MOUNTAINS OUT OF MOLEHILLS: MAKING THE MOST OUT OF MICROTOPGRAPHY

David Stott

ArkIT, Moesgaard Museum.

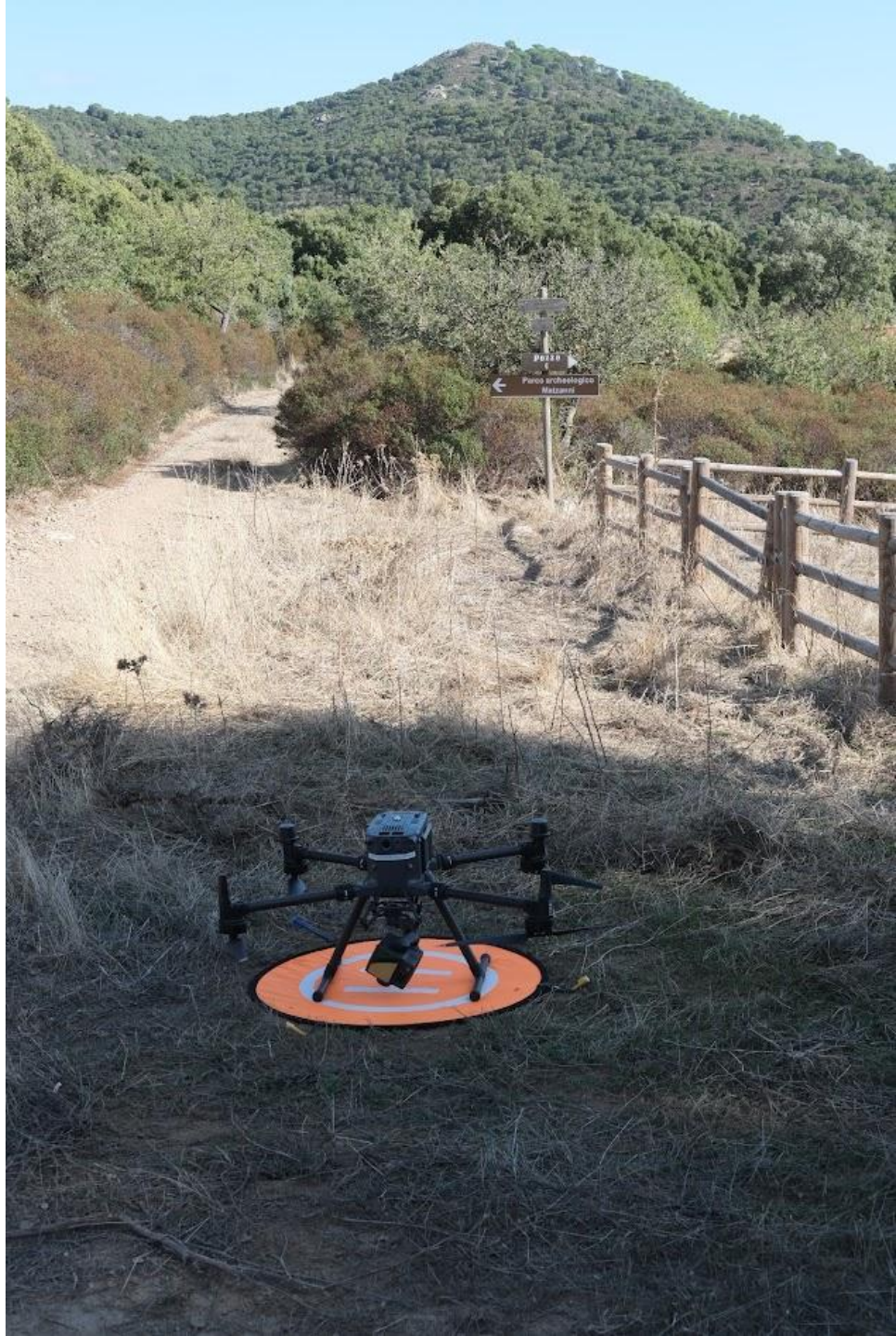
ds@moesgaardmuseum.dk

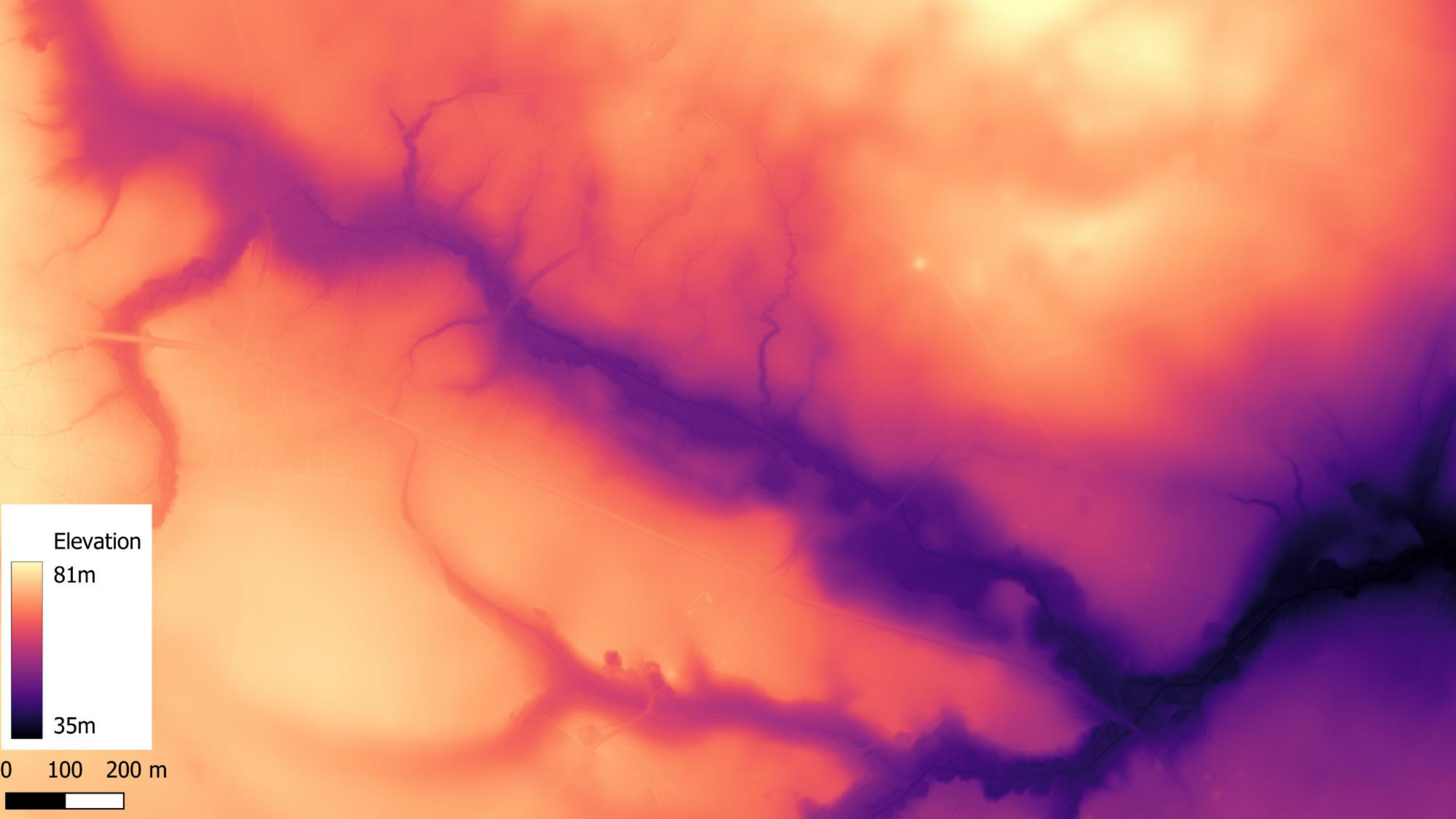
MOESGAARD

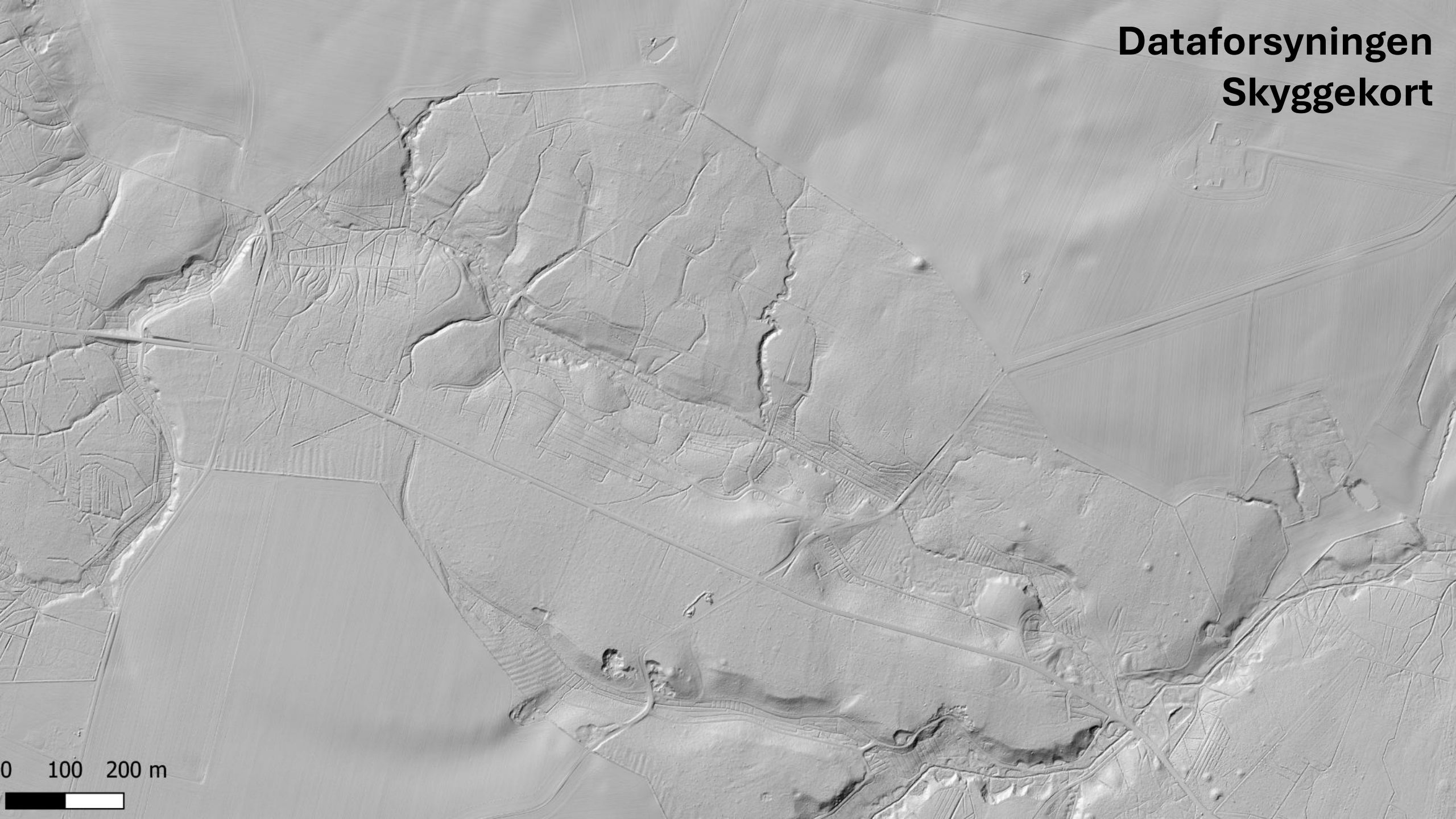
Arkæologisk IT

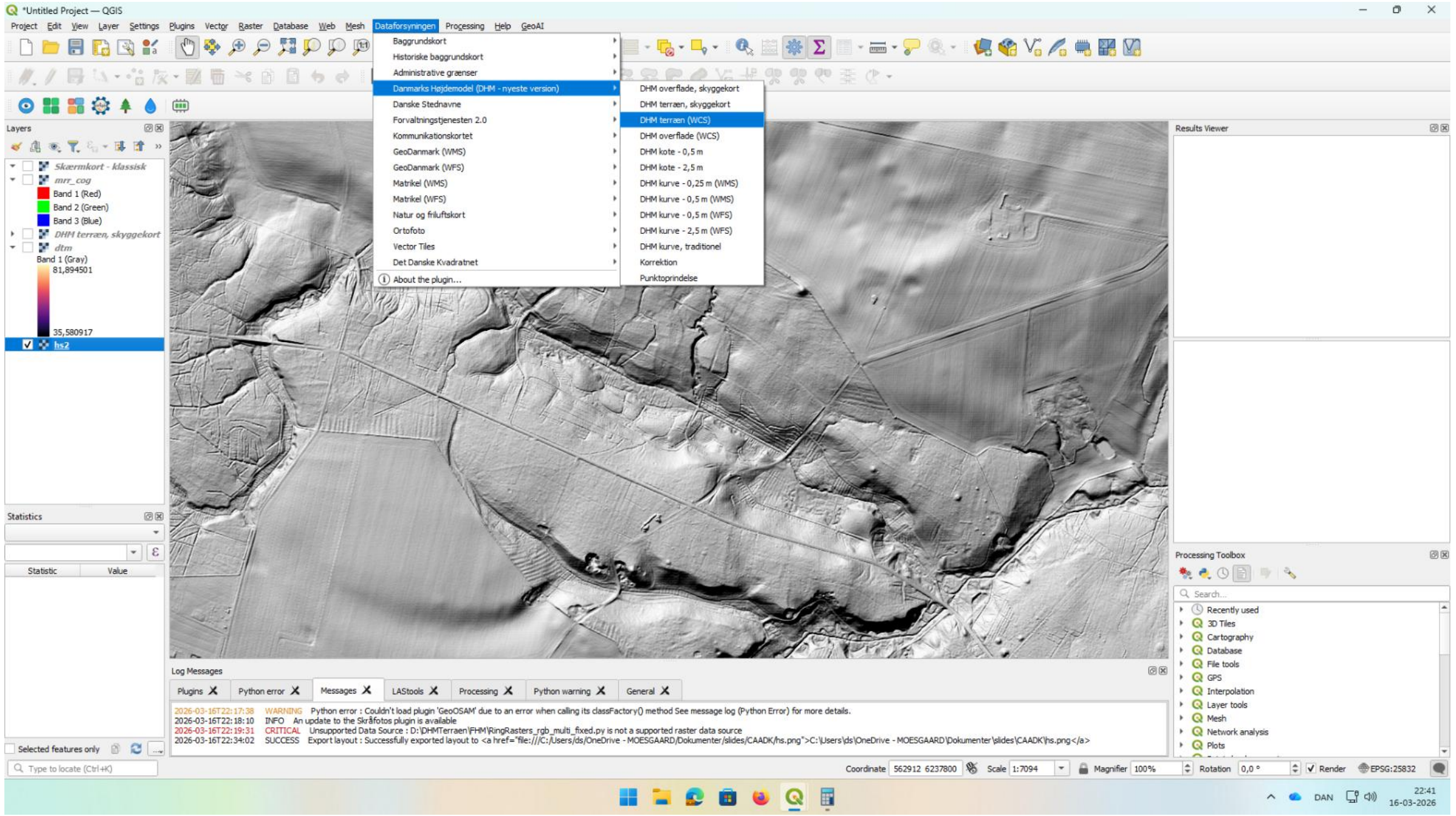
Topographic & Bathymetric (2.5D) data

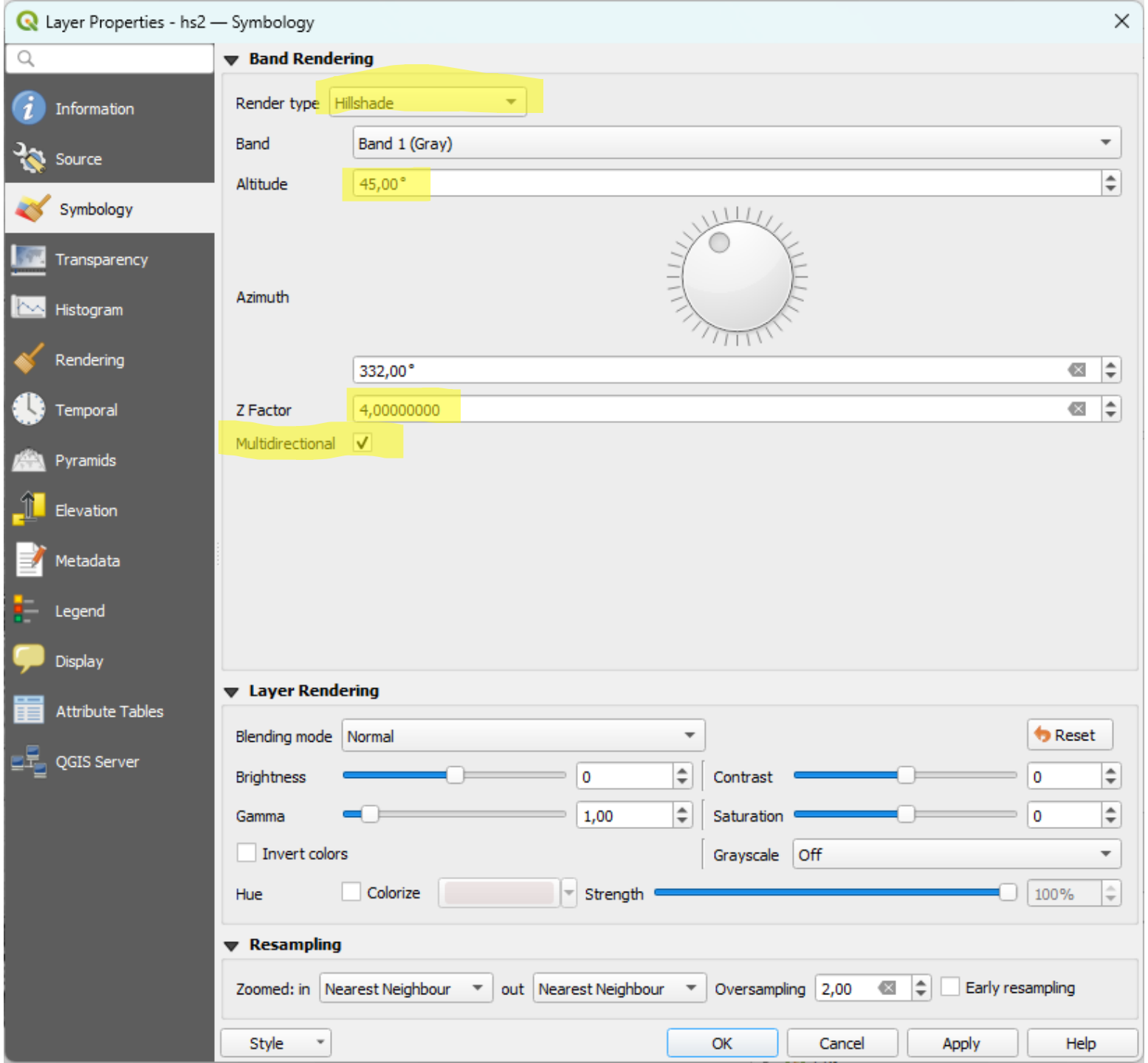
- We use these a lot. Not just lidar.
  - Lidar
  - Multi Beam Echo Sounder (MBES)
  - Photogrammetry
- DTMs / DEMs / DSMs
- Can’t visualise the whole range the data:
- Emphasise changes / discontinuities:
  - Lighting:
    - Hillshading
  - Openess
    - Skyview factor
    - Local dominance
  - Trend removal
    - Residual or local relief models
    - Topogaphic position index




Elevation
81m
35m
0
100
200 m

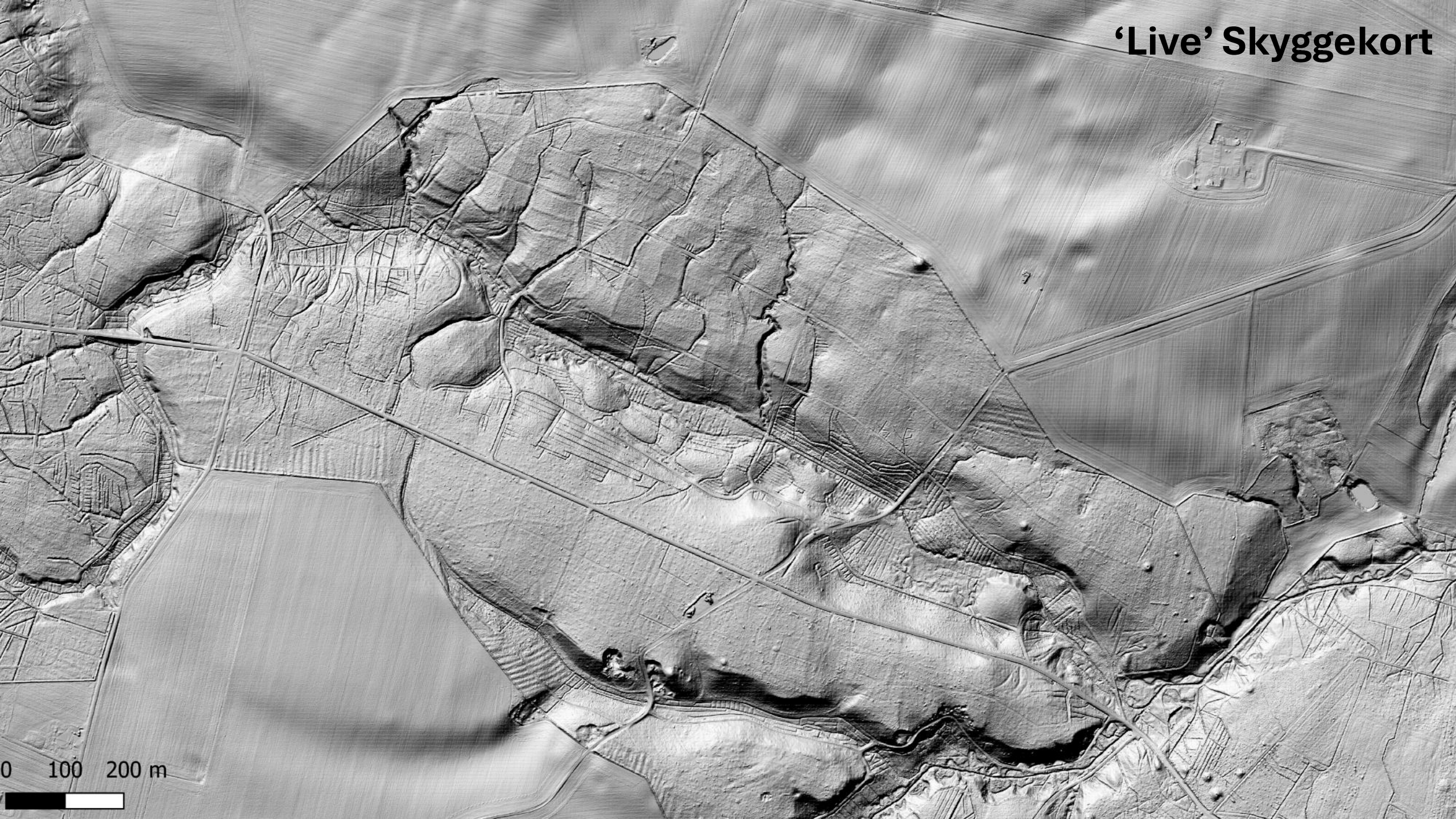

Dataforsyningen
Skyggekort
0 100 200 m

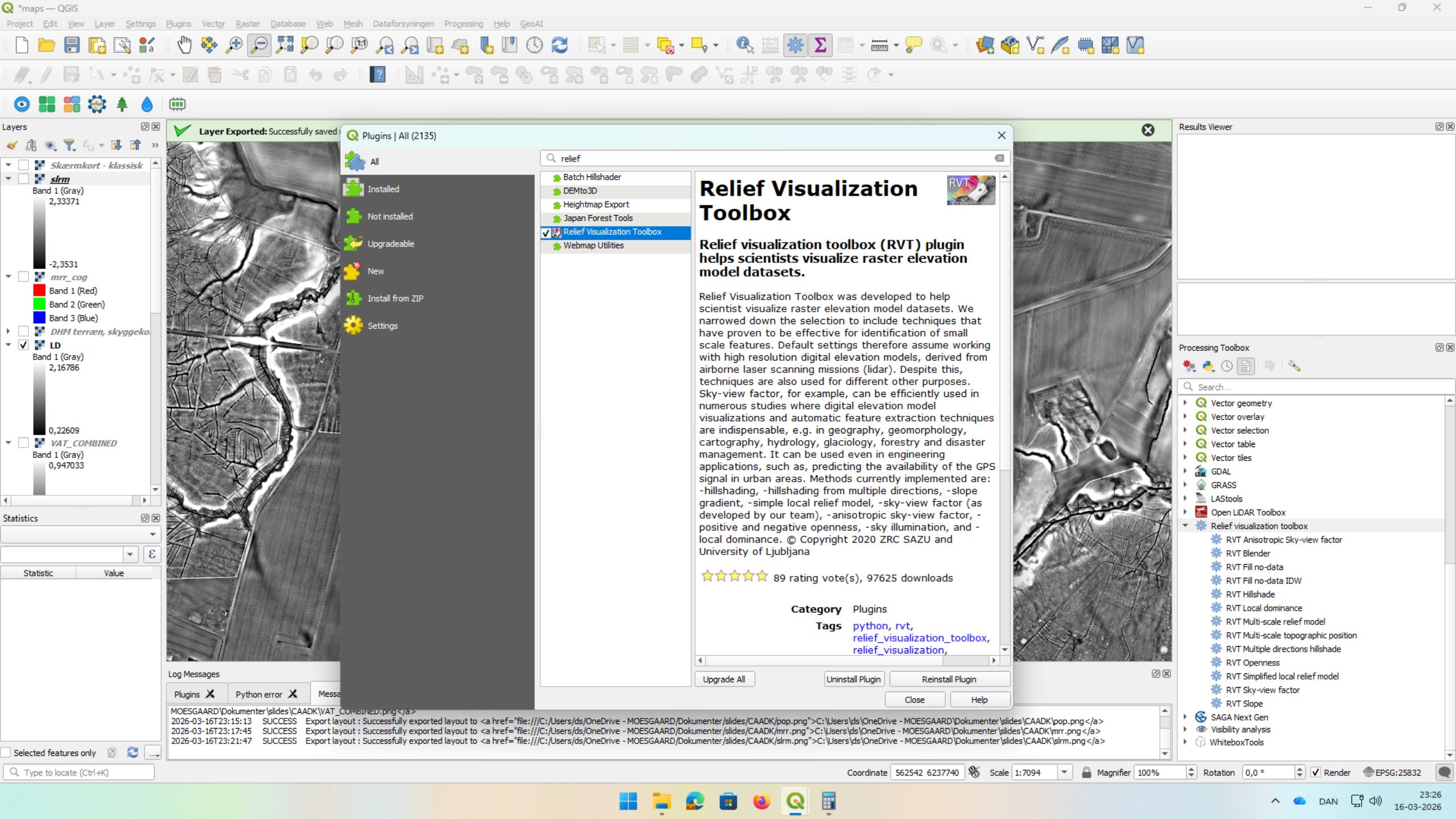

*Untitled Project — QGIS
Project Edit View Layer Settings Plugins Vector Raster Database Web Mesh Dataforsyningen Processing Help GeoAI
Baggrundskort
Historiske baggrundskort
Administrative grænser
Danmarks Højdemodel (DHM - nyeste version)
Danske Stednavne
Forvaltningstjenesten 2.0
Kommunikationskortet
GeoDanmark (WMS)
GeoDanmark (WFS)
Matrikel (WMS)
Matrikel (WFS)
Natur og friluftskort
Ortofoto
Vector Tiles
Det Danske Kvadratnet
About the plugin...
DHM overflade, skyggekort
DHM terræn, skyggekort
DHM terræn (WCS)
DHM overflade (WCS)
DHM kote - 0,5 m
DHM kote - 2,5 m
DHM kurve - 0,25 m (WMS)
DHM kurve - 0,5 m (WMS)
DHM kurve - 0,5 m (WFS)
DHM kurve - 2,5 m (WFS)
DHM kurve, traditionel
Korrektion
Punktoprindelse
Layers
Skærmkort - klassisk
mrr_cog
Band 1 (Red)
Band 2 (Green)
Band 3 (Blue)
DHM terræn, skyggekort
dtm
Band 1 (Gray)
81,894501
35,580917
hs2
Statistics
Statistic
Value
Selected features only
Type to locate (Ctrl+K)
Results Viewer
Processing Toolbox
Search...
Recently used
3D Tiles
Cartography
Database
File tools
GPS
Interpolation
Layer tools
Mesh
Network analysis
Plots
Log Messages
Plugins
Python error
Messages
LAStools
Processing
Python warning
General
2026-03-16T22:17:38 WARNING Python error : Couldn't load plugin 'GeoOSAM' due to an error when calling its classFactory() method See message log (Python Error) for more details.
2026-03-16T22:18:10 INFO An update to the Skråfotos plugin is available
2026-03-16T22:19:31 CRITICAL Unsupported Data Source : D:\DHMTerraen\FHM\RingRasters_rgb_multi_fixed.py is not a supported raster data source
2026-03-16T22:34:02 SUCCESS Export layout : Successfully exported layout to C:\Users\ds\OneDrive - MOESGAARD\Dokumenter\slides\CAADK\hs.png
Coordinate 562912 6237800
Scale 1:7094
Magnifier 100%
Rotation 0,0 °
Render
EPSG:25832
DAN
22:41
16-03-2026

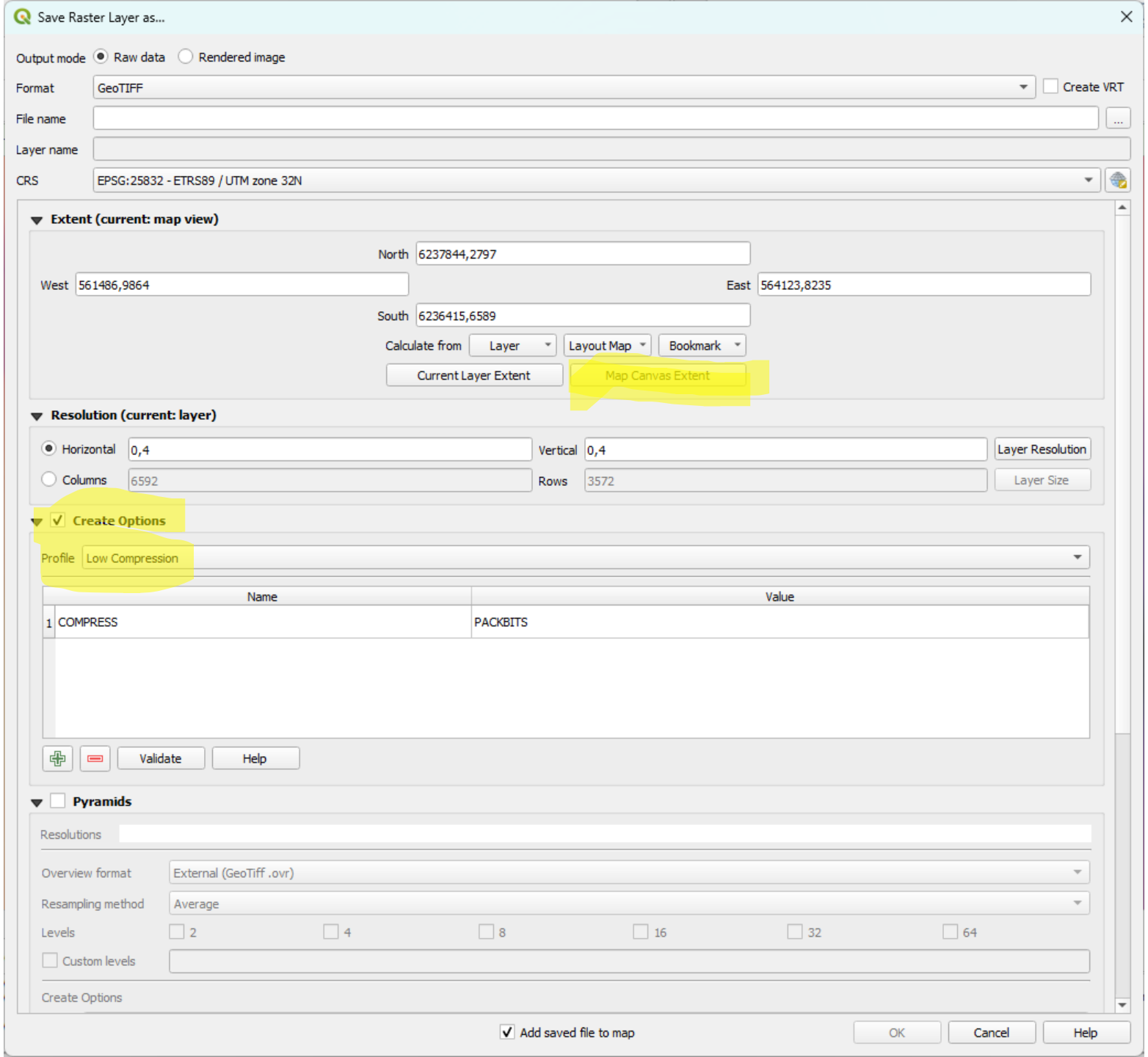


MOESGÅRD
Arkæologisk IT

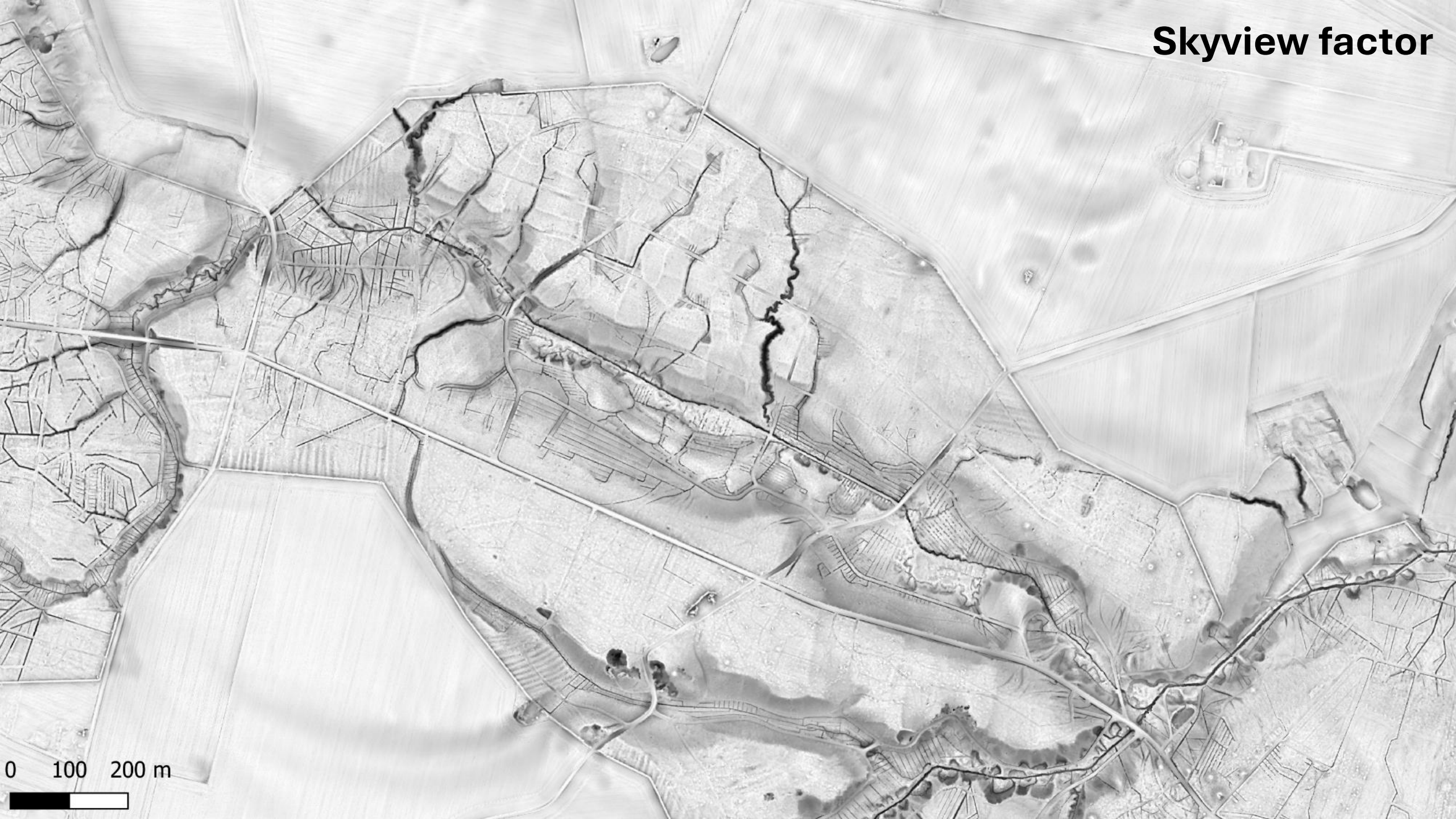
‘Live’ Skyggekort

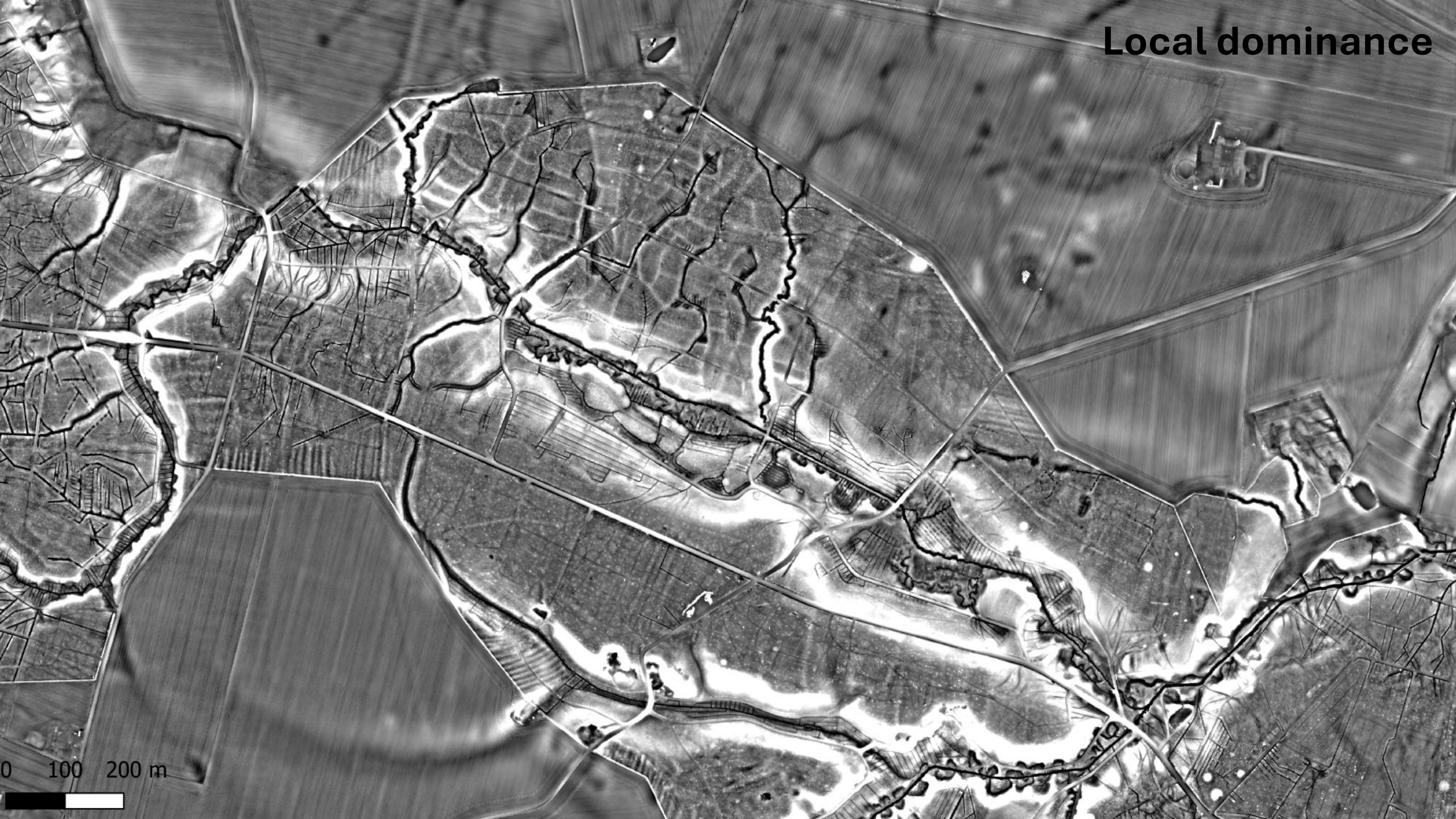


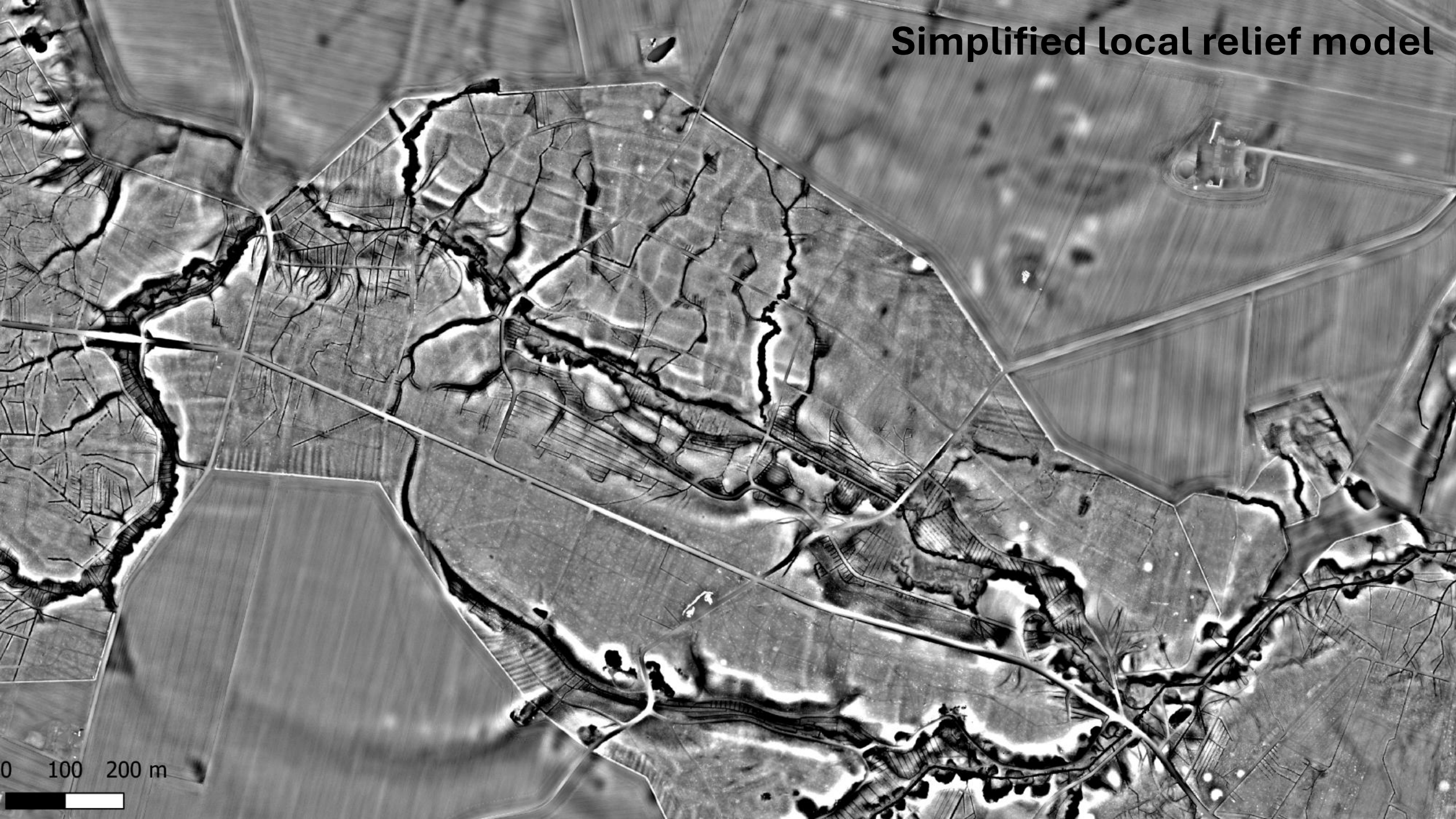

*maps — QGIS
Project Edit View Layer Settings Plugins Vector Raster Database Web Mesh Dataforsyningen Processing Help GeoAI
Layers
Skærmkort - klassisk
slrm
Band 1 (Gray)
2,33371
-2,3531
mrr_cog
Band 1 (Red)
Band 2 (Green)
Band 3 (Blue)
DHM terræn, skyggeko
LD
Band 1 (Gray)
2,16786
0,22609
VAT_COMBINED
Band 1 (Gray)
0,947033
Statistics
Statistic
Value
Selected features only
Type to locate (Ctrl+K)
Layer Exported: Successfully saved
Plugins | All (2135)
All
Installed
Not installed
Upgradeable
New
Install from ZIP
Settings
relief
Batch Hillshader
DEMto3D
Heightmap Export
Japan Forest Tools
Relief Visualization Toolbox
Webmap Utilities
Relief Visualization Toolbox
RVT
Relief visualization toolbox (RVT) plugin helps scientists visualize raster elevation model datasets.
Relief Visualization Toolbox was developed to help scientist visualize raster elevation model datasets. We narrowed down the selection to include techniques that have proven to be effective for identification of small scale features. Default settings therefore assume working with high resolution digital elevation models, derived from airborne laser scanning missions (lidar). Despite this, techniques are also used for different other purposes. Sky-view factor, for example, can be efficiently used in numerous studies where digital elevation model visualizations and automatic feature extraction techniques are indispensable, e.g. in geography, geomorphology, cartography, hydrology, glaciology, forestry and disaster management. It can be used even in engineering applications, such as, predicting the availability of the GPS signal in urban areas. Methods currently implemented are: -hillshading, -hillshading from multiple directions, -slope gradient, -simple local relief model, -sky-view factor (as developed by our team), -anisotropic sky-view factor, -positive and negative openness, -sky illumination, and -local dominance. © Copyright 2020 ZRC SAZU and University of Ljubljana
89 rating vote(s), 97625 downloads
Category Plugins
Tags python, rvt, relief_visualization_toolbox, relief_visualization,
Upgrade All
Uninstall Plugin
Reinstall Plugin
Close
Help
Log Messages
Plugins
Python error
MOESGAARD\Dokumenter\slides\CAADK\VAT_COMBINED.png
2026-03-16T23:15:13 SUCCESS Export layout : Successfully exported layout to C:\Users\ds\OneDrive - MOESGAARD\Dokumenter\slides\CAADK\pop.png
2026-03-16T23:17:45 SUCCESS Export layout : Successfully exported layout to C:\Users\ds\OneDrive - MOESGAARD\Dokumenter\slides\CAADK\mrr.png
2026-03-16T23:21:47 SUCCESS Export layout : Successfully exported layout to C:\Users\ds\OneDrive - MOESGAARD\Dokumenter\slides\CAADK\slrm.png
Results Viewer
Processing Toolbox
Search...
Vector geometry
Vector overlay
Vector selection
Vector table
Vector tiles
GDAL
GRASS
LAStools
Open LiDAR Toolbox
Relief visualization toolbox
RVT Anisotropic Sky-view factor
RVT Blender
RVT Fill no-data
RVT Fill no-data IDW
RVT Hillshade
RVT Local dominance
RVT Multi-scale relief model
RVT Multi-scale topographic position
RVT Multiple directions hillshade
RVT Openness
RVT Simplified local relief model
RVT Sky-view factor
RVT Slope
SAGA Next Gen
Visibility analysis
WhiteboxTools
Coordinate 562542 6237740
Scale 1:7094
Magnifier 100%
Rotation 0,0 °
Render
EPSG:25832
DAN
23:26
16-03-2026



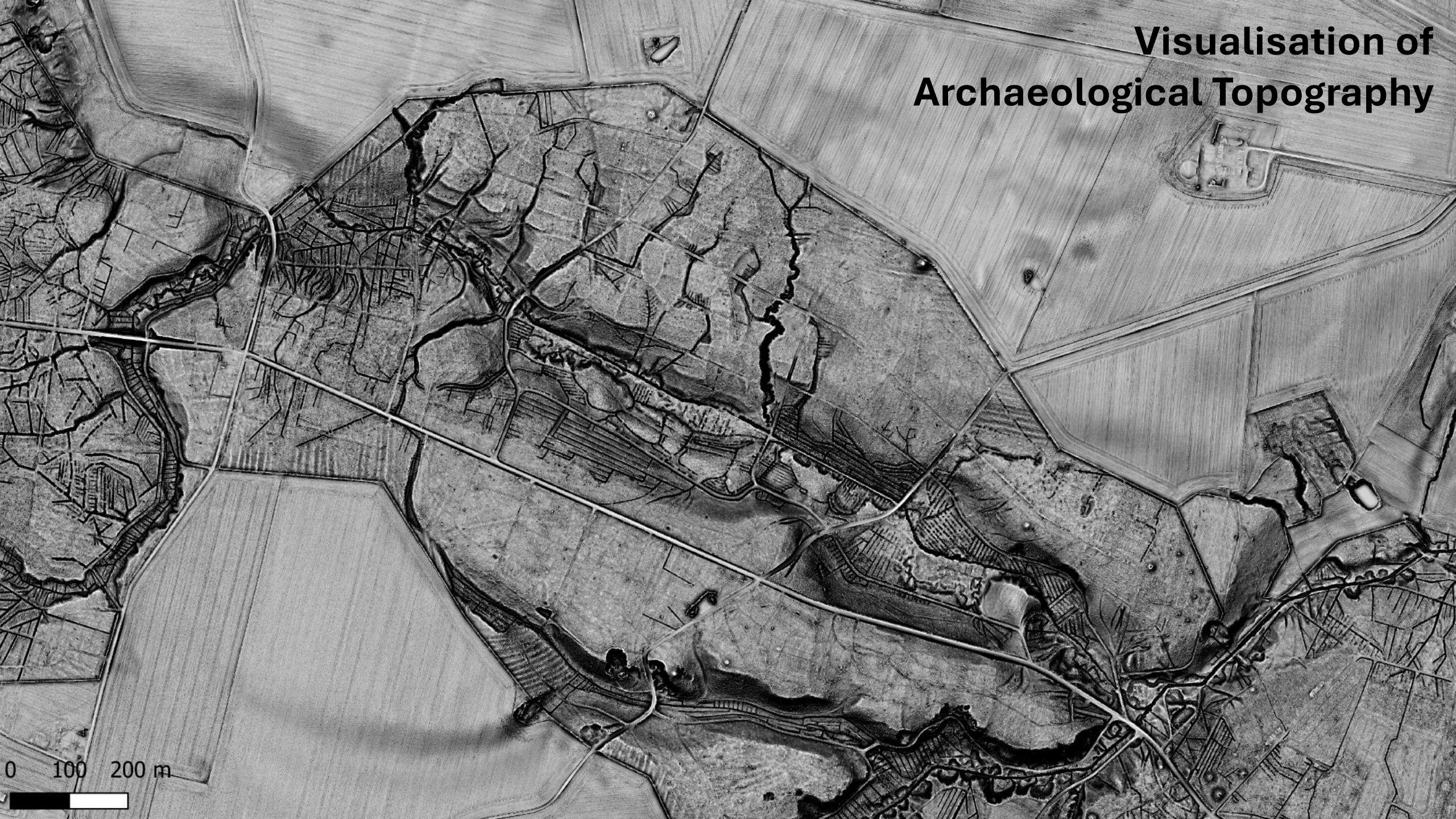
MOESGÅRD
Arkæologisk IT

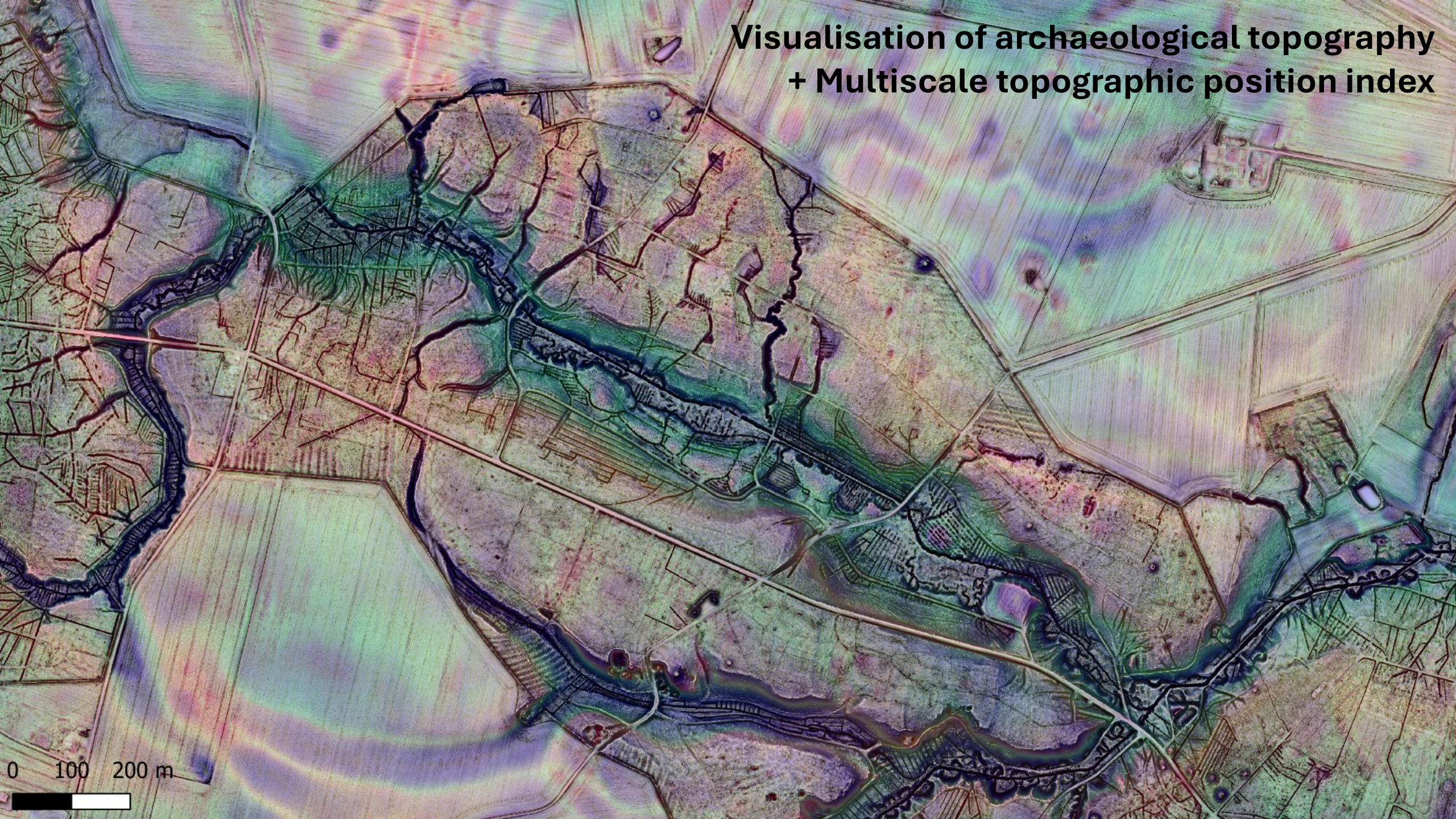

Skyview factor
0
100
200 m

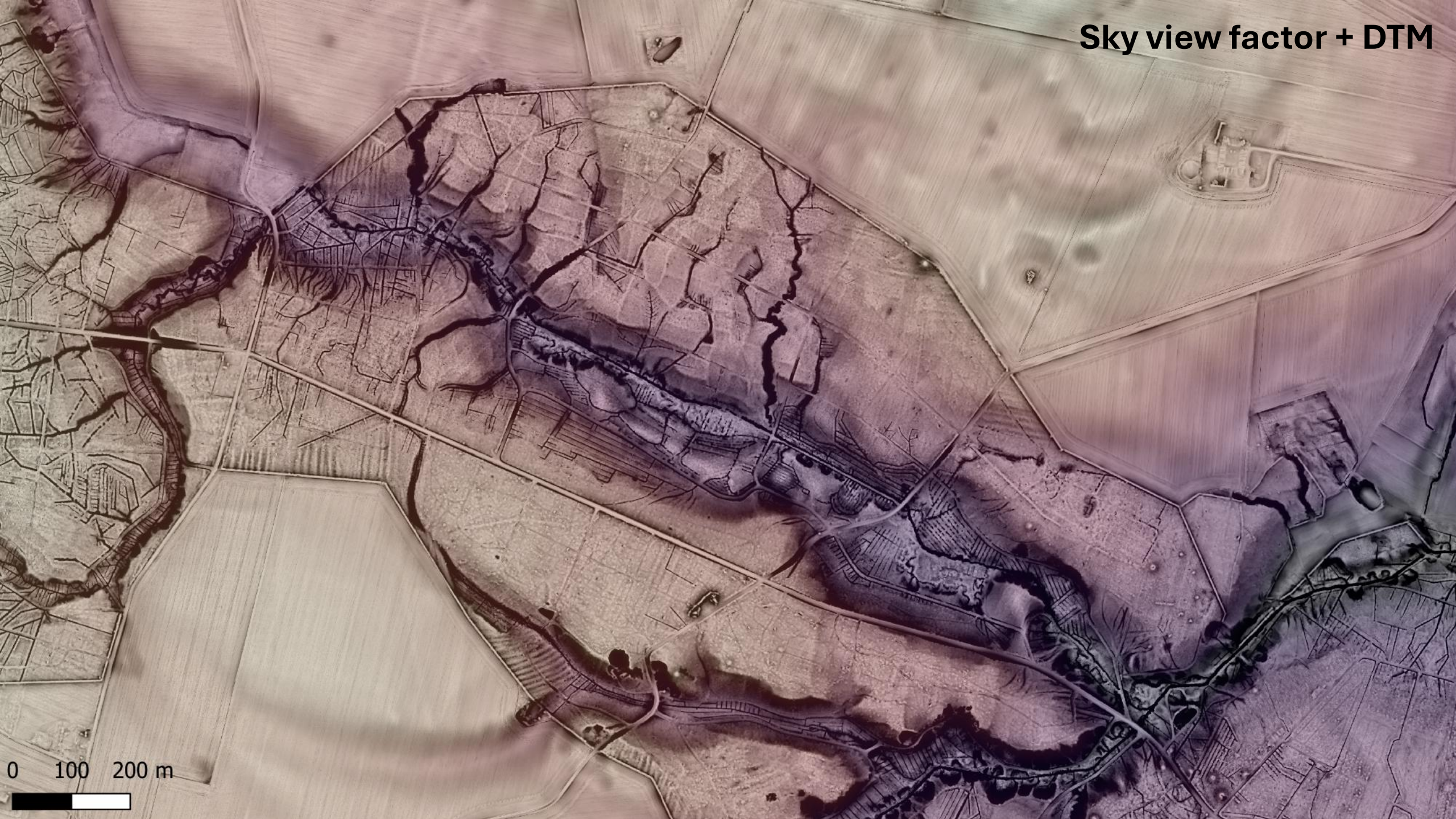

Local dominance
0 100 200 m

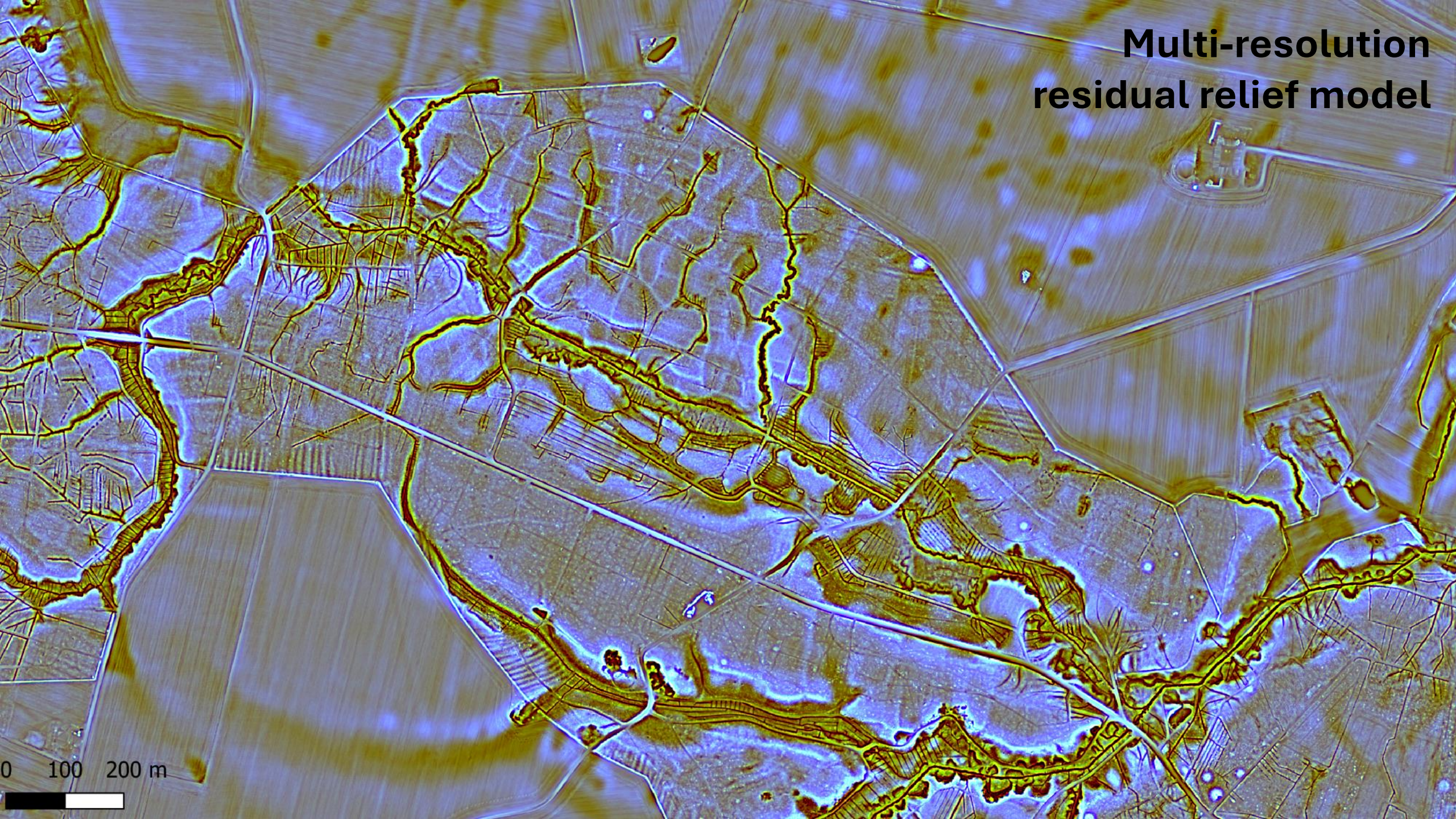

Simplified local relief model
0 100 200 m

Visualisation of Archaeological Topography




Visualisation of archaeological topography
+ Multiscale topographic position index
0
100
200 m


Sky view factor + DTM
0
100
200 m

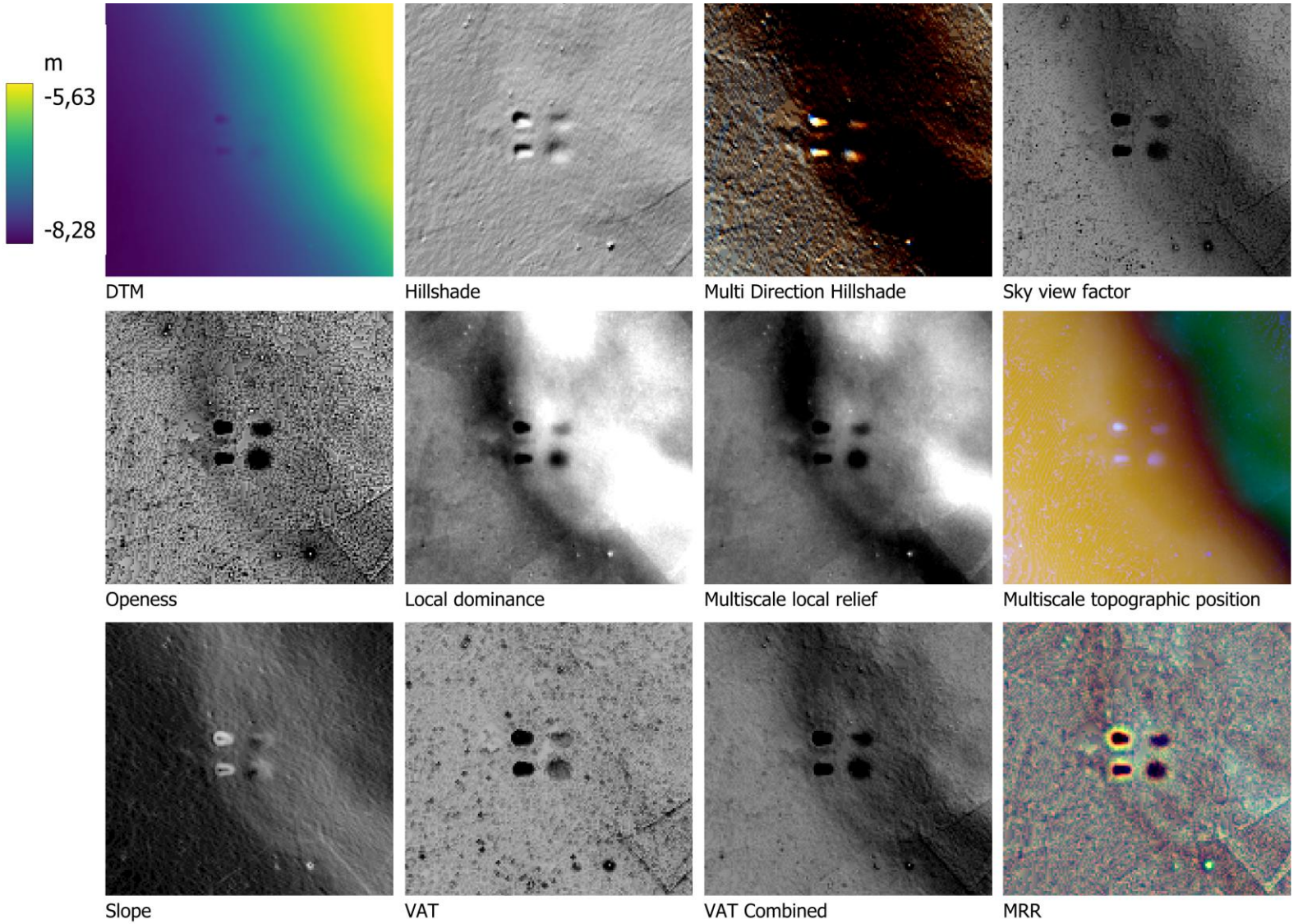

Multi-resolution
residual relief model
0 100 200 m

MBES

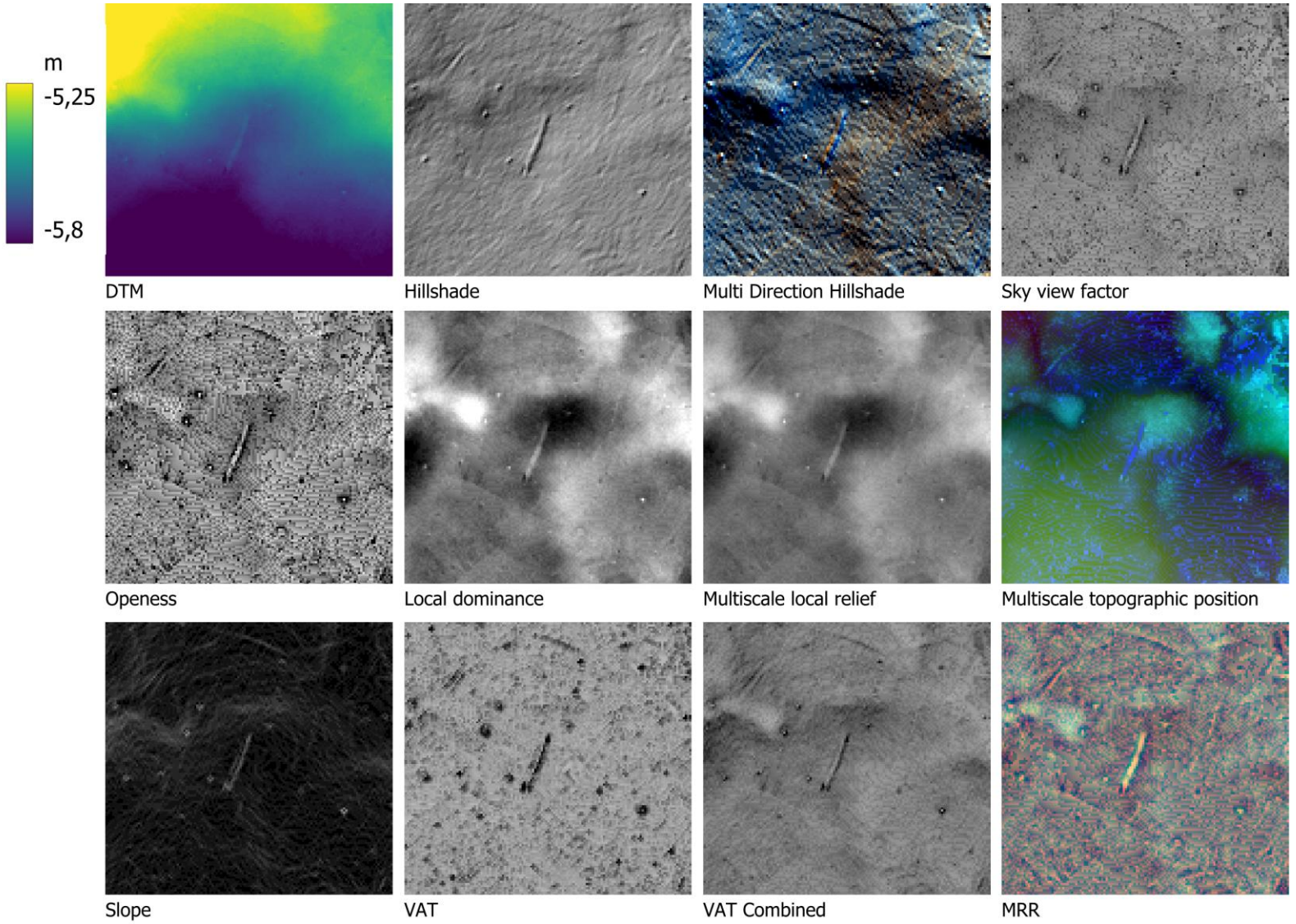
Underwater!

MOESGÅRD

Arkæologisk IT



SUBNORDICA
BEYOND SUBMERGED LANDSCAPES
erc
European Research Council
Established by the European Commission
Funded by
the European Union
MOESGÅRD
Arkæologisk IT



SUBNORDICA
BEYOND SUBMERGED LANDSCAPES
erc
European Research Council
Established by the European Commission
Funded by
the European Union
MOESGÅRD
Arkæologisk IT

EPIGRAPHY / ICONOGRAPHY

Rocks!

MOESGÅRD

Arkæologisk IT

Foto: Casper Skaaning Anderson

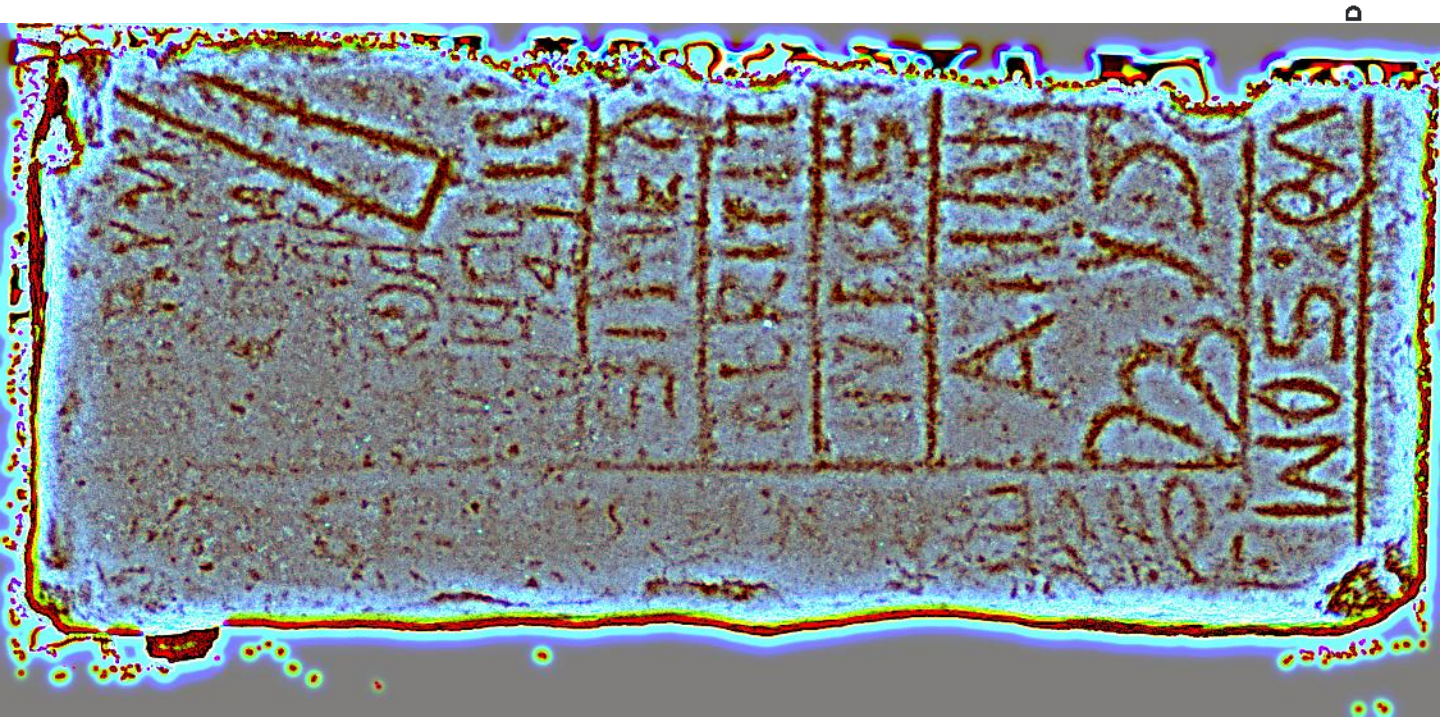
ortofoto

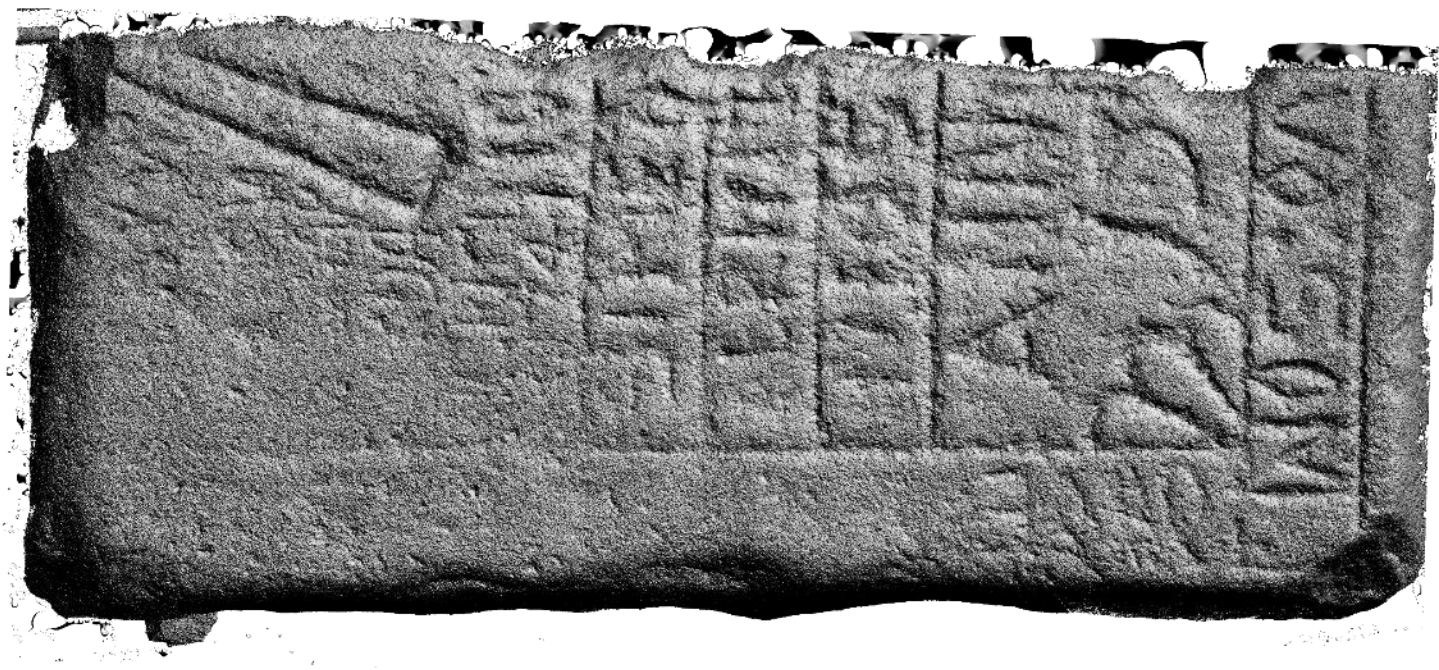
hillshade

residual relief

MOESGÅRD
Arkæologisk IT

Foto: Casper Skaaning Anderson





MOESGÅRD

Arkæologisk IT