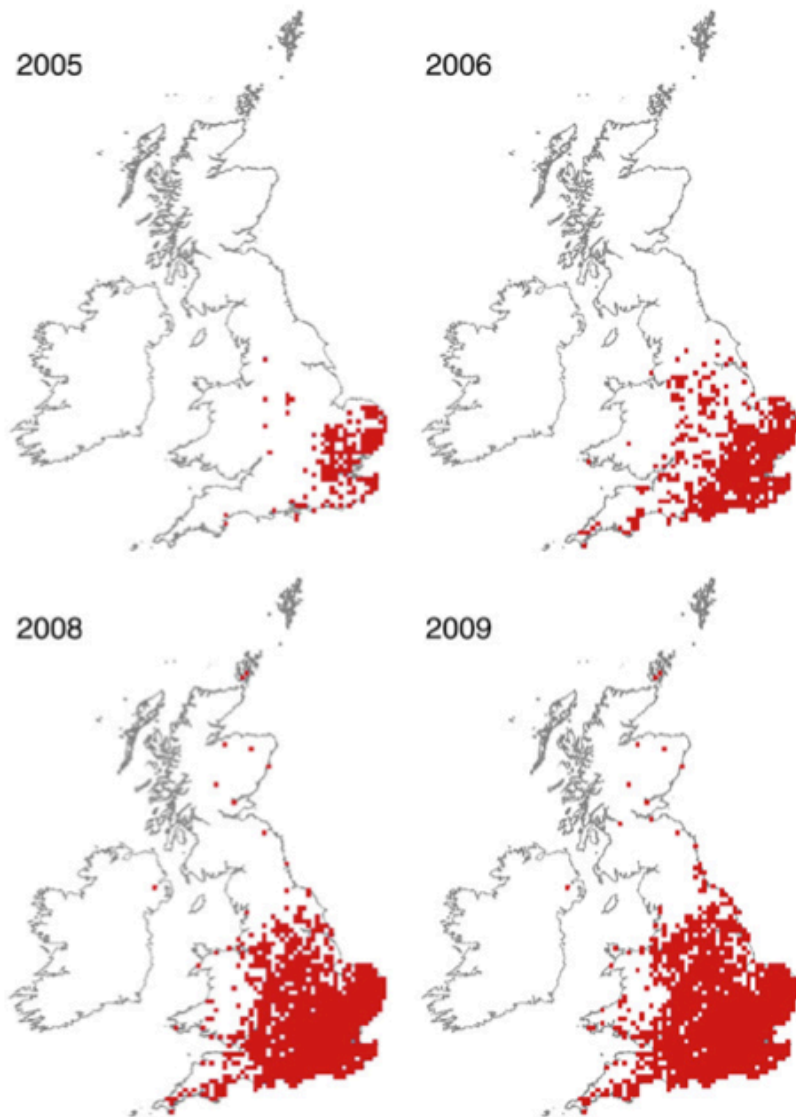




# Heterogeneity of patterns and processes along biological invasion successions (*PROBIS*)

Biodiversa European Joint Call 2012-2013,  
financially supported by the following  
national Agencies (**ONEMA, DFG, SEPA,**  
**FORMAS**)

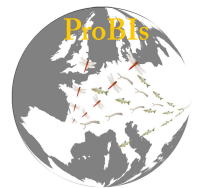




**Traits beneficial** in the  
**early**  
**phase** of an invasion  
might differ from those  
favoured at **later stages**.



**Phenotypic variation**  
**Demographic variation**  
**Genetic variation**





## Along an invasion gradient:

B.

### 1) Characterizing patterns of **traits variation**:

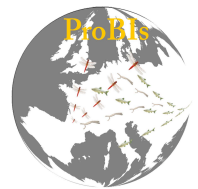
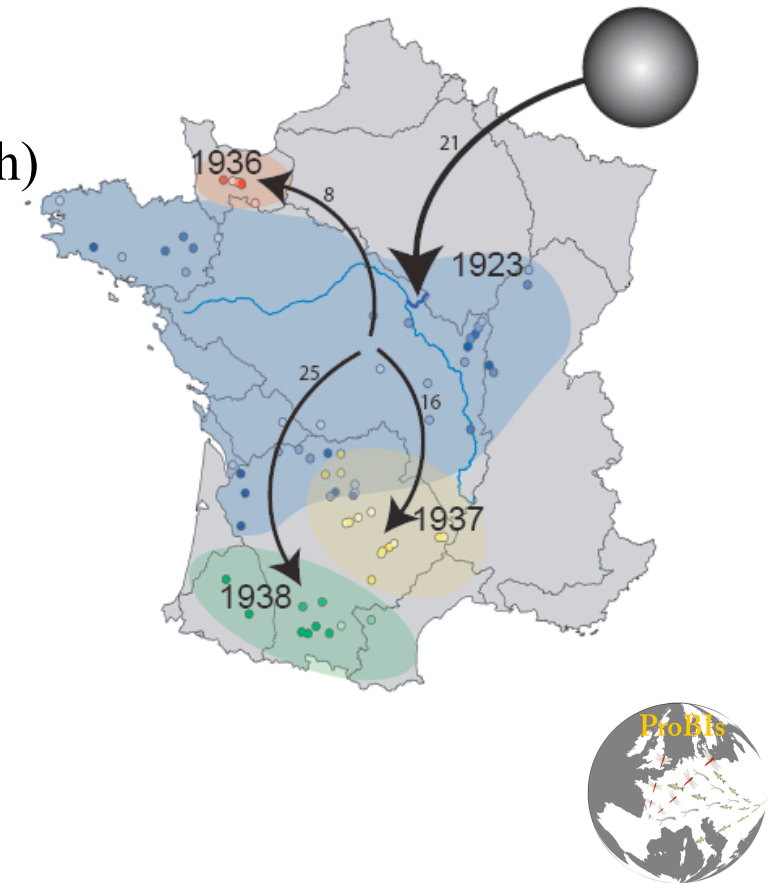
- **Phenotype** (behavior, morphology, physiology)
- **Life history traits** (survival, reproduction, growth)
- Genetic (relatedness)

### 2) Test for the underlying **evolutionary processes**:

- Phenotypic plasticity and/or natural selection
- **Gene expression** and **sequence polymorphism**

### 3) Role in **invasiveness** and invasion success:

- **Experiments**
- **Modelling**



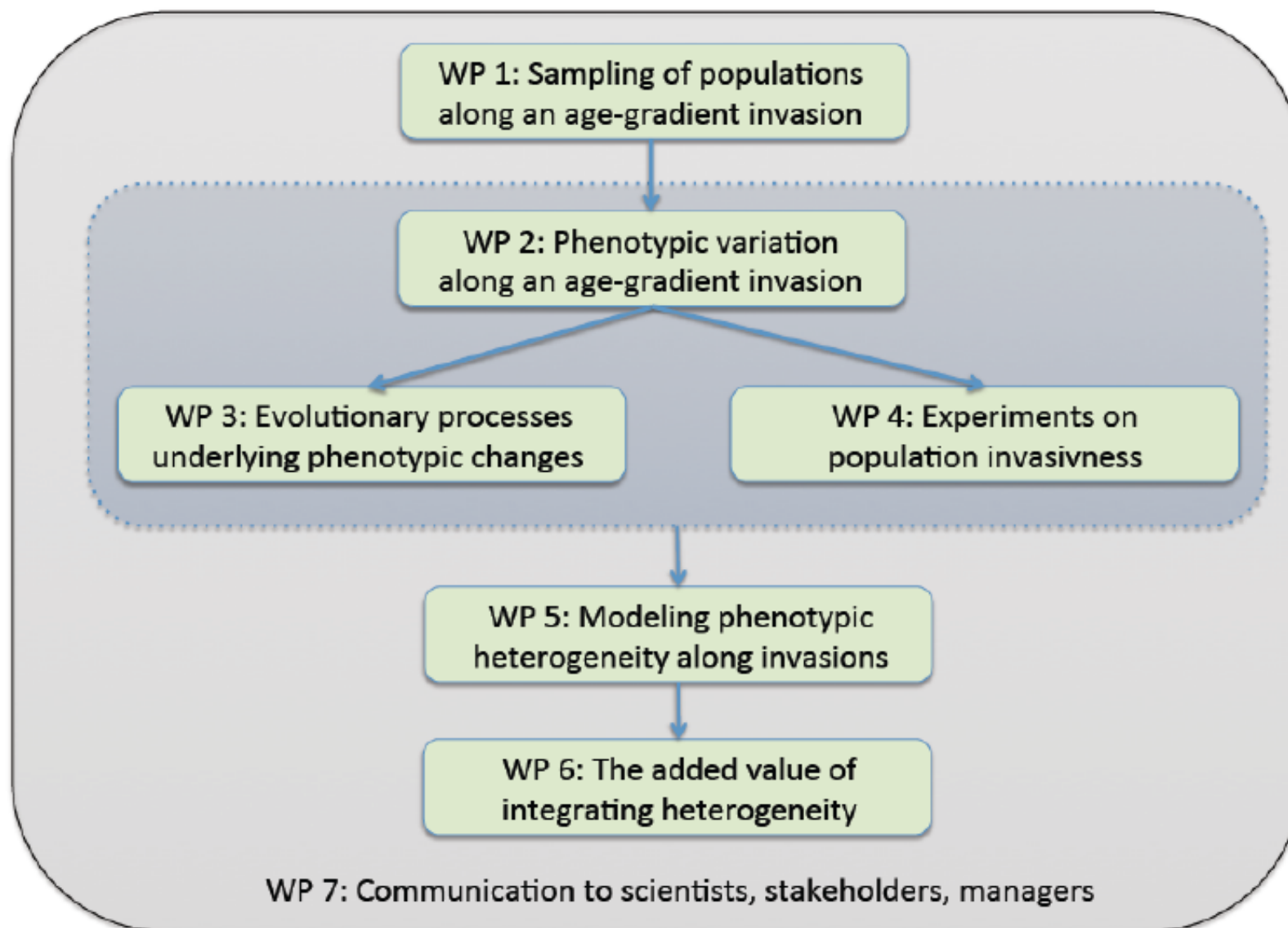
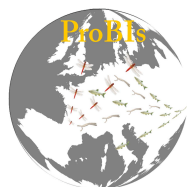


Figure 1. Structure of PROBIS in to seven work-packages (WPs).

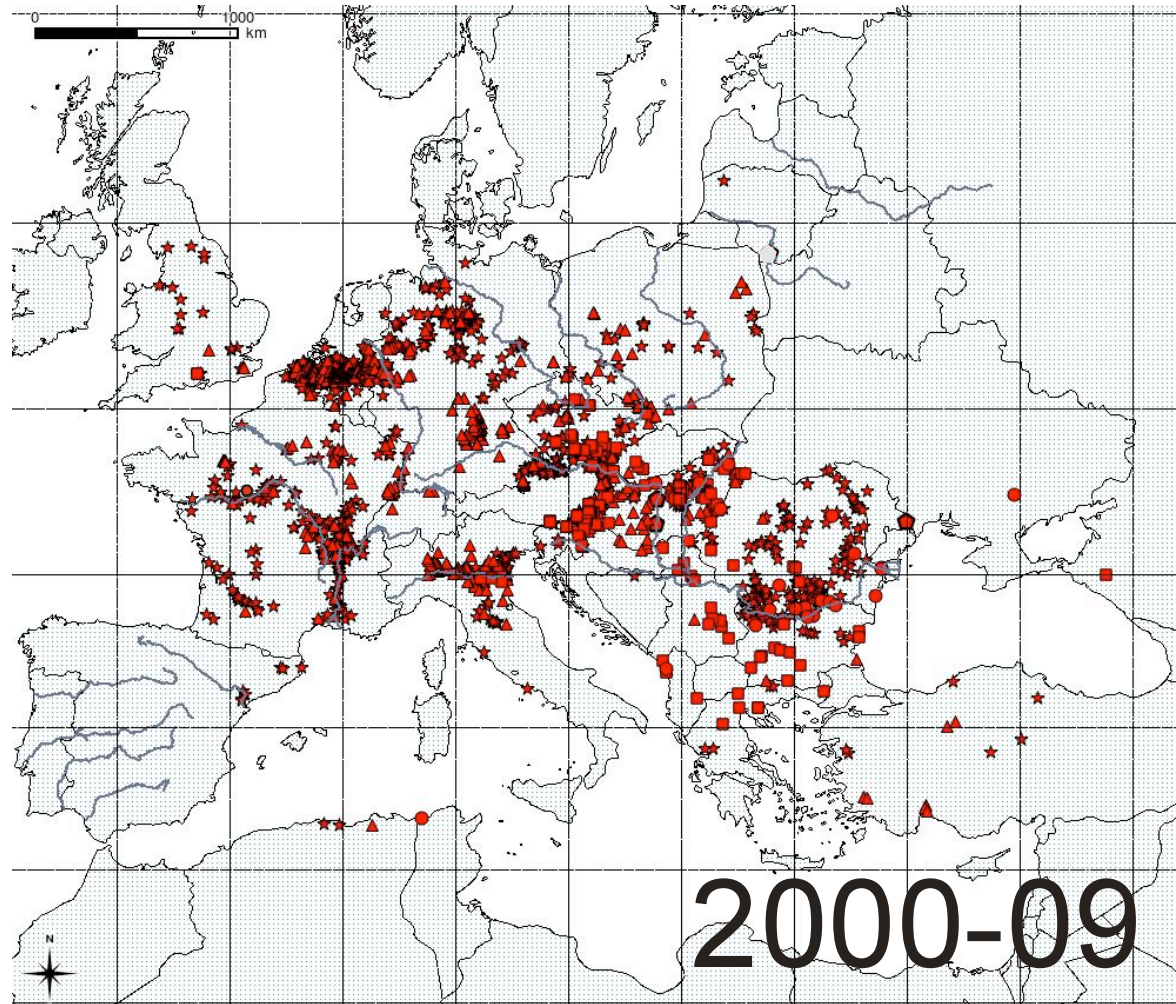


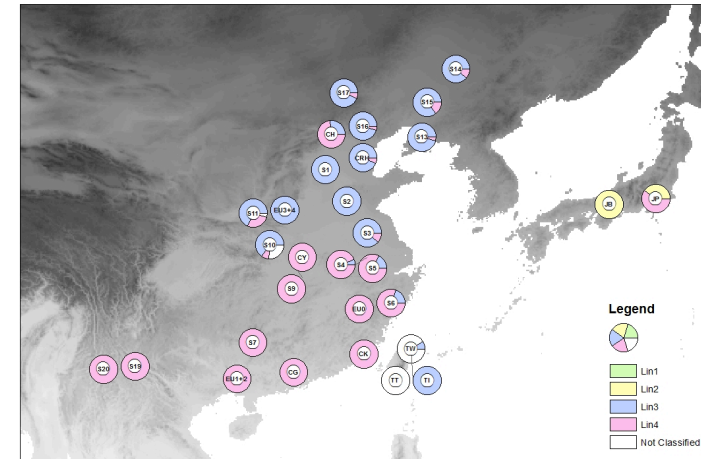
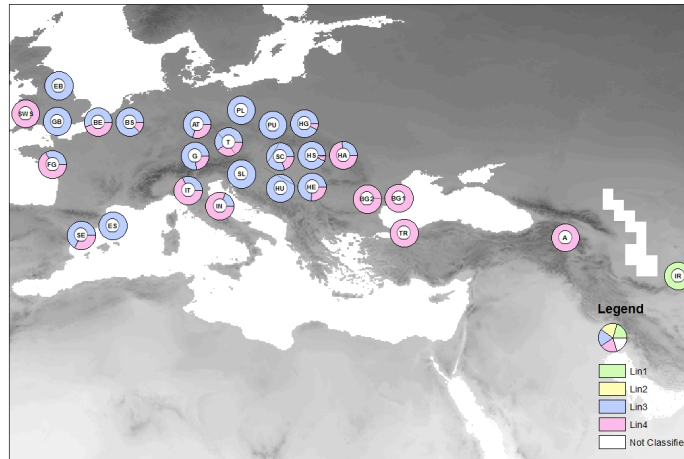


Topmouth gudgeon  
*Pseudorasbora parva*

**Rapid invasion** due to  
Accidental transport  
via fish farming trade

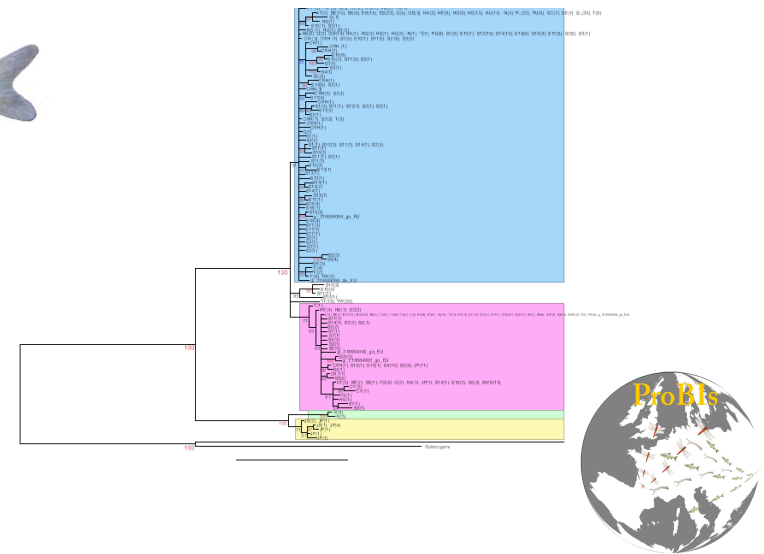
Gozlan et al. (2010)

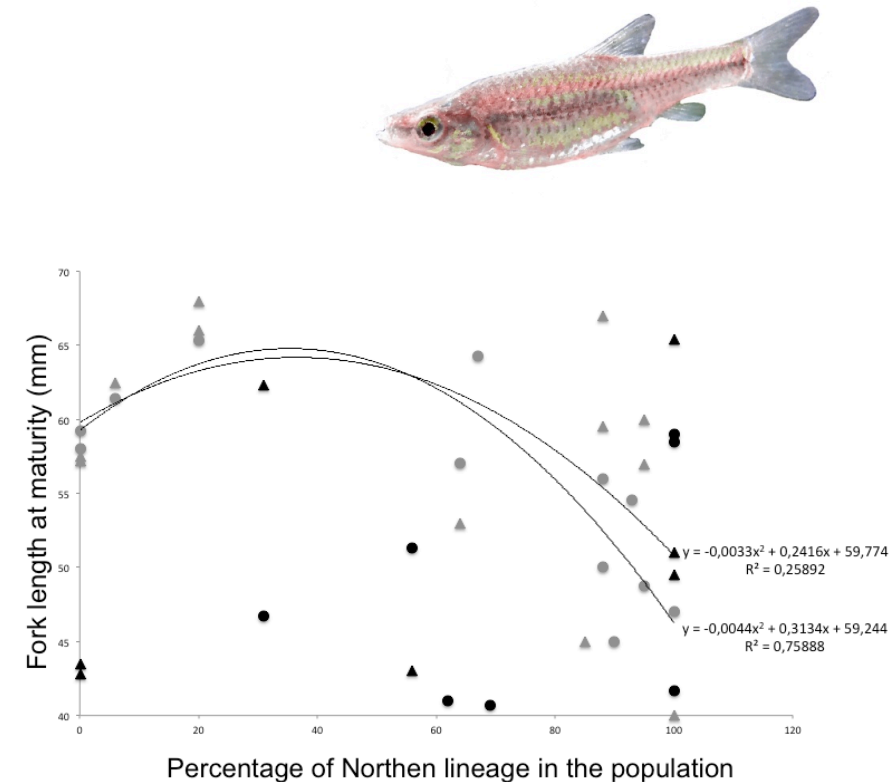
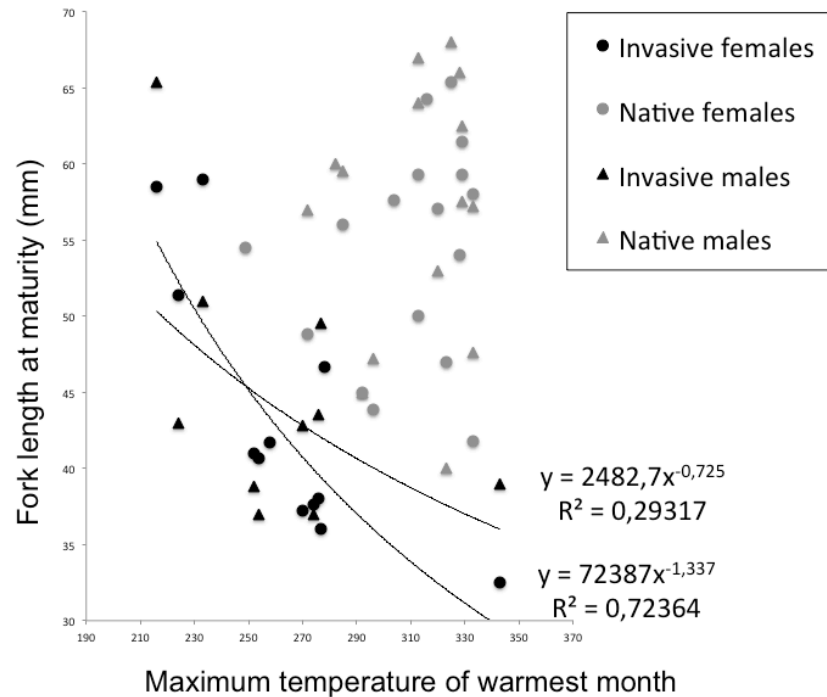




**Admixed** invasive & native  
population

Simon et al. (2011)





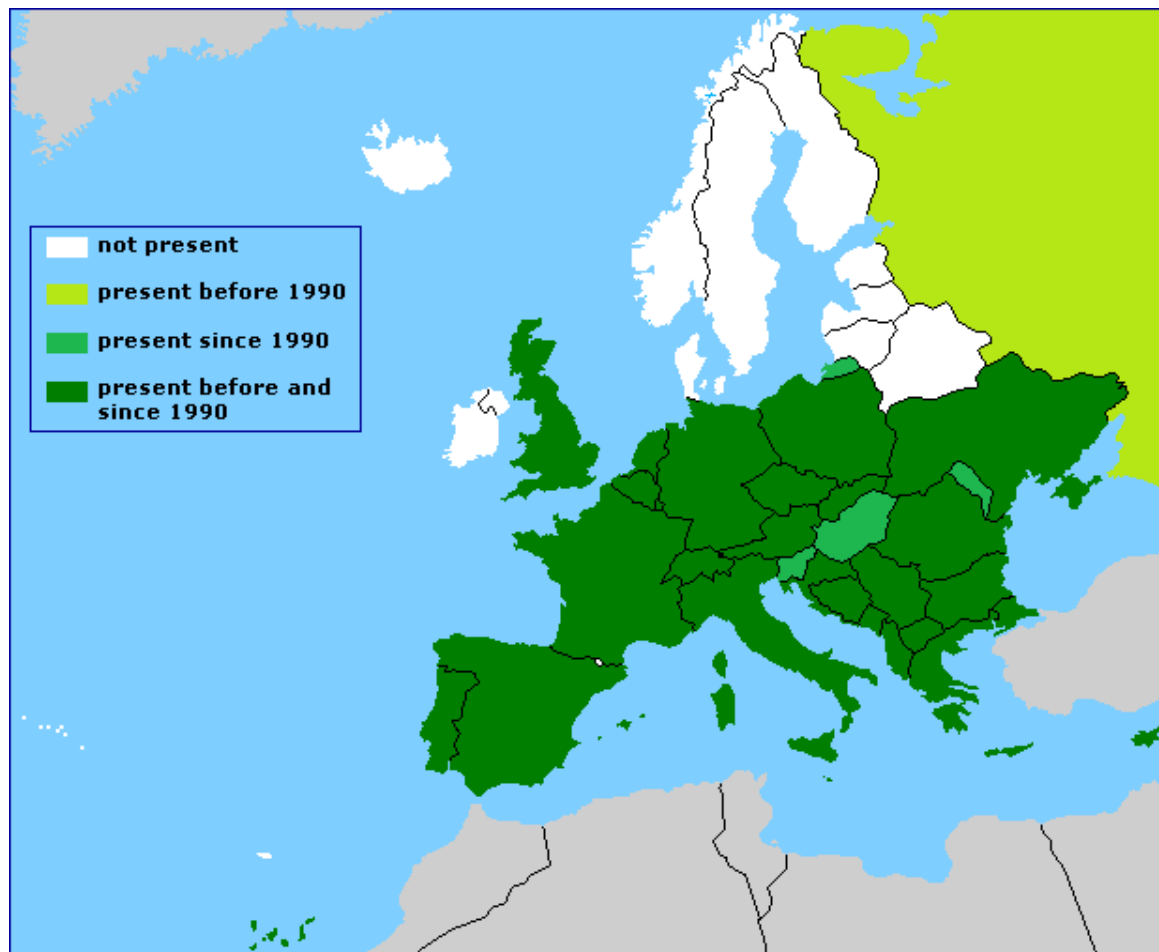
Sex and Range specific life history trait . Gozlan et al. (2014)







Common scarlet-darter  
(*Crocothemis erythraea*)

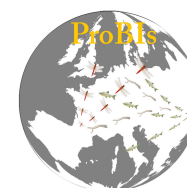
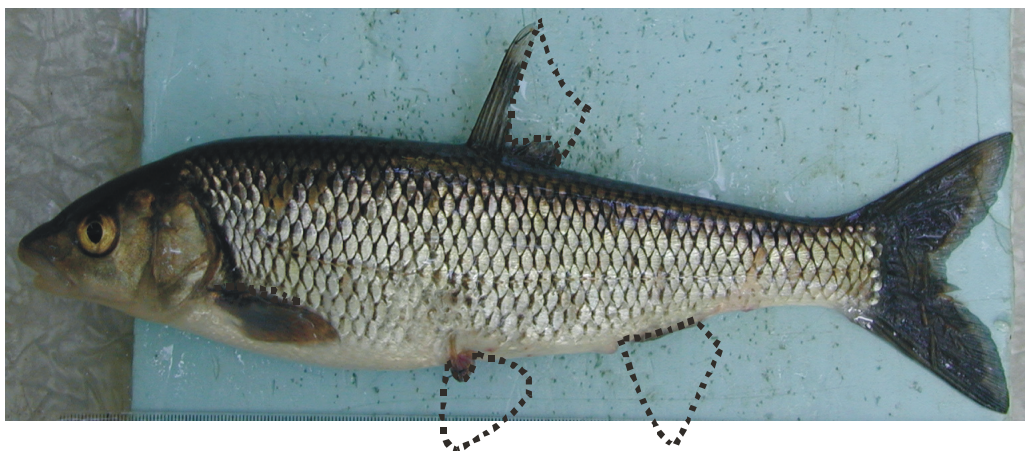
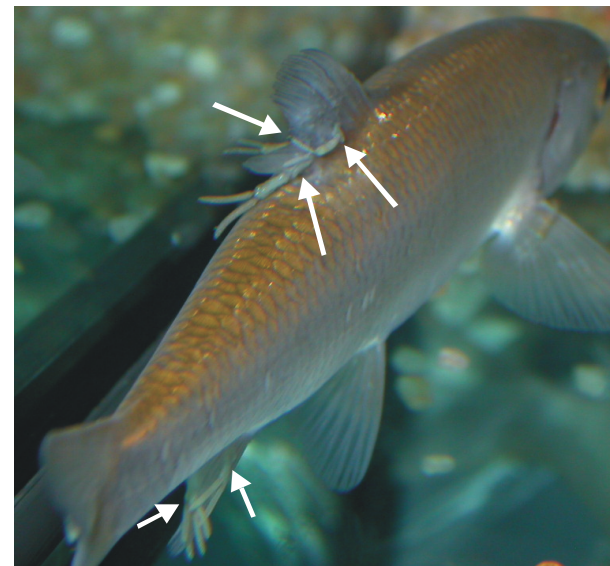






*Tracheliastes polycolpus*

Copepod, Lernaepodidae





## *Schedule 2014-2016*

- 1) **Phenotypic variation** along an age-gradient invasion
- 2) Genome wide **sequencing**
- 3) **Experimental approach** test the reaction norm of fitness related traits across the invasive range
- 4) **Develop a dispersal model** based on existing data

