

[Effects of stream flooding on the distribution and diversity of groundwater-dependent vegetation in riparian areas \(Baattrup-Pedersen et al 2013\) \[1\]](#)

1. Effects of the frequency and duration of flooding on the structural and functional characteristics of riparian vegetation were studied at four sites ($n = 80$, 50×50 cm, plots) along medium-sized naturally meandering lowland streams. Special focus was on rich fens, which – due to their high species richness – are of high priority in nature conservation.

2. Reed beds, rich fens and meadows were all regularly flooded during the 20-year study period, with a higher frequency in reed bed areas than in rich fen and meadow areas. In rich fens, species richness was higher in low frequency flooded areas (≤ 3 year⁻¹) than in areas with a high frequency of flooding (> 3 year⁻¹) or no flooding, whereas species richness in reed beds and meadows was unaffected by flood frequency.

3. The percentage of stress-tolerant species was higher in low intensity flooded rich fen areas than in high intensity and non-flooded areas, indicating that the higher species richness in low frequency flooded rich fens was caused by competitive release. We found no indication that increased productivity was associated with high flooding frequencies.

4. We conclude that the restoration of morphological features in stream channels to increase the flooding regime can be beneficial for protected vegetation within riparian areas, but also that groundwater discharge thresholds and critical levels for protected vegetation should be identified and considered when introducing stream ecosystem restoration plans.

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