

Great glacial giants: erratic boulders of northern Poland as witnesses of the Pleistocene ice age and beyond

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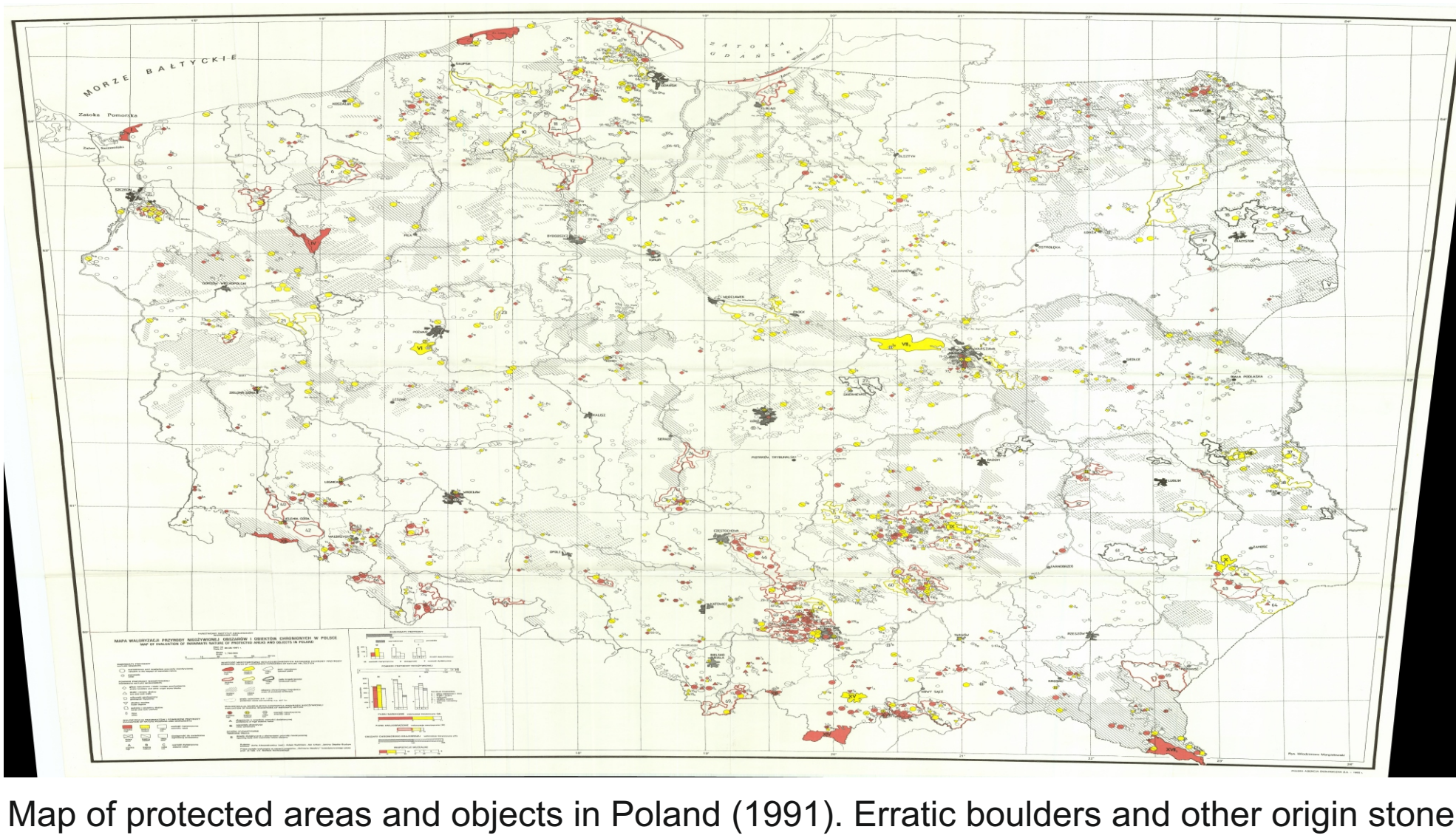
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Introduction

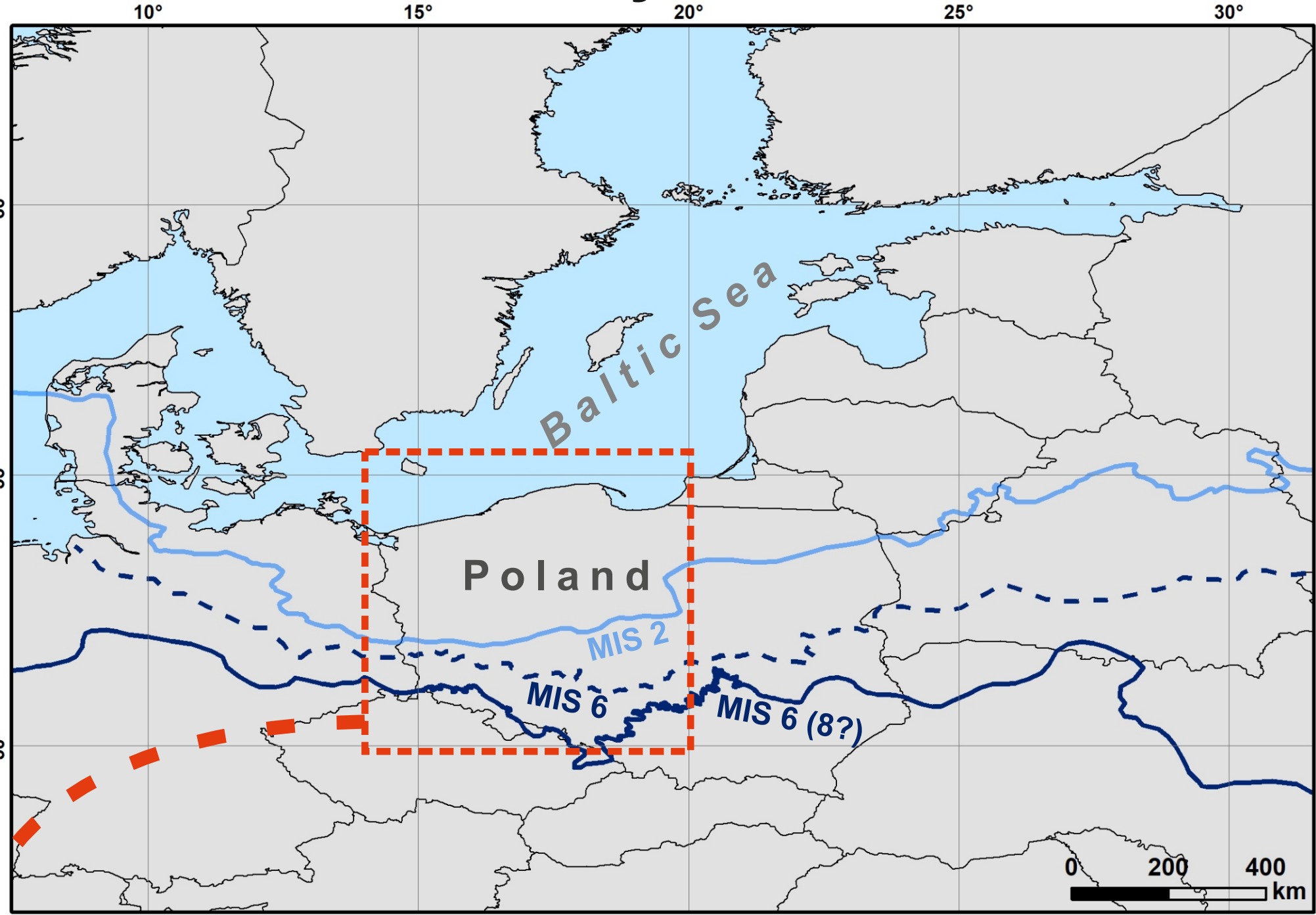
In this study, we present the occurrence and characteristics of erratic boulders within the area covered by the last and penultimate glaciations in northern Poland. Large erratics were identified using books, maps, and catalogues dedicated to environmentally protected sites (e.g., lists of natural monuments). We compiled all available information about large erratics into a GIS database and screened it to identify the largest in situ boulders potentially suitable for surface exposure dating with cosmogenic ¹⁰Be. In subsequent phases of our study, these boulders were used as key dating sites for reconstructing the chronology of the last FIS retreat in northern Poland. Additionally, some of these boulders hold significant cultural importance for local communities, paving the way to legends and myths, serving as esoteric places, or becoming locations commemorating important historical events.

Maps of large erratic boulders in Poland



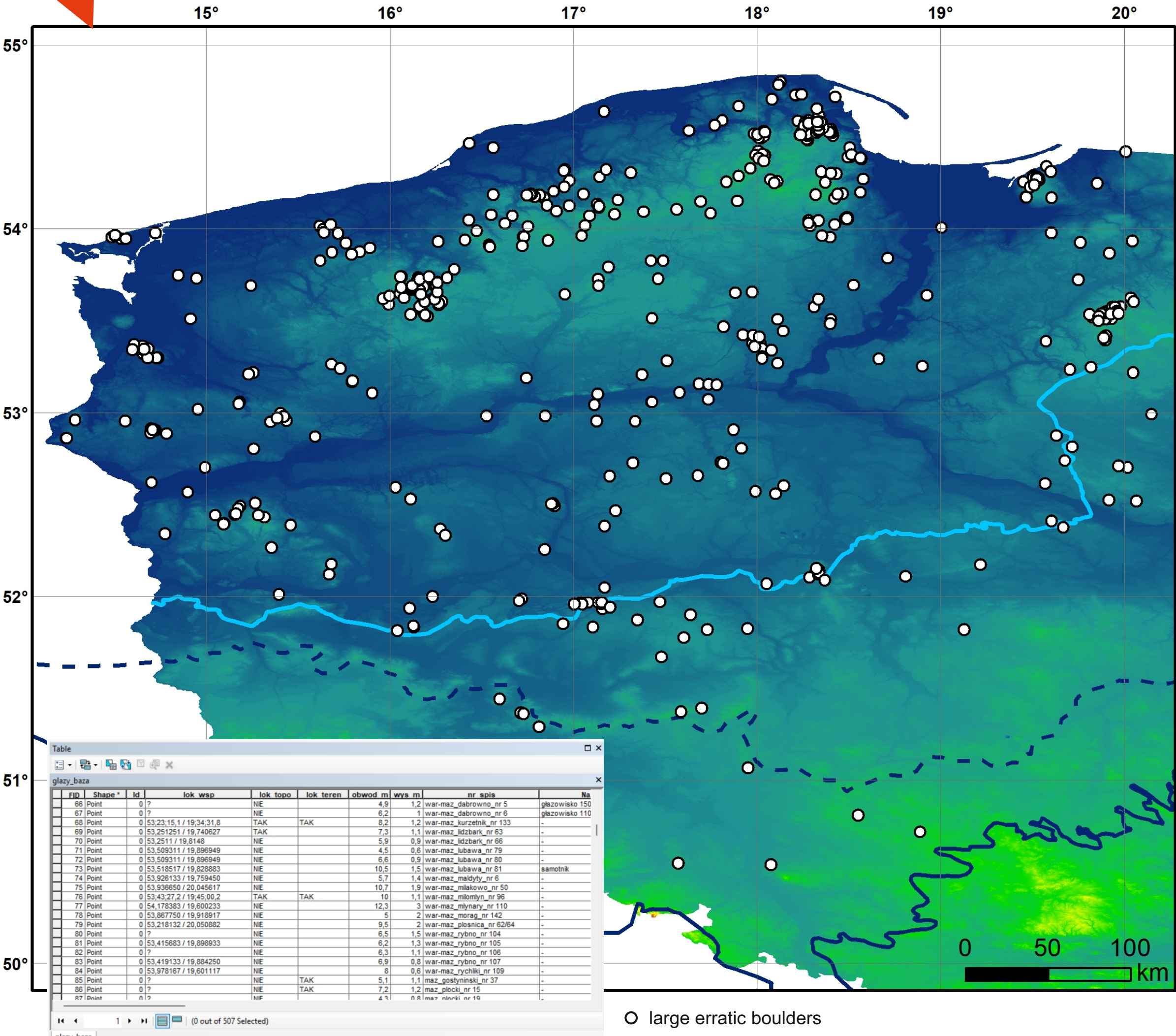
One of the first map (1963) displaying location of large erratic boulders in Poland protected by law as a natural monuments. Boulders are marked with black circles.

Study area



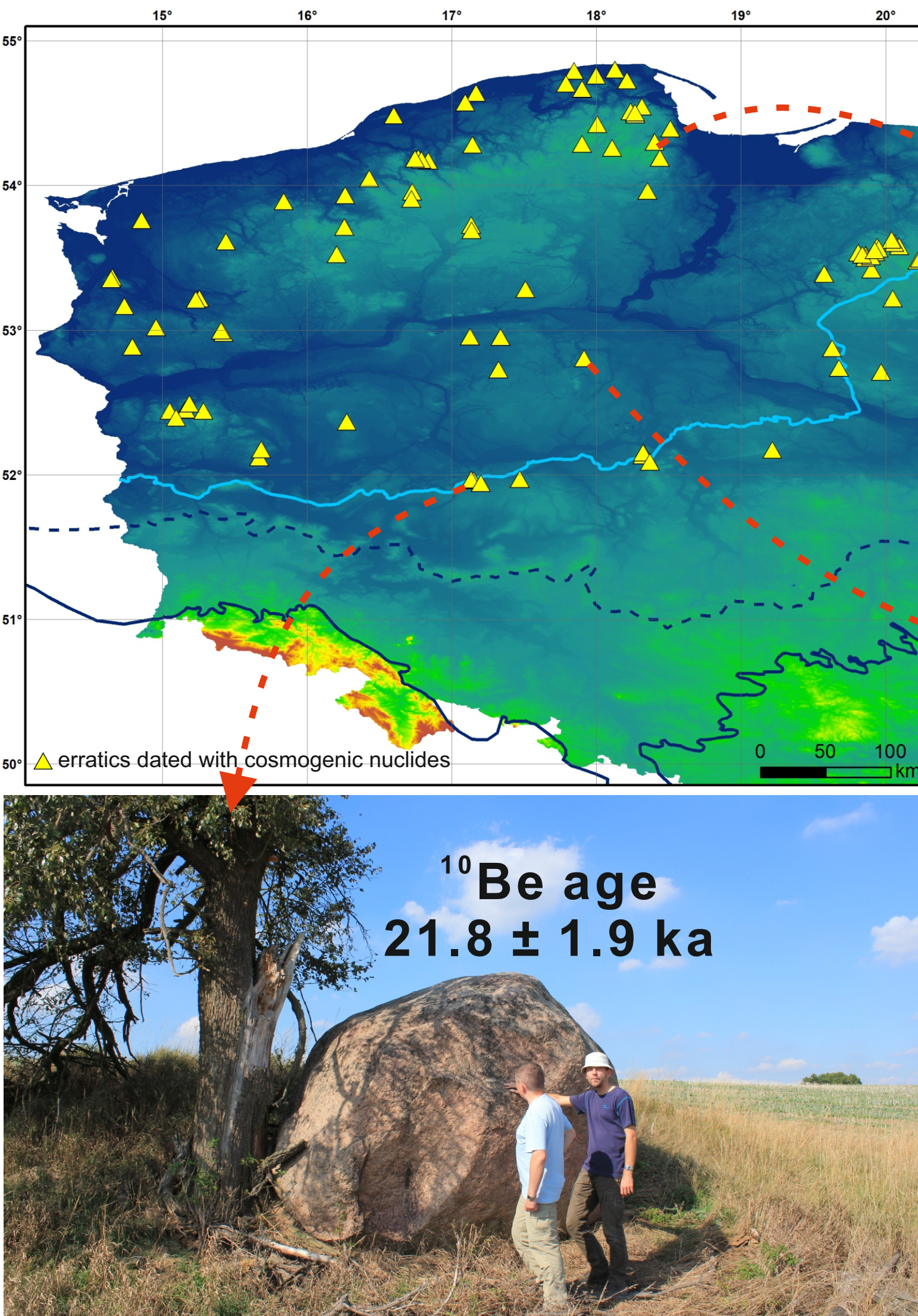
Study area is marked with a red rectangle. Blue lines indicate ice sheet limits during:
MIS 2 - Marine Isotope Stage 2 (~29-14 ka) **MIS 6** - Marine Isotope Stage 6 (~191-130 ka)
MIS 8 - Marine Isotope Stage 8 (~300-243 ka)

GIS database



GIS database of large erratic boulders located in western Poland compiled based on various sources (catalogues, books, maps). The database consists of more than 500 objects.

Erratic boulders dated with cosmogenic nuclides



Examples of cosmogenic nuclides surface exposure dating of large erratic boulders in Poland. Results were obtained during realisation of „DatErr” project (2024-2019).

Anthropogenic traces and mythological contexts of glacial erratics

Anthropogenic traces



The boulder was used as raw material for millstone production. The arrow indicates the spot where attempts were made to carve out a millstone.

Mythological contexts



The „Cracked Stone”, also known as the „Devil’s Stone”. According to local legend, the devil tried to build a stone bridge across the lake in order to claim the soul of a local farmer. As the work was nearly completed, a rooster crowed before dawn, frightening the devil. In his rage, he dropped the last boulder, which cracked and remained on the lake’s shore. Another version of the legend says that the devil was trapped inside the stone by an iron cross driven into it, and he remains imprisoned there to this day.

