Aquatic Insect Lab

David Boukal working group

Unraveling the responses of freshwater macroinvertebrates facing multiple stressors from local to global scales

Talk by Samuel Dijoux (PhD student)

Přírodovědecká fakulta
Faculty of Science

Department Ecosystem Biology,
University South Bohemia

Lab. Aquatic Insect Ecology & Relict Ecosystems
ENTU, Biology Centre AV CR

BIOLOGICKÉ CENTRUM AV ČR, v. v. i.

Freshwater habitats under multiple stressors

Our pet subjects: aquatic macroinvertebrates !

- **Indicators of the state of aquatic ecosystems**
- **Wide and variable trophic niches**

Simple to manipulate

Variety of life strategies

From small to large scales: a variety of approaches to combine

Field sampling

Field experiment

Mesocosms

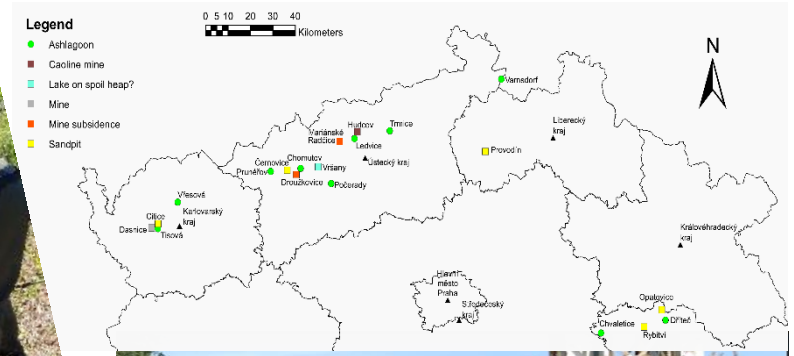
Laboratory experiments

Theoretical modelling

Realism

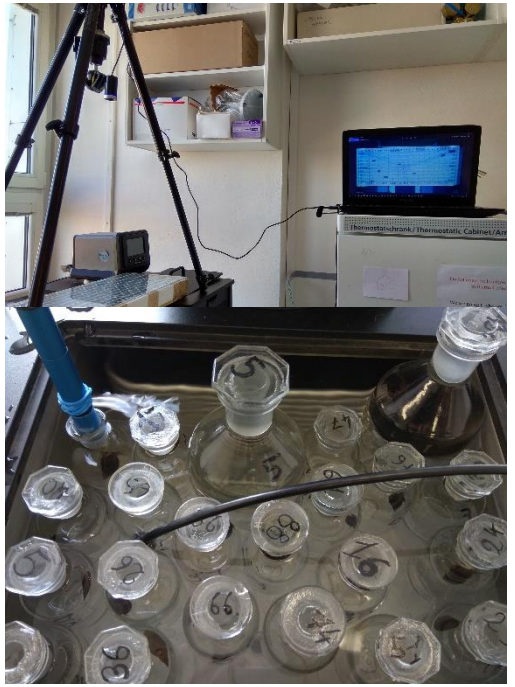
Control of environment / Simplicity

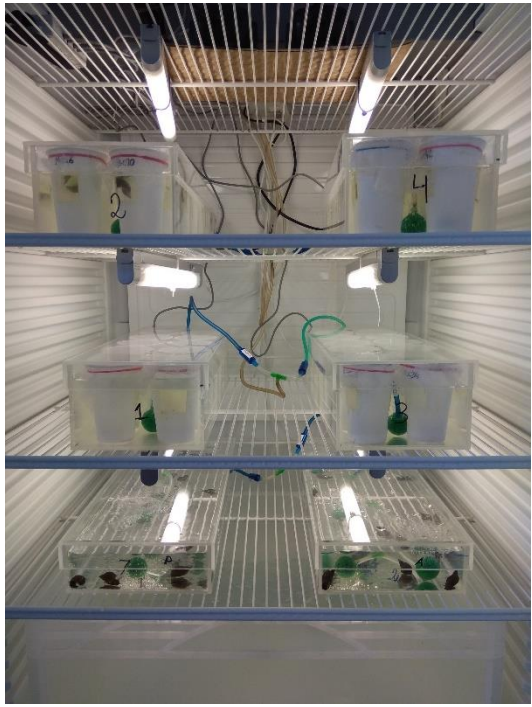
Current projects: Impacts of heavy metals on macroinvertebrate communities



- Inventory of the biodiversity in polluted freshwaters
- Analysis of heavy metal content in selected biota
- Transplant experiments to test possible adaptation/acclimation of species to pollution

Current projects: Local adaptations to urbanization



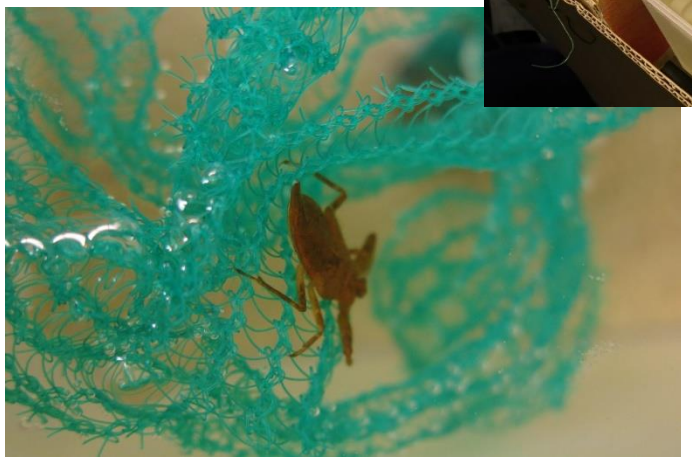


- Studying biodiversity in small standing waters around cities
- Analyzing species adaptation to varying temperature conditions

Current projects: Monitoring the colonisation of macroinvertebrates in post-mining sites

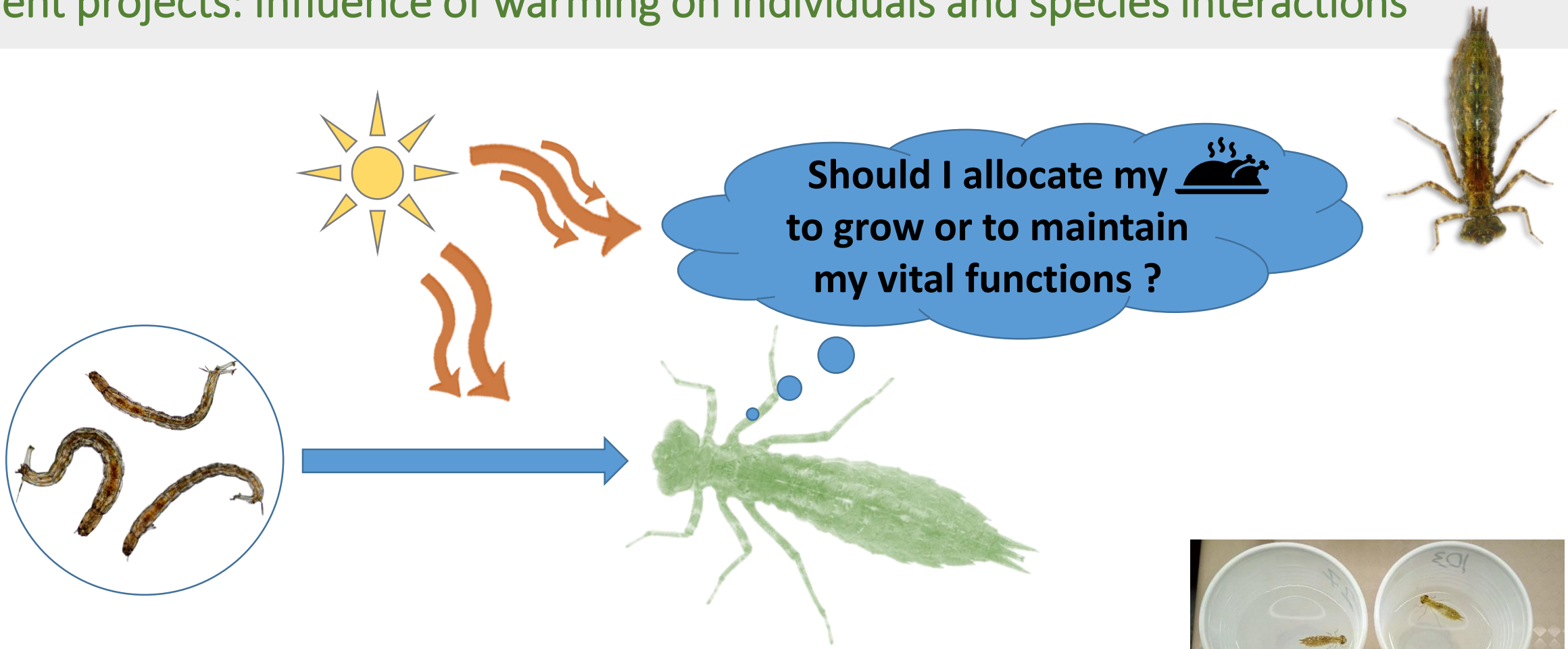
- Biodiversity of post-mining sites
- Ongoing long-term study of community assembly
- Aquatic-terrestrial coupling (dispersal and emergence patterns of chironomids)

Current projects: Effects of habitat complexity on predator-prey interactions



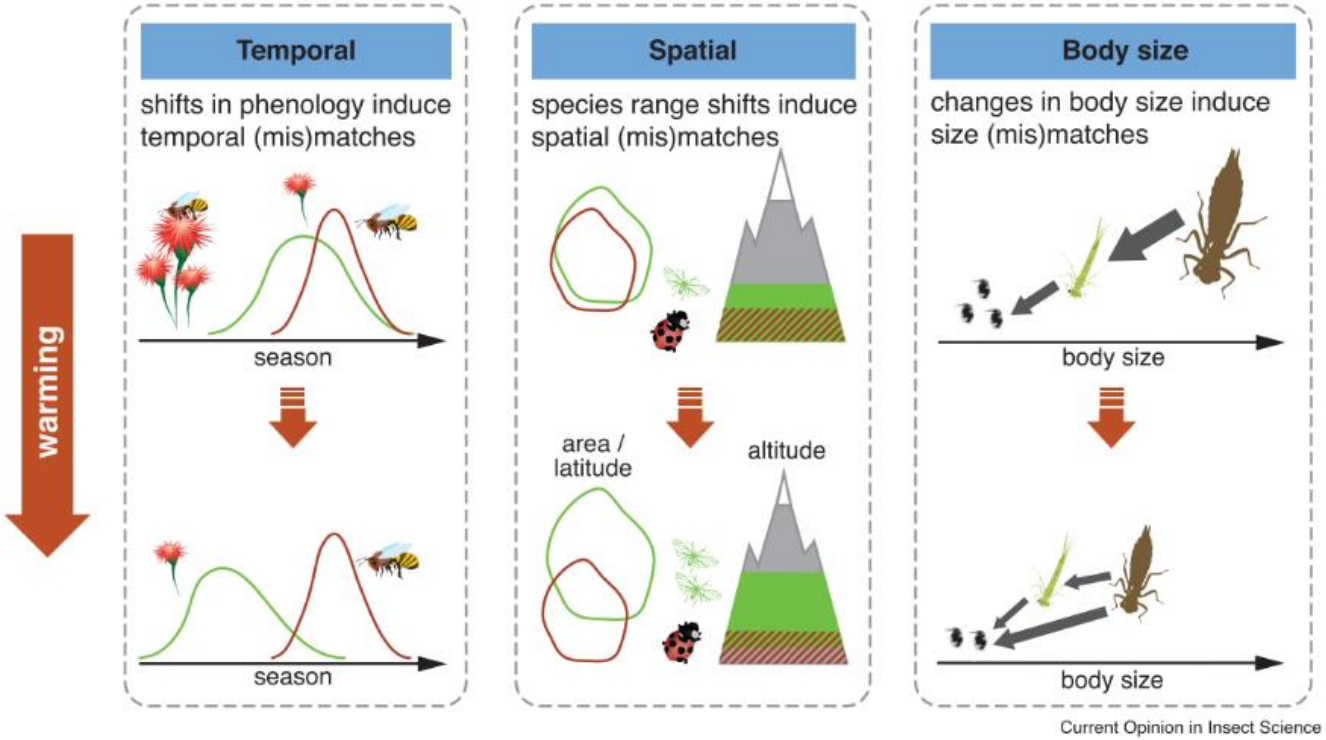
- Mesocosm and lab experiments
- Measuring the effect of habitat complexity on predation

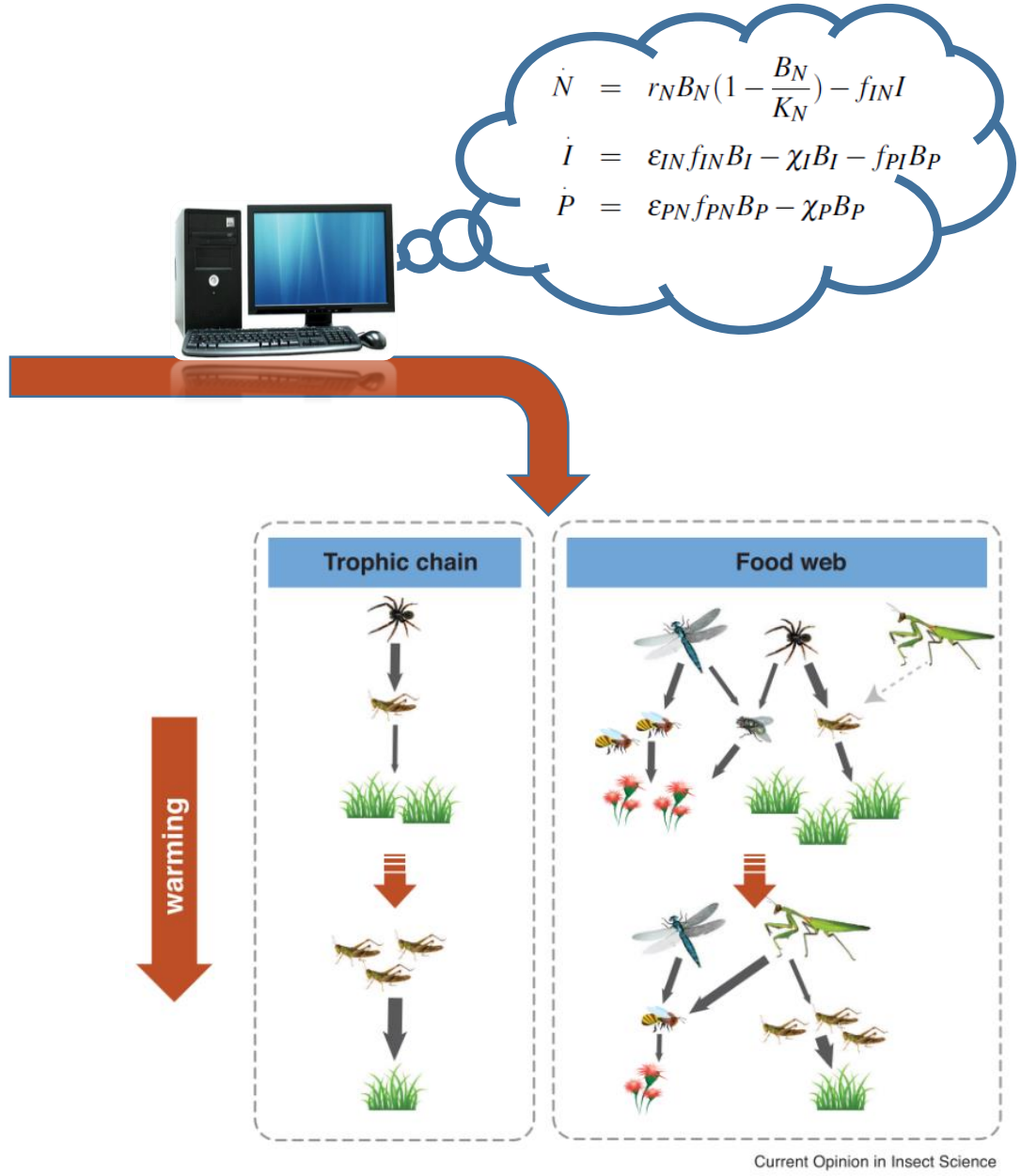
Current projects: Influence of warming on individuals and species interactions



- Laboratory experiments
- Measuring how temperature alters behavior, physiology and trophic interactions in selected aquatic macroinvertebrates

Current perspectives: Trophic interactions under global change





- Theoretical modelling
- Predicting how species responses to global changes affect the structure of food webs

Our Team: Join us!

Samuel Dijoux

dijous00@prf.jcu.cz

David Boukal

dboukal@prf.jcu.cz

International team

- 3 Post-Doc researchers
- 6 PhD students
- 1 Technician

~ 3-6 internship students/year (MSc./Bc.)