

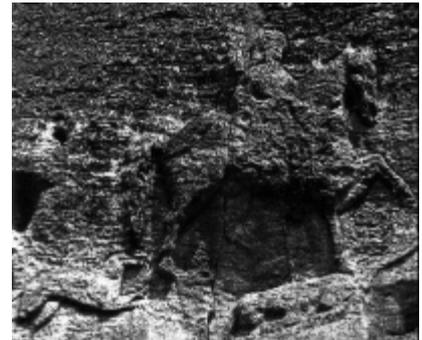
Madara Rider

The bas-relief of the monument was cut in the western slope of the Madara Plateau.

Upper Cretaceous calcareous sandstone and limestone are exposed in the almost vertical (120 m in height) slope where the monument is cut. These rocks are porous, fragile and water permeable. Lower Cretaceous marls and clays lie in the basement of the Plateau. They are plastic and impermeable.

Slope processes, karst manifestations, weathering, fracturing cause the instability of the Plateau periphery.

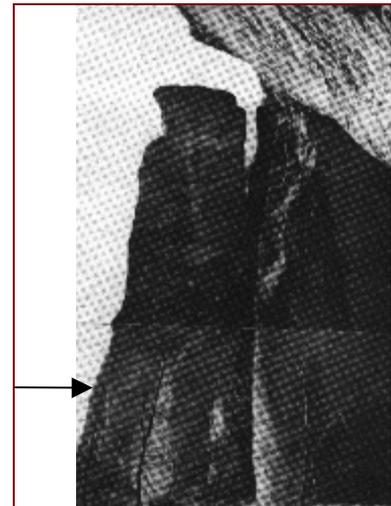
Main geological risks: weathering of the bas-relief, fractures of the rocky block with the monument. Other risks are related to seismicity of VII degree (MSK-64), slope processes, karst, ground water.



Numerous and diverse geological, engineering geological and biological investigations are made. They include field, laboratory and instrumental measurements, including the continuous monitoring of the movements in the main fractures of the monument.

There are a lot of proposals for the temporary and permanent protection of the monument.

A new construction with a concrete roof is built above the monument for its protection from superficial water.



The Madara Rider is a unique rock bas-relief with petroglyphes in Europe from the 8th-9th centuries.

The monument testifies the creation of new European State called Bulgaria in the Balkan Peninsula.

Brouchev, I., Avramova-Tacheva, E. 1988. Engineering geology and problems of preservation of historical sites and monuments in Bulgaria. – In: Eng. Geology and Ancient Works, Monuments and Historical Sites (Ed. Marinov, Koukis), Balkema, Rotterdam, Holland, p. 1397-1405.

Matova, M., Frangov, G. 2001. Gravitational and Earthquake-Induced Phenomena in the Region of the Historical Monument “The Horseman of Madara”. – Proceedings of UNESCP/IGCP Symposium “Landslide Risk Mitigation and Protection of Cultural and Natural Heritage” (15-19.1.2001, Tokyo, Japan), p. 67-83.

Venkov, V., Koshev, N. 1974. Investigations of the rocks in the limits of the Madara Rider related to the monument’s conservation. - Investigations and conservation of cult.monuments in Bulgaria. Sofia, p.83-97 (in Bulgarian).