The main objective of this project is to determine the way of forming anabranching and meandering rivers in the Transdanubian region and postglacial areas. Anabranching rivers, consisting of a network of low-energy channels and a number of stable alluvial islands. Such rivers were present in a number of places of central Europe, in a period preceding intensive hydro technical works in the 19 century. However, their courses were transformed by anthropogenic interventions such as constructions and canals, dams and drainage ditches. Despite the intensive changes, remains of the former channels have been preserved in the modern floodplain surface. The project aims to reconstruct past river channel changes that occurred prior to the period of intensive hydro technical works.

The research will include geophysical surveys using a ground-penetrating radar - a device that allows for imaging of sedimentary structures in the shallow subsurface. Sorts of deposits that build river floodplains in the Polish Lowland (the middle Obra and Wełna Valleys) and Transdanubian region (the Kapos and Sio Valleys) will be recognized by coring. The age of past channel pattern transitions will be determined using radioisotopes (radiocarbon dating). Moreover, locations of the former channels will be identified using historical maps and aerial images.

As most of anabranching rivers in Europe have been transformed by hydro technical works, relatively little is known how these rivers evolved. Some of these rivers, as illustrated on historical maps from the 18^{th} century (a period preceding canals construction) were characterized by a meandering pattern of river “branches” within an anabranching pattern. This is a rare feature in this type of rivers. It is possible to reconstruct the evolution of anabranching rivers with meandering anabranches on the basis of the analysis of sedimentary architecture of former floodplains and channels. Collected data allow for better understanding how these rivers evolved in various geomorphic conditions – in postglacial areas (using the example of the Polish Lowland) and areas that were not glaciated in the Pleistocene (using the example of the Transdanubian region). The project also aims to answer the question whether a formation of meander bends in anabranching and single-channel meandering rivers is governed by similar processes.