ADDITION OF WOOD IN STREAMS

experiences from a lowland stream restoration project

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Introduction

Addition of woody debris in streams is a common low-budget alternative to complex restoration projects. Although increasingly used to increase hydromorphological and ecological status of streams and rivers, only few European projects have been monitored and few descriptions of ecological effects of wood addition exist to date.

fig 1. Wood addition in a Dutch lowland stream (Jufferbeek)

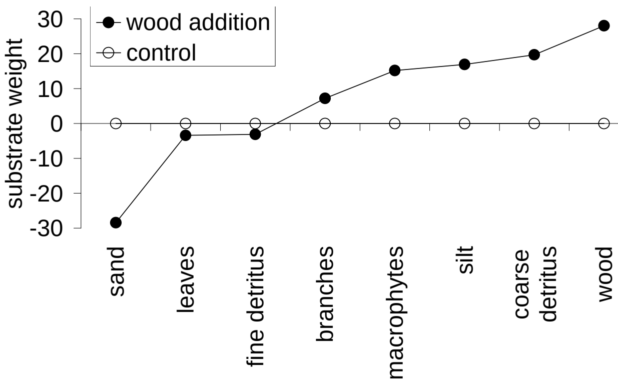

fig 2. Substrate changes after wood addition in restored section compared to a control section.

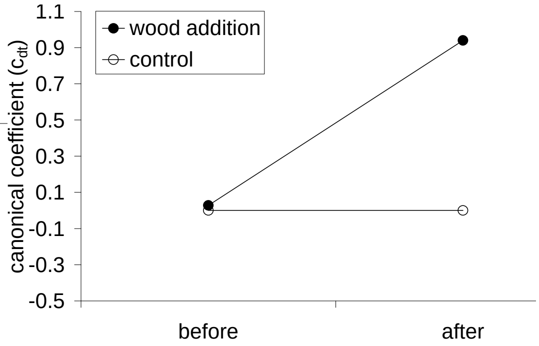

fig 3. BACI of macroinvertebrate community.

Small scale wood addition

Here we investigated the small-scale introduction of woody debris as a possible restoration measure in a Dutch lowland stream (fig 1). Using a before-after-control-impact (BACI) designed experiment investigating both a wood introduction and a control section, we examined restoration-induced changes in stream substrate patterns and aquatic macroinvertebrate community composition.

Community shifts

After wood addition, substrate heterogeneity of a formerly sand dominated stream bed increased and shifts in macroinvertebrate community composition were observed (fig 2, 3). Changes in feeding and habit groups provided support for community functional changes due to wood addition, in favour of some WFD indicator species (fig 3,4).

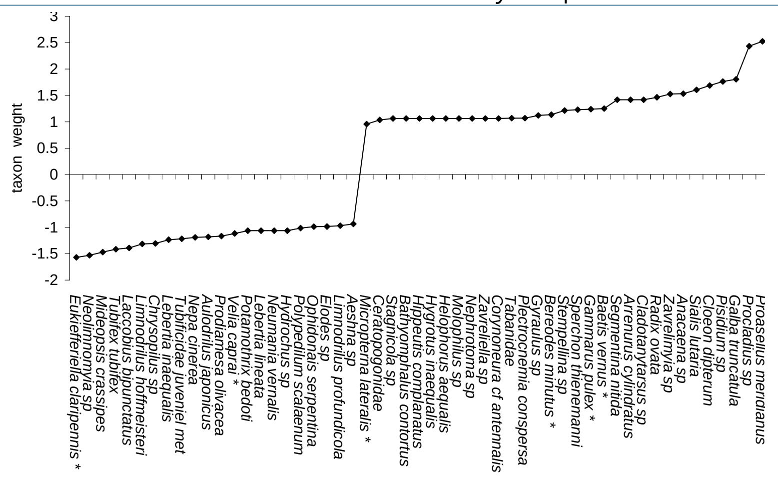

fig 3. Taxon weight of macroinvertebrates indicating changes between control and restored section.
** WFD indicator species*

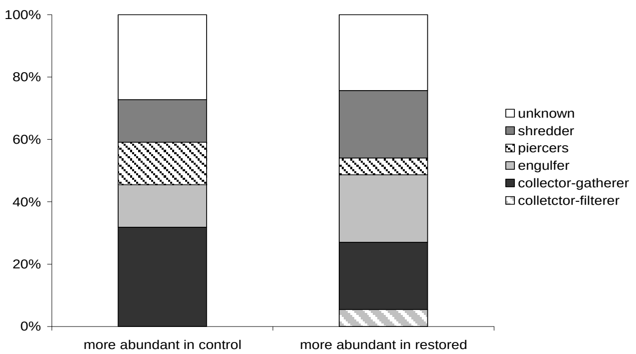

fig 3. Functional feeding group differences

These findings suggest that re-introducing wood to Dutch lowland streams is an appropriate restoration technique to improve the hydromorphological and ecological status. Additional work is needed to confirm these findings, focusing on the addition of more wood over larger spatial scales.

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