

Element geochemistry as a tool for determining the suspended particulate matter (SPM) pollution sources in the Sava River headwaters

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Study area and sampling

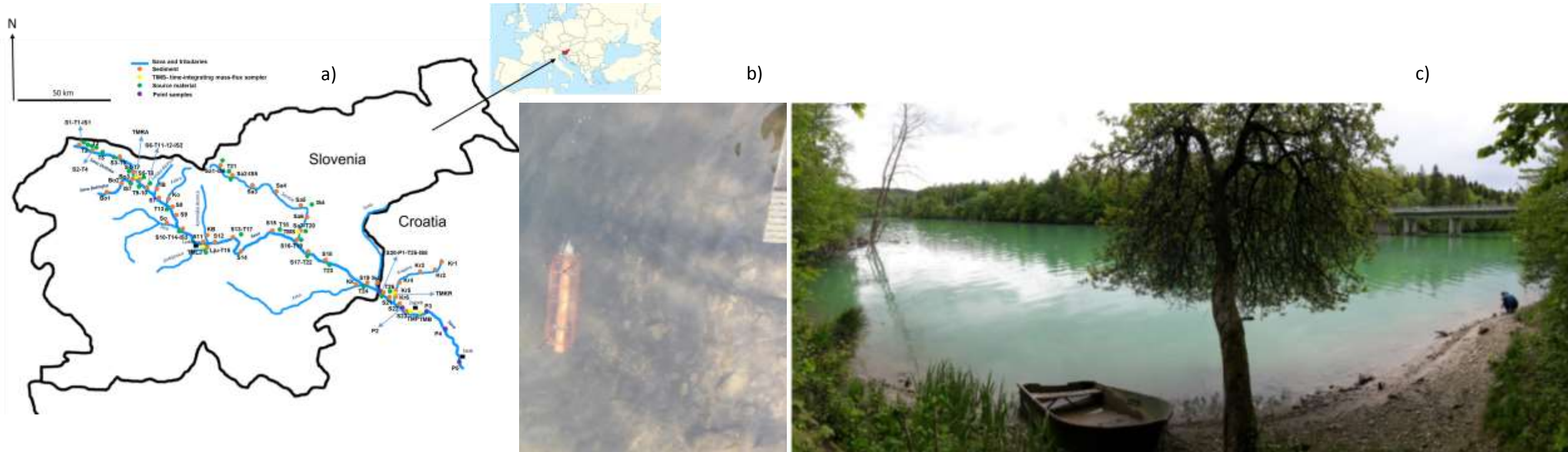
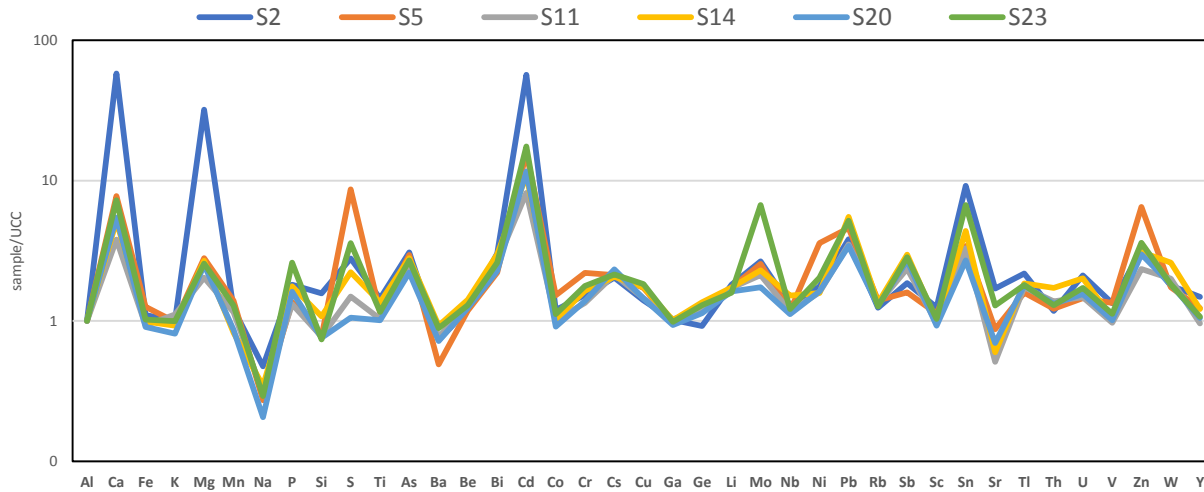
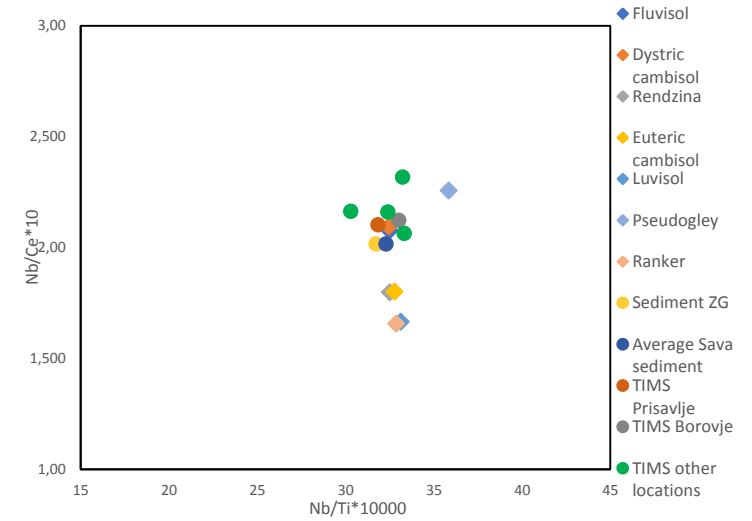


Fig.1. a) Sampling sites along the Sava River; b) Time-integrated mass flux sampler (TIMS) – located in the Ljubljanica River; c) Zbilje lake – sampling location

Geochemical nature of elements in river sediments



Sources of suspended particulate matter



CONCLUSION

- The highest EF values (between 3 and 22) were obtained for potentially toxic elements: **As, Bi, Cd, Cr, Cu, Ni, Mo, Pb, Sb, Sn, Zn and P.**
- Spatial distribution of anthropogenic elements in soils and sediments pointed out three main areas under the anthropogenic pressure;
 - a) first area includes the Moste dam and Acroni Jesenice steel factory, which is characterized by element association of **Cr-Cu-Ni**,
 - b) second area is related to the zinc production in Celje and the element association of **Cd-Mo-Zn**
 - c) third area is related to agricultural activities and sewage discharges in the surrounding of Zaprešič area which is characterized by **Pb-Sn-Zn** element association.
- **Ce, Nb, Ti and Th** were established as the most conservative of the immobile elements, and the best indicators of the SPM sources
- **Fluvisol** was revealed as the most probable source of the SPM of the Sava River upper catchment

