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**RIPARIAN PLANT DISTRIBUTION IN THE LUCKIAMUTE RIVER BASIN,
CENTRAL OREGON COAST RANGE: PRELIMINARY ANALYSIS OF
GEOMORPHIC AND ANTHROPOGENIC CONTROLS ON ADVENTIVE SPECIES
PROPAGATION IN AN UNREGULATED WATERSHED**

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Disturbance by geomorphic and anthropogenic processes affects riparian substrate, nutrient levels, canopy shading, and hydrology. As such, fluvial systems commonly serve as conduits for the dispersal of exotic plant species. This study involves spatial analysis of vascular plant distribution in the riparian understory of the Luckiamute River basin, central Oregon Coast Range. Preliminary results are used to decipher geomorphic and anthropogenic controls on adventive species propagation in an unregulated watershed.

Over 1700 m² of riparian understory was surveyed using 1- by 100-m transects oriented perpendicular to the active channel, with 20 survey stations irregularly spaced ($D_{avg} = 5.1$ km) along the lower 100 km of the drainage ($A_d = 815$ km²). Vascular plant species were identified in each transect with observations on distance from channel, cover area, frequency of occurrence, origin, canopy composition, and light intensity. The majority of survey stations were located on incised floodplain surfaces characterized by riparian tree cover, silty-clay loams, and slopes less than 10%. Survey results are summarized as follows: No. of Adventive Species = 55; No. of Native Species = 75; Adventive Cover = 26.7%; Native Cover = 12.8%; Native:Adventive Ratio = 2.1. The two most common adventives are *Rubus armeniacus* and *Phalaris arundinacea*. *Polygonum cuspidatum* has limited frequency, but ranks in the 95th percentile of total invasive area. The most abundant native species include *Rubus leucodermus*, *Symphoricarpos albus*, *Urtica dioica*, and *Polystichum munitum*.

Distribution analysis provides a framework for positing mechanisms of adventive plant dispersion. Longitudinally, *R. armeniacus* and *P. arundinacea* are ubiquitously distributed throughout the lower watershed, while *P. cuspidatum* is restricted to upper reaches. Transverse to the floodplain, *P. arundinacea* and *P. cuspidatum* are limited in occurrence to less than 15 m from the channel, while *R. armeniacus* is common throughout. Results suggest that hydrochory is the primary dispersal mechanism for the former two species, while mixed modes apply to the latter. A combination of geomorphic (flooding) and anthropogenic disturbance (timber harvesting) processes result in substrate alteration and canopy gaps, thus diminishing barriers to exotic plant colonization.