Soil Bioavailable Nitrogen at BIFoR FACE

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Introduction

Increases in atmospheric CO_2 have fertilised forest ecosystems and led to an uptake of CO_2 into plant and soil biomass, reducing the concentration of CO_2 in the atmosphere. However, this fertilisation effect may be limited by soil nutrients availability, hence exacerbating CO_2 rises, without the buffering effect of carbon uptake by forests.

Methodology

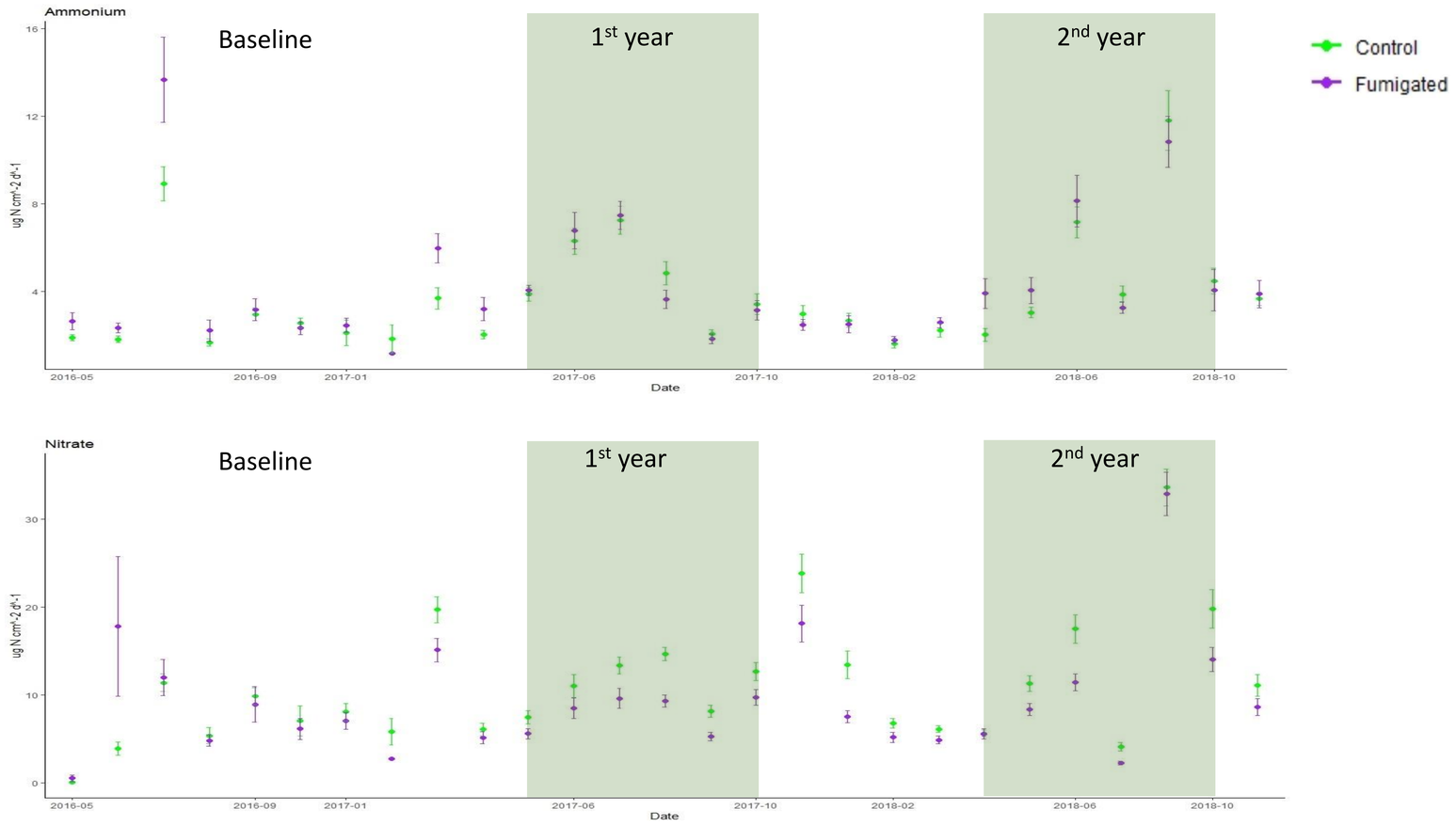
To assess nutrient dynamics, 3 anion and 3 cation resins were deployed in 8 areas in each of the 6 experimental plots. Resins were vertically installed in the top O - 10 cm of soil for ~ 1 month, before being retrieved and extracted for NH_4^+, NO_3^-.

Results

Baseline: seasonal trends across the site, with no signicant variation in the soil bioavailable NH_4^+, NO_3^- and concentrations across in control (green) and treatment rings (purple).

1st year fumigation (April - October 2017; coloured area): broad seasonal trends remains, but NO_3^- was lower in the treatment rings, than in the controls, with little change observed for NH_4^+.

2nd year fumigation (April – October 2018; coloured area): broad seasonal trends remain, but NO_3^- lower in the treatment rings, than in the controls, at the beginning of the season, with little change observed for NH_4^+.



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Stay in touch

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