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Biological and  
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## Ichthyofauna Of Selected Vendace-Type Lakes Of Poznań Lakeland

Jan Mazurkiewicz<sup>1, 2\*</sup>, Klaudia Łyczykowska<sup>2</sup>, Mateusz Rawski<sup>1, 2</sup>, Krzysztof Florczyk<sup>1, 2</sup>, Jan Banaszak<sup>1</sup>, Paula Skrzypczak<sup>2</sup>, Marcin Wiśniewski<sup>3</sup>

<sup>1</sup>Poznań University of Life Sciences, Experimental Station of Feed Production Technology

and Aquaculture in Muchocin, Muchocin 20, 64-400 Międzychód

<sup>2</sup>Poznań University of Life Sciences, Laboratory of Inland Fisheries and Aquaculture, Department of Zoology, Wojska Polskiego 71c, 60-625 Poznań

<sup>3</sup>Polish Angling Association, District in Poznań, Znanieckiego 9, 60-682 Poznań

\* correspondence address: e-mail: [klaudialyczykowska@gmail.com](mailto:klaudialyczykowska@gmail.com)

The Polish law on the fishing use of rivers and lakes imposes an obligation to conduct fisheries management sustainably. A key element of such management is to research the status of fish and their habitats, which allows for a better understanding of conservation needs and opportunities for developing fish populations. For lakes, research on species protection and biodiversity conservation is more complex and less developed than for flowing waters. Correctly understanding these relationships is essential for predicting changes, such as the spread of invasive species, human activities' effects, or climate change's impact. This study aimed to determine the species composition of selected lakes, focusing on Coregonid populations as important bioindicators, to further develop a system for sustainable lake fisheries management.

The research was conducted in August and September 2023 in six lakes in Poznań Lakeland, Western Poland: the Dominickie, Kuźnickie and Lubiwiec lakes used by the Polish Anglers Association, District of Poznań, and the Gorzyńskie, Gorzyckie and Tuczno Wielkie lakes managed by the Poznań University of Life Sciences, Experimental Station of Feed Production Technology and Aquaculture in Muchocin. Nordic gillnets were used following European Standard EN 14 757 to assess the species composition and structure of the ichthyofauna. Fishing took place during nighttime hours, when the activity of most species reaches its maximum. Nets were deployed for 10 hours, which minimized the risk of organism decomposition and predation.

In Dominickie and Gorzyńskie lakes, the dominant species were *Perca fluviatilis*, *Rutilus rutilus* and *Blicca bjoerkna*. In Kuźnickie and Tuczno Wielkie lakes the dominant species were *Perca fluviatilis* and *Rutilus rutilus*, in Gorzyckie Lake *Perca fluviatilis*, *Rutilus rutilus*, *Blicca bjoerkna* and *Alburnus alburnus*, and in Lubiwiec Lake *Perca fluviatilis*, *Rutilus rutilus* and *Coregonus albula*.

The study confirmed high biodiversity in the analyzed lakes, indicating these ecosystems' good condition. The presence of Coregonids, such as *Coregonus albula*, is significant in some of the studied lakes, indicating the waters' high quality and ability to support demanding indicator species. These findings underscore the need for further research and regular monitoring of lake ecosystems to protect them and maintain their

ecological status. Developing innovative, sustainable fisheries management strategies is a crucial element in the long-term conservation of the biodiversity of these waters.

This study was carried out as part of the project no. 00001-6520.13-OR1500001/22 entitled: "Development and testing of innovative, resource-efficient research systems for environmental parameters and the status of ichthyofauna with particular emphasis on the Coregonid species for environmentally sustainable lake fisheries", Task 1.13 "Innovations" according to EU Regulation No. 508/2014, Priority 1 – "Promoting environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based fisheries" realized in the Operational Program "Fisheries and Sea"