## Insight into the hunter-gatherer life. Human activities in the light of Late Glacial and Early Holocene archaeological and palaeoceological evidence from Western Poland

Around 14,000 years ago, after retreating the Scandinavian Ice-Sheet to the North, hunter-gatherers started to appear at the Polish Lowland. This way of life existed up to the spreading of livestock farming and agriculture in the 2-nd half of 7-th millennium. Despite the growing number of multidisciplinary research of older and middle Stone Ages this period is still the poorest recognized in prehistory.

Due to considerable time space the only reminiscences of hunter-gatherers settlement are usually stone and flint tools. It could seem that is very little but carefully "reading" them – getting to know what activities were taken by using them (scarping, cutting, sawing, game hunting, processing of bones, striking fire etc.), or if they were repaired, whether the raw material from which they are made originated from the nearest vicinity of the sites or it had been "imported" from afar. All these will allow in an indirectly way recognize the hunter-gatherers activities. Dispersion of flint artefacts – nodules; cores processed in order to get blanks for tools manufacturing and tools in the campsites allows us to reconstruct its spatial organization, distinguishing the specific zones of human activities (e.g. hide, game processing).

The main aim of the research project is therefore to recognize lifeways of Late Palaeolithic and Mesolithic hunter-gatherers in present-day Western Poland. The project involves seeking the answers for crucial issues concerning existence of these societies – how their life looked like, what they ate, what activities they took, what was their impact on the local environment and whether it is readable for us, and if so, in which data. Were different strategies for livelihood applied by chronologically and culturally diverse communities, and if so, what was it caused by?

The broad spectrum of specific research methods will be adopted to achieve the above mentioned aim. First of all, during 3 seasons of excavations, the hunter-gatherers campsites will be explored, in vicinity of Lubrza and Kopanica, on the Lubuskie Lake District. Materials gained as a result of these investigations will be carefully studied. The comparative analysis between those campsites and known from North European Plain will be conducted.

The radiocarbon dating of organic materials (e.g. animal bones) or charcoal from hearths give us possibility to define the precise age of the campsites.

Due to reconstruction of the environment in which hunter-gatherers existed, multidisciplinary archaeobiological analysis will be carried out. On the basis of pollen content, macroscopic plant remains, mollusc, diatoms (type of algae), cladocerans (type of crustaceans), present sediments of former lakes, on the shores which humans organized their encampments, reconstruction of past landscapes and its changes through time will be possible.

The significant role of the project will also play reconstruction of hunter-gatherers subsistence strategies and plant diet. In order to it the archaeozoological analysis of animal bones, macroscopic plant remains and charred tissue of edible tubers and roots will be adopted.

The special attention will be paid on ability to evidence human impact on the environment, e.g. by burning marsh vegetation on the lake shores in order to facilitate an access to drinking water or fruit harvesting edible aquatic plants.

The geological structure of former lakes, the source of drinking water and food (fish, edible aquatic plants) for hunter-gatherers will be recognized in details. Pollen, geochemical and radiocarbon analysis of lacustrine sediments allow to give the answer – when they originated, what was their range and depth, and how they changed over time.

All the research will give us the possibility to recognize hunter-gatherers lifeways in changing environmental and cultural conditions.