

Nitrogen dynamics in two small watersheds with different stream nitrate concentrations

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Nitrogen dynamics were compared in two stream watersheds (#3 and #7) with different nitrate concentrations in their stream water. The nitrate concentration was always higher in the stream of #3 (1.6 mgN/L) than in that of #7 (0.3 mgN/L). Nitrogen deposition rate was higher in #7 than in #3, but nitrogen leaching rate at 40 cm below ground surface was higher in #3 than in #7. Increase in nitrogen isotope ratio of nitrate was observed in the bottom of the #7 watershed. Low plant uptake and immobilization by microorganisms with no clear denitrification in the #3 watershed might result in higher nitrate concentration in its stream.

Keywords: nitrogen dynamics, nitrate, stream, isotope ratio