

# Nitrogen in litterfall and precipitation and its release during litter decomposition in the Chilean piedmont matorral

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## Abstract

Parts of the nitrogen cycle involving two dominants (*Lithraea caustica* and *Quillaja saponaria*) in the Chilean piedmont matorral have been studied over a 15-month period. Analyses showed that 8.2 kg N ha<sup>-1</sup> yr<sup>-1</sup> entered the system in rainfall and dry deposition, though impactation of N-containing compounds on vegetation (not measured) may elevate this value. *L. caustica*, by virtue of its greater percent cover, contributed more leaf litter than did *Q. saponaria* to the system (1089, vs 737 kg dry matter ha<sup>-1</sup> yr<sup>-1</sup>, respectively), although on an individual basis *Q. saponaria* produced more litter (640, vs 350 g dry leaf litter m<sup>-2</sup> yr<sup>-1</sup> for *L. caustica*). This plus the greater nitrogen release of *L. caustica* leaf litter during decomposition (2.61, vs 0.60 g N kg dry litter<sup>-1</sup> yr<sup>-1</sup> for *Q. saponaria*) and *Q. saponaria*'s higher N-content of dropped leaves (0.54, vs 0.37% N for *L. caustica*) may indicate a more external cycling of nitrogen in *Q. saponaria* relative to that in *L. caustica*. These two species may therefore represent two different strategies of individual nitrogen cycling, external and internal.

**Keywords** Chile, *Lithraea caustica*, Litterfall, N-cycling, Piedmont-matorral, *Quillaja saponaria*