

Nitrogen mineralization in two unpolluted old-growth forests of contrasting biodiversity and dynamics

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Studies in unpolluted, old-growth forests in the coastal range of southern Chile (42°30'S) can provide a baseline for understanding how forest ecosystems are changing due to the acceleration of nitrogen (N) inputs that has taken place over the last century. Chilean temperate forests, in contrast to their northern hemisphere counterparts, exhibit extremely low losses of inorganic N to stream waters. The objectives of this study were (a) to determine whether low inorganic N outputs in these forests were due to low rates of N mineralization or nitrification, and (b) to examine how biodiversity (defined as number of dominant tree species) and forest structure influence N mineralization and overall patterns of N cycling. Studies were conducted in a species-poor, conifer-dominated (*Fitzroya cupressoides*) forest with an even-aged canopy, and in a mixed-angiosperm (*Nothofagus nitida*) forest with a floristically more diverse and unstable canopy. Nitrogen mineralization rates measured in laborat