Polish Geological Institute
National Research Institute
Polish Geological Survey

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Zoom in - zoom out challenge:
Semantically and visually coherent overview geological maps of Poland

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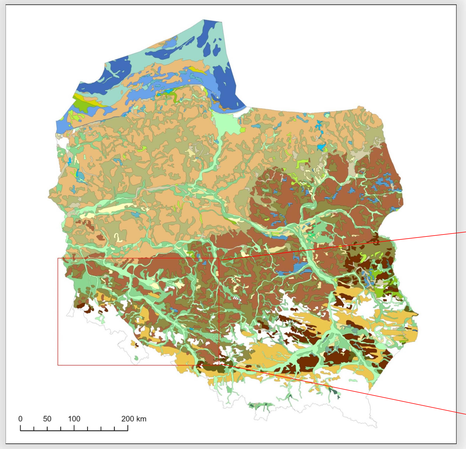
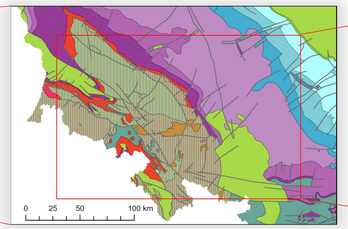


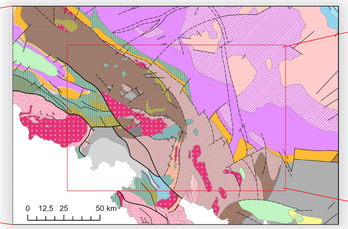
Quaternary Map of Poland 1:2 500 000 compiled in the frame of the European IQUAME project

Traditional visualisation based on the genesis, lithology, and age of the units

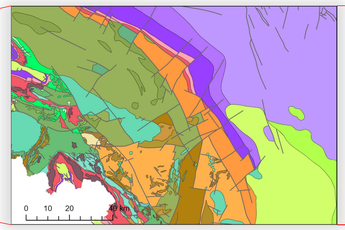
In Poland, overview geological maps ranging from scales of 1:2,500,000 to 1:500,000 have been traditionally prepared using distinct graphical styles, each tailored to the particular characteristics of the mapped geological units. These maps used to employ individual patterns and colour palettes to enhance the visibility and readability of geological features, prioritising the requirements of printed editions. However, differences in the number and types of geological units across various maps led to inconsistent visual representations, limiting the ease of comparison between them.



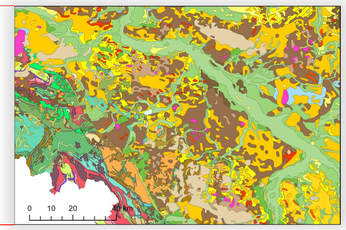
Geological Map of Poland 1:1 000 000: sub-Cenozoic surface



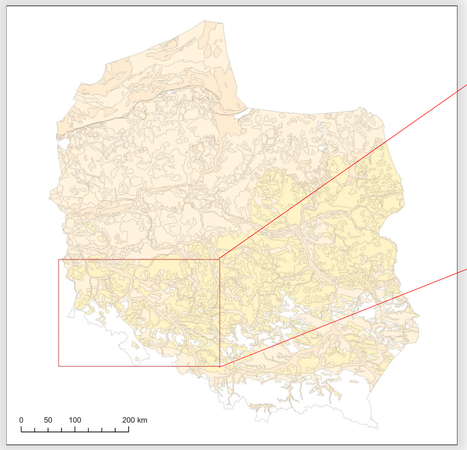
Geological Map of Poland 1:750 000: at 500 m below ground level

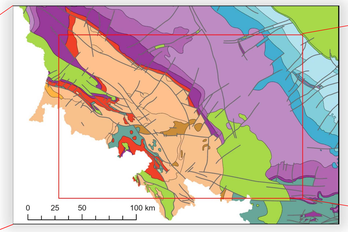


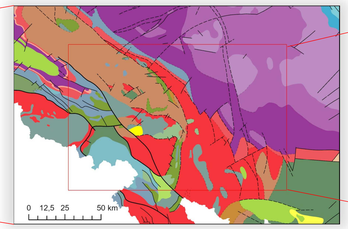
Geological Map of Poland 1:500 000: sub-Cenozoic surface

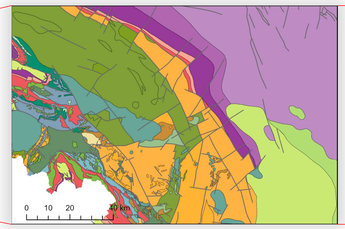


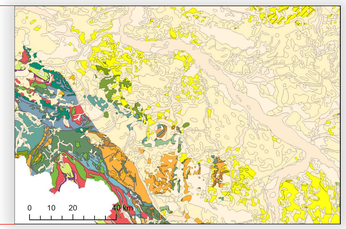
Geological Map of Poland 1:500 000: surficial geology











New visualisation based on the age of the units and colour symbols built upon the ICS system

To address the above, the PGI's team embraced the idea of creating a unified, semantically harmonised graphical style for overview geological maps. The main objective was to develop a common style for all stratigraphic units, which could be applied across various maps of Poland, particularly those prepared for online publication in the frame of the Polish Geological Cartograhy Platform. This experiment aimed to standardise the colour and pattern schemes, building upon the stratigraphic classification system provided by the International Commission on Stratigraphy (ICS), but with necessary extensions to accommodate mixed stratigraphy. This approach significantly enhanced the comparability of geological data across maps. By adopting a consistent visual language, the maps delivered a clearer cartographic message, particularly when zooming in and out in map viewers.

MGP2500k – wydzielen...ne czwartorzędu

Field: Add Calculate | Selection: Select By Attributes Zoom To Switch Clear Delete Copy

	NO_IQUAME	Stratigraphy_older	Stratigraphy_younger	EventEnvironment	EventProcess	Lithology_1	Lithology_2	Lithology_3	IDValue	Kod	Opis wydzielenia	Opis wydzielenia EN
1	1	Weichselian	Weichselian	glacier related setting	deposition by or from...	sand	gravel	silt	W,g	12	glina lodowcowa	till
2	48	Holocene	Holocene	marine setting	deposition from water	sand	gravel	<Null>	H,m	5	piaski i żwiry morskie	marine sand and gravel
3	43	Holocene	Holocene	lacustrine setting	deposition from water	silt	sand	organic rich s...	H,l	7	mułki i piaski jeziorne	lacustrine silt and sand
4	43	Holocene	Holocene	lacustrine setting	deposition from water	silt	sand	organic rich s...	H,l	7	mułki i piaski jeziorne	lacustrine silt and sand
5	43	Holocene	Holocene	lacustrine setting	deposition from water	silt	sand	organic rich s...	H,l	7	mułki i piaski jeziorne	lacustrine silt and sand
6	48	Holocene	Holocene	marine setting	deposition from water	sand	gravel	<Null>	H,m	5	piaski i żwiry morskie	marine sand and gravel
7	43	Holocene	Holocene	lacustrine setting	deposition from water	silt	sand	organic rich s...	H,l	7	mułki i piaski jeziorne	lacustrine silt and sand
8	43	Holocene	Holocene	lacustrine setting	deposition from water	silt	sand	organic rich s...	H,l	7	mułki i piaski jeziorne	lacustrine silt and sand
9	1	Weichselian	Weichselian	glacier related setting	deposition by or from...	sand	gravel	silt	W,g	12	glina lodowcowa	till
10	1	Weichselian	Weichselian	glacier related setting	deposition by or from...	sand	gravel	silt	W,g	12	glina lodowcowa	till
11	20	Weichselian	Weichselian	glaciolacustrine setting	deposition from water	clay	silt	sand	W,gl	13	iły, mułki i piaski jeziornolo...	glaciolacustrine clay, s...
12	20	Weichselian	Weichselian	glaciolacustrine setting	deposition from water	clay	silt	sand	W,gl	13	iły, mułki i piaski jeziornolo...	glaciolacustrine clay, s...
13	1	Weichselian	Weichselian	glacier related setting	deposition by or from...	sand	gravel	silt	W,g	12	glina lodowcowa	till
14	20	Weichselian	Weichselian	glaciolacustrine setting	deposition from water	clay	silt	sand	W,gl	13	iły, mułki i piaski jeziornolo...	glaciolacustrine clay, s...
15	1	Weichselian	Weichselian	glacier related setting	deposition by or from...	sand	gravel	silt	W,g	12	glina lodowcowa	till
16	57	Weichselian	Weichselian	glaciomarine setting	deposition by or from...	clay	<Null>	<Null>	W,gm	11	iły morskolodowcowe	marinoglacial clay

Standardisation of geological maps visualisation is crucial for improving data legibility and semantically harmonised approach the visualisation not only enhances the clarity of individual maps but also makes data more comparable across different scales and regions. By providing a consistent and intuitive visual representation of geological units, this method helps to improve the overall understanding of geological data and facilitates its use in various scientific, educational, and practical contexts.

While not represented in the visualisation, data concerning the lithology and genesis of the units are incorporated within the GIS databases of the maps and are accessible for a range of spatial analyses.

*The maps have been resized proportionally to their original scale for the purposes of the poster presentations.

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