

Monitoring of the invasive diatom *Didymosphenia geminata* in the subarctic and in alpine areas of southern Europe

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In recent decades invasive species have been spreading across Europe. Although the perceptions of invasive species are divergent among researchers there is a general consent that invasive species endanger the diversity of native biota and hence should be monitored to initiate appropriate counter measures in drastic cases. Anthropogenic activities and climate change are the main cause for the enhanced spreading of non-native species to new environments. In this presentation we will present preliminary results from two aquatic case studies, one located in subarctic Iceland (River Elliðaár) and one in the high mountains of Bulgaria (the Seven Rila lakes), focusing on the freshwater diatom *Didymosphenia geminata* (Didymo). The diatom is a single cell algae which's natural habitat is cold fresh water environments with low nutrient content, i.e. mountainous areas in Europe, Asia and North America. In the last decades Didymo has been increasingly observed in new areas, e.g. Iceland, North America and New Zealand. Within the ESENIAS-TOOLS project two field excursions will identify the existence of Didymo in the two study sites and compare current abundance to previous observations. The preliminary results in the Rila Mountains, including both fossil and recent records, confirm that the occurrence of Didymo is restricted to Lake Bliznaka, the largest of the seven lakes located at lower altitude. In River Elliðaár preliminary results indicate a high abundance of Didymo along all sampling locations, confirming the invasive proliferation described in previous studies. The upscaling of the preliminary results from Elliðaár and Rila Mountains can help us to formulate general conclusions about the spreading of this invasive species. Furthermore, this bilateral cooperation can be further extended to other countries and hence contribute to a better management of invasive alien species in Europe.

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