CLIMATIC, HYDROLOGICAL AND HYDROCHEMICAL EFFECTS ON BENTHOS OF THE STREAM GRAISUPIS, LITHUANIA

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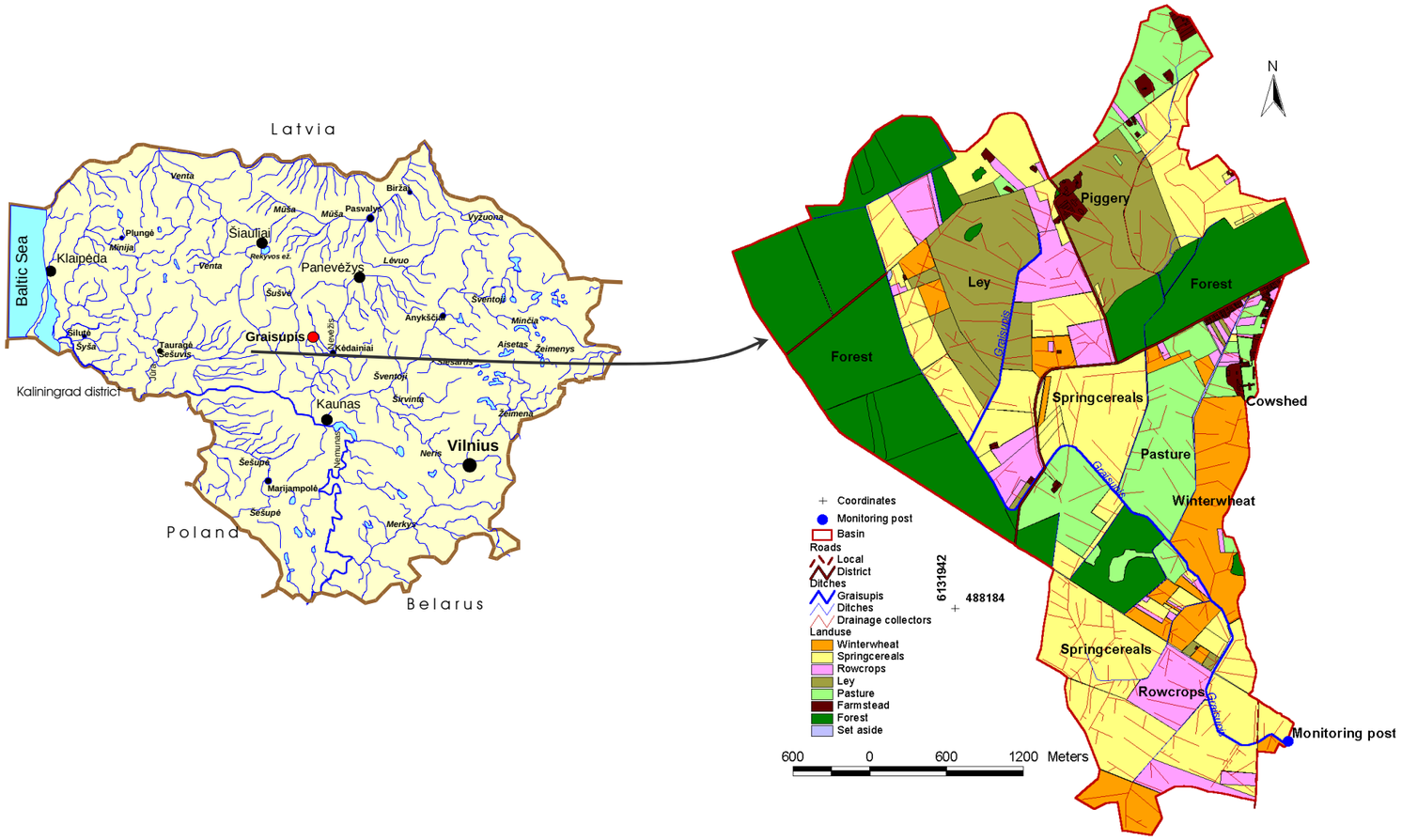
Benthos parameters, climatic factors, stream water discharge, and nitrogen and phosphorus concentrations in water of the stream Graisupis have been analysed. It was determined that the ecological status of the monitoring stream became worse according to the benthos parameters during the studied period. The number of taxa sensitive to pollution (stoneflies, mayflies and caddisflies), the mean Chandler biotic index and benthos biomass decreased. This happened under the conditions of increased weather temperature, reduced rainfall and stream water discharge, increased phosphorus concentration, reduced nitrogen concentration and reduced N/P ratio. The analysis has shown that the deterioration of the stream Graisupis ecological status was determined by the reduction of rainfall during summer time, which caused longer periods of stagnant stream water or small water discharge, and deteriorated oxygen conditions due to organic matter destruction in the stagnant water. Deterioration of the conditions could be indirectly indicated also by the reduced N/P ratio. The investigation has shown that climatic factors and possible global environmental change have to be considered when agricultural pollution impact on monitored stream ecological status is to be evaluated.



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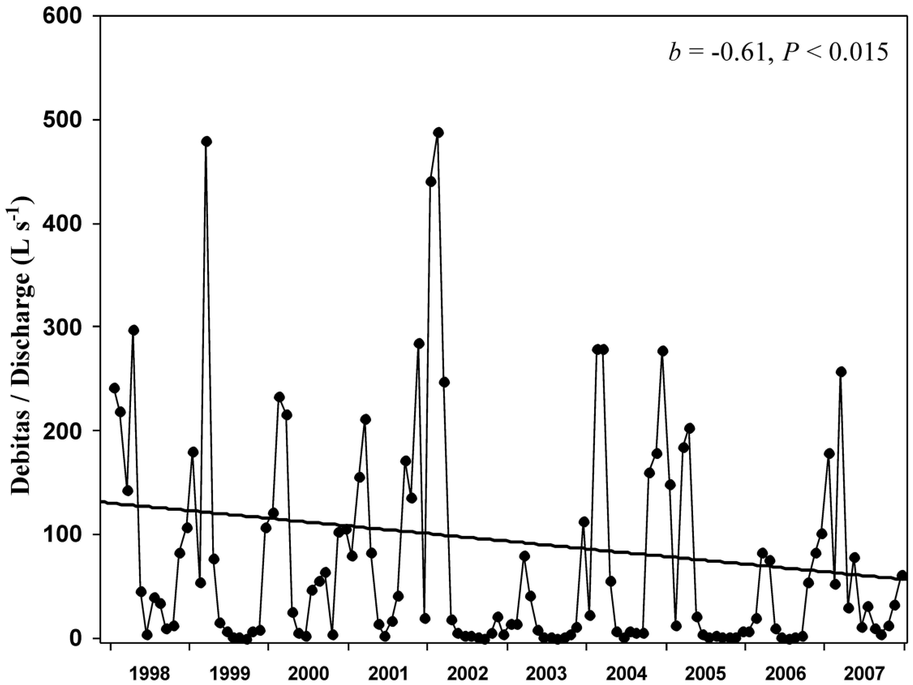
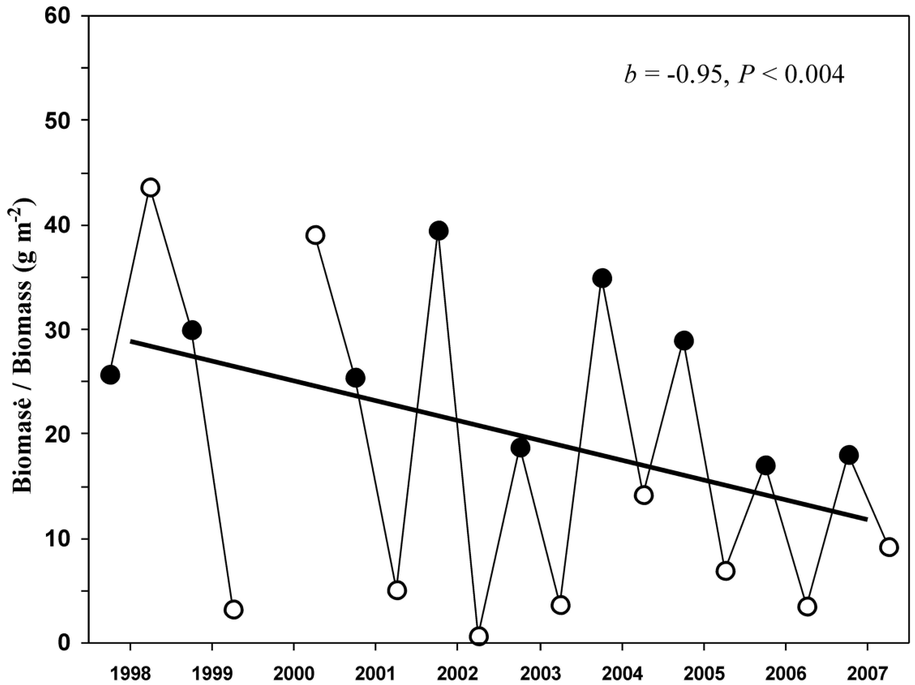
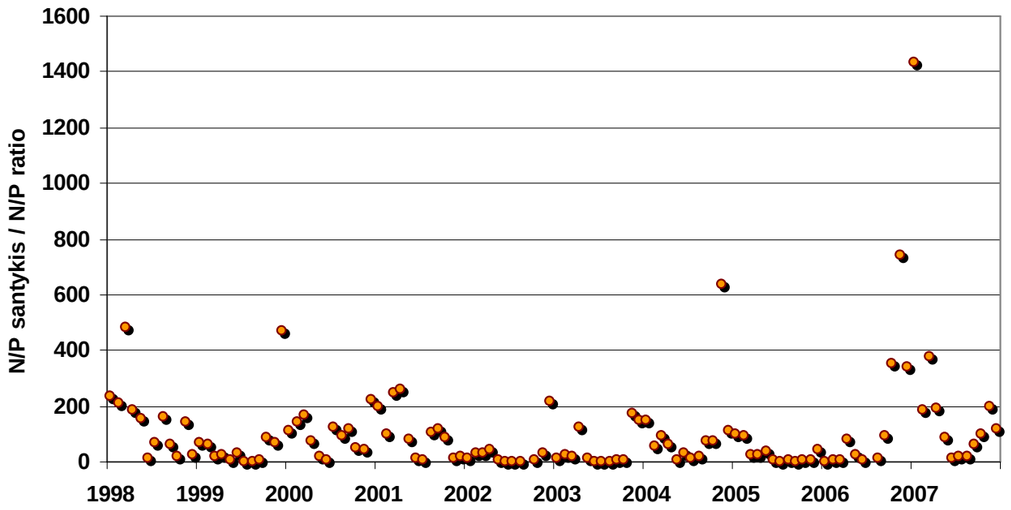
Water flow effect on benthos biomass





N/P ratio in stream water



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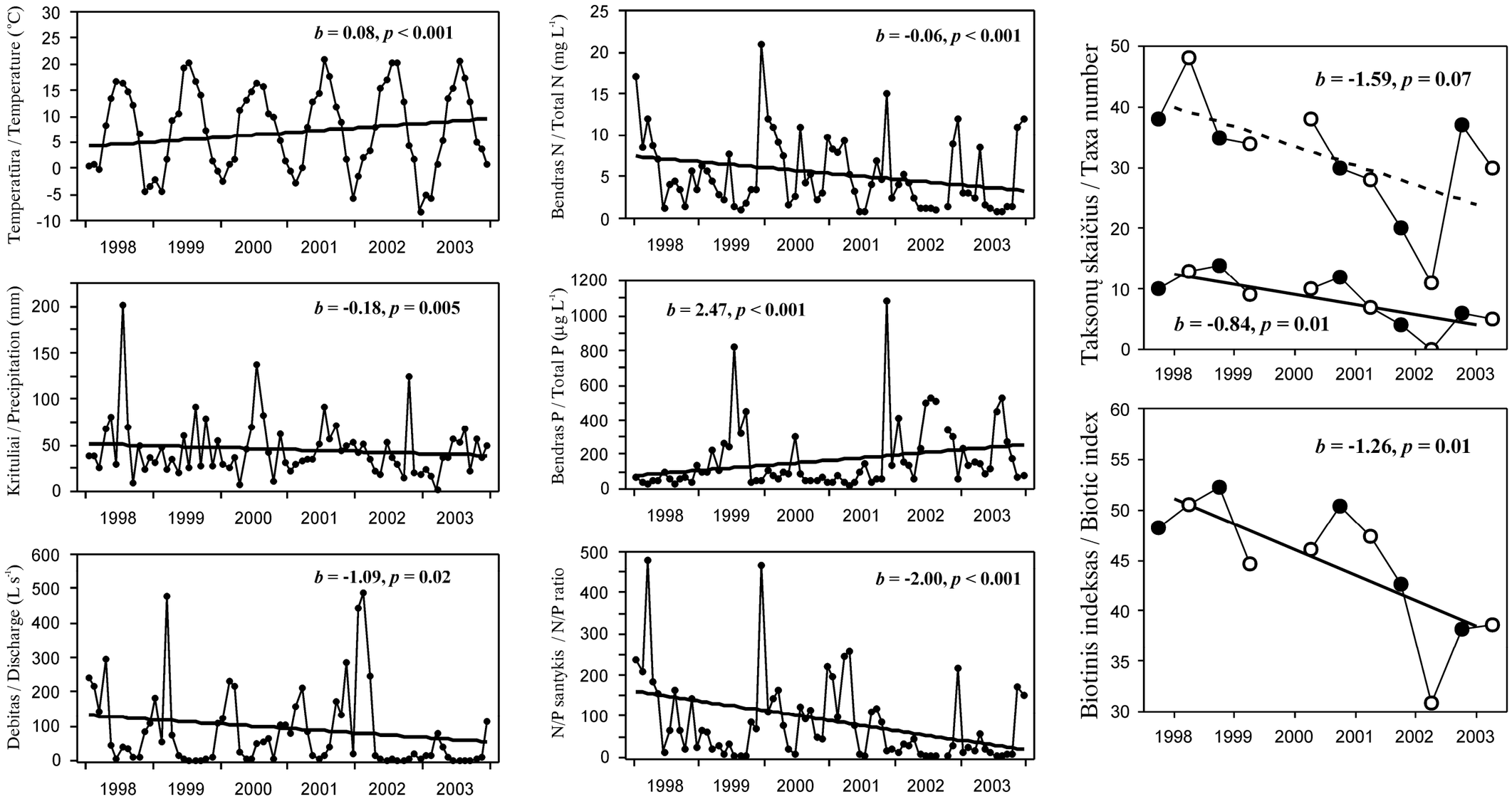
Reduced biodiversity under the conditions of increased weather temperature, reduced rainfall, stream water discharge and N/P ratio