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The influence of large wood accumulations on riparian seed bank diversity

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Little is known about the structure and complexity of seed bank within the riparian corridor and the how large wood accumulations contribute to riparian seed bank diversity. This study aimed to examine and quantify seed bank assemblage and diversity along the undisturbed riparian corridor of the Highland Water, a second order lowland stream draining the New Forest. Seed bank samples were collected from five riparian corridor microhabitats namely mid-channel bars, floodplains, bare banks, banks adjacent large wood accumulations and within large wood accumulations that differed in their hydrologic connectivity with the river. Descriptive statistics and ordination methods applied to the floristic and sediment data sets indicates that sediment organic matter content, species richness and proportions of functional types distinctly differed among the riparian microhabitats types but there was no difference in viable seed densities. Banks adjacent large wood accumulations were the most floristically diverse and rich in organic matter with mid-channel bars exhibiting the reverse. This was due to the ability of large wood accumulations to buffer varying magnitudes of physical gradients and sort seeds and sediments, therefore altering the character of bare banks. This study not only strengthen the evidence that riparian corridors exhibit elevated spatial sediment and vegetation heterogeneity but also demonstrates the importance of large wood accumulation as habitat modifiers, ecosystem engineers and conservation sink for moisture, organic matter and seeds, resources essential for riparian vegetation conservation, recovery and restoration efforts.