

Introduction

The last quarter of the century has seen the growth in various limnological studies, which have resulted in a number of published contributive works as well as monographic papers. That renaissance of limnological research, especially geographical studies of water reservoirs, perfectly coincides with the mainstream of contemporary scientific research, aimed at assessing the ecological changes of the natural environment as a whole or its elements. Basic questions which the answer to has been searched for refer to the following: are the observed changes caused by natural factors, that is, can they be considered as the evidence for short- or long-term fluctuations, or are they occurring as the consequence of various anthropogenic influences? Water reservoirs are among the objects in which these changes can be easily observed. They compose an essential element of the landscape, a peculiar ecosystem, which is extremely sensitive to all biotopic transformations resulting in biocenotic changes. The researched reservoirs are of various origins. Vast majority of them is of purely natural genesis. These are lakes that were formed without any anthropogenic factors. However, that group includes also lakes that have been dammed in order to increase retention. This operation is most commonly caused by the need for meeting the demands of different areas of economy, which exceed the local available water reserves. Thus, the water exchange processes occurring in such water bodies are anthropogenically disturbed, although to an insignificant extent. Another group comprises reservoirs created with partial contribution of anthropogenic factors. These are reservoirs with basins created anthropogenically, which were filled with water as a result of surface flow of rainwater or flow of shallow underground water. Such reservoirs are numerous in exploited areas, especially in regions of open pit ore exploitation (hollows filled with water) and underground mining (flooded subsidence basins). A large number of such reservoirs in these areas, as well as their landscape-shaping role, justify the introduction of the notion "anthropogenic lakeland" which has appeared in reference to Upper Silesian Industrial Region (GOP) and Łuk Mużakowski. The appearance of such reservoirs completely resembles that of lakes in post-glacial areas, but they would not have appeared if underground or open-pit exploitation had not been

carried out there. Except for the anthropogenic genesis of the basin, the processes related to water exchange, shaping the level of water reserves and limnological regime are generally of natural hydroclimatic character.

The third group includes reservoirs formed with substantial contribution of human activities. It comprises reservoirs created as a result of building of a drop on the river, which dammed its waters. Dammed, retaining reservoirs are built in order to meet particular needs resulting from water management tasks. These are usually multi-function reservoirs. Recently, there have been increased creation of small dammed reservoirs, related to the "small retention" programme. This group includes various, usually small, anthropogenic reservoirs, intentionally formed and filled with water. They serve particular functions, e.g. for fire-fighting, sports and recreation, industry, dosing, etc. Settling tanks and fish ponds also belong to this group.

The subsequent, fourth volume of "Limnological review" presented to the readers is a continuation and thematic reference to the previous volumes. It comprises papers with one element in common: a water reservoir regardless of its origin, considered from different points of view in terms of processes that occur in it and its function (hydrological, hydrochemical, hydrobiological, agricultural, hydrotechnical, hydroeconomic, etc.) as well as morphogenic and limnologic transformations caused by both natural and anthropogenic factors. Also, the team of authors represents different research centers (universities, agricultural academies, technical universities, department institutes), both domestic and foreign ones. That is so because wherever temporary water retention takes place, there occur processes of water exchange and transportation, changes in its physical-chemical properties, and the biotic sphere gets adjusted to that naturally or anthropogenically shaped ecological niche, which is treated as a peculiar geoecosystem. Populations appear, whose successive links depend on the degree of territorial balance of the natural system, which comprises not only a water reservoir, but its direct catchment area as well.

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