

POPULAR SCIENCE DESCRIPTION

Modern archaeology frequently meets environmental sciences in the scope of geoarchaeological studies. The main aims of such cooperation is to present the complex history of human past with the environment, which often have determined human activities – but also the habitation have influenced the nature. Essential in such research are the areas where a suitable record occurs to provide the palaeoenvironmental reconstructions. Such areas are mainly lakelands, but also the palaeolakes, which were formerly a water reservoirs but presently only their sediment record have been preserved.

An example of such place is the microregion of Bruszczewo in the Great Poland, which is the study area of the presented project. It consist of essential archaeological sites, especially in terms of cultural development in this part of Europe, like i.e. the unique, in European scale, fortified settlement from the Early Bronze Age in Bruszczewo, which have been a subject of numerous publications in international archaeological literature. This area is also essential for other prehistoric and historic periods like the Late Bronze Age or Early Medieval. Therefore, the Bruszczewo microregion is considered to be a landscape of human interest for at least 4 thousands years. However, this interest is not continuative, due to the significant hiatuses in human occupation (i.e. during the Middle Bronze Age).

During the previous research of the fortified settlement in Bruszczewo, the Polish-German team of scientist made an intriguing discovery, which was the indication that the settlement was encircled by the lake from north, east and south. Presently this area consists of meadows spread across the plain of the Samica Valley bottom. This information provoked an necessity to recreate the changes in the landscape. Single core, reflecting the natural record of lake sediments, proven the changing character of the area and the diminishing of the lake around VIth century AD.

However, this stage of research did not bring efficient data, that could serve for precise reconstruction of the environmental transformations, as those derived from archaeological research concerning the cultural development. There was no answer to the lake extent or its short-termed changes, however an brief picture of general trends in vegetation cover dynamics was drawn. The presented project aims to fill this gap by elaborating the precise extent of the reservoir, its genesis and the exact time of its transformation into the peatland. It is planned to reconstruct the physical, chemical and biological characteristic of the lake and its waters, which will allow to estimate the human influence on this natural feature. Thanks to recognizing the main parameters of the lake and dynamic of their changes, it will be possible to answer the crucial archaeological questions: i.e. did the lake served as an defensive feature all the time, or just during the Early Bronze Age by filling the moat of the settlement? Have the Early Medieval people witnessed the remnant lake or was the area covered with swamps and peatlands? What was the character of the lake and its water during the times before human occupation? How human influenced the water? How fast did the environment recovered during the occupational hiatuses? How the vegetation looked like during particular periods and. most importantly, how did it change between and during particular periods? The answer to those questions will be brought by usage of the interdisciplinary methodology, like magnetometry, vibra-coring with undisturbed sediments stratigraphy, sedimentology, geochemistry, palynology, diatom studies and AMS radiocarbon dating with precise method of sampling. By comparing the environmental reconstruction with an extensive and already existing archaeological data, it will be possible to write an complex history of the human-environmental relations in one of the most crucial regions of cultural development in this part of Europe.

The results of the project are going to be presented on an international symposiums, gathering the geoarcheology specialist, as well as by articles in journals dedicated to describe the human development in landscapes. The final effect of the project will be to visualize the following stages of landscape evolution with reconstructed human settlement net in the Samica Valley in Bruszczewo microregion.