

Restoring small streams: Effects on aquatic organisms

Lucie Sprecher, Tara Behnsen, Christine Weber
Swiss Federal Institute of Aquatic Science and Technology (Eawag). christine.weber@eawag.ch

Background

- Invertebrates, fish, and aquatic and terrestrial plants were surveyed in 23 restoration projects in Swiss streams.
-> see also our other poster on the left
- The comparison with a channelised control revealed improvements for all four organism groups (Fig. 1)
- The variability across sites was higher for plants than invertebrates and fish.

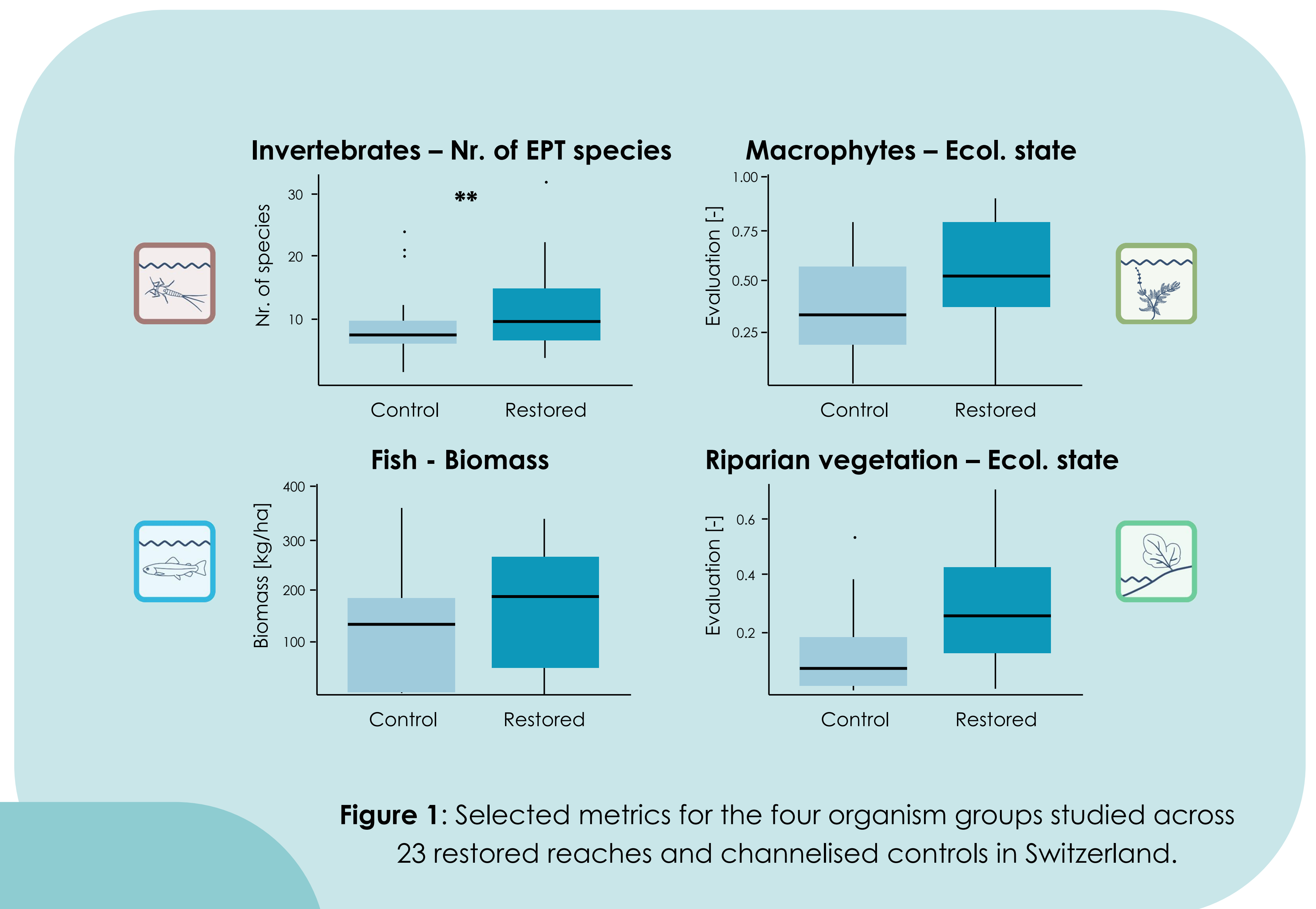


Figure 1: Selected metrics for the four organism groups studied across 23 restored reaches and channelised controls in Switzerland.

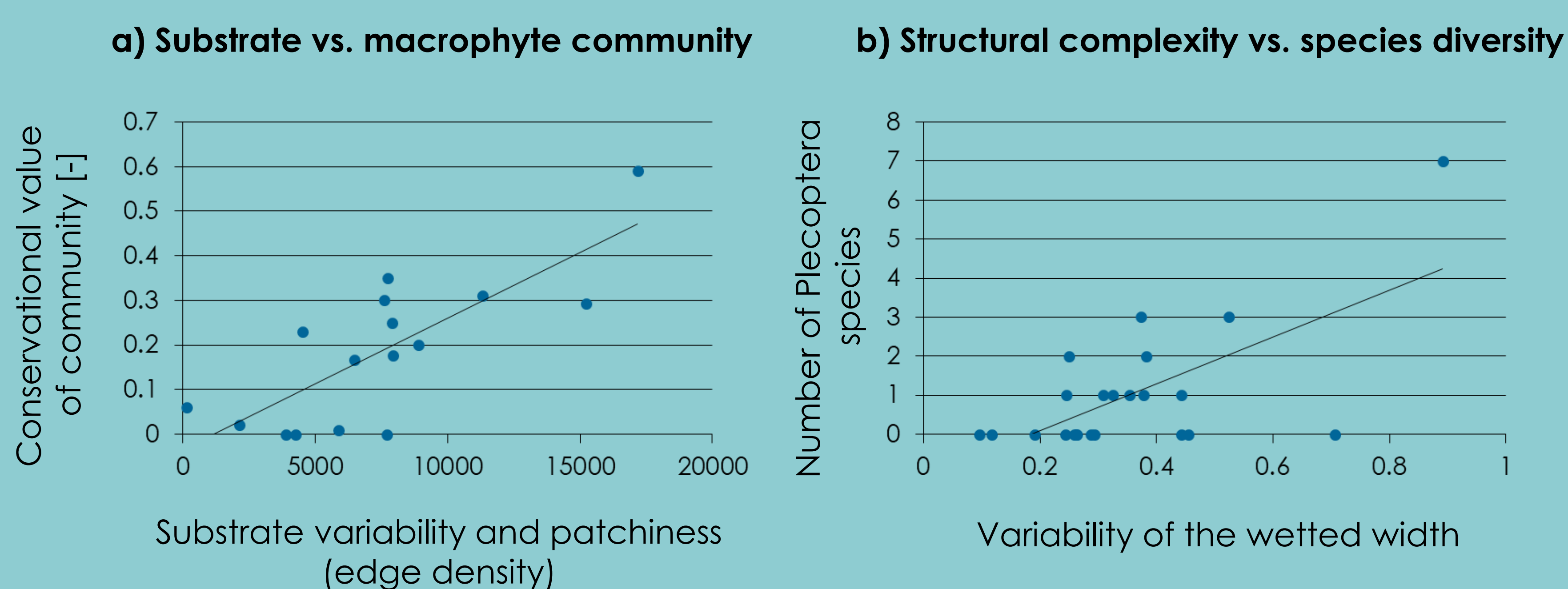


Figure 2: Interactions between restoration effects. Shown are the values observed in the restored reaches.

Context matters

- Restoration effects were compared with project characteristics and catchment variables (e.g. land use) to explain the observed trajectories.
- For instance, restored reaches in catchments with a high load of total nitrogen tend to harbour fewer stonefly species.
- More results follow in autumn 2025.

Interactive effects

- The biotic effects were correlated with the abiotic effects observed in the habitat diversity surveys.
- For instance, restored reaches with patchier substrates harboured more rare species of macrophytes (Fig. 2a).
- Restored reaches with a more variable width supported a greater diversity of stoneflies (Fig. 2b).

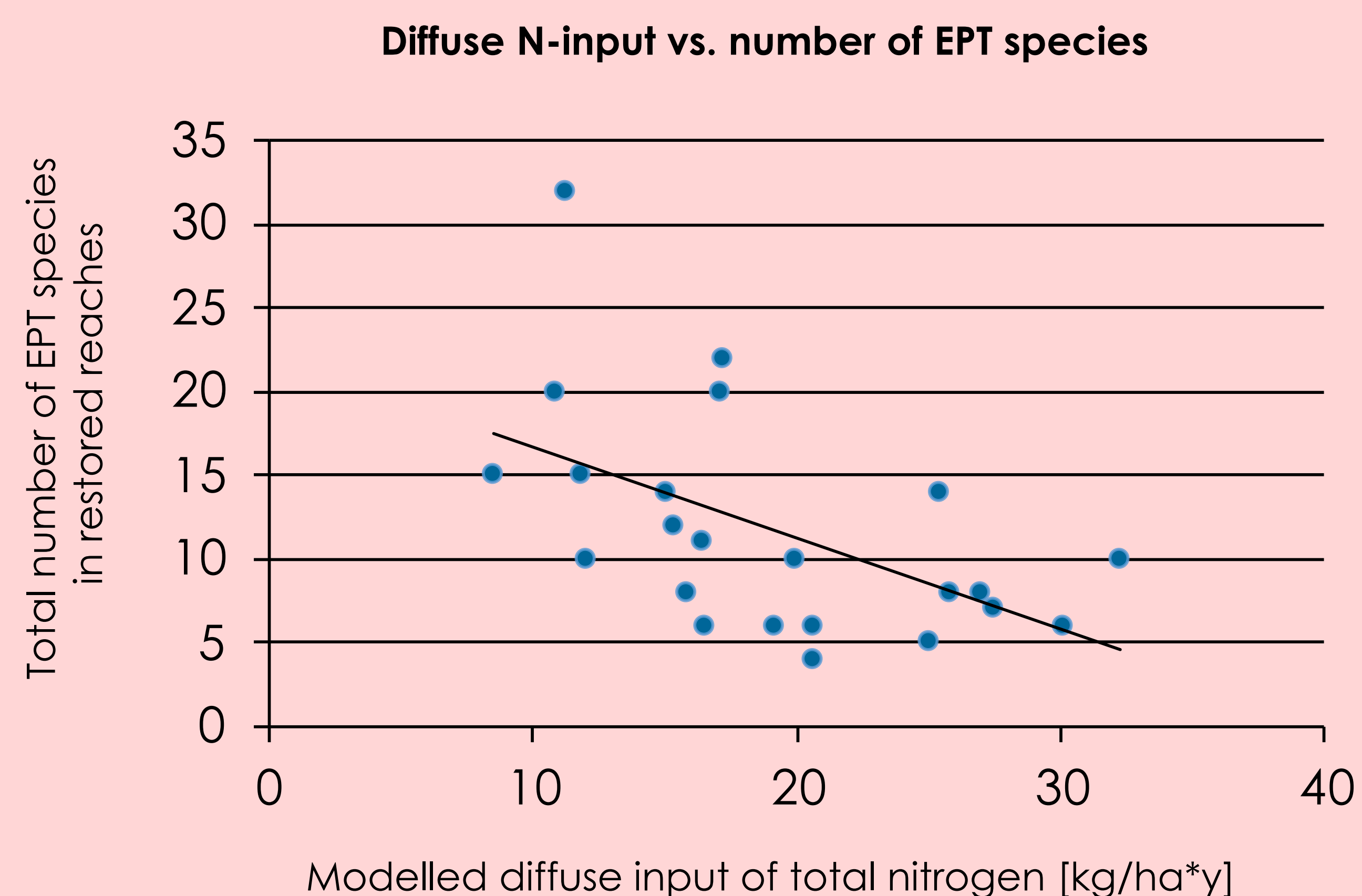


Figure 3: Example of how contextual variables such as the total nitrogen load influence restoration outcome.