

First-ever deep-drilling expedition to the Baltic Sea launches

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Starting in September 2013, the Baltic Sea will be the scene of a unique scientific expedition. The Integrated Ocean Drilling Program (IODP) will set out drilling deeper into Baltic Sea sediments than ever before, all the way to sub-seafloor sediments that developed approximately 130,000 years ago, before the last ice age. From the Baltic Sea Basin, the IODP drillings will collect sediment cores 50–300 metres long from a total of eleven drill sites.

The expedition involves Finnish scientists from the Geological Survey of Finland and the University of Helsinki. Finland participates in the IODP thanks to an annual membership fee paid by the Academy of Finland.

Provided that the drilling is successful, the data amassed will shed completely new light on the historical development and climate of the region during the warm phase before the last [glacial period](#) some 130,000 years ago.

By studying the advances and retreats of the Scandinavian Ice Sheet between 100,000 and 20,000 years ago, the IODP expedition also aims to investigate whether the Scandinavian Ice Sheet influenced North Atlantic climatic oscillations or if it simply responded to those climate changes and shifts in the ice sheet cover.

Getting down to the core

IODP drillships have not previously ventured into such shallow waters. The two-month Baltic Sea expedition starts and ends in Copenhagen, Denmark.

The international [drilling vessel](#) will take on 19 scientists, two from Finland.

"My assigned task on the ship will be to monitor the succession of [sediment layers](#) and the type of sediments that are drilled. I'll also be doing some geophysical and magnetic measurements," says Research Professor Aarno Kotilainen from the Geological Survey of Finland. The second Finnish representative on board the drillship, Outi Hyttinen from the University of Helsinki Department of Geosciences and Geography, will be performing similar tasks.

"I expect that the expedition and its results will provide us with new information on what the Baltic Sea has been like in the past and which factors have affected the changes in the sea," explains Kotilainen. The IODP was launched in 2003 to build on the work started by its predecessors ODP and DSDP as early as in the 1960s. Together, the three programmes have produced valuable data on global-level [climate change](#).

Kotilainen and Hyttinen have set up a blog on www.gtk.fi/syvakairaus where they describe the progress of the expedition, which, after more than ten years' of planning and preparation, is a dream come true for the scientists. The drill sites closest to home are located in the Swedish side of the Gulf of Bothnia.

Over the course of the autumn, the IODP drillship will recover several kilometres of [sediment cores](#). The core barrels will not be completely opened until they have been brought ashore in Bremen, Germany, where the scientists will spend a month during the winter to study the core

samples. Kotilainen estimates that it will take 3–4 years to analyse the results of the entire expedition.

Provided by Academy of Finland

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