



Landscape and anthropogenic controls on large wood distribution in a river network at different spatial scales: Guiding river corridor restoration

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Interactions between large wood (LW), flow, and sediment dynamics are an important determinant of geomorphic, ecological, and biogeochemical processes in streams and rivers draining forested watersheds. Importantly, supply of LW to channel networks from riparian and upland forests has been altered by anthropogenic landscape disturbances such as timber harvest. Thus, insight into the interplay between natural and anthropogenic controls on LW distribution is pivotal for guiding effective conservation and restoration efforts. However, one challenge in advancing our understanding in this matter is related to a multitude of spatial scales at which LW varies within river corridors. This research examined LW distribution in a mountainous stream network at reach and sub-reach resolution as well as the associations between LW and channel morphology. To this end, we combined extensive field surveys, aerial LiDAR data, and satellite imagery and the analysis was conducted using linear models and spatial statistics. Preliminary results indicate that there are systematic spatial trends in LW across the stream network and its distribution seems to be associated with various factors, including morphological complexity of the channel as well as connectivity with the adjacent hillslopes. These findings will inform ongoing watershed restoration project and ecological conservation of salmonid fish which benefit from LW-related habitat features.