



## **Effects of river restoration on riparian plant communities in northern Sweden**

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Riparian communities are structured to a large extent by fluvial processes such as flooding and sediment deposition. In many Swedish rivers, these processes have been altered by timber floating. During the timber floating era (ca. 1850 – 1970), streams throughout northern Sweden were channelized to facilitate more efficient log transport. Large boulders were removed, and barriers made of stone and wood were installed to straighten river flows and cut off secondary channels, resulting in simplified channel morphologies and altered patterns of flooding and sediment deposition. In recent years, local jurisdictions have begun to restore channelized streams. These ongoing restoration works offer a unique opportunity to study how changes in channel morphology and hydraulic regime influence patterns of species composition and productivity in riparian plant communities.

We surveyed vascular plant species in the riparian zones adjacent to channelized and restored streams within the Ume and Pite river systems, northern Sweden. Preliminary data indicate that riparian plant communities adjacent to restored reaches are more species rich and more evenly distributed than their counterparts adjacent to channelized reaches. These results suggest that river restoration may be an effective strategy for enhancing riparian biodiversity, and that recovery may occur over relatively short time spans. To the extent that observed differences in species richness are due to changes in fluvial disturbance regime, these findings serve as a test of biodiversity theory. Since riparian zones tend to be areas of disproportionately high species richness in boreal and northern temperate ecosystems, an understanding of these processes may be essential for understanding the factors controlling biological diversity at regional scales.