Peatland shrub fine roots increase resource acquisition with warming

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Abstract:

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Peatland plant resource acquisition

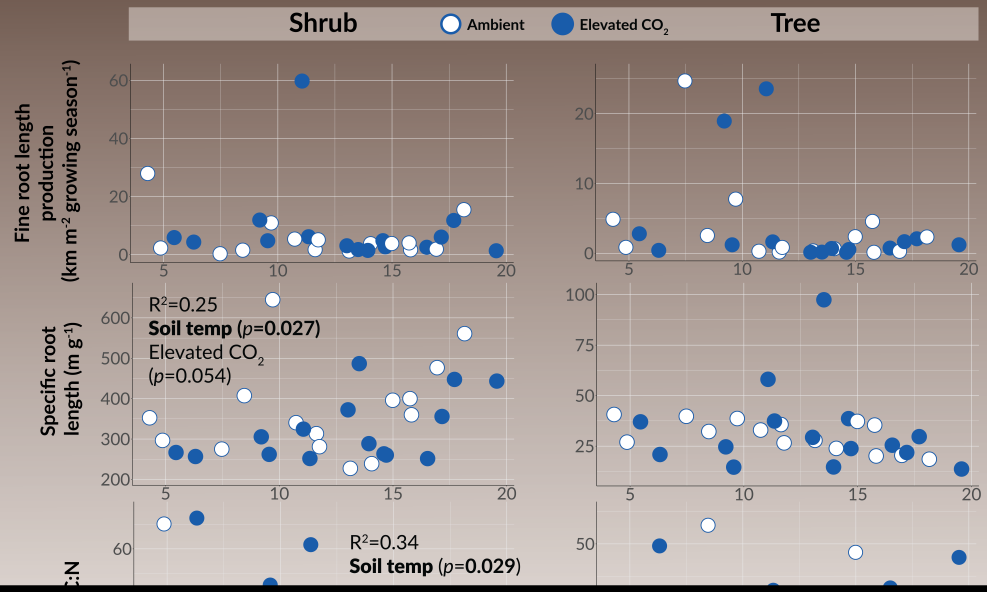
Plants assimilate carbon (C) and take up nutrients and water (**plant economics**[1])

Plant resource acquisition strategies have often been studied aboveground, leaving belowground processes understudied[2]

Peatland plant resource acquisition may differ from upland ecosystems[3,4] and **climate warming** may alter peatland vegetation communities, leading to **changes in plant resource acquisition strategies and C cycling**

How do shrub and tree root economic traits change with warming and elevated CO_2 in a peatland?

Over **5 growing seasons** (2014-2017[5], 2022), we collected fine roots from **root ingrowth cores** (min 10 cm depth):



Only models with marginal $R^2 \geq 0.2$ shown. Supplementary information with linear mixed effects model results:

Trends suggest more and longer shrub roots

Shrubs invest C more on length than mass

Shrubs acquire more N