

## Distribution of the fine-grained sediments in Helsinki metropolitan area, Finland

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Urban growth leads to construction of buildings and infra in challenging areas with superficial deposits such as fine-grained sediments in the coastal area of Finland. The Helsinki metropolitan area has undergone many fresh water and marine stages after the last deglaciation and these stages of Baltic Sea basin have transported and accumulated fine silt and clay material. Geological and geotechnical properties and structure of these fine-grained sediments depend on the sedimentation environments, source material, and erosion and re-deposition during isolation.

A combined model of the appearance of the fine-grained sediments in the metropolitan area was made. The model is based on Quaternary maps of metropolitan cities Helsinki, Espoo, Vantaa and GTK, and thickness of the soft sediment layers from geotechnical investigations where available. The model was combined with high-resolution LiDAR DEMs for classification and visualization.

Based on the model, the fine-grained deposits were categorized into different classes according to their geological-geomorphological and geotechnical properties as well as location in the metropolitan area.