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Using Direct and Indirect Methods to Assess Changes in Riparian Habitats

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摘要	Hydrological regime disturbances in riparian ecosystems affect the interactions between soil properties and vegetation. The proper assessment of changes occurring in river valley forests is a basis for planning in sustainable forest management. The existing habitat conditions in plant communities can be assessed by both direct and indirect measurements. The aim of the study was to compare the results obtained with direct and indirect methods of data collection. We also evaluated the validity of the studied variables. Our study was based on data from plots established in 90-year-old forests in the Odra river valley (SW Poland). Habitat features, such as soil moisture (F), nitrogen (N), and soil reaction (R), were expressed directly using field measurements and indirectly using Ellenberg’ s indicator values, calculated based on the presence/absence of species in a plot (aEIVs) as well as on species cover (wEIVs). Only in the case of nitrogen did the use of both methods of estimating habitat features give the same results for selected riverside forests. In ordination and regressive analyses, use of direct or indirect methods strongly influences the results of calculations. Analyses conducted on the basis of selected parameters indicate a significant decrease in soil moisture and a change in soil reaction in the riparian forest located on the edge of the floodplain, which indicates that the habitat transformation has already begun. We concluded that the use of Ellenberg’ s indicator values (EIVs) for monitoring riparian habitats has numerous disadvantages, and therefore data based on direct measurement should be preferred. View Full-Text
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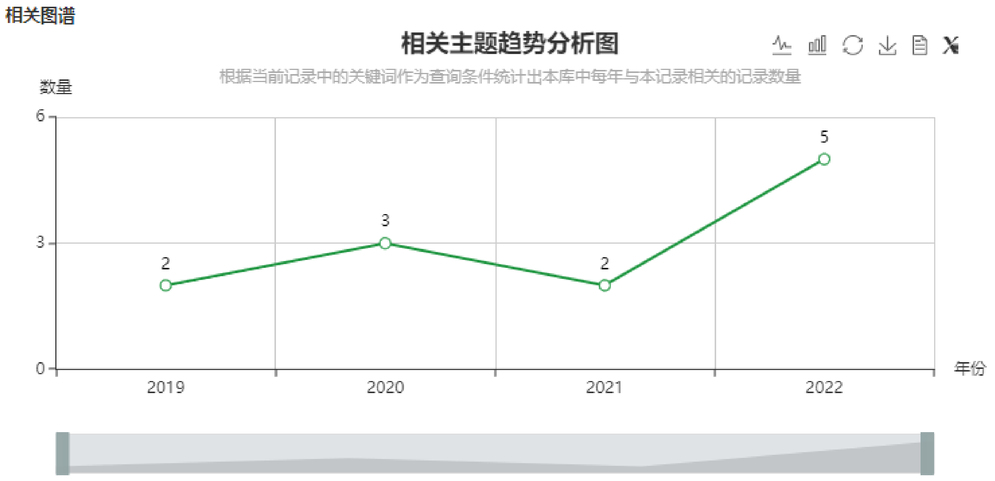

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