

ABSTRACT

The importance of of urban space quality in Poland has increased for local communities and local governments in recent years. An important element of this space is the local stream, both as a source of problems, as well as potential or real value. This is an illustration of the general rule, that positive economic and civilizational changes generate both technical possibilities and local communities aspirations for the "restoration" of urban streams.

The thematic area of the work covers issues related to the assessment of the urban river's morphology, for identifying restoration activities that can be carried out. Most of known morphological assessment methods used over the world do not include the element of planning revitalization activities. Meanwhile, there is a close relationship between the morphological conditions of the stream and its corridor, and the range of necessary and feasible actions aimed at recreating natural features of the urban streams. Methods of assessing the stream morphology and methods of identifying the revitalization possibilities require field surveys to provide a large amount of precise information, but at the same time make stream assessment relatively expensive and time-consuming. Since the development of methods, there has been significant technological progress in access to spatial information. The quality and accessibility to spatial information allows to obtain significant amount of data for the assessment of the morphological condition and the identification of river revitalization opportunities without the necessity of field surveys. Numerous elements of the morphology of the channel and the stream buffer can be easily identified using of widely available cartographic materials, i.e. orthophotomaps for the analysis of watercourses, may allow for quick determination of initial parameters of watercourses morphology and the identification of places where it is possible and necessary to undertake revitalization activities.

As part of the research, River Habitat Survey and Unified Stream Assessment surveys were conducted on the Kłodnica stretch from the sources to the tributary of Jamna (about 13 km). The survey was carried out using cartographic materials and spatial information and simultaneously as field assessment of the river. Next, research results were compared in order to determine the characteristics of the tested stream, which can be ascertain by means of map information. In this way, a list of indicators was created, which became the basis for creating a method of determining the directions of revitalization, while defining the hydromorphological state of the stream. The method created was based on the RHS and USA methods with appropriate modification taking into account specifics of urban river.. The work also presents an example of the application of the method created for another watercourse in the Kłodnica catchment.