Land Monitoring

COPERNICUS LAND MONITORING SERVICE WORKSHOP ON CLC+

MS CONTRIBUTION

Brussels, Albert Borschette Congress Center
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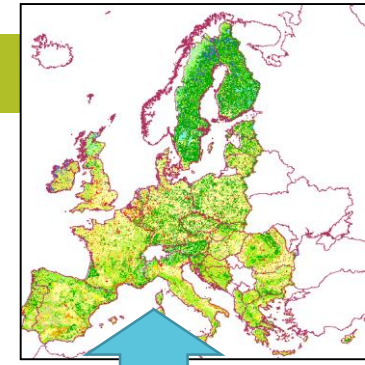
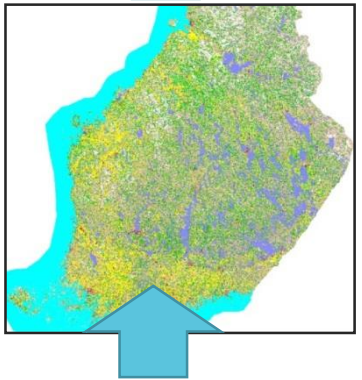
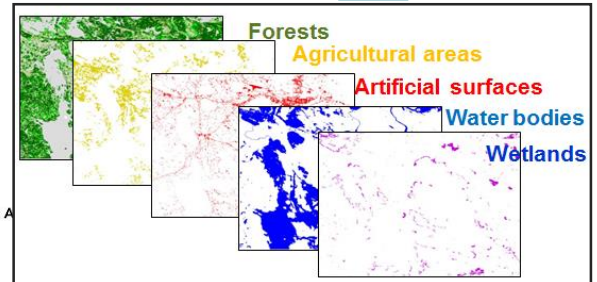
SETTING THE SCENE: CLC PRODUCTION IN FINLAND

- In Finland Land Cover and Land Use information is collected by and maintained in various organisations
- Governmental open data policy supports the distribution and re-use of data
- The following approach has been applied since 2000 as part of the Copernicus programme
  - Integration of GIS + satellite interpreted data to produce a high resolution raster LC product (HR CLC 20 m)
  - Application of an automated generalisation method to derive EU CLC data (MM 25 ha) from the national HR CLC 20 m data







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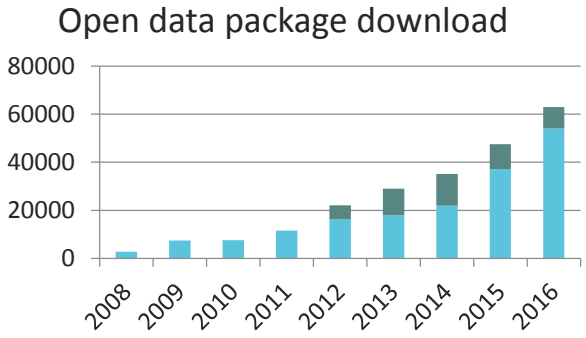
1. What are the national needs for LC/LU data for the coming years? 1/2

- The HR CLC 20m product is one of the most used (downloaded) data of SYKE



TOP 5 data download in 2016

1. Groundwater bodies
2. Corine Land Cover
3. Natura 2000 sites
4. Drainage basin areas
5. Protected sites

- Present use cases, at least:
  - Ecosystem services (Forest, Water, Soil etc.)
  - Water quality and hydrological modelling (Characteristics of river basins)
  - Risks assessments (Floods)
  - Land use planning (Background data)
  - …

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1. What are the national needs for LC/LU data for the coming years? 2/2

- New user needs
  - Spatially more detailed information and time-series
  - Going from 2D mapping into 3D virtual models

- For example:
  - Habitat mapping and monitoring
    - Detailed information on the habitat distribution, the status and changes, like overgrowth, drainage, management practices
  - Nature conservation
    - Old growth forests (structure of canopy, height)
    - Large single trees (aspen)
  - Land Use Plans in 3D -> Pressure for Existing Land Use data in 3D
  - Need for more detailed spatially explicit land use changes (LULUCF)

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2. What are the national plans for acquiring/producing LC/LU data and how do you see the potential linkages with European initiatives?

- We are presently working together with the national land survey of Finland on the restructuring of the topographic database
  - Goal: secure creation of CLC 2018 and LCLU products beyond
- Sentinel satellite data are the most important part of Copernicus programme at national scale
  - National Satellite data Centre is being built at Sodankylä by the Finnish Meteorological office (Collaborative ground segment)
  - Direct downlink of Sentinel 1 and mirror site for Sentinel 2,3,…
  - Processing facilities for large data volumes (Calvalus parallel processing environment)
  - Present bottle neck: pre-processing tools are not operative for detection of cloud, haze and shadow
- Airborne laser scanning data
  - First coverage will cover the whole of Finland 2019
  - National programme for second update under development (Laser2020)
  - Secure re-use in CLC+

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3. What are the gaps in national data for which CLC+ could become useful?

- High resolution Land Cover data needed covering the whole of Baltic Sea drainage basin
  - Especially for water quality modelling
- Lack of pre-processing tools for Sentinels
- Lack of national resources
  - Copernicus is an important instrument for funding and for supporting national cross-sector and international cross-border cooperation
    - Lack of national land monitoring programme
    - Need for a cross-sectoral and international cooperation and data production

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4. Expectations towards the agency in relation to LULUCF?

- Presently LULUCF reporting is based on National Forest Inventory (NFI)
  - Statistical approach with the aid of extensive network of field sample plots
- Future possibilities
  - Integration of statistical and GIS methods
  - Mapping of relevant changes (spatially explicit)
  - Could EEA refine a methodology to be used based on Copernicus products?
- Benefits
  - Potential in focusing of mitigation measures for CO2 emissions and uptake
- General support for Open Data policy and other measures leading towards interoperability
  - For example provision of CAP LPIS/IACS information in a harmonised way

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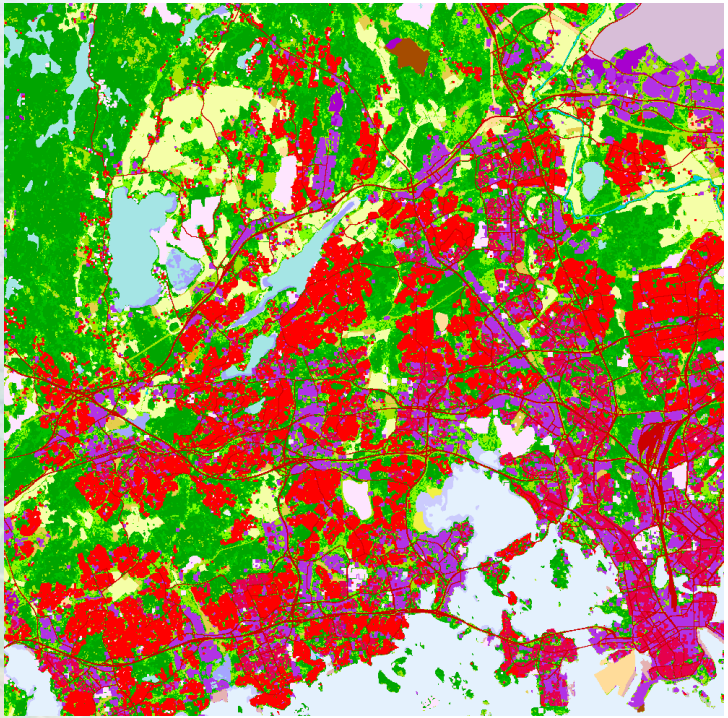
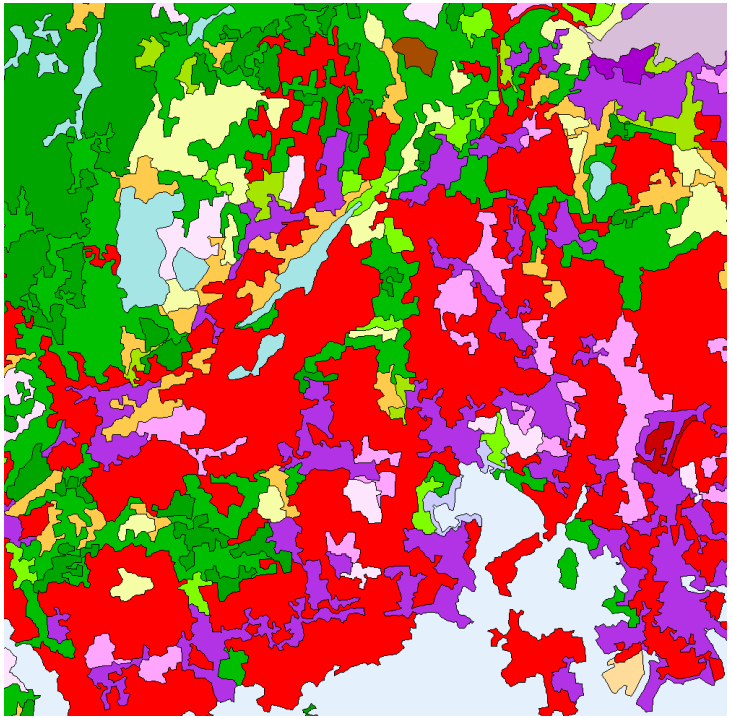
THANK YOU FOR YOUR ATTENTION!

HR CLC (20 m)



CLC (MMU 25 ha)



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