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Linking riparian forest harvest to benthic macroinvertebrate communities in Andean headwater streams in southern Chile

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Abstract

Headwater streams are fully linked to surrounding riparian vegetation through coarse and fine organic matter inputs. However, forestry operations in or close to riparian corridors, particularly in mountainous forested microcatchments, can alter both the organic matter dynamics and the composition, structure and function of stream macroinvertebrate assemblages. Although it is an issue of great concern elsewhere, in Andean headwater streams scarce information exist about this respect. By using a paired-catchment approach (thinned vs. unthinned) in two sets of selected evergreen and deciduous small streams in southern Chile (39°S), we evaluated the effects of forest harvest on seasonal and annual litterfall dynamics and the structural and functional attributes of macroinvertebrates between January 2008 and January 2009. Metrics used to assess changes included riparian litterfall input, invertebrate colonization and leaf decomposition of dominant plant species (evergreen: *Laureliopsis philippiana*, *Myrceugenia planipes*; deciduous: *Nothofagus alpina*), taxa richness, functional feeding group (FFG) composition, and their densities and biomasses for each stream. In both experimental trials, microcatchments registered significant

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