

The invasive diatom *Didymosphenia geminata* in River Elliðaár

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Introduction

- ▶ The diatom *Didymosphenia geminata* (Figure 1, 2) (didymo or rock snot) is a single-cell algae⁴
- ▶ It grows attached to rocks and is abundant in cold, oligotrophic fresh waters

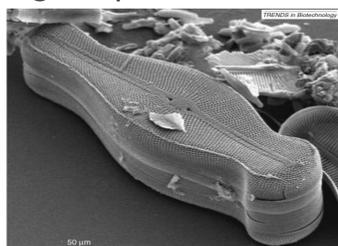


Figure 1. Scanning of *Didymosphenia geminata*



Figure 2. Cells and stalk of *Didymosphenia geminata* from the study area

- ▶ It is native in the northern hemisphere and considered **invasive** in Australia, New Zealand, Chile and Iceland³
- ▶ Increasing cover of *D. geminata* lowers the biodiversity in the river²
- ▶ There is a concern that the didymo has a negative impact on fisheries
- ▶ The existence of *D.geminata* in Iceland was first confirmed in 1994
- ▶ Subsequently the diatom was spreading and is now widely spread in Iceland (Figure 3)¹

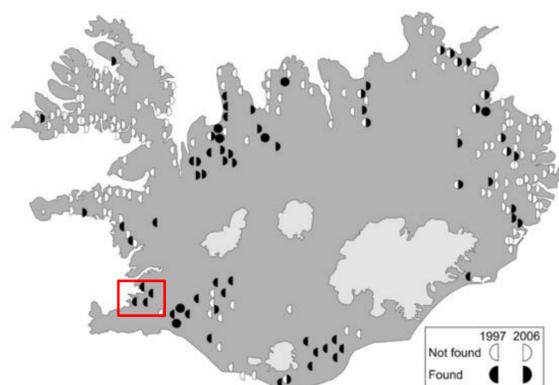


Figure 3. Distribution of *Didymosphenia geminata* in Icelandic rivers in 1997 and 2006.¹ Current study area (River Elliðaár) is marked by a red square.

Study area

- ▶ This study focuses on River Elliðaár, its tributaries (Suðurá and Hólmsá) and Lake Elliðavatn (Figure 3, 4 and 5)
- ▶ New samples were collected from 7 sampling locations: downstream and upstream in each river and in lake Elliðavatn



Figure 4. Sampling in river Elliðaár, July 2015

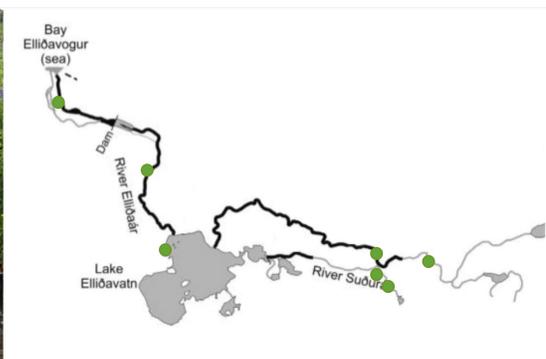


Figure 5. River Elliðaár, Suðurá, Hólmsá and Lake Elliðavatn and sampling locations

Objectives

- ▶ Establish new Status Quo of *D. geminata* in River Elliðaár
- ▶ Assimilate existing physical, chemical and biological data for the Elliðaár watershed, (i.g. data on hydrometeorology, nutrients, invertebrates and fish)
- ▶ Examine the possible impact of *D. geminata* on the other algae and invertebrates
- ▶ Name driving factors enhancing the distribution of *D. geminata*
- ▶ Finally, we will compare the dispersion rates of invasive species in Iceland to dispersion rates observed by project partners in south-eastern Europe in order to characterise dispersion rates according to their climatic setting

Methods

- ▶ Collection and analyses of new diatom samples from the Elliðaár system (Figure 4, 6 and 7)
- ▶ Collide and synthesise available physical, chemical and biological data from the Elliðaár system
- ▶ Standardization of methods to international standards



Figure 6. Sample collection in River Hólmsá, November 2015



Figure 7. Collection of diatoms from river stones, November 2015

Preliminary results

- ▶ *Didymosphenia geminata* is abundant in most samples collected in 2015 (Figure 2 and 8)

Acknowledgements

- ▶ This project is part of ESENIAS - The East and South European network for invasive alien species



Figure 8. Diatom samples from the study area, November 2015

References

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