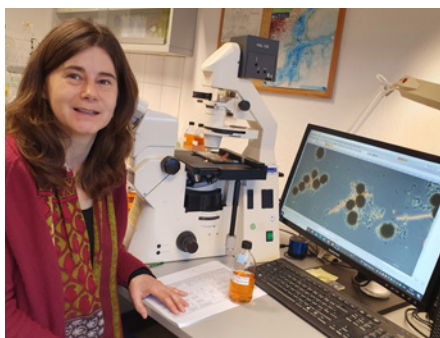
Marie-Tharp (1920-2006),
Oceanographer

Photo: Marie Tharp working watching the seismic plotter print a fathometer record aboard the USNS Kane in 1968.

Wednesday, 21st February 2024, 11:00 CET
ENB Seminar Room (Geb. 5, 1st upper Floor), Wischhofstr. 1-3, 24148 Kiel

Now at
ENB Seminar
Room!

Predicting the Future from Signatures of the Past: Using living sediment archives and ancient DNA to understand responses of marine primary producers to environmental change



Current Climate Change is a major threat to marine biodiversity with severe effects on marine ecosystem function and stability. Phytoplankton, at the base of the marine food webs, already start showing shifts in species composition and abundance as a consequence. Yet it is unclear how such changes occurred in the past and likely continue in the future.

Permanently anoxic sediments, as present in the deep Basins of the Baltic Sea preserve phytoplankton DNA and living resting stages for centuries and even millenia. Thus they represent chronological archives of phytoplankton adaptation to alternating Climate conditions of the

Holocene. Using ancient DNA- and Resurrection Ecology approaches we investigated the responses of Baltic phytoplankton communities and populations of key Diatoms and Dinoflagellates to past Climate change. In this presentation I will show data on Holocene community dynamics of Baltic phytoplankton, as well adaptive trait changes in populations and underlying genomic responses, and discuss exciting findings on the ability of phytoplankton to survive centuries to millennia in anoxic sediments. Results of modelling experiments based on sediment archive data will be presented, exploring phytoplankton structure and function in the Baltic ecosystem under different future scenarios.

Afterwards: Early career researchers of all genders are welcome to come and talk to Anke Kremp about career paths, etc.