

The project concerns the impact of beaver activity on changes in the functioning of the natural environment and the human economy in the mountains. The beaver, called an environmental engineer, does not adapt to the existing environmental conditions, but transforms them by building lodges, dams, digging burrows and channels. Dams created by beavers slow down the water flow and raise the water level, creating large areas where water is retained. The beaver, mainly as a result of hunting, disappeared from the Carpathians probably at the end of the 16th century. Its reintroduction in the Polish Beskids took place in the 1980s and 1990s and was aimed at, inter alia, increasing biodiversity and restoring proper water conditions in an environment significantly changed by man. The research will cover selected parts of river valleys along the N-S transect through the Western Carpathians (Poland, Slovakia). These are areas historically conditioned by diversified land use (different sizes of agricultural plots) and population density. Moreover, beavers migrated to Slovakia from Poland, so the time of their presence in a given environment is different. The selection of the research area will also enable the analysis of the beavers activity, taking into account the relief diversity and selected meteorological factors (including precipitation and temperature). Recognition of the role of beavers in small retention in the mountain environment is currently of particular importance due to climate change and the problem of droughts. The morphological activity of beavers in mountain areas is relatively poorly studied, despite its high activity in these areas. It needs to be highlighted that beavers also cause measurable losses in the human economy and lead to local conflicts between humans and beavers. By increasing their range, beavers may cause damage to flood embankments, destroy trees (including fruit trees), block culverts and dykes, drainage ditches, harvest crops near watercourses, and may cause flooding of farmland and road infrastructure. The amount of compensation paid for the harmful actions of beavers is much higher than the damage caused by other animals. It should be emphasized that the changes taking place in the mountain environment as a result of the activity of beavers are different than in the lowland areas. Moreover, studies on the impact of beavers not only on the natural environment, but also on the human economy are rare in the Carpathians. The results obtained as part of the planned research will be a comprehensive analysis of the effects of engineering activities of beavers on changes in the functioning of river valleys and on human economy after 40 years after the reintroduction of the first individual to the Western Carpathians. In addition, the results can be used to develop solutions to human-beaver conflicts in mountain areas.