





The relative importance of direct and indirect effects of large scale and local factors for stream fish population

Direct and indirect effects of large and small-scale drivers of fish abundance in streams

Dead wood mediates effects of large and small-scale factors on trout abundances

Outline

**Introduction**

Fish in streams are important. Fish migrate in rivers and rivers encompass different abiotic and biotic environment. This makes it challenging to identify drivers of fish abundance, and therefore to implement effective restoration measures

We know from existing literature that both local and large-scale factors influence fish abundances/ ~~large-scale drivers of fish abundances typically define the fundamental species niche while small-scale factors define the applied niche of each species~~. For example, among large-scale drivers, ….blablabla. On the other hand, small-scale factors define different local habitats where coexisting (sympatric) species minimize predation pressure and competition. For example…

At local scale, dead wood debris is known to increase fish population growth. However, what species benefit from LWD is not clear yet. Furthermore, we know little about the factors driving LWD abundances and persistence, which limit our ability to use LWD as an effective restoration measure (if conditions are not good for LWD persistence there is little point in adding LWD)

AIMS:

1. Unified framework to understand the relative importance of large and small scale factors for fish populations in streams
2. Investigate whether LWD has beneficial effects on three key species
3. Understanding drivers of LWD persistence

This has important implications from a management perspective.

Results