



TEMPORAL DYNAMICS OF HALOPHILIC DIATOM TAXA IN A LOWLAND LOTIC SYSTEM IN HUNGARY

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The presence and spread of halophilic and mesohalophilic diatom taxa in freshwater lotic ecosystems are caused both by antropogenic pollution (e.g. crop production, mining) and by natural processes (e.g. increase of nutrients concentration in lack of rainfall). Thus, these taxa are usually sensitive indicators of rapid changes caused by eutrophication, environmental pollution, or climate change.

Diatom assemblages were regularly monitored in lowland lotic systems in Hungary (Central Europe), in the humid spring period and in the dry autumn period of the extremely dry year of 2012. Highly pronounced changes in diatom composition were observed from spring to autumn. Almost in every case, taxa number and relative abundance of small diatom species (e.g. *Achnanthisidium* spp., *Amphora pediculus*) increased, while taxa number and abundance of other genera (e.g. *Navicula* spp., *Nitzschia* spp.) decreased from spring to autumn. Furthermore, it is important to emphasize the appearance of some halophilic and mesohalophilic taxa (especially *Nitzschia sensu lato* species, e.g. *Nitzschia angustata*, *Nitzschia* cf. *lorenziana*, *Nitzschia* cf. *prolongata*, *Tryblionella calida*) in autumn. Not only taxa number but relative abundance of the halophilic and mesohalophilic species increased in the dry autumn (by 48% and 31%, respectively). Abundances of certain taxa (e.g. *Fragilaria pulchella*, *Nitzschia* cf. *lorenziana* and *Nitzschia tryblionella*) showed a positive correlation with chloride and phosphate concentration, while that of other taxa (e.g. *Nitzschia umbonata*, *Tryblionella apiculata* and *Tryblionella calida*) showed a positive correlation with the concentration of nitrate. Our findings point out that these halophilic and mesohalophilic diatom taxa sensitively indicated short-term changes in lowland lotic ecosystems, like increasing salt-concentration from spring to autumn caused by the lack of rainfall and/or environmental loads.