Is the FACE system polluting other areas of the forest.

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BIRMINGHAM INSTITUTE OF FOREST RESEARCH

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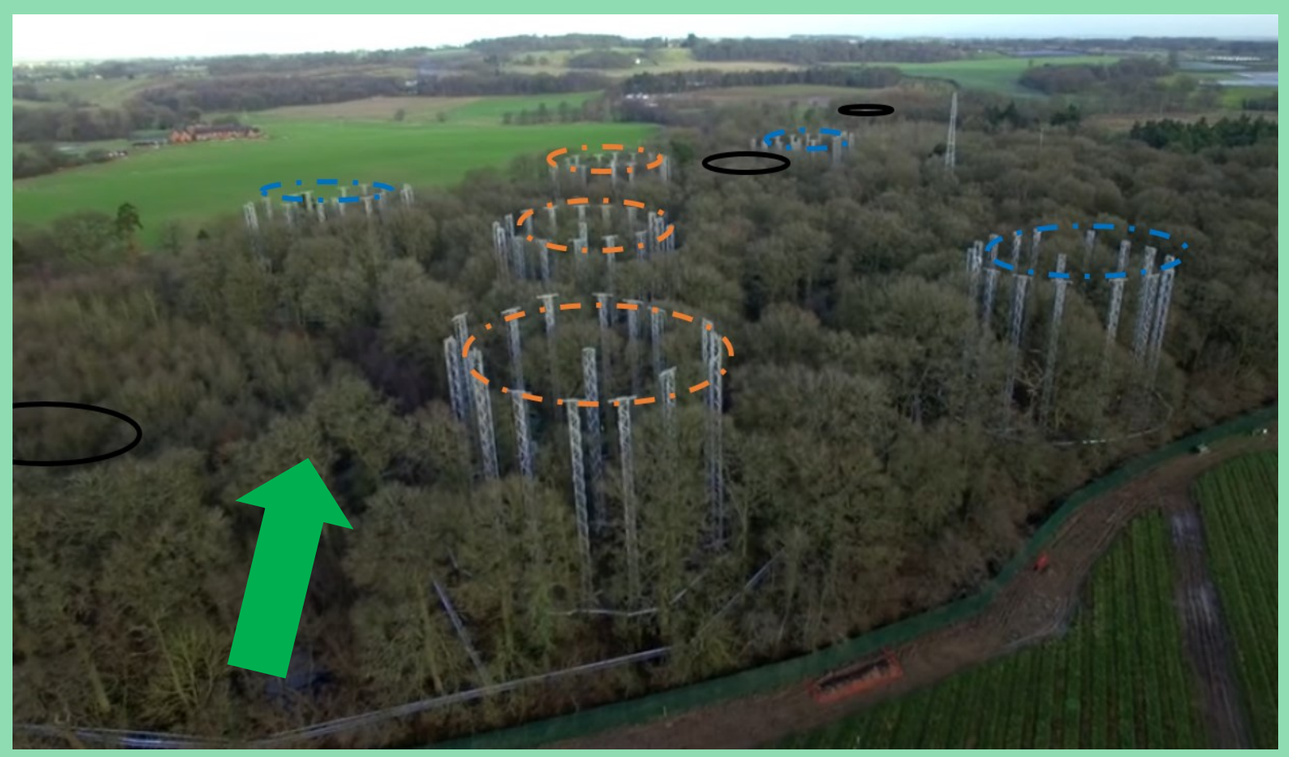
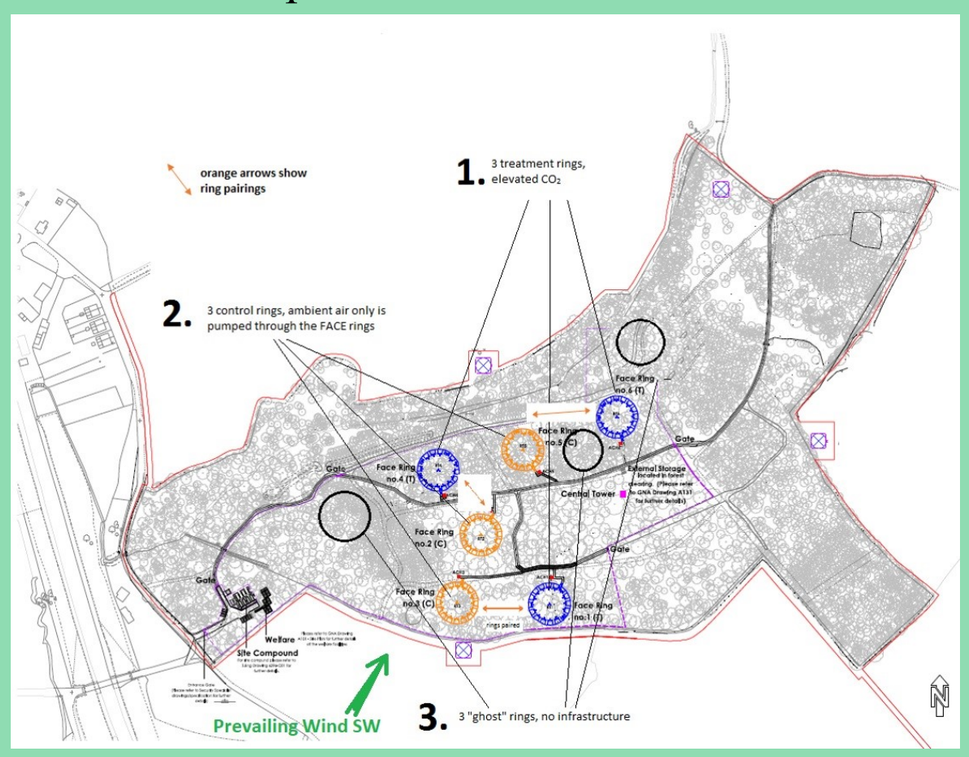
The Free Air Carbon Enrichment (FACE), baseline areas are used as an important datum; they are used as the background data when conducting growth rate experiments. The experiment has three enhanced areas, that are dosed with CO_2 and continually monitored to confirm the correct dose was applied. There are three control ambient areas, that have similar towers, air injection fans and monitoring system as the dosed areas but no extra CO_2. There are three undisturbed areas, that have no towers and no extra air fans, to ensure that they are a reliable control measure they need to be a natural as possible. By adding a CO_2 monitoring system into the undisturbed areas, they can be validated, that they are truly representative of a native forest and that they are not being polluted by the enhanced CO_2 areas.

This project will design and construct a monitoring system for the three baseline areas.

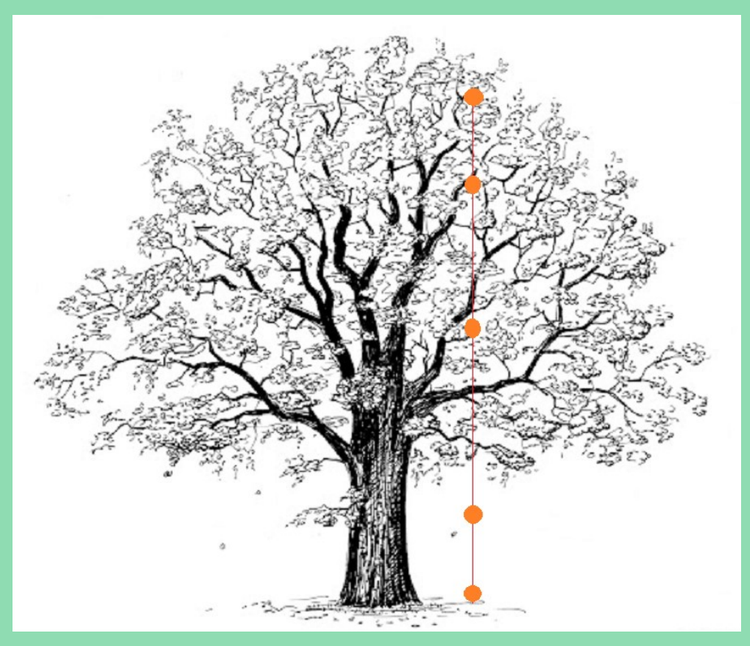
An overhead view of the forest



A plan view of the forest

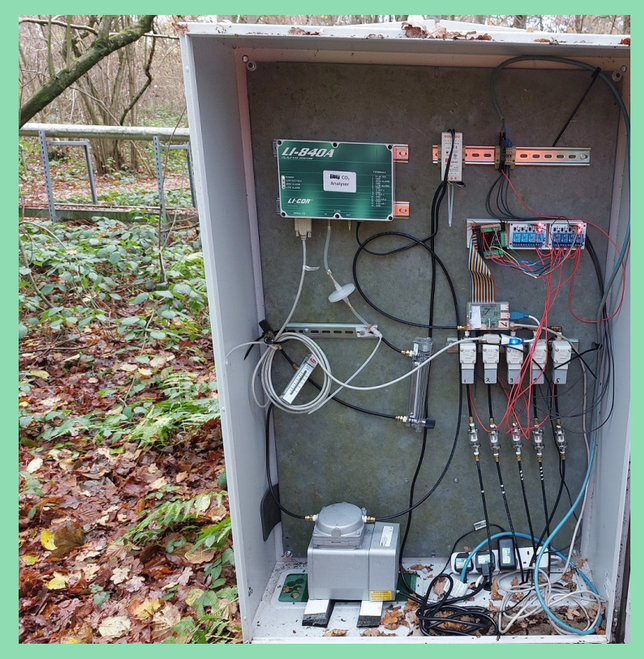


Enhanced areas shown blue, Ambient orange and Baseline black, prevailing wind indicated by the green arrow.



The Baseline monitoring system, inlets are suspended from the tree nearest to the centre of the area, they draws air from five different heights

18m, 14m, 10m, 2m, 0.25m



Early results, the CO_2 found in Baseline plot 7, reading is CO_2 above control plot CO_2, from July until October 2021.