

## Preliminary results of seabed investigations in the Baltic Sea and the Gulf of Finland

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High-resolution sea bottom relief maps have been compiled for large areas of the Gulf of Finland and the Baltic Sea, using multibeam echosounder surveys by the Estonian Maritime Administration spanning the latest twenty years. Multibeam echosounder is a type of sonar that is used to map the bottom of a water body. The high-resolution maps provide opportunities for distinguishing a number of interesting geomorphological objects, the Neugrund impact structure in particular. Remote sensing methods (sidescan sonar and continuous seismoacoustic profiling, video recording, etc.) and direct sampling of submarine outcrops were used for further studies of the identified structures.

**Pockmarks.** A number of trench-like N-S structures, from which hydrocarbons seep, are observed in the gas-saturated mud and clays covering the westernmost part of the Neugrund impact structure. These features are obviously related to the fault zones.

**Ice scratch marks.** A set of shallow straight trenches is observed in the shallow (5 -15 m deep) seabed on top of mud- or clay-covered hillocks. These are obviously scratches made by pressure ice ridges.

**Streambeds.** Bunches of streambeds are observed in the mud- and clay-covered seabed at the foot of submarine slopes and escarpments in the central part of the Gulf of Finland. These features are up to 20 m deep, 200 m wide and some kilometers long. Streambeds are especially well observed on the top of the submarine Odensholm Peninsula where bottom current is particularly strong.

**Iron-manganese concretions.** Iron-manganese concretions were mapped in large areas of the Gulf of Finland and the Baltic Sea at the seabed depth of over 50 m. The chemical composition of the concretions is being studied.

Together with these findings, some other interesting submarine structures were studied near the islands of Väike-Pakri, Krass, Hiiumaa and Saaremaa.