



The establishment and growth of Salicaceae in a dynamic, near-natural river system

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Within forested riverine environments, the establishment and growth of vegetation is strongly interlinked with hydrological and geomorphological processes. Typical riparian trees, such as Salicaceae, have been shown to influence the floodplain environment by increasing sedimentation rates, stabilising landforms and, in the long term, contributing to floodplain aggradation and island formation, which influences surface water movement. This paper presents findings from a study of riparian tree establishment and growth along a near-natural, dynamic river system. The sexual and asexual regeneration of three Salicaceae species were investigated using experimental plots of cuttings and seedlings, which were located in sites of contrasting elevation and sediment calibre (chosen to represent different soil moisture conditions). The study was conducted in May 2004 and survival and growth was monitored over two growing seasons. Cutting establishment was strongly associated with higher elevations and the presence of fine sediment, which provided moisture and protection from disturbance from high flows. Seeding mortality was very high, due to disturbance from high flows, but seedlings which did survive showed a strong preference for mixed sediment sites. Successful establishment of both cuttings and seedlings was strongly associated with soil moisture availability and protection from flood disturbance, which were associated with the hydrological regime. The preference of these species to certain environmental conditions has important implications for floodplain evolution and has a strong application to river management