GIS assessment of the state of the geographical environment along tourist trails. Polish Tatra Mountain case study

A.M. Tomczyk, M. Ewertowski

Institute of Paleogeography and Geoecology, Adam Mickiewicz Univeristy (alto@amu.edu.pl)

This presentation proposes a concept for quantitative research on the condition of the environment along tourist trails. It is based on the application of the GPS for detailed fieldwork and a GIS for data integration. The data are obtained from various sources and used in an in-depth analysis allowing for the overall evaluation of the environmental condition tourist trails find themselves in. This evaluation in turn provides a basis for monitoring and the pursuit of protective actions in protected areas.

Within the framework of the GIS for tourist trails, the subsystems are defined and discussed: (1) the data-gathering subsystem making use of data sources in the form of: existing materials and field data (variables collected with GPS receiver: kind and state of the trail surface, morphometric data - the original width of the tourist trail and the width of destroyed vegetation cover, the kind of substratum on which the tourist trial is constructed, the vegetation cover in the immediate vicinity of the trail, obstacles on the trail which made it hard to use, devices protecting against damage to the trail surface, other elements of tourist infrastructure, characteristic elements of biodiversity and geodiversity, certain indicators of negative tourist activity and of other negative human activity; (2) the data-storage subsystem, for which the proposal involves a basic database (not updated every year), as well as an annually-updated database. (3) the data-processing and analysing subsystem; (4) the visualization subsystem.

The above methodology is presented using a case study on the state of the geographical environment along one of the tourist trails in the Western Tatra Mountains. Some research results and factors affecting the trail's degradation are also presented.