Streams as Nitrogen Filters in the Landscape: Lotic Intersite Nitrogen eXperiment (LINX)

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* Lotic Intersite Nitrogen eXperiment II (LINX II)

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The LINX ^{15}N tracer approach
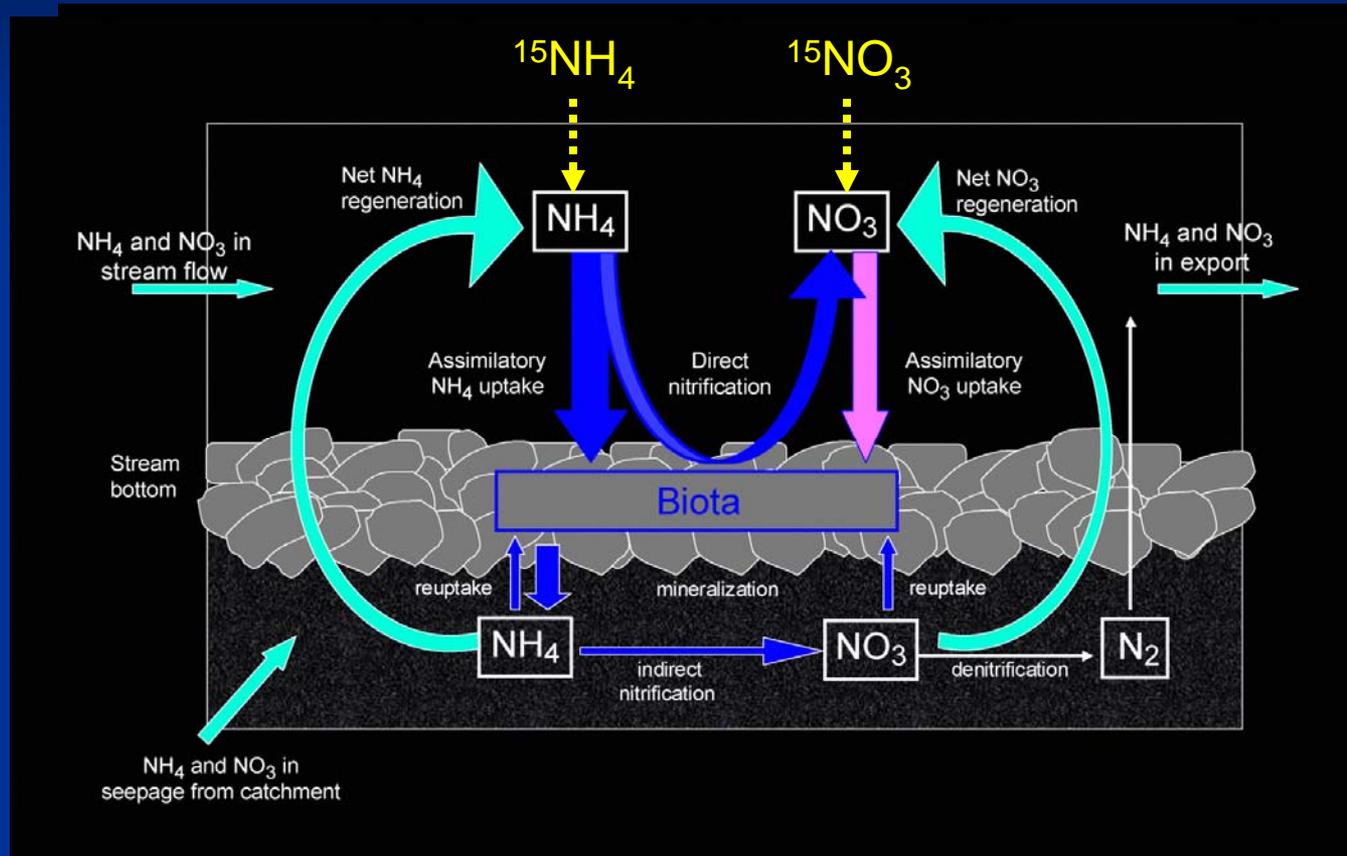
First direct measurements of gross NH$_4$ and NO$_3$ uptake, nitrification, and denitrification rates at the stream reach scale

LINX I study
(NH$_4$ uptake and cycling)

- 12 small, relatively pristine streams over broad range of biomes
- 42-d addition of ^{15}NH$_4$ (500 per mil)
- Intensive sampling of streamwater N, detritus, organism biomass before, during, and after ^{15}N addition
- Focused on N uptake and transformations, N movement through food web

LINX II study (NO$_3$ uptake and cycling)

- 72 small streams: 8 biomes, 3 land uses/biome (ref, agr, urb)

- 1-d addition of ^{15}NO$_3$ (20,000 ‰)

- Sampling of stream N, biomass, metabolism, hydrodynamics (predictors)

- Focused on NO$_3$ uptake and denitrification

- Model simulation of NO$_3$ retention in river networks based on experimental results