



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY



**Long-term monitoring indicates that land use and soil drainage interactions drive macroinvertebrates and diatoms composition but not diversity in Irish agricultural catchments**

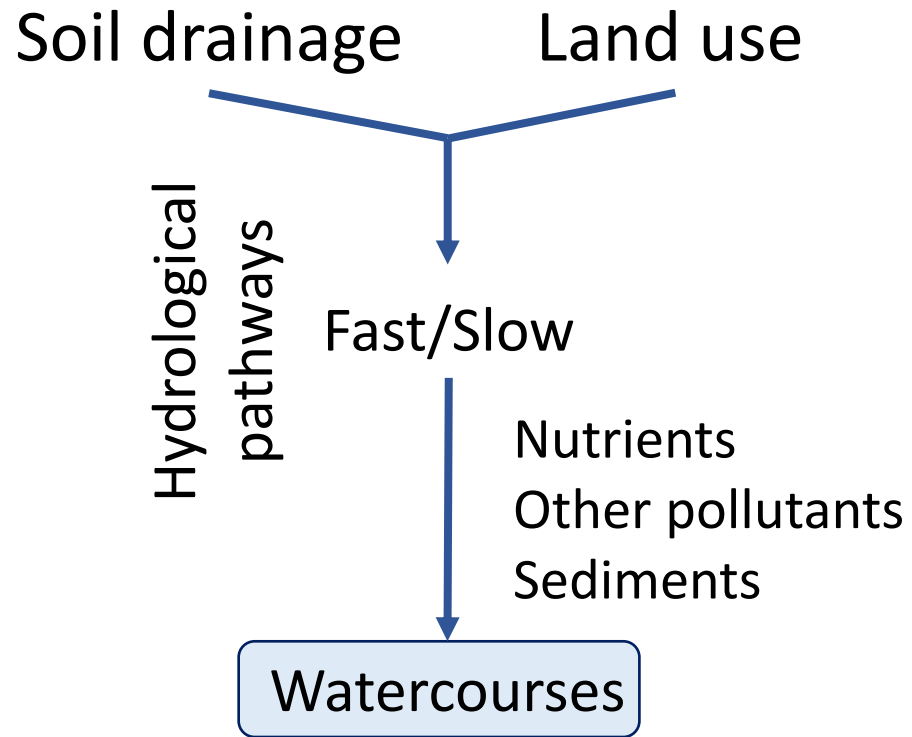
**Jean C. G. Ortega, Rebecca Hall, Per-Erik Mellander**

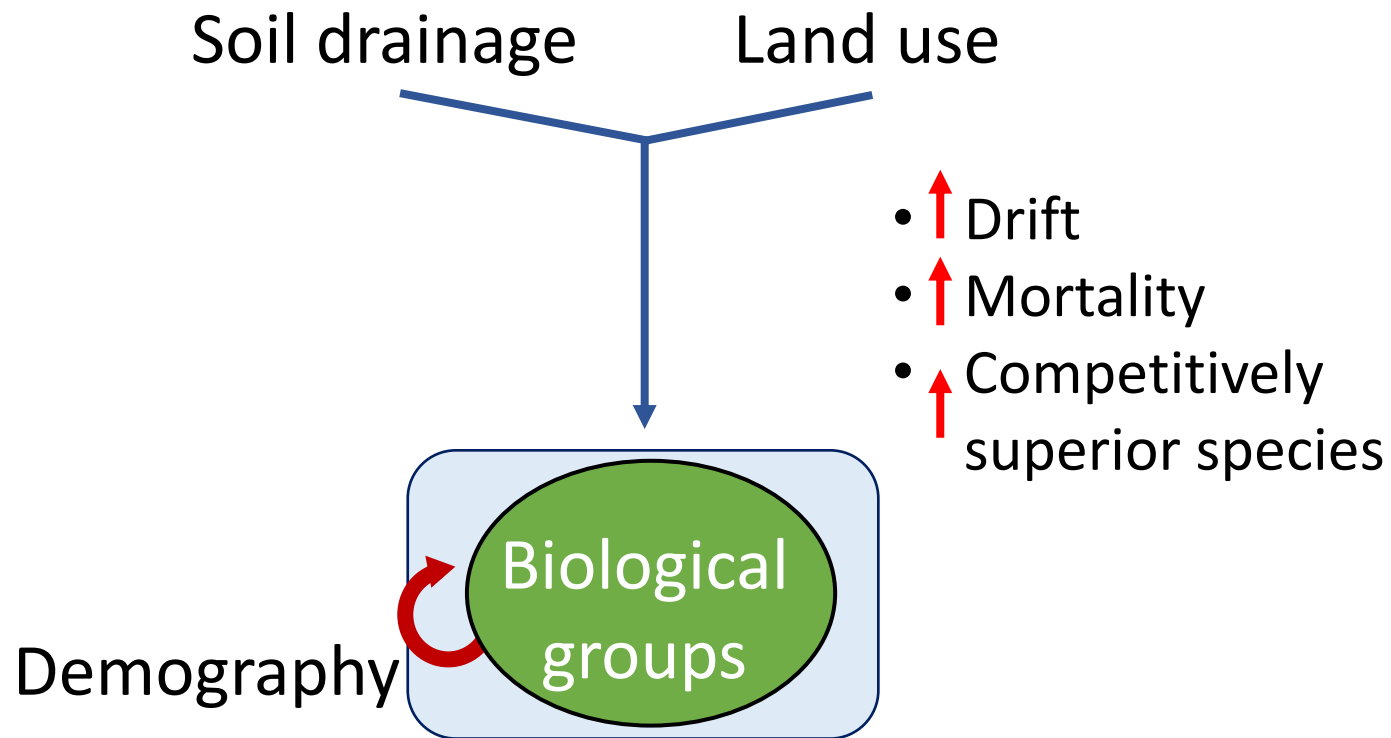
Agricultural Catchments Programme

Teagasc Research Centre, Johnstown Castle, Co. Wexford

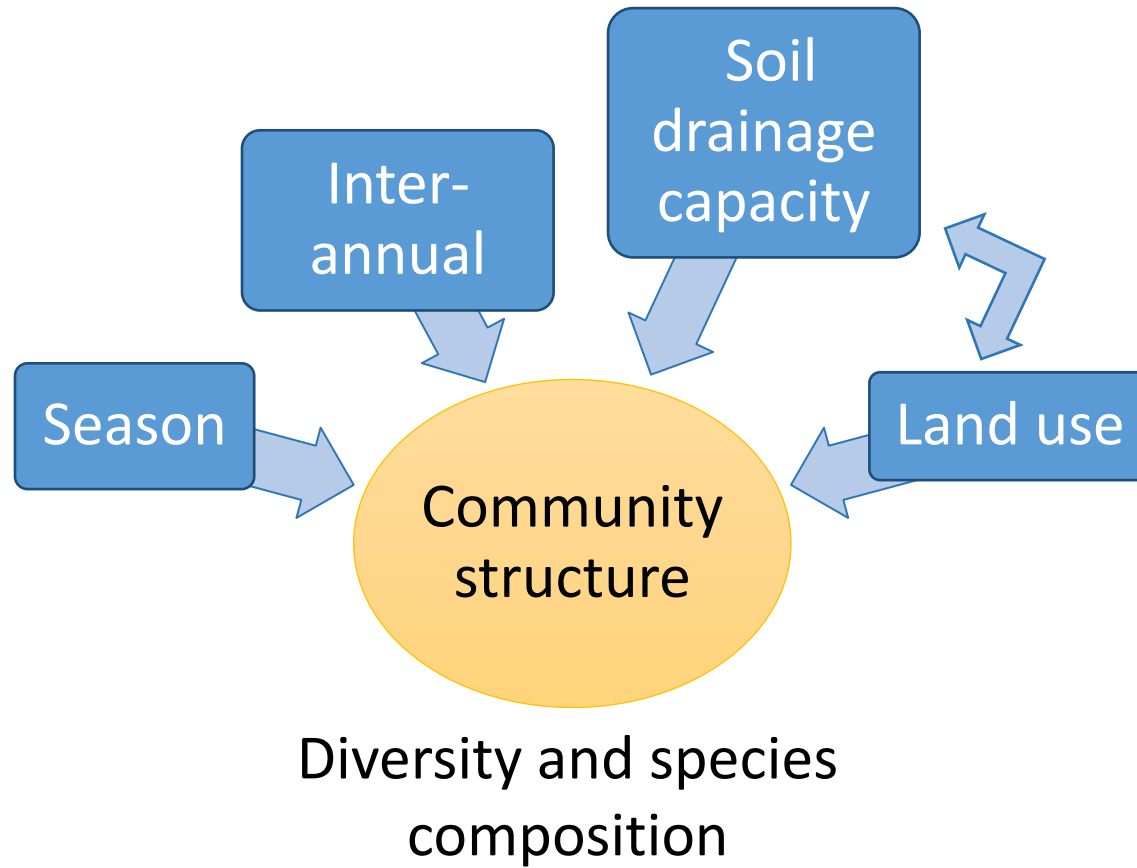
[jean.ortega@teagasc.ie](mailto:jean.ortega@teagasc.ie)

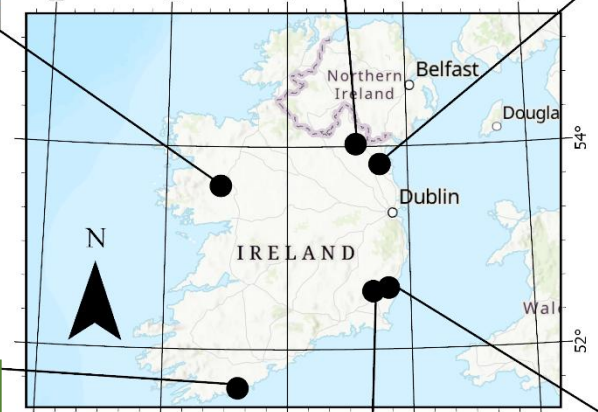
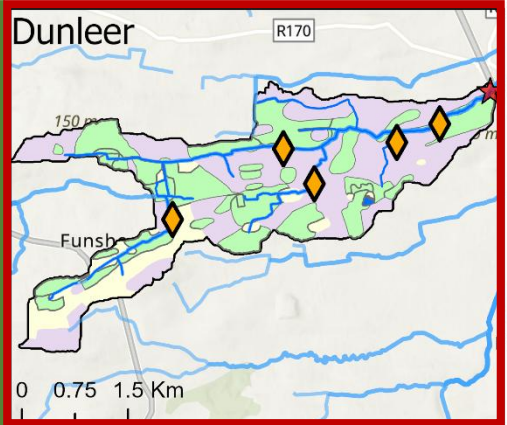
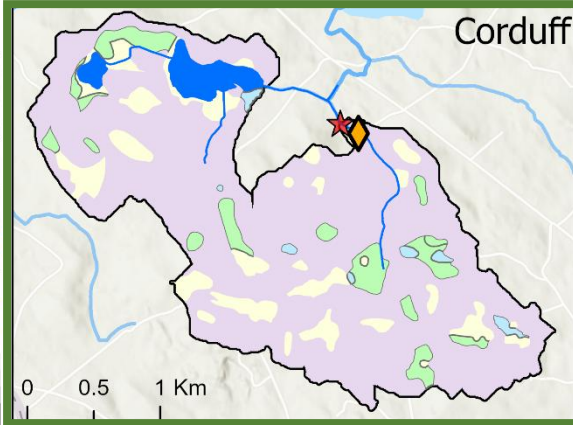
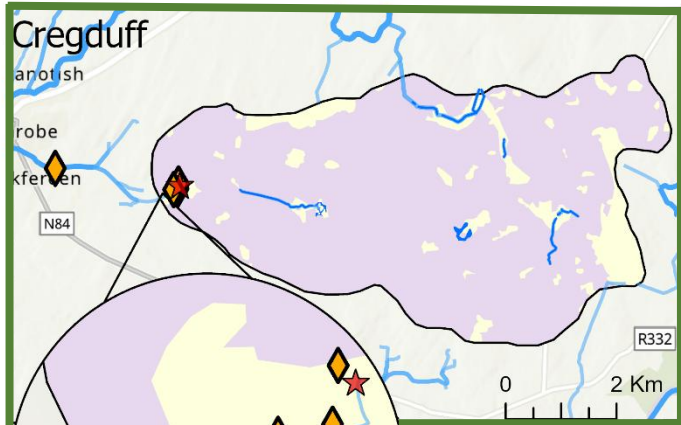
# Surrounding land-watercourse relation





- Seasonal emergence
- Recolonization after spates
- Stochastic birth/death/migration



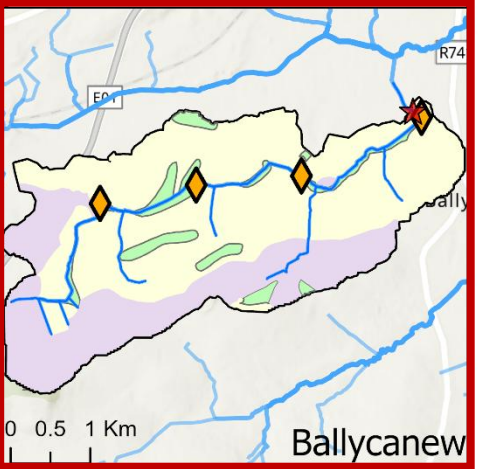
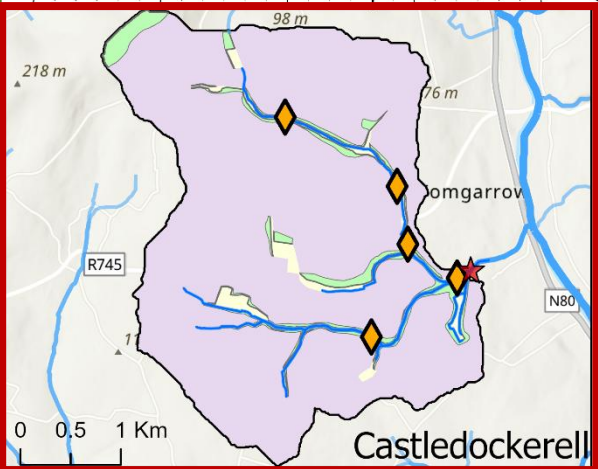
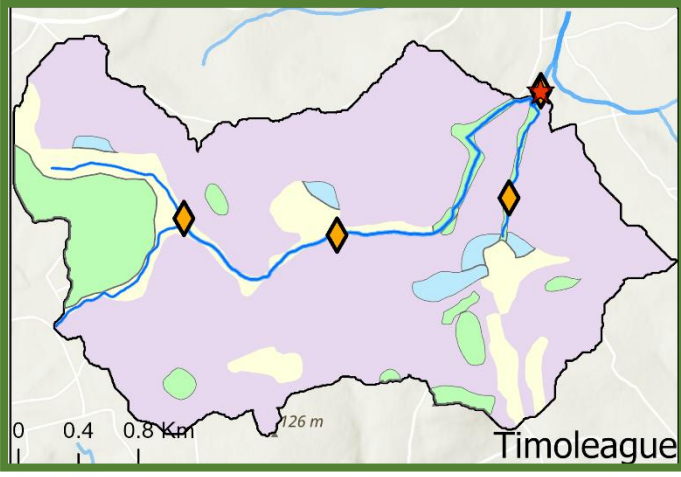


**Soil drainage**

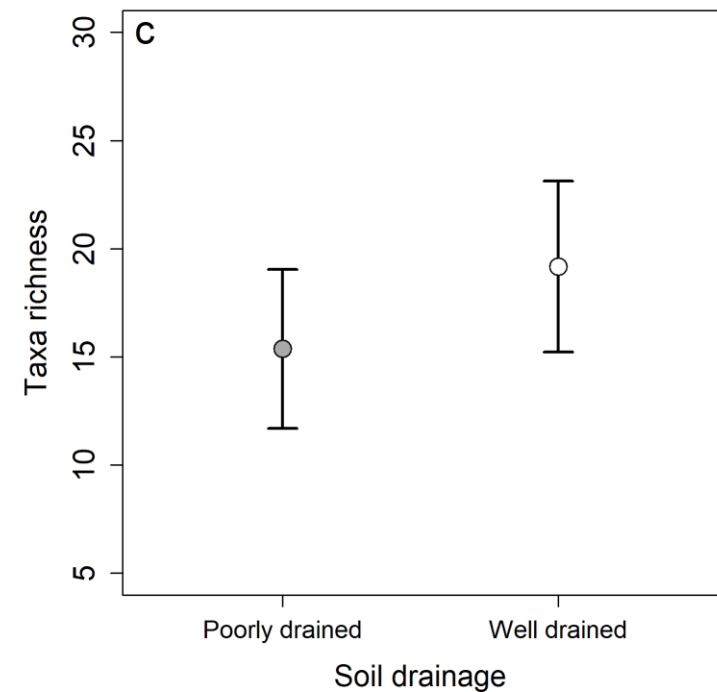
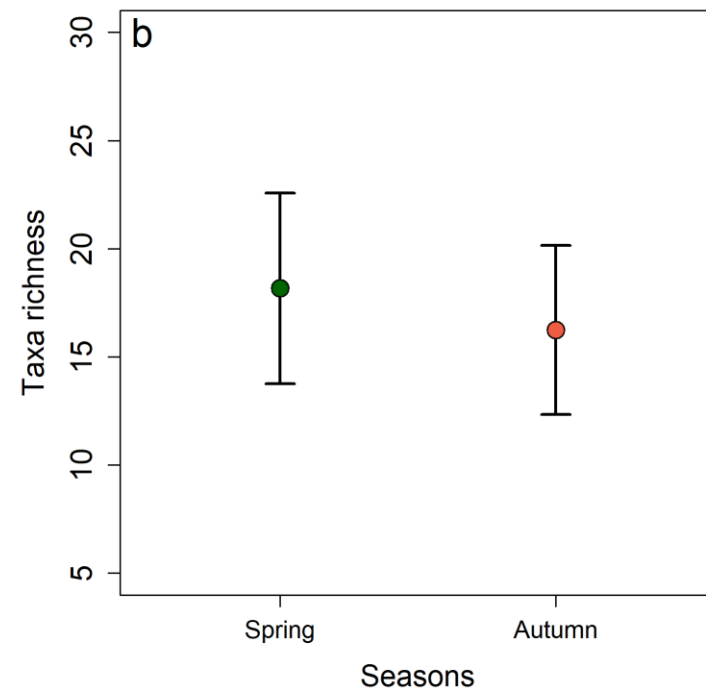
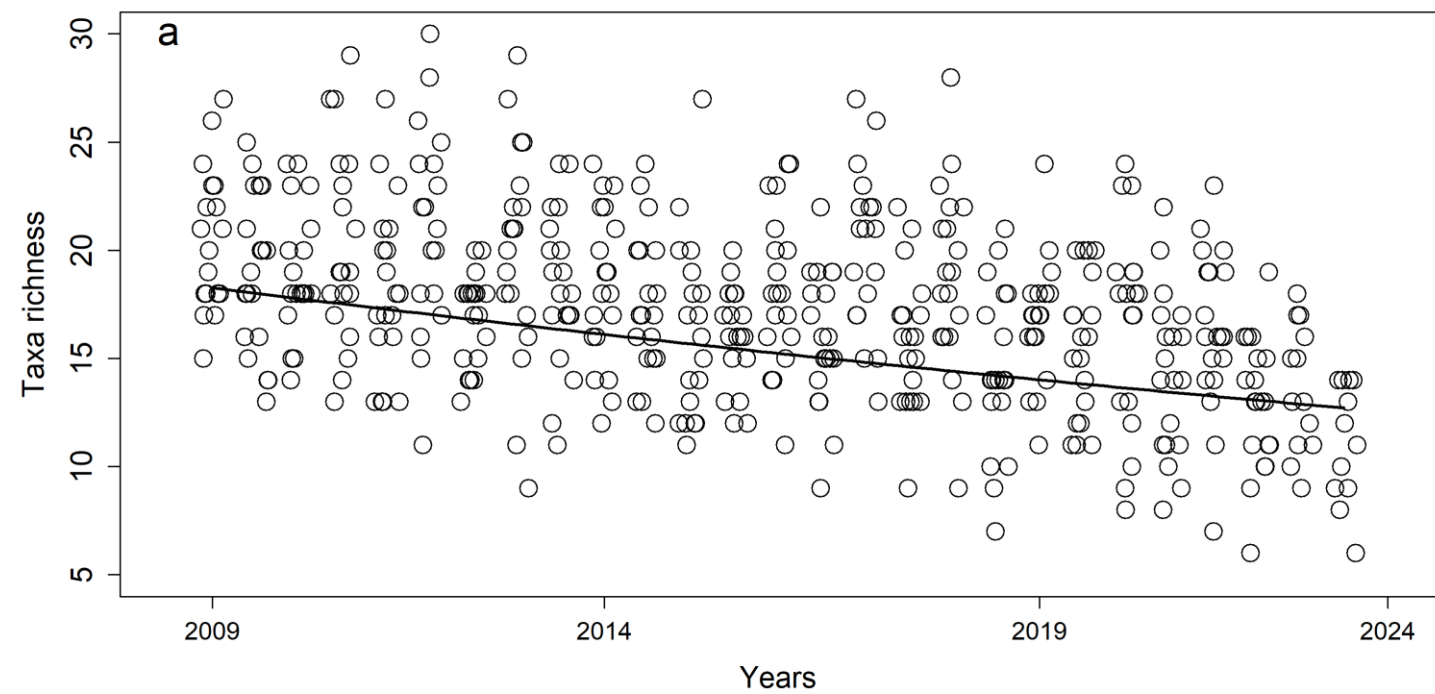
- Water
- Poorly
- Moderately
- Imperfectly
- Well

- ★ Outlet
- ◆ Biological sampling sites

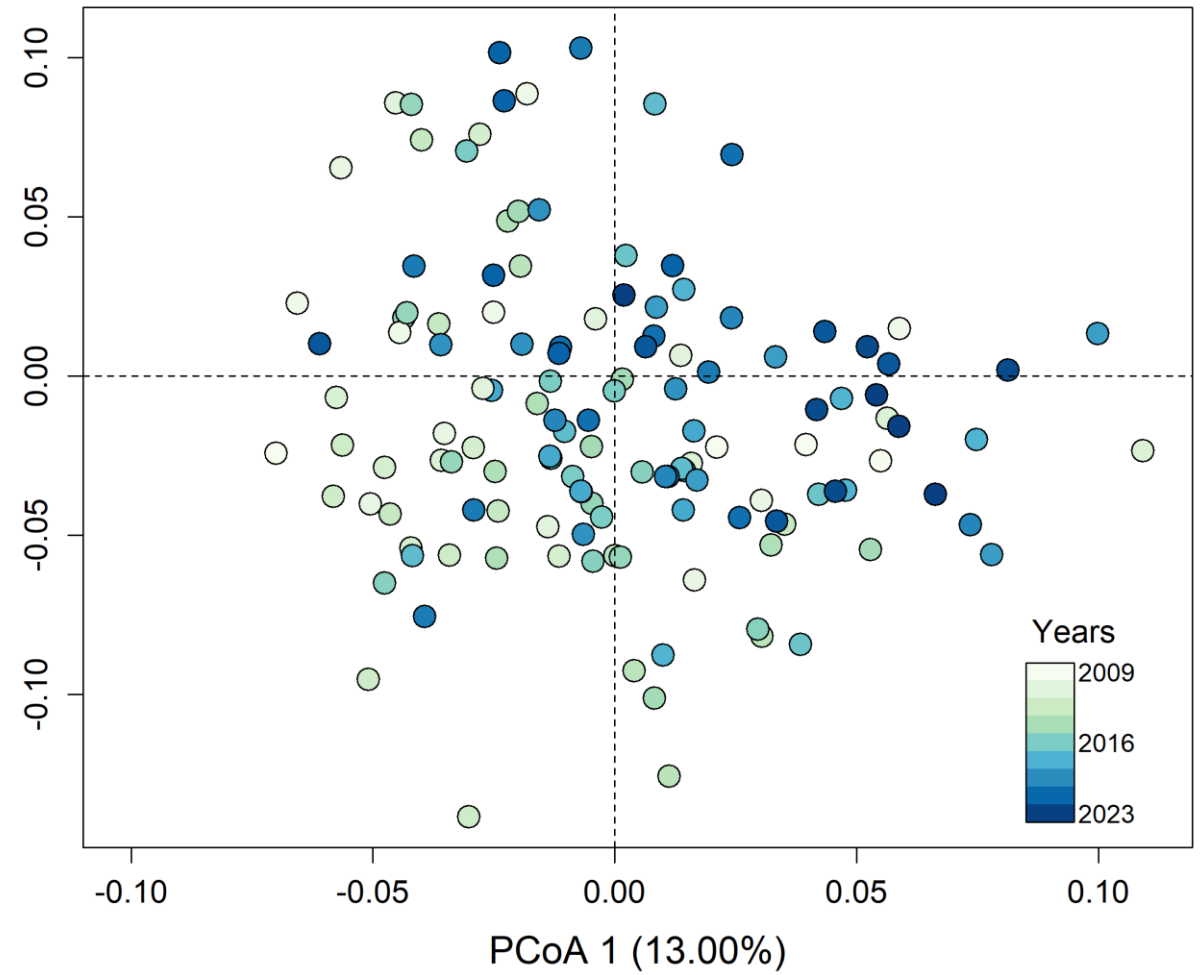
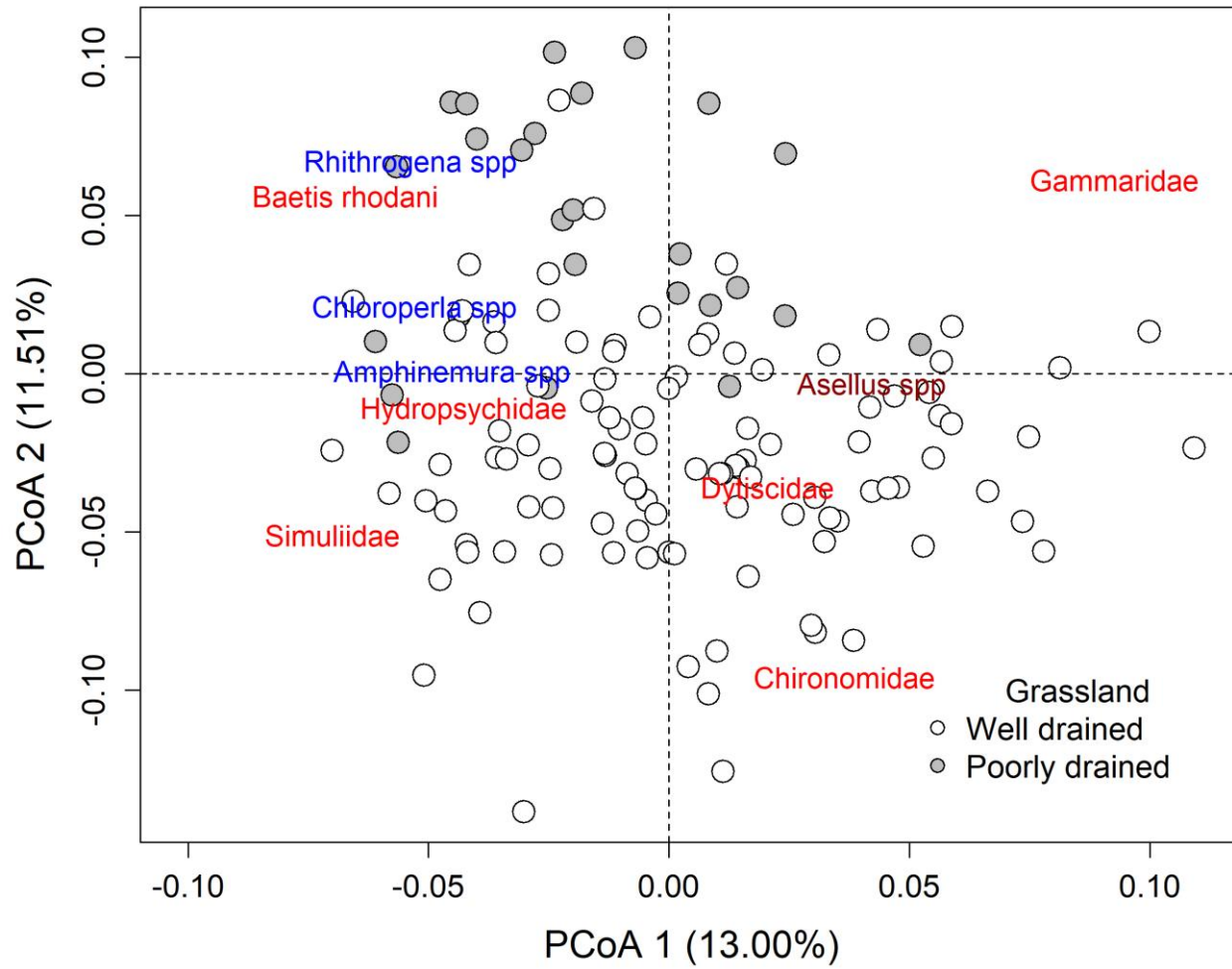
- Macroinvertebrates and diatoms: sampled **twice a year** from **2009 to 2023**



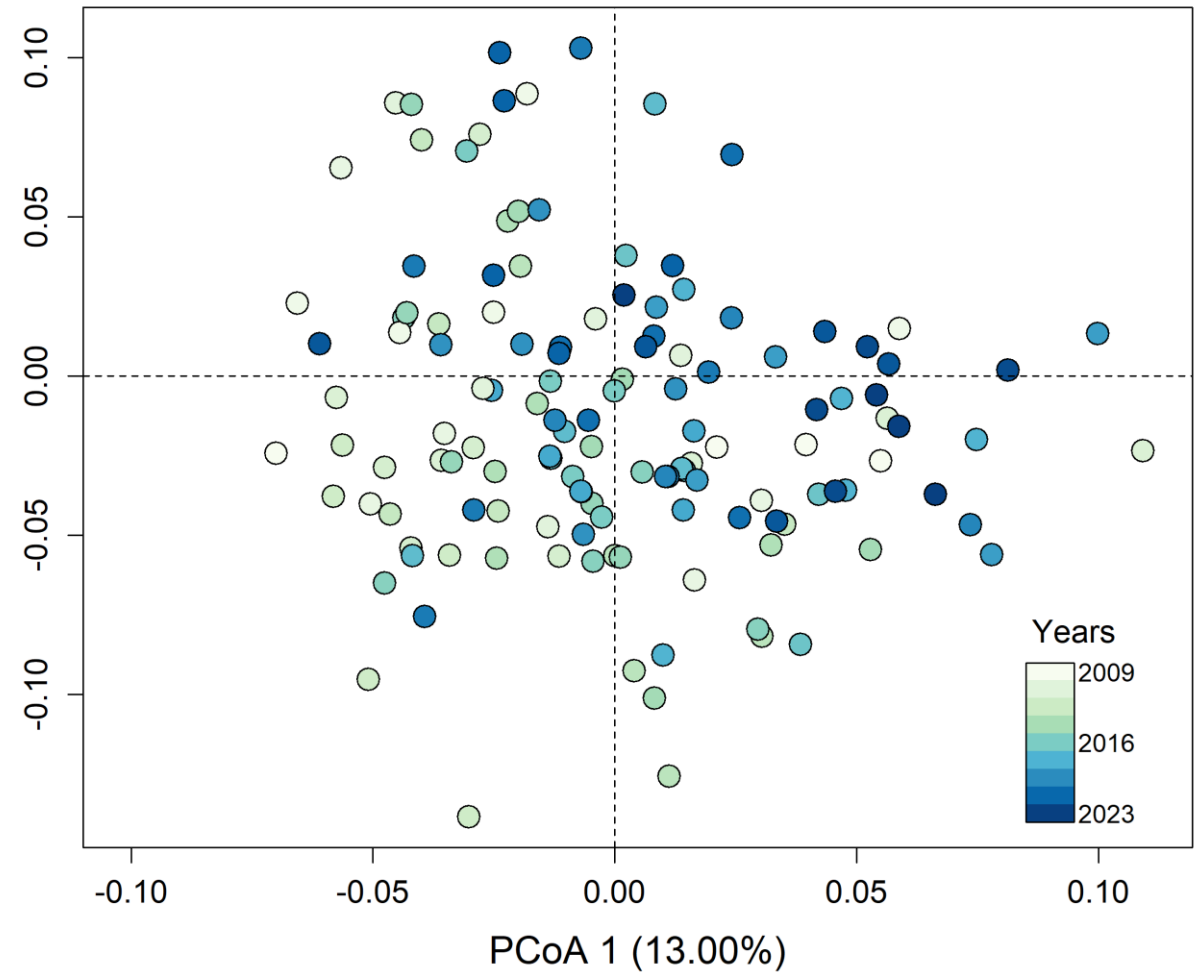
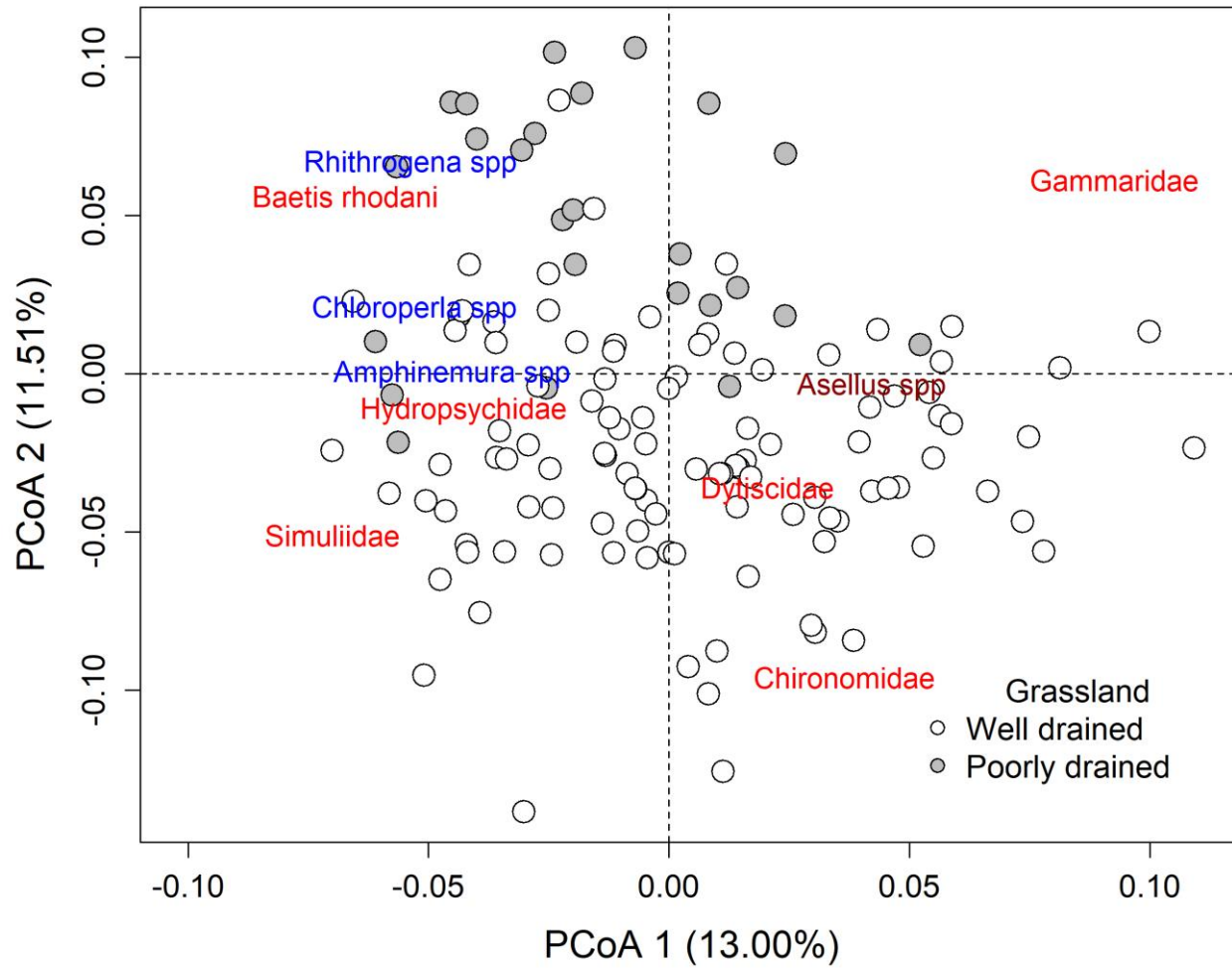
# Macroinvertebrates



# Macroinvertebrates

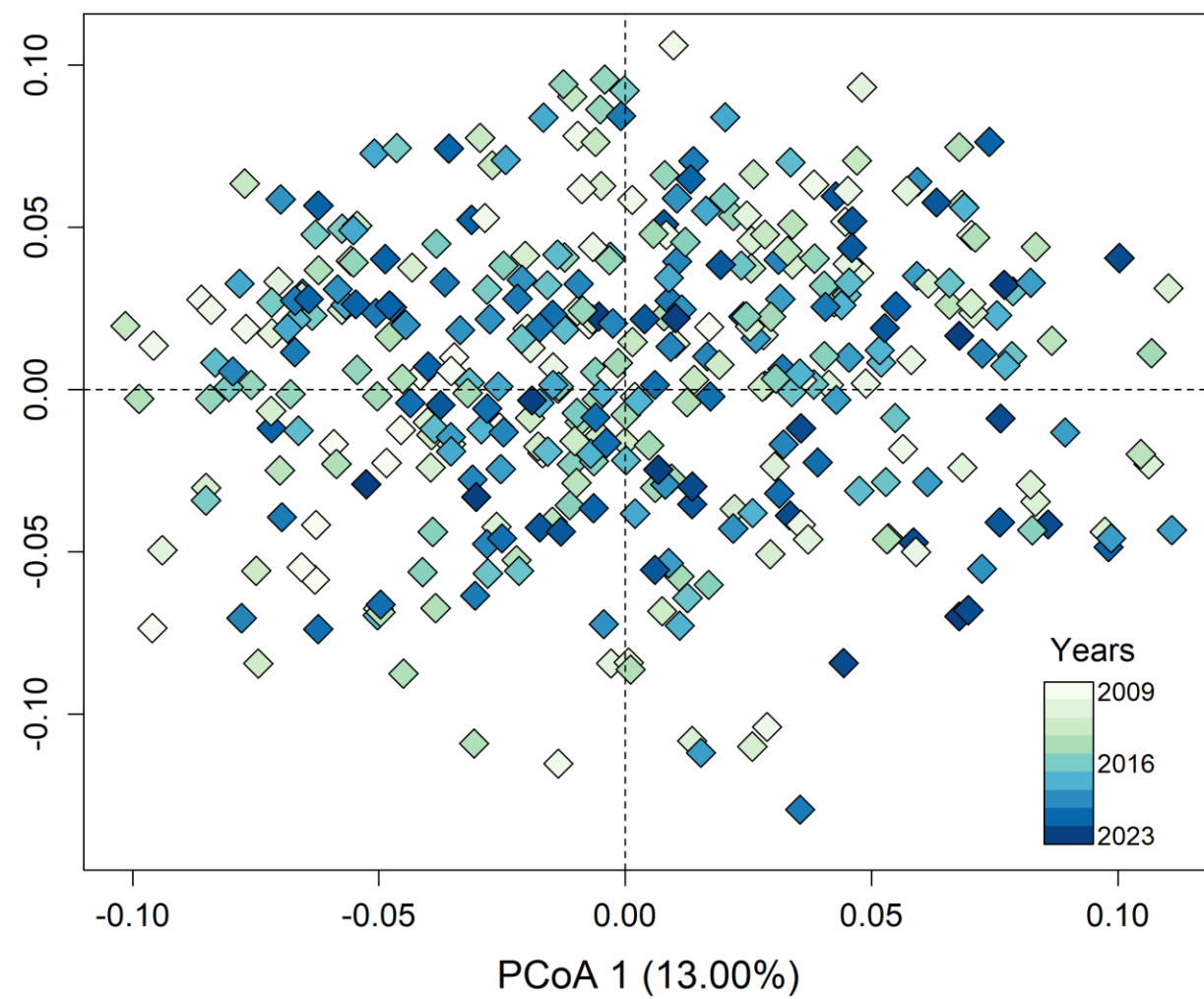
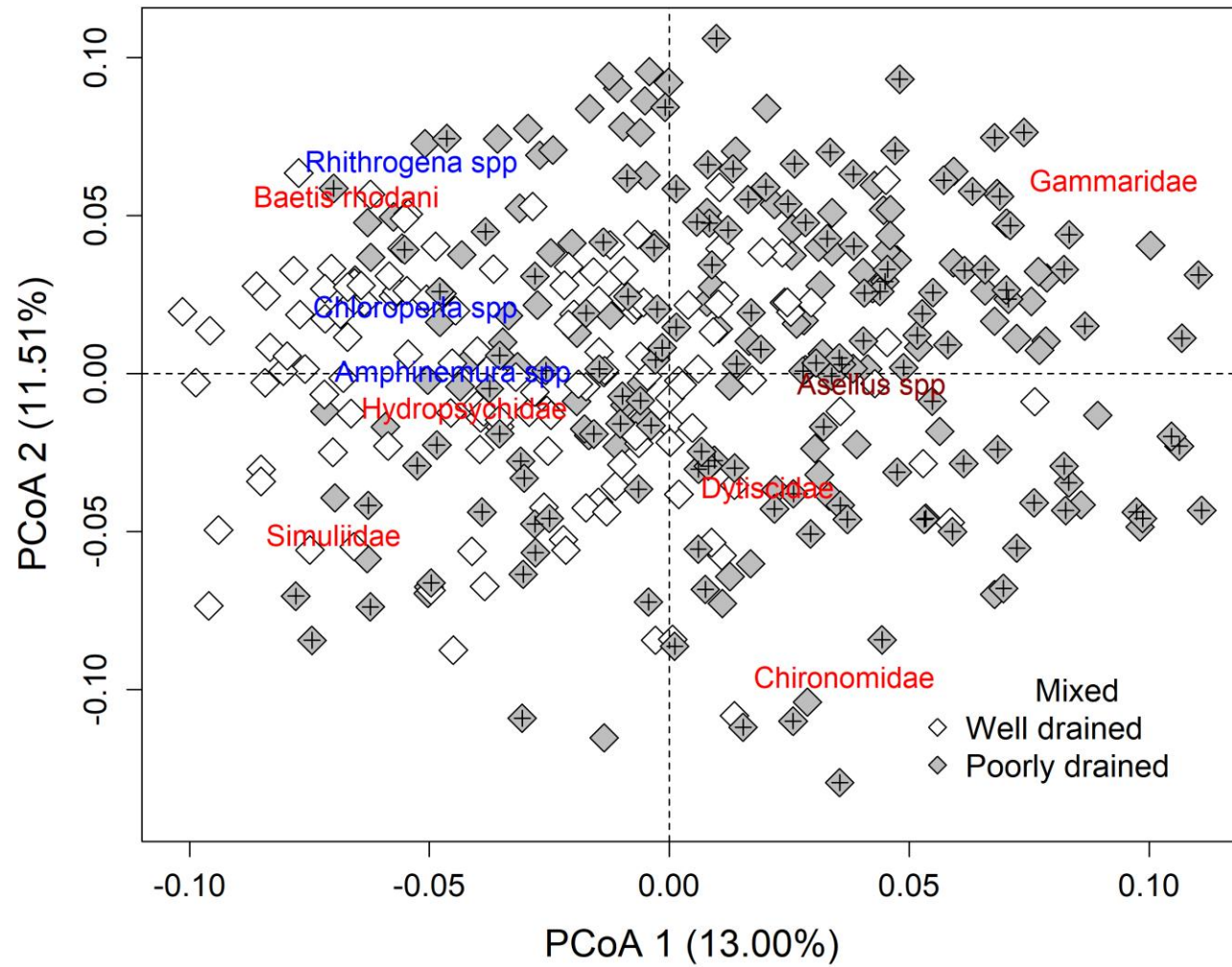


# Macroinvertebrates

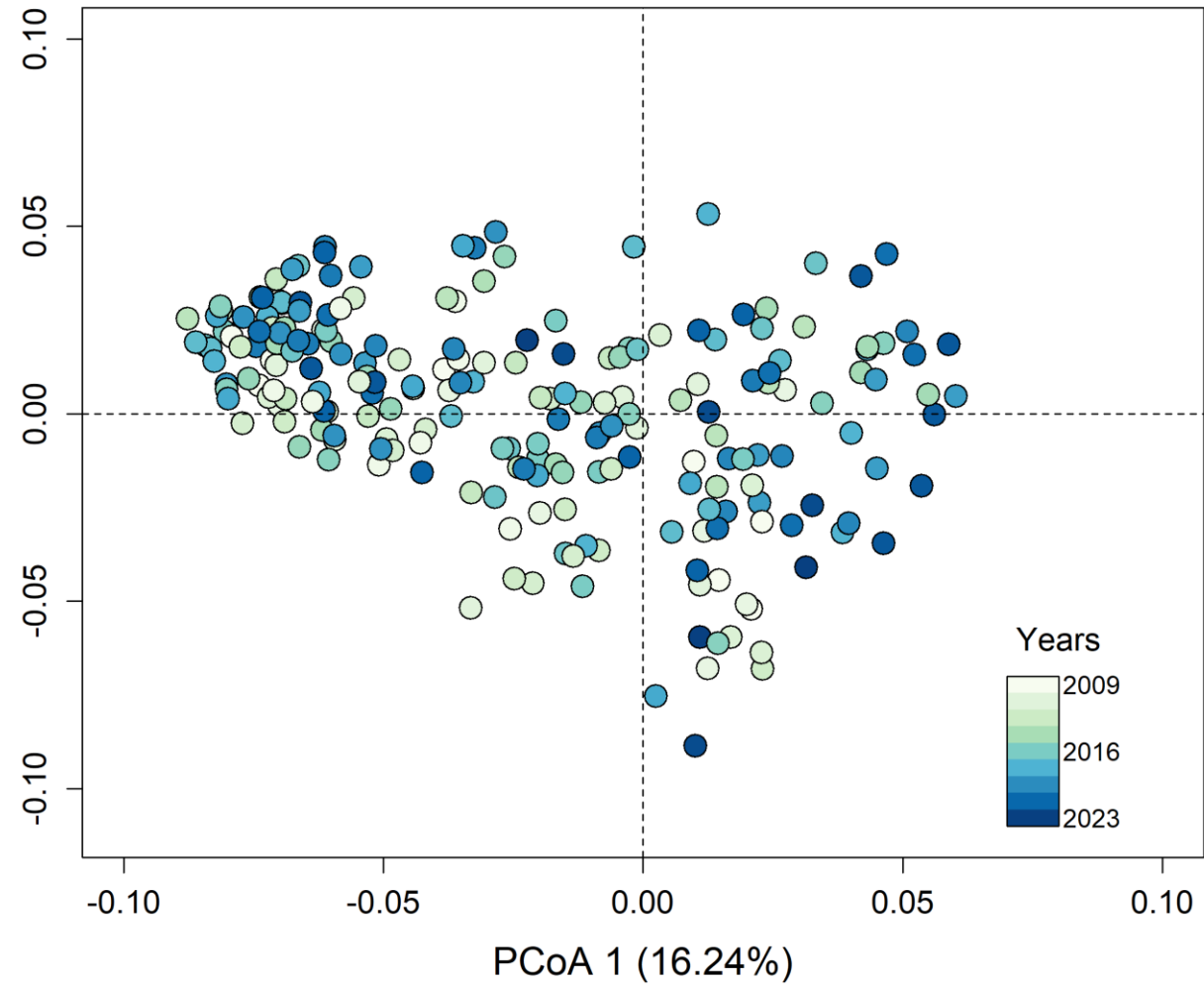
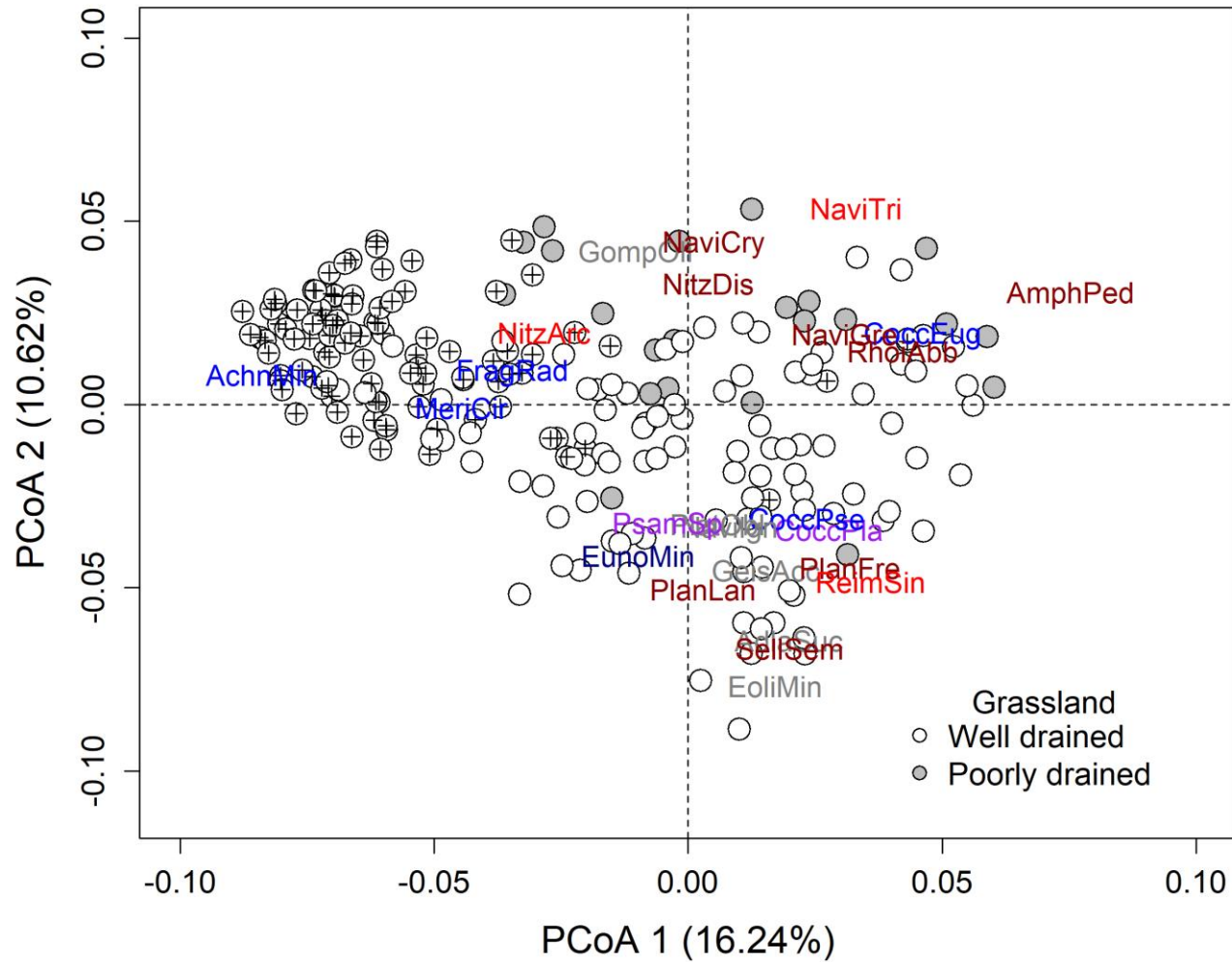


Improving WQ would have **↑** abundances of sensitive (blue) species in more recent samplings

# Macroinvertebrates



# Diatoms





## Agri-Climate Rural Environment Scheme (ACRES)

Basic Income Support for Sustainability Scheme for farmers



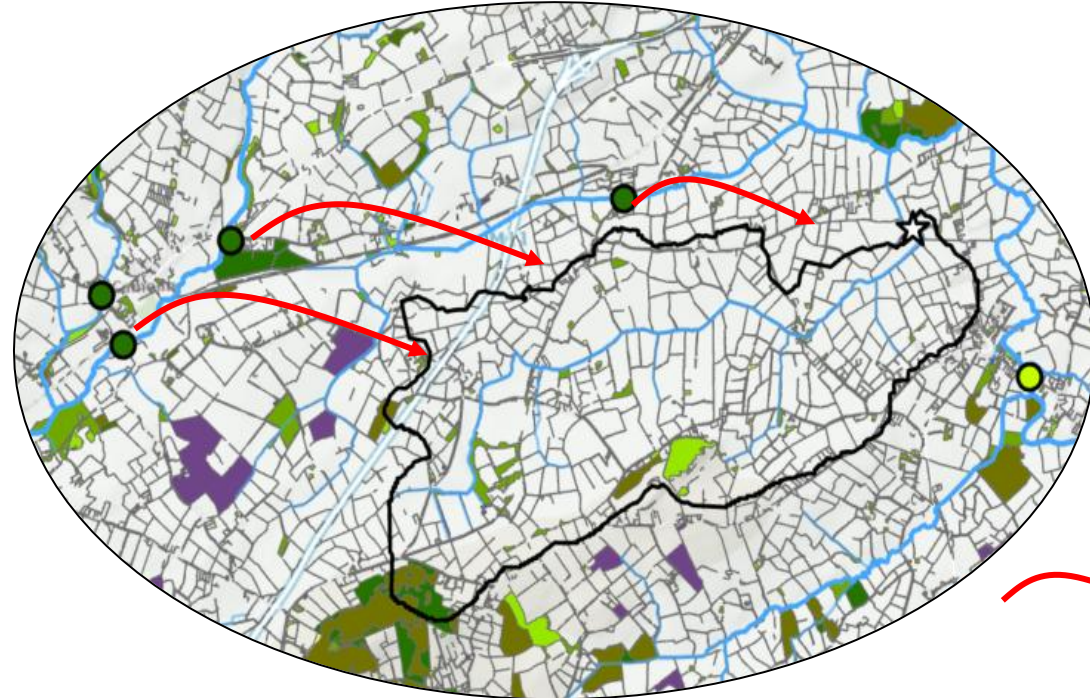
Water European Innovation Partnership (EIP) Project for Ireland

- **Consultation/collaboration and compliance: Training and knowledge-transfer** help farmers to engage with best agricultural practices
- Adoption of **targeted** mitigation measures



Photo: Jean Ortega

- Adoption of **riparian vegetation restoration**
- > **Strong evidence support to retain N by vegetation buffers**
- > **May improve connectivity among source populations**



Dispersal  
from  
source

**Thanks!**

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An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine

