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The dynamics of vegetation and vegetative particles in fluvial systems.

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This paper considers the dynamics of whole plants, plant fragments and plant propagules within fluvial system and how these are moderated by the form and vegetation cover of the river channel and its margins. Whole plants, plant fragments and propagules form part of the organic sediment load of rivers. They are delivered to rivers by physical processes but the timing of seed release and the morphological characteristics of the plants moderate delivery. The transport and deposition of plant material is partly controlled by flow patterns but is also influenced by the buoyancy and morphology of the plant material. Once deposited, the vegetative fragments, propagules and the plants that develop from them can have significant local effects on flow hydraulics and sediment erodibility, producing complex assemblages of physical features. Aggregate 'vegetative particles' are identified as being particularly important in accelerating vegetation colonisation of exposed river sediments, driving landform development and supporting the rapid development of a diverse cover of plants. The paper explores these processes at different spatial scales and within the context of restoration schemes and semi-natural river systems.