

## Background and aim:

Streams worldwide are subject to human impacts that degrade habitat conditions. In Sweden more than 70% of the streams are regulated and more than 33,000 km channelized. Channelization results in loss of structural complexity, simplified flow patterns, and decreased availability of microhabitats for a wide array of lotic organisms

### Aim:

- Investigate the effects of channelization on fish biota over a gradient of channelization severeness
- Evaluate the new tool *Nordic Multi-mesh Stream Survey Net* as a tool for these kinds of investigations.

## Method

Fish were sampled at 15 sites in two nemoboreal streams located in Gävleborg County. The sites were put on a scale from 0 – 3, where increasing numbers on the scale relates to an increased channelization severeness. Fish were sampled with the new tool *Nordic multi-mesh Stream Survey Net (NSSN)*, a small version of the standardized *Nordic Survey Net* and designed to operate in running waters

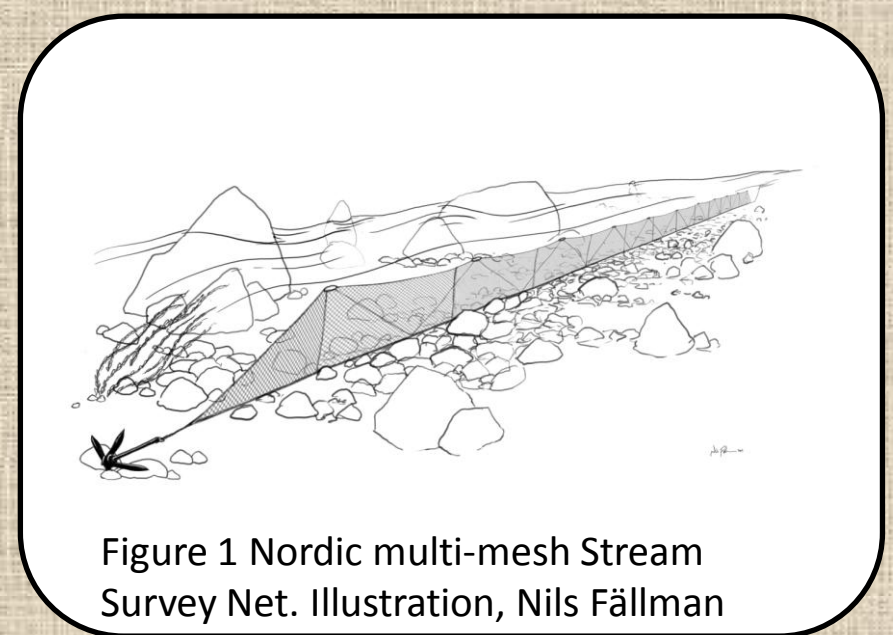


Figure 1 Nordic multi-mesh Stream Survey Net. Illustration, Nils Fällman

**Results:** Limnophilic species increased while the rheophilic species decreased along the gradient of channelization

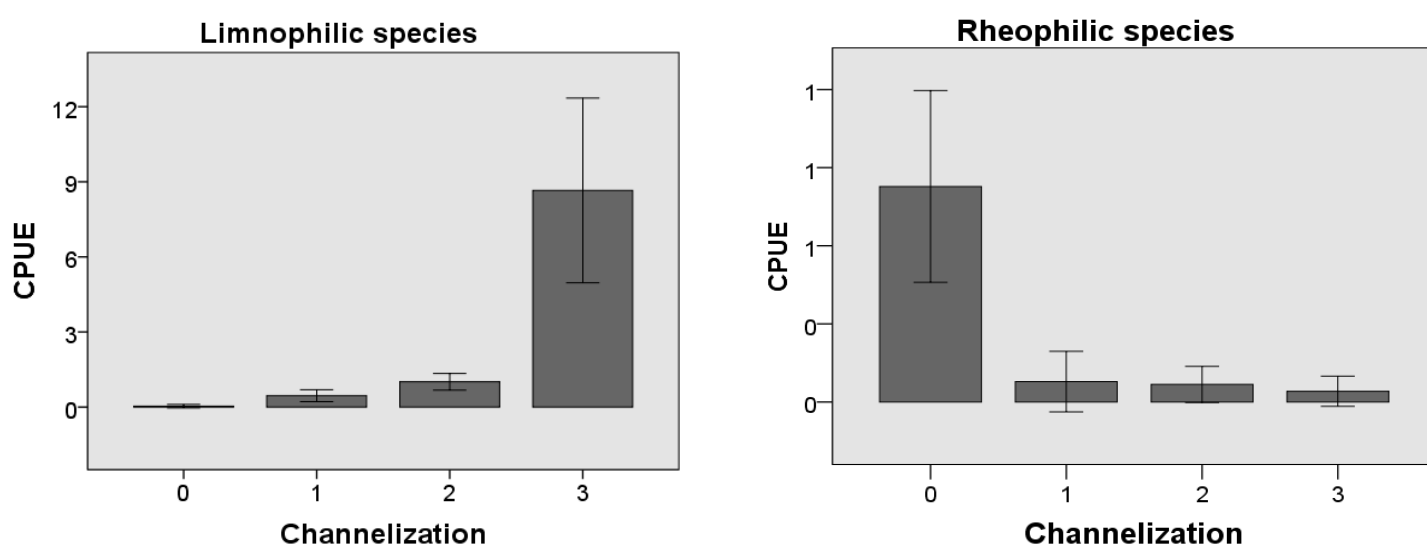


Figure 2 Channelization effect on limnophilic and rheophilic species

Channelization have a significant effect on the relative abundance as well as species richness in the studied streams

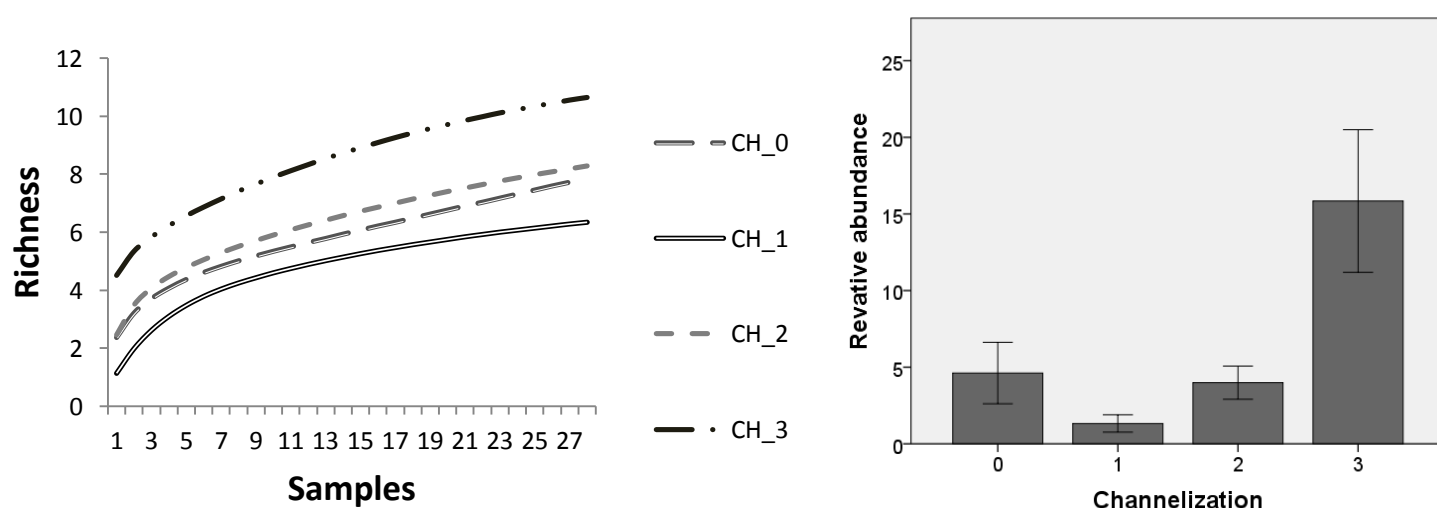


Figure 3 Expected species richness and relative abundance regarding the fish community in relation to channelization

## Conclusions:

- Increased channelization severeness causing shifts in species composition and changes in the stream ecosystem.
- Channelization is one of the primary factors affecting the abundance and species richness in the studied streams
- Nordic multi-mesh Stream Survey Nets as a method will contribute new knowledge about fish populations in running water

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