



KURZEMES  
PLĀNOŠANAS  
REĢIONS

# INVENTORY OF GEOLOGICAL SITES

## Lessons from comparison



Co-funded by  
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Latvia – Lithuania

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# Inventory of geosites in Finland

- » **The national esker protection programme and inventories (1972-1980)**

159 eskers, 96 000 hectares, approx. 6 percent of the total area of eskers

- » **The national mire protection programme (1979)**

The assessment was based on data already available, the most representative mires were selected

- » **The assessment of geologically and geomorphologically valuable bedrock sites (1989-2008)**

>1 000 sites checked in the field, 160 internationally or nationally valuable



» **Rock outcrop areas of national value (1989-2015)**

1 286 sites of national value

» **Inventory of nationally valuable moraine formations (1999-2007)**

1 400 sites checked in the field, 584 nationally and 23 internationally valuable

» **Nationally valuable aeolian sand and littoral deposits (2005-2011)**

697 sites checked in the field, 417 of which are nationally valuable

» **Blockfield sites of national value (2010-2017)**

1 000 sites checked in the field, 640 were nationally valuable

» **Finnish inventory programme for underwater marine diversity (2009-2015, 2017-..)**

Biological and geological mapping methods and remote sensing



# Classification & criteria



- » During the first inventories selection of criteria were quite informal and precise classification by value was not always used;
- » Starting from the 1980s the **four-stage rating scale** was introduced:
  - international, national, regional and local value;
  - the main factors in classification are geological, biological and landscape factors.
- » A scoring system was developed, and various calculations were performed to obtain an accurate score for each object;
- » Currently in use in many countries with minor modifications.



## Geological value (example: *blockfield sites*)

- » History of the formation and other geological features

- type of the blockfield
- stone size, roundness, orientation and stone density
- rock type and its migration

- » Geomorphology

- size and shape of the blockfield
- the height of the stratum, slopes, and their steepness

## Biological value

- » Rarity and diversity of habitat types
- » Rarity and endangerment of species
- » Naturalness



# **Landscape**

- » Perception of the environment
- » Landscape opening up to the environment
- » Internal landscape

# **Other values**

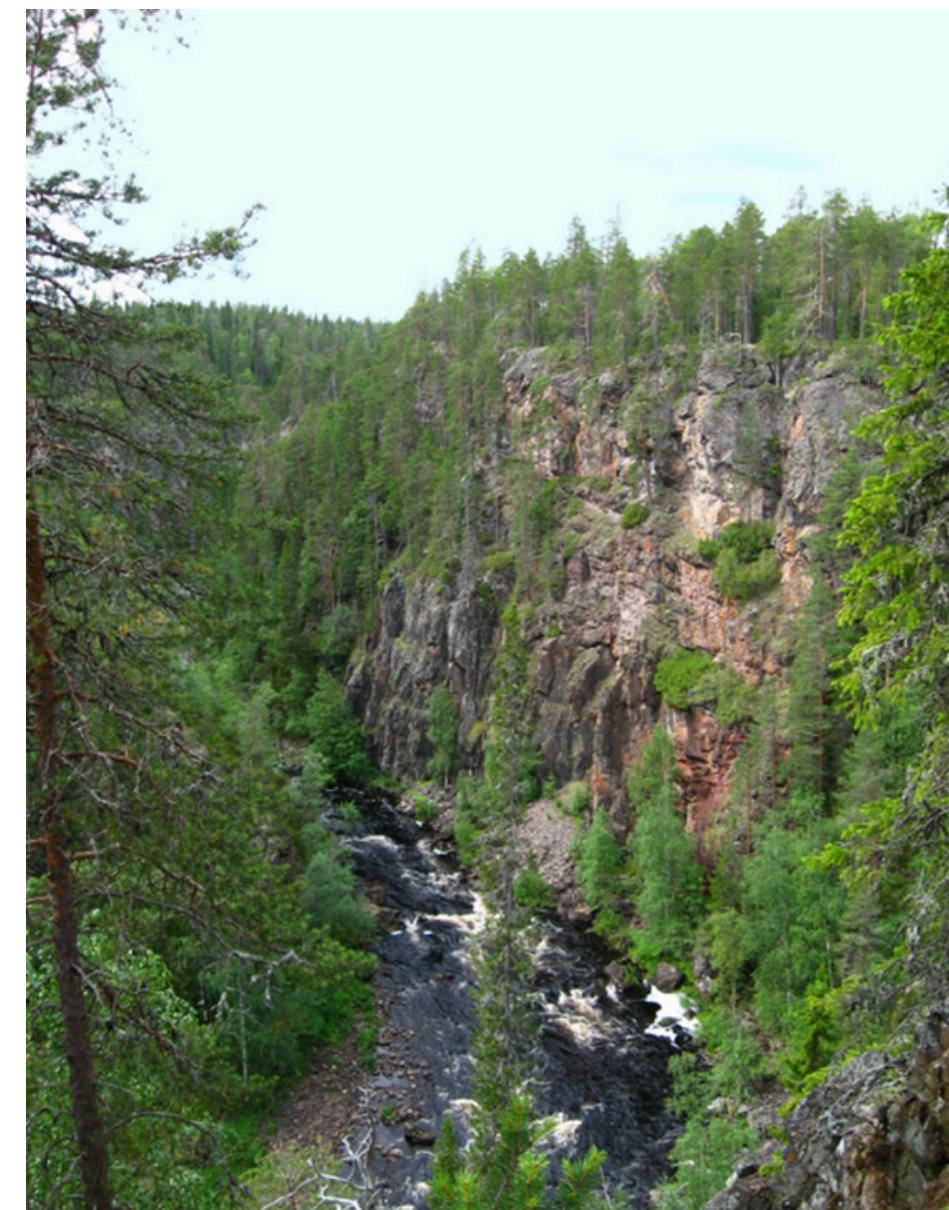
- » Recreational use
- » Cultural history and archaeology
- » Groundwater
- » Naturalness
- » Surrounding area



<b>Geological points</b>	<b>Value class</b>
1,00-1,50	<b>1</b>
1,75-2,25	<b>2</b>
2,50-2,75	<b>3</b>
3,00-3,50	<b>4</b>
3,75-4,00	<b>5</b>



<b>Value class</b>	<b>Level of significance</b>	<b>Description</b>
5	<b>International value</b>	The site is of international significance (e.g. a unique geological feature at the European or global scale).
4	<b>National value</b>	The site is of outstanding significance at the national scale (Finland).
3	<b>Regional value</b>	The site is significant at the regional or provincial scale.
2	<b>Local value</b>	The site has significance at the local level.
1	<b>Low or no significant value</b>	The site has limited scientific, educational, or representational value.



# Classification & criteria in GEOSITES project

- » A joint set categorisation criteria has been developed;
- » Criteria are aligned with the structure and attributes of the GIS database;
- » Enables comprehensive and comparable documentation of geosites;
- » Provides the basis for prioritising sites, managing them effectively, raising public awareness, and supporting strategic planning.



# Data collected

» **2161 geological objects** in Kurzeme (1832) and Žemaitija (329):

17 Caves

676 Rock outcrops

39 Waterfalls

117 Coastal cliffs

788 Springs

160 Stones

295 Hillforts

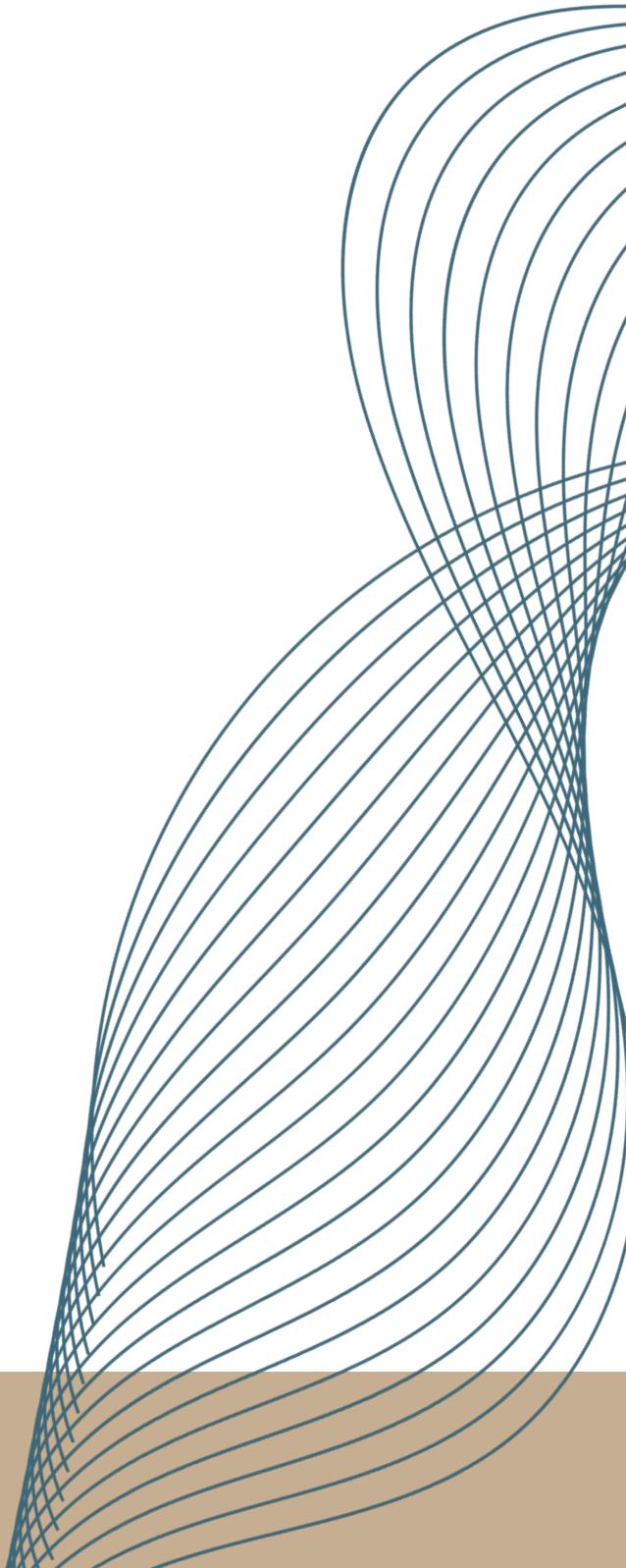
41 Other relief forms

28 Other geological objects

» The database is continually updated with new information from archives and field visits

# Data sources

- » **Nature conservation agencies** (protected sites, nature monuments, EU protected habitats);
- » **National Cultural Heritage Board** (archaeological monuments – hillforts, culturally and historically significant stones, springs, etc.);
- » **Municipalities** (TAPIS system, archives);
- » **Databases** on geological objects in Latvia by geology expert Andris Grīnbergs.





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