

GIO Land High Resolution Layer Forest Mapping in Finland, Iceland and the Baltic Countries

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Introduction

In project GIO Land VTT Technical Research Centre of Finland Ltd. produced the High Resolution Layer Forest maps for Estonia, Finland, Iceland, Latvia and Lithuania (Total area = 618 000 km²)

- Tree Cover Density and Forest Type maps in national projection, 20 m pixel resolution
- Tree Type and Tree Presence/Absence maps in European projection, 25 m pixel resolution

VTT was part of the consortium with Metria AB (SE) and GeoVille (AT).

GIO Land is part of the European Copernicus programme that aims at producing several land cover datasets using satellite images on 39 European countries. GIO Land is coordinated by the European Environment Agency (EEA). Copernicus is a European system for monitoring the Earth including Earth observation satellites and in-situ sensors.

Thematic processing

- VTT in-house *Probability* software was used for modelling and thematic map production
- Automatic model refinement by the analysis of the reference data histograms
- Interactive model refinement using web map service of aerial images
- Computation of country-wide map mosaics
- Post-processing with ArcGIS

Map Accuracy Assessment / Verification

- Quantitative accuracy assessment of the Forest Type maps was conducted with reference data extracted from aerial images according to GIO guidelines to verification or JRC sampling scheme
- GIO Tree Cover Density map of Finland was verified against the reference map of Natural Resources Institute Finland (Luke) using 25 km x 25 km forest patches in 18 random locations

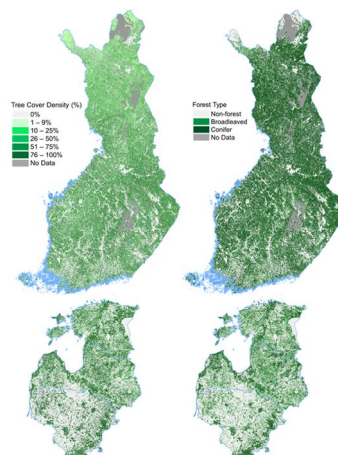


Figure 1. Tree Cover Density and Forest Type maps of Finland and the Baltic countries