



Conservation of geo- and –biodiversity in Lithuania: are there conflicts?

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Lithuanian surface is sculptured by more than five glaciers, which retreated c. 10 000 years ago. After the ice sheets melted in Lithuania, Latvia and Poland, and other neighbouring countries, they left numerous erratic boulders and boulder fields. Hundreds of single boulders and boulder fields are declared as natural monuments in Lithuania and other countries and are variably protected. Tens of single boulders and boulder fields are included into the Geosites database at the Lithuanian Geological Survey.

Rapid weather changes in Lithuania cause the weathering of erratic boulders. However, the fastest erosion is by overgrowing cryptogams: lichenized and non-lichenized fungi, algae, cyanobacteria and bryophytes. Lichens are among the first colonizers of rock surfaces, and their impact on stonework heritage is rather well documented. Hard rocks (e.g. granites) are weathering considerably slower than soft or relatively soft sandstones, dolomites or marbles; however serious impact is visible on stones with inscriptions, drawings and open surfaces of the protected nature monuments. Lichens gradually cover whole boulder surfaces obscuring their geological value and contributing to the surface weathering in Lithuania and neighbouring countries where numerous protected stony nature monuments occur.

The 73 of the 723 species of lichenized and allied fungi in Lithuania are confined to hard acid rocks. Eight of these acid rock-dwelling species are included in the Lithuanian Red Data Book, some of them have high threat category or are thought to be extinct now. There is no conservation conflict between the red-listed saxicolous lichens and their substrate where the species are confined to wild boulder meadows. Here lichens and their boulder substrate suffer from excessive growth and overshadowing from surrounding vascular plants, also from pollution which change stone surface properties and induce encroachment of more aggressive species than the usual slow-growing acid rock communities.

The main conservation conflict occurs when the solitary boulder monuments or open boulder expositions (e.g. V. Intas' Museum of Boulders in Mosedis, the Geology Museum in Vievis) are concerned. These expositions are supposed to serve a basis for geological science and education; however they are almost completely overgrown. Attempts to clean the boulders were met by general public and some scientists rather negatively and caused several conflicts. A wave of negative opinions appeared in media after the second largest boulder Puntukas was cleaned by compressed water streams. Several problems are concerned. First of all, both chemical and mechanical cleaning not only will remove lichens and other cryptogams, but may be damaging to a boulder or to environment and wildlife. The measures should be taken with utmost care, and lichen species as well as stone surfaces are to be examined before applying any treatment. Another problem is to convince general public, caretakers and scientists that the overgrown stone surfaces should be cleaned. Some botanists, foresters, environmental people would prefer to let the nature to do its work and to cover stony surfaces with vegetation. Therefore, in conflict cases, expert opinions, both botanical and geological should be addressed.

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