

## **Abstract**

Caves are valuable sites from geological, palaeontological and biological point of view. They are important biotopes of rare and endangered species. Their ecosystem is quite specific and often very independent on environment. Therefore, the caves since the beginning of science have been the subject of research, and gradually also the subject of protection. Caves can also be very attractive objects of interest of tourism. In the Czech Republic there are 14 open to the public karst caves that have regulated attendance, and their access time is subordinated to the interests of nature conservation. On the other hand, there are also a number of caves that are not secured in any way and may be a target of unregulated tourism.

This dissertation discusses the evaluation and the impact of attendance on non-karst caves in the National Nature Reserve Canyon Labe, which are freely accessible. I divided the work into three parts. In the first part I dealt with quantifying the attendance of all caves in the area of interest. On the basis of collected data, I made a selection of caves, which I later focused on. In the second part of my work I focused on obtaining information about the visitors and their motivations using public inquiry survey in selected caves. In the third part I tried to analyze the impact of attendance on the cave environment and compile a list of caves in terms of the vulnerability of selected species. In determining the impact I also considered the impact of attendance on the cave microbial communities based on analysis of phospholipid fatty acids (PLFA). Then in a program ArcGIS 10 I created plans of the caves and I processed the acquired data into maps.

An analysis of the attendance shows that the most visited caves in the area are Loupežnická Cave and The Cave of Friendship, which are also popular with commercial speleotourism. The proportion of visits during hibernation of bats reaches 50 % of the total attendance, which is really problematic in relation to the protection of nature. The survey of public inquiry also shows that the motivation of respondents corresponds mainly to adventurous and extreme forms of tourism. As well as the influence of the frontier nature of the site becomes evident according to the attendance analysis which points to the fact that the majority of visitors to the caves comes from the Federal Republic of Germany.

Sorting caves in the area of interest based on the calculation of the theoretical vulnerability suggests that in some caves with regionally significant amount of attendance may be more likely to collide with the conservation of significant species. The results of PLFA analysis confirmed significant differences between soil affected and unaffected by attendance, especially in bacteria. Large variability among the locations suggests that microbial communities are also influenced by a number of other factors that may not be related to the attendance of the cave.

**Key words:** cave, speleotourism, attendance, pseudokarst, GIS, PLFA