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Geology interpretation at a spot: knowledge transfer, geoheritage and geoconservation problems in the protected areas of Lithuania

Grazina Skridlaite (1), Laura Gedminiene (1), Jurate Vaznyte (1), Simonas Saarmann (2), and Jonas Seckus (1)

(1) Nature Research Centre, Vilnius, Lithuania (skridlaite@geo.lt), (2) Karalienes Mortos private school, Vilnius, Lithuania (norosvaikas@gmail.com)

In 2017, the Lithuanian Geological Society implemented a project aimed at geological knowledge transfer and common geoconservation problems in the protected areas of Lithuania. Even though many regional and national parks in Lithuania are rich in geological heritage, they have many questions how to protect, conserve or use it. The available scientific information often is too sophisticated and not adapted to their needs. Therefore, the first aim was to explain geology and teach how to solve local problems at a spot. There were many applicants, but only few were selected because of the limited funding.

In western Lithuania, the Rambynas regional park near the Lithuania- Russia (Kaliningrad area) border was visited. On the Vilkyskiai ridge hills dissected by deep ravines and washouts with an incipient suffosion circus, participants have discussed how to tell glaciation stories, explain ancient and modern processes. The Neringa national park in the Curonian Spit, on the Baltic Sea coast has the second highest dunes in Europe. One of the local problems is a fast-growing tree and bush carpet on dune slopes. Mountain pines and other trees have been intensively planted since the 19th century to protect settlements from a moving sand. Some dunes are almost completely hidden by forest and stopped to move.

In the easternmost part of Lithuania, the Dieveniskes regional park, famous for its old, before-Weichselian glaciation surface, features numerous erratic boulder fields. They are protected but almost overgrown by shrubs and grass, covered by lichen and moss, therefore deteriorating quite fast. The employees wandered what environmental-friendly protection measures could be taken.

In south-central Lithuania, scientists and protected areas specialists have discussed the origin and evolution of the Nemunas River loops and highly mineralized water beneath the Nemunas valley. Near Vilnius, an enigmatic origin of a small lake chain and the fast development of ravines and landslides in the Duksta River valley were a subject of further scientific discussions. The acceleration of natural an anthropic erosion was pointed out and protection measures discussed.

The participants found it useful to learn about deep geology beneath the parks and its influence on surface features, the up-to-date research results in popular language, as well as how different educational, motivational tasks can be achieved through the geology knowledge. Modern approaches how to teach and use geology for differently-aged audience were introduced.

To summarize, the first important issue was to teach how to understand and tell geology stories to visitors and authorities. The protected areas employees wanted to know how to nominate geological objects for a nature monument or other protected area status. Some of the visited geology objects do not have a high scientific value, but are outstanding features of the area. All were interested in how to protect some objects from natural and anthropic erosional processes, what protection measures would be recommended and who could provide with recommendations. The participating geologists did their best, however they faced an urgent need for advice from qualified specialists of geoheritage conservation and protection.