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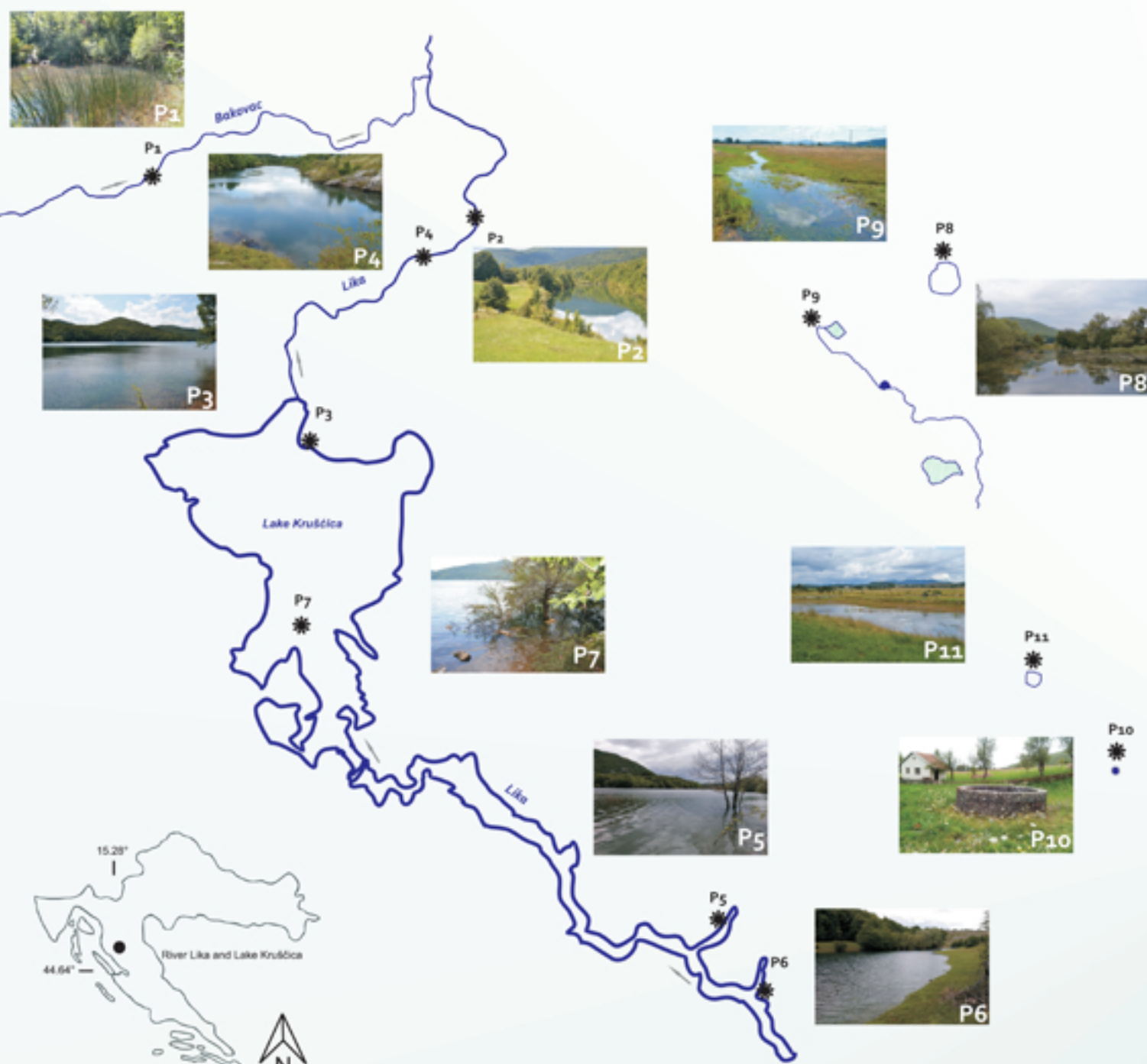


Fig. 1. Schematic view and photographs of sampling sites along investigated area: **P1** - tributary Bakovac, NW from the river Lika; **P2** - River Lika, downstream, slow flow; **P3** - NW access to the Lake Kruščica, near dam; **P4** - River Lika, downstream, fast flow; **P5** - River Lika, upstream, flooded area; **P6** - River Lika, upstream, flooded area; **P7** - SE access to the Lake Kruščica; **P8** - Lake Čatrnja; **P9** - fluviokarstic stream and spring with swamp areas near Sitvuk; **P10** - well from 1891. in Prvan Selo; **P11** - Lake Trnovo.



Fig. 2. Two macroalgae taxa (dried material) **A:** *Batrachospermum* sp., **B:** *Nitella* sp.



Fig. 3. Sampling site **P9** - Dominant taxa **A:** *Gallium* sp., **B:** *Scirpus lacustris* L. and **C:** *Lysimachia nummularia* L.

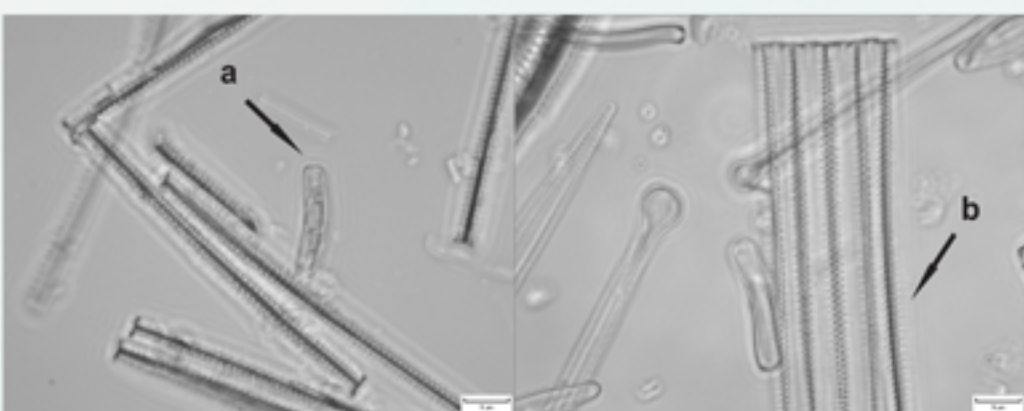


Fig. 4. Light micrographs of dominant phytobenthos species: **a** - *Achnanthes minutissimum* (Kützinger) Czarnecki; **b** - *Fragilaria capucina* Desmazières

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STUDY SITE & OBJECTIVES

Composition and abundance of aquatic flora (phytoplankton, phytobenthos, macrophytes) is one of three biological elements in assessment the ecological status of rivers according to the Water Framework Directive and National Habitat Classification (NHC) which are important tools for categorization of habitats.

The main objective of this study was to describe the phytobenthos and sampling sites according to the NHC along the river Lika (78 km), artificial lake Kruščica (1500 ha) and tributaries in the wider area at the two instances (May and August 2014) (**Fig. 1**). With the main objective, accompanying objectives were: comparison of the composition and creation of a taxonomic list of aquatic macrophytes and phytobenthos. In this investigation we used Croatian Trophic Diatom Index (CTDI) as potentially the best index for phytobenthos community. Each sampling site was characterized by the NHC.

RESULTS

A total of 20 taxa of aquatic macrophytes (**Tab. 1.**) of which 4 macroalgae: *Batrachospermum* spp., *Chara* spp., *Cladophora* spp. and *Nitella* spp. (**Fig. 2.**) were used in the characterization of nine different water habitats on a total of 11 stations processed. Stream near the village Sitvuk (**P9**) was the most interesting with a dominant taxon *Gallium* sp. and species *Scirpus lacustris*, *Lysimachia nummularia* and *Equisetum palustre* (**Fig. 3.**).

A total of 113 diatom taxa was recorded in benthic samples. The most common species were *Achnanthes minutissimum* (17 samples) and *Fragilaria capucina* (16 samples) (**Fig. 4.**) while 58 were recorded only for individual samples of which 19 were recorded in epipelton sample (**P2**).

High number of species found in individual samples indicate specific physico- chemical conditions for some of sampling points. Nine different taxa (*Caloneis silicula*, *Stauroneis phoenicenteron*, *Epithemia frickei*, *Eunotia arcubus*, *Gomphonema augur*, *Gomphonema capitatum*, *Neidium ampliatum* and *Rhopalodia gibba*) found in only one sample counted few individuals or were even seen once during light microscopy (**Fig. 5.**). CTDI was in the range from 1.7 to 2.5 indicating good to moderate conditions (**Fig. 6.**).

| Taxa | Station | | | | | | | | | | |
|---|---------|----|----|----|----|----|----|----|----|-----|-----|
| | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 |
| <i>Alisma lanceolatum</i> With. 1796 | | | | | | | | | | | |
| <i>Batrachospermum</i> spp. | | + | | | | | | | | | |
| <i>Chara</i> spp. | | | | | | | | | | | |
| <i>Cladophora</i> spp. | | | | | | | | | | | |
| <i>Equisetum palustre</i> L. 1753 | | | | | | | | | | | |
| <i>Fontinalis antipyretica</i> var. <i>gigantea</i> (Sull.) Sull. 1864 | | | | | | | | | | | |
| <i>Fontinalis antipyretica</i> var. <i>gracilis</i> (Lindb.) Schimp. 1896 | | | | | | | | | | | |
| <i>Galium mollugo</i> L. 1753 | | | | | | | | | | | |
| <i>Galium</i> spp. | | | | | | | | | | | |
| <i>Iris pseudacorus</i> L. 1753 | | | | | | | | | | | |
| <i>Juncus articulatus</i> L. 1753 | | | | | | | | | | | |
| <i>Lysimachia nummularia</i> L. 1753 | | | | | | | | | | | |
| <i>Mentha aquatica</i> L. 1753 | | | | | | | | | | | |
| <i>Mentha arvensis</i> L. 1753 | | | | | | | | | | | |
| <i>Myriophyllum spicatum</i> L. 1753 | | | | | | | | | | | |
| <i>Nitella</i> spp. | | | | | | | | | | | |
| <i>Potamogeton natans</i> L. 1753 | | | | | | | | | | | |
| <i>Potamogeton nodosus</i> Poir. 1816 | | | | | | | | | | | |
| <i>Scirpus lacustris</i> L. 1753 | | | | | | | | | | | |
| <i>Sparganium erectum</i> L. 1753 | | | | | | | | | | | |

Table 1. List of 20 macrophyte taxa found at 11 sampling points.

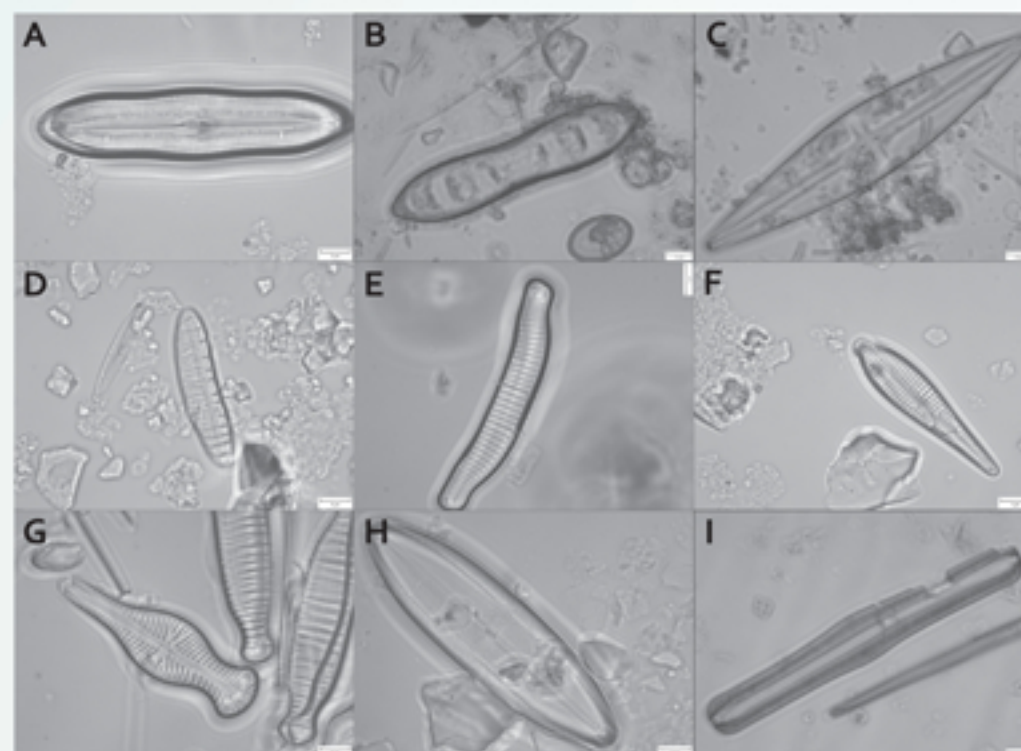


Fig. 5. Light micrographs of rare phytobenthos species: **A:** *Caloneis silicula* (Ehrenberg) Cleve, **B:** *Cymatopleura solea* (Brébisson) W.Smith, **C:** *Stauroneis phoenicenteron* (Nitzsch) Ehrenberg, **D:** *Epithemia frickei* Krammer, **E:** *Eunotia arcubus* Nörpel & Lange-Bertalot, **F:** *Gomphonema augur* Ehrenberg, **G:** *Gomphonema capitatum* Ehrenberg, **H:** *Neidium ampliatum* (Ehrenberg) Krammer, **I:** *Rhopalodia gibba* (Ehrenberg) Otto Müller

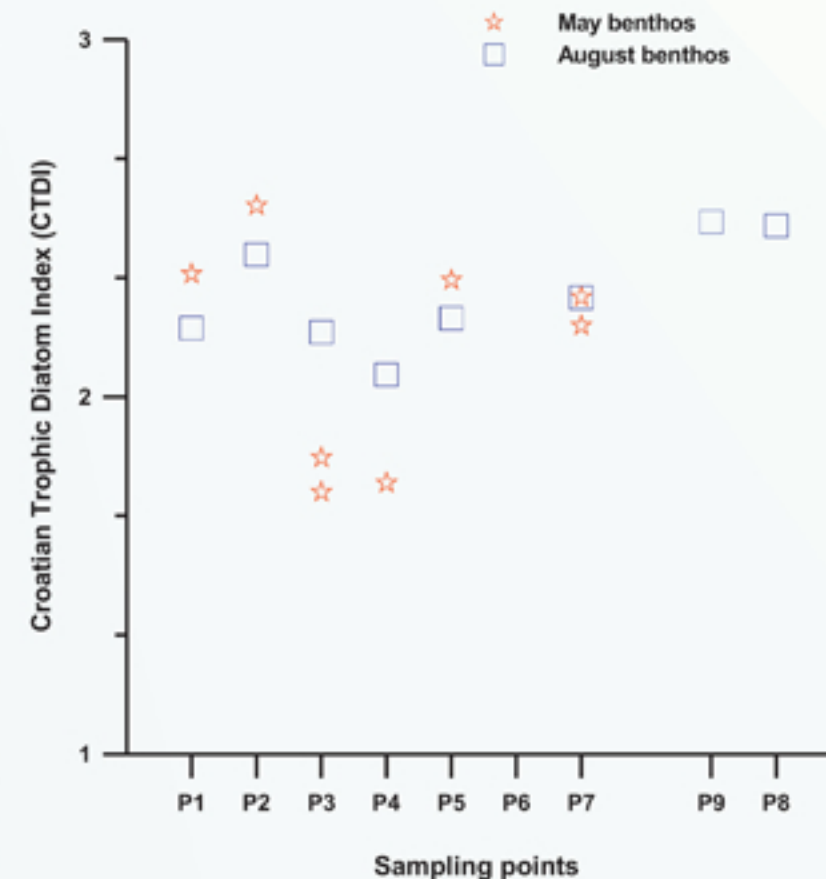


Fig. 6. Croatian Trophic Diatom index for phytobenthos samples respectively according to sampling sites.