



MAPPING KNOWLEDGE PERSPECTIVES IN AQUATIC BIOTA DIVERSITY: INSIGHTS FROM A CASE STUDY IN THE NEOTROPICAL REGION.

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Understanding patterns of scientific production is essential for identifying gaps and guiding future research efforts, particularly in regions with high biodiversity and heterogeneous environmental conditions. In this context, this study aimed to evaluate the scientific production on aquatic biodiversity in southern Brazil (taxonomic coverage, spatial and temporal distribution of studies, and others). An extensive survey of the literature was conducted using indexed databases including different aquatic biota groups (bacteria to macroinvertebrates) across aquatic environments. Data were compiled to characterize patterns of knowledge distribution and to identify potential drivers of knowledge gaps, including taxonomic coverage, spatial distribution of studies, thematic approaches, research effort (e.g., study duration), institutional structure, and metrics of scientific visibility. Descriptive and exploratory analyses were performed to identify patterns in scientific knowledge and its distribution. The results showed that research on aquatic biota biodiversity in southern Brazil is unevenly distributed, with a concentration of studies in specific regions and environments related to major research groups. Some taxonomic groups were more frequently studied, while others remain underrepresented, indicating important gaps in biodiversity knowledge. Additionally, authorship analyses showed the variability in institution of the first author, internationalization in the manuscripts and the scientific visibility was influenced by factors such as publication language, number of authors, and journal impacts. Our results revealed a fragmented structure of scientific knowledge, characterized by spatial concentration of studies, taxonomic biases, and limited integration among research approaches. This lack of connectivity across scales, methods, and biological groups highlights the need for more integrative frameworks to better understand biodiversity patterns. Expanding such efforts is essential to strengthen knowledge on aquatic biodiversity and to support more effective conservation, management, and monitoring strategies for freshwater ecosystems across the Neotropical region.

Keywords: *Freshwater ecology; Human pressures; Southern Brazil; Paraná state, Lotic environments.*

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