



CSC

ICT Solutions for
Brilliant Minds



PaTuli spatial data service

Kylli Ek

14.12.2022

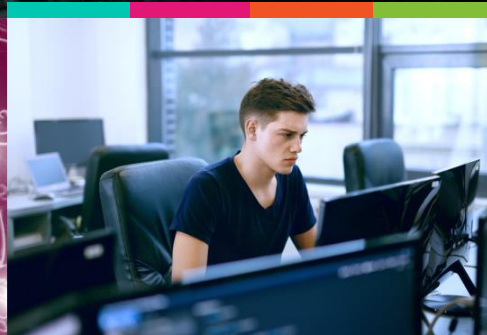


PaTuli

• www.csc.fi/paituli

- Open to everybody, but targeted for academic users
- Data of Finland, mostly from governmental organizations
- Finnish universities and research institutes can have own data
- Includes historical versions of data (2005 ->)
- Main statistics: 13 Tb data, 266 datasets, 2600+ users
- CSC operates the service, Ministry of Culture and Education supports the service, free of charge for end-users

PaTuli datasets



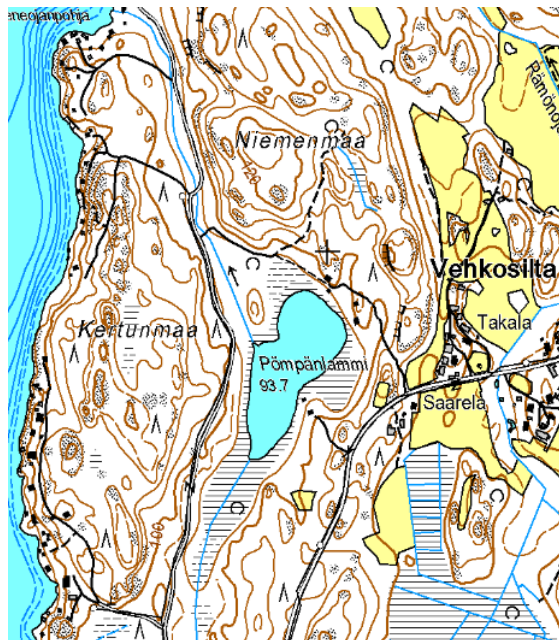
Paituli datasets producers

- Finnish Digital and Population Data Services Agency
- Finnish Food Agency
- Finnish Meteorological Institute (FMI)
- Finnish Transport Infrastructure Agency, Digiroad
- Institute for the Languages of Finland (KOTUS)
- Latuviitta
- National Land Survey (MML)
- Natural resource institute Finland (LUKE)
- Statistics Finland
- University of Helsinki, Digital Geography Lab

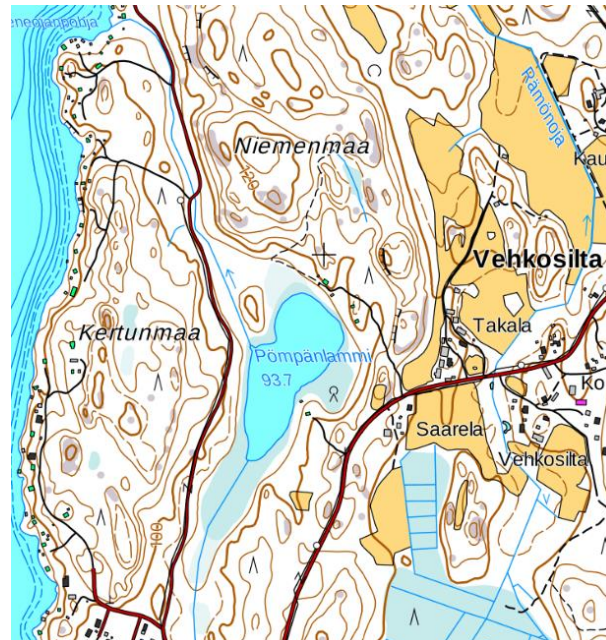
- 1:20 000
- 2005->
- PNG, TIFF

NLS, basic map

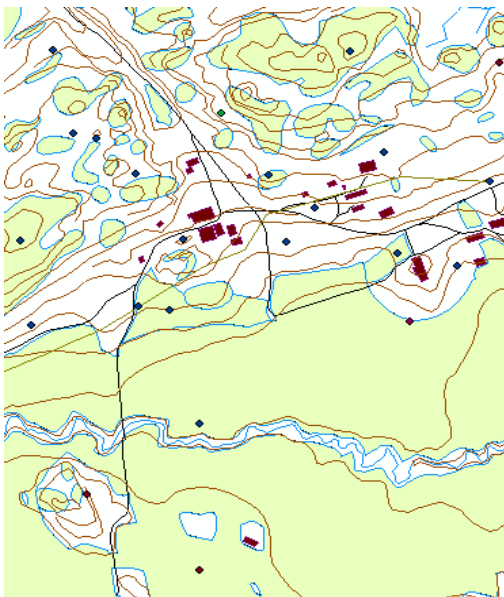
Background color



Print color



- 1:10 000
- 2005->
- SHP for map sheets
- GeoPackage all Finland in one thematic file



© Maanmittauslaitos 2010

NLS, topographic database



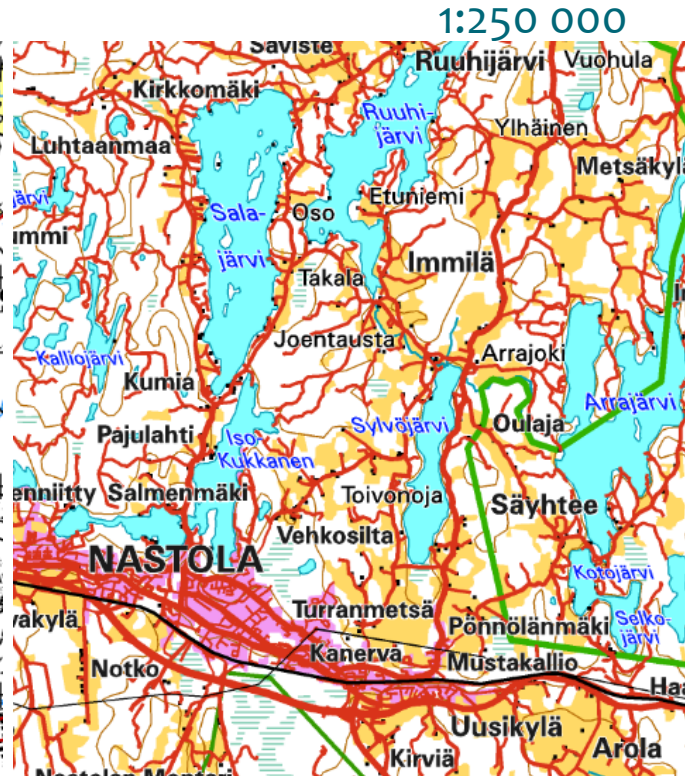
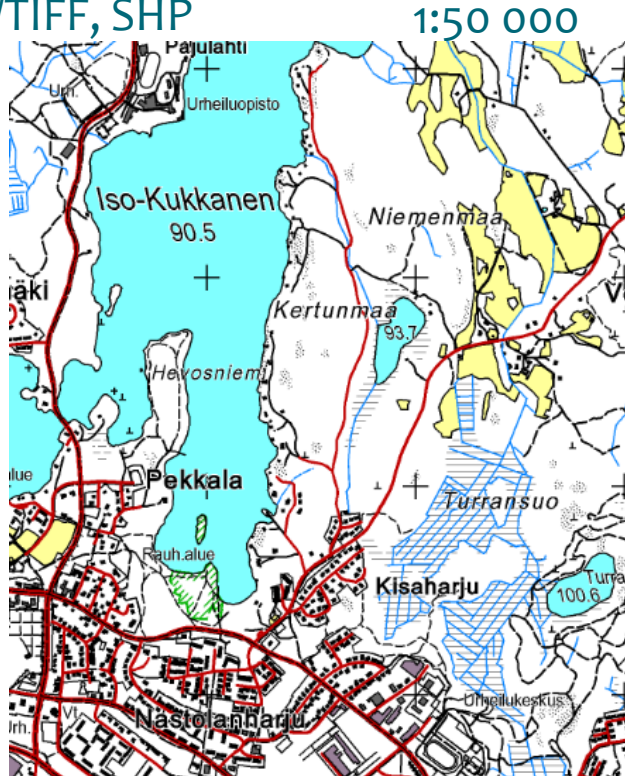
- Traffic
 - Road, streets, tracks, railways, ferries, airports
- Buildings
- Administrative borders
- Place names
- Land use
- Water
 - Sea, lakes, rivers, streams, springs
- Contours, height and depth
- ...

➤ 1:50 000 – 1:4 500 000

➤ 2005->

➤ PNG/TIFF, SHP

NLS, topographic and general maps



1:10 000

NLS, ortho images

1997->

JPG2000

Normal color



Infrared



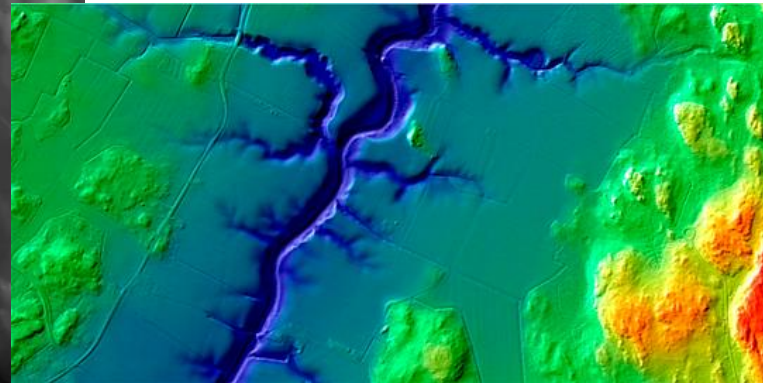
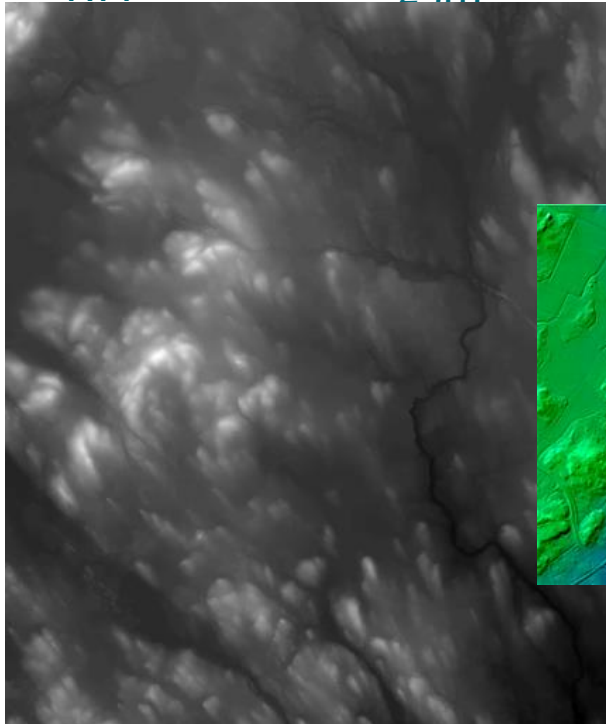
Black-and-white
(some old images)

- 25m, 10m and 2m

- 2005->

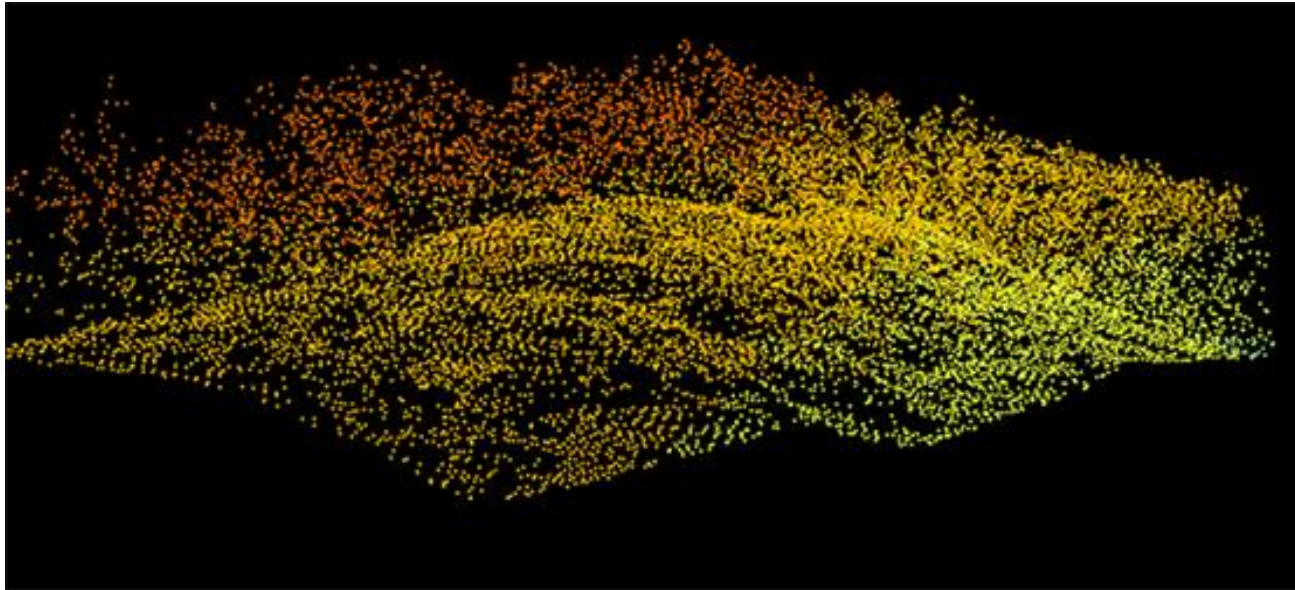
- TIFF

NLS, DEM, digital elevation model



- 0,8 points / m²
- 2008->
- LAZ

NLS, lidar



1:10 000 – 1:1 000 000

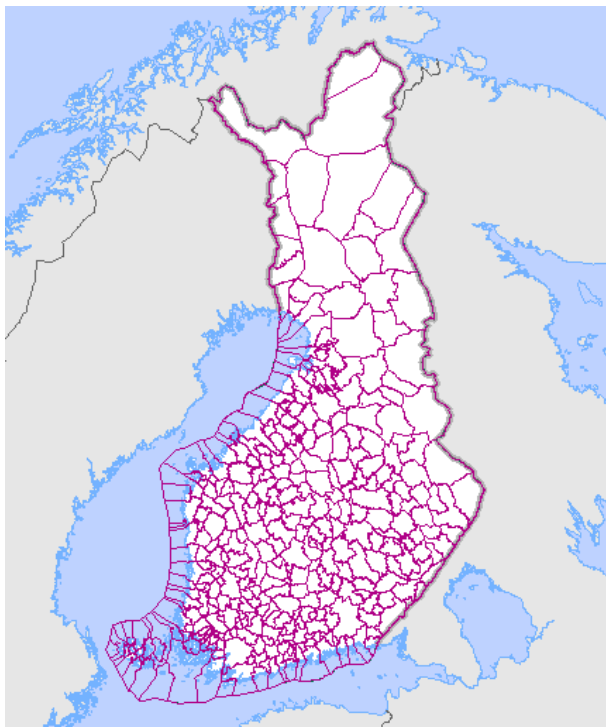
2005->

SHP

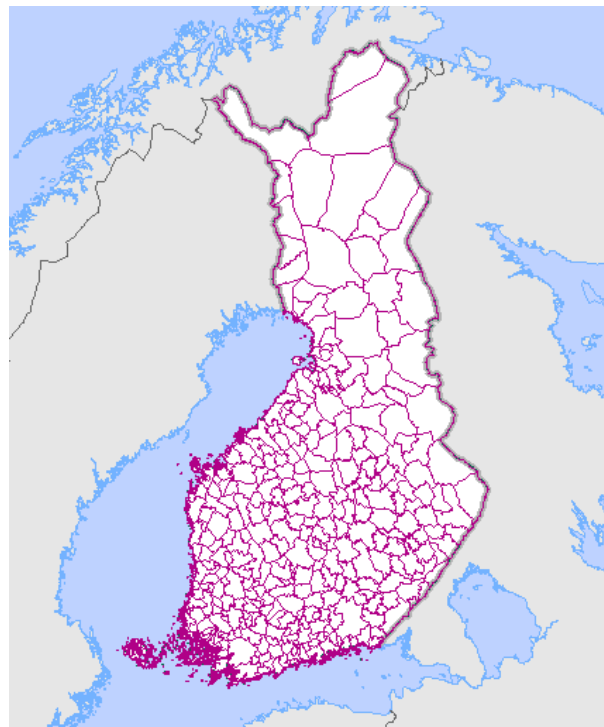
NLS, administrative borders



1:10 000



1:1 000 000, for thematic maps



- 1:10 000
- 2006->
- SHP + DBF

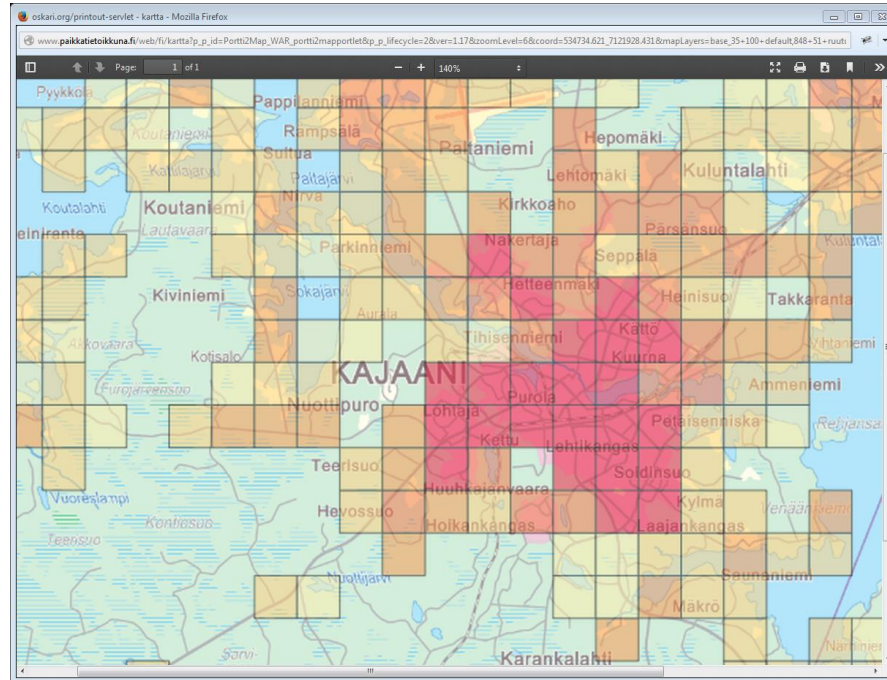
Finnish Transport Infrastructure Agency, Digiroad



- Roads and streets
- Addresses -> **geocoding**
- Speed limits, turning restrictions etc -> **routing**
- Bridges and tunnels
- Parking areas and houses
- Bus stops
- ...

- 1 x 1 km
- 2005, 2010-2018
- SHP

Statistics Finland, Population grid data

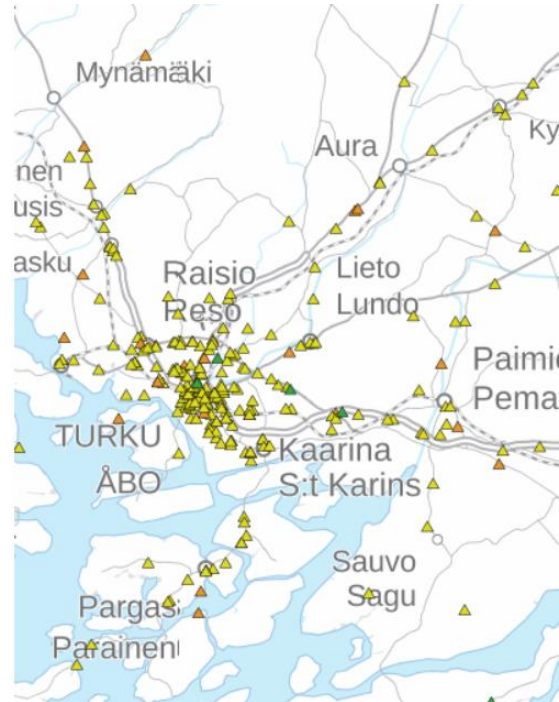


2011->

SHP



Statistics Finland, road accidents



- 10 x 10 km
- 1961->
- TIFF, NetCDF

FMI



Average temperature



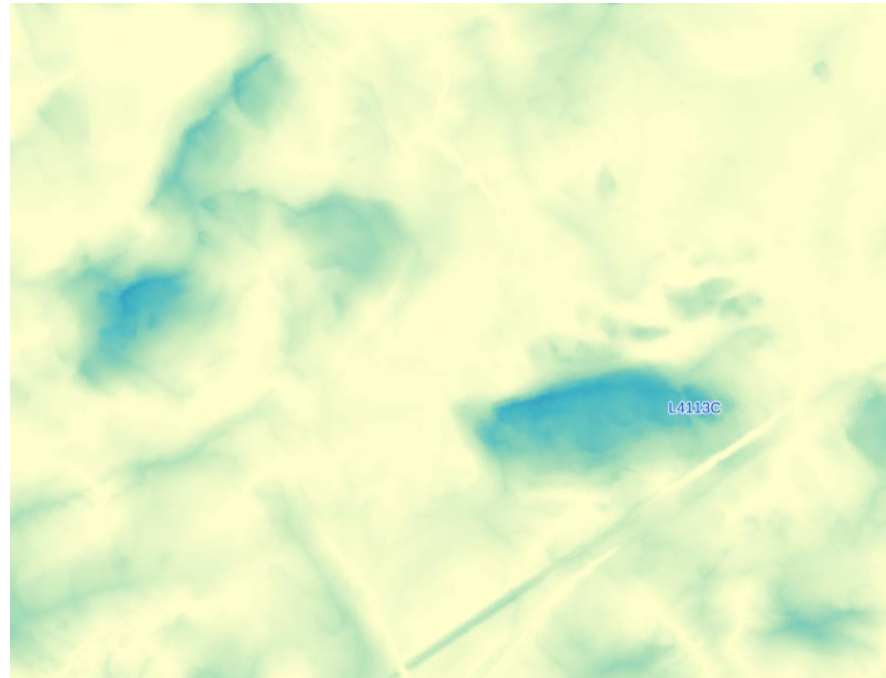
Precipitation



- Min and max temperature
- Air pressure
- Snow depth
- Relative humidity
- Radiation
- etc

- 2 x 2 m
- 2014-2019
- TIFF

LUKE, DTW-depth-to-water index map

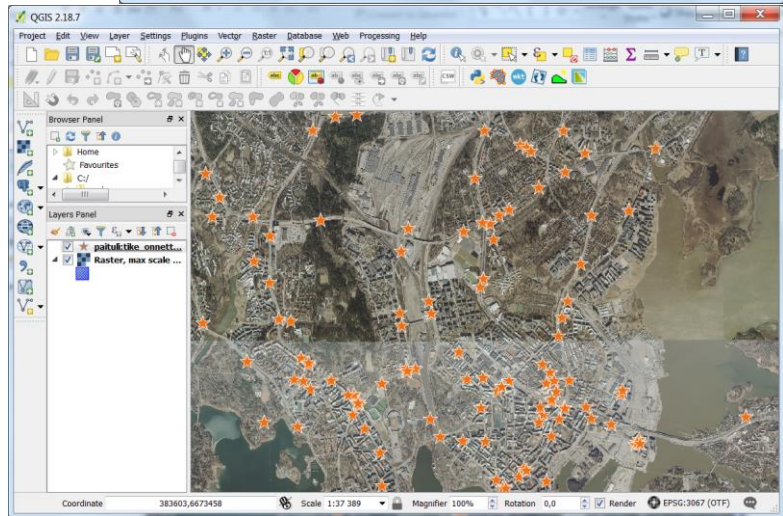
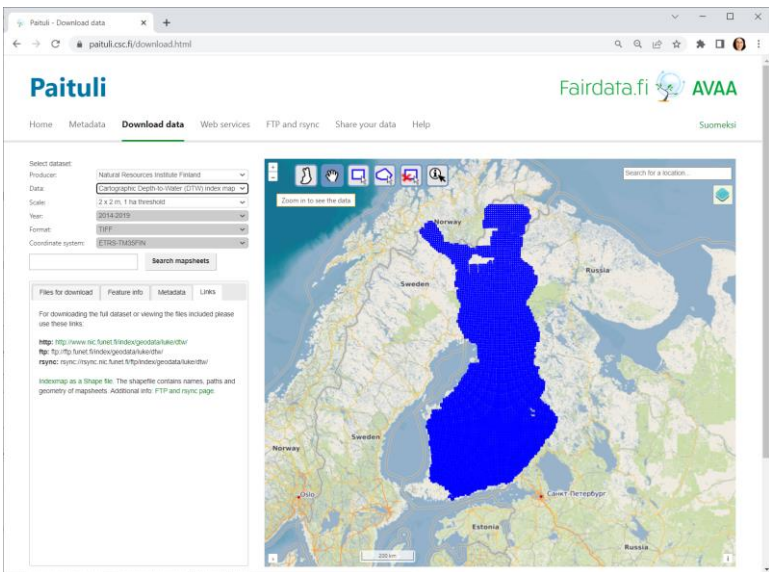
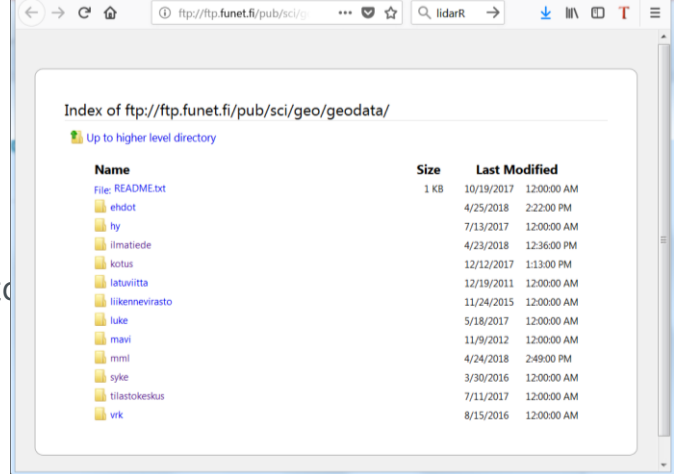


Data access

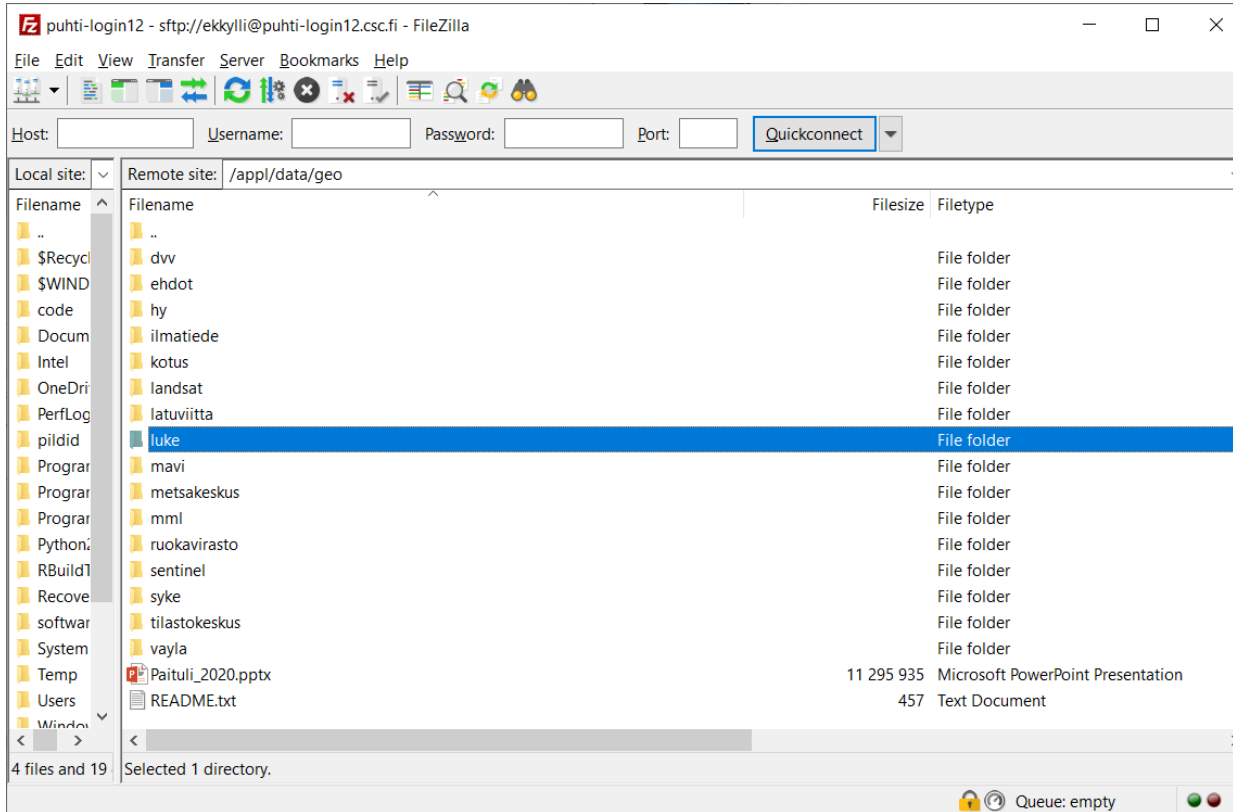


Paituli download / usage options

1. Files as zip from Paituli web service
2. APIs: WFS, WCS, WMS, WMTS, new OGC APIs
3. Files batch download - https/ftp/rsync: curl, wget, Python, R etc
4. Puhti



Paituli files in Puhti supercomputer



puhti-login12 - sftp://ekkylli@puhti-login12.csc.fi - FileZilla

File Edit View Transfer Server Bookmarks Help

Host: Username: Password: Port: Quickconnect

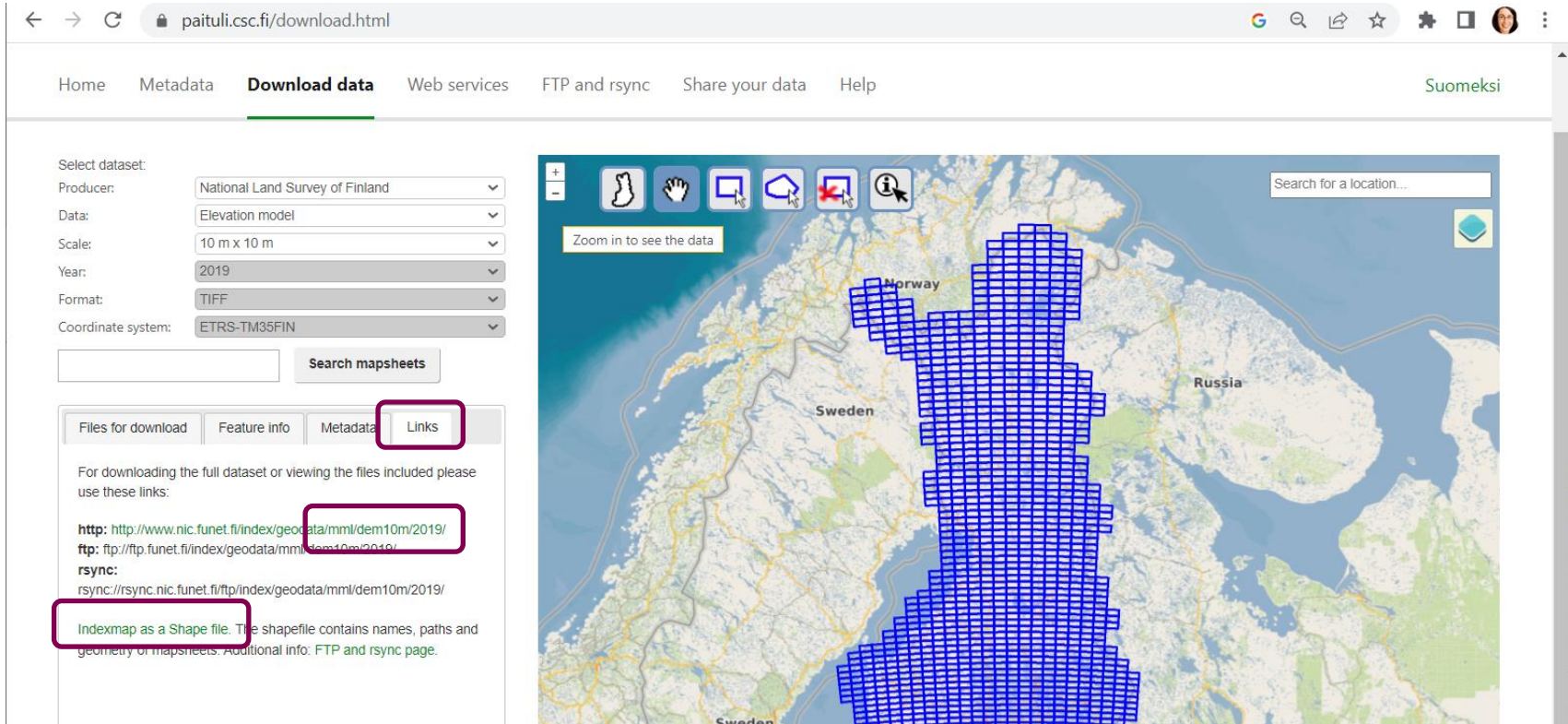
Local site: Remote site: /appl/data/geo

Filename	Filename	Filesize	Filetype
..	..		
\$Recycl	dvv		File folder
\$WIND	ehdot		File folder
code	hy		File folder
Docum	ilmatiede		File folder
Intel	kotus		File folder
OneDri	landsat		File folder
PerfLog	latuviitta		File folder
pildid	luke		File folder
Prograr	mavi		File folder
Prograr	metsakeskus		File folder
Prograr	mml		File folder
Python:	ruokavirasto		File folder
RBuild1	sentinel		File folder
Recove	syke		File folder
softwar	tilastokeskus		File folder
System	vayla		File folder
Temp	Paituli_2020.pptx	11 295 935	Microsoft PowerPoint Presentation
Users	README.txt	457	Text Document

4 files and 19 Selected 1 directory.

Queue: empty

How to find the file path in Puhti? /appl/data/geo



← → ↻ paituli.csc.fi/download.html

Home Metadata **Download data** Web services FTP and rsync Share your data Help Suomeksi

Select dataset:
Producer: National Land Survey of Finland
Data: Elevation model
Scale: 10 m x 10 m
Year: 2019
Format: TIFF
Coordinate system: ETRS-TM35FIN

Search mapsheets

Files for download Feature info Metadata **Links**

For downloading the full dataset or viewing the files included please use these links:

http: <http://www.nic.funet.fi/index/geodata/mml/dem10m/2019/>
ftp: <ftp://ftp.funet.fi/index/geodata/mml/dem10m/2019/>
rsync: <rsync://rsync.nic.funet.fi/ftp/index/geodata/mml/dem10m/2019/>

Indexmap as a Shape file. The shapefile contains names, paths and geometry of mapsheets. Additional info: [FTP and rsync page](#).

Zoom in to see the data

Search for a location...