

CASE STUDY 1:
**Biological and ecological traits
of invasive alien freshwater mussels
in Bulgaria**

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AIM OF THE WORK

Collect and analyse available data on biology and ecology of invasive alien freshwater mussels in Bulgaria inland waterbodies.



Mixed colonies of *Dreissena polymorpha* and *Dreissena rostriformis bugensis*, from the Ogosta Reservoir



Corbicula fluminea from Tsibritsa River

OBJECTIVES

- Collect data on current distribution of invasive alien mussels in Bulgaria → target species could be *Dreissena polymorpha* and *Corbicula fluminea*

- Summarise data on biology and physiological requirements

- Analyse the available environmental parameters

- Predict potential distribution based on biological and environmental data sets

DATA SOURCES

- Survey data (distribution, biological and environmental parameters)



- Existing spatial data and databases compiled from stations monitored by Regional Environmental, Meteorological and Hydrological Laboratories

- Project data

- Data from published sources (distribution, physiological tolerances, biology).

TYPE OF DATA

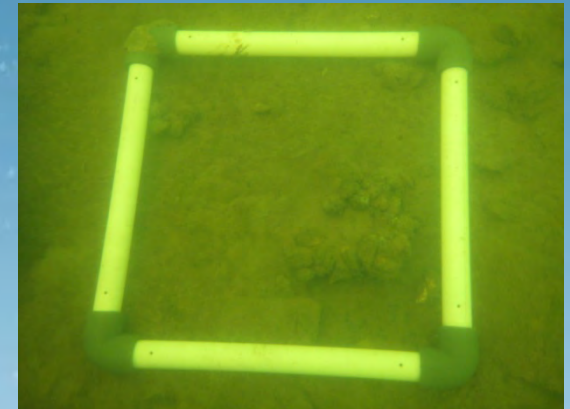
- Abundance in relation to different biometrical categories → Adults – Small adults – Medium size – Very small



Example of colony of *Dreissena polymorpha* with individuals of different size

- Sampling method → Dredge – Petersen Grab – Diving

During sampling by diving we used the “square” method



- Physico-Chemical parameters (e.g. pH, water temperature, saturation

STATISTICAL APPROACH

We we'll try different programs and approaches (GLM, PCA, biological traits analysis) to find the best predictive model for Bulgarian inland water bodies.

CANOCO

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MAXENT

Study visits:

May 2015

February-March 2016

