

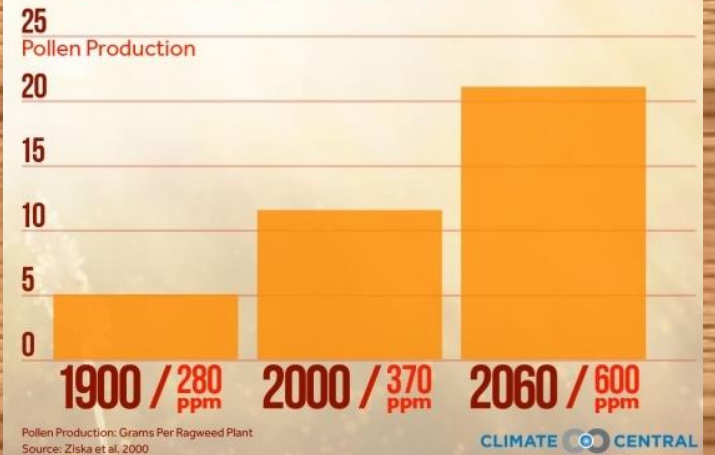
Future climate: Future pollen and spores

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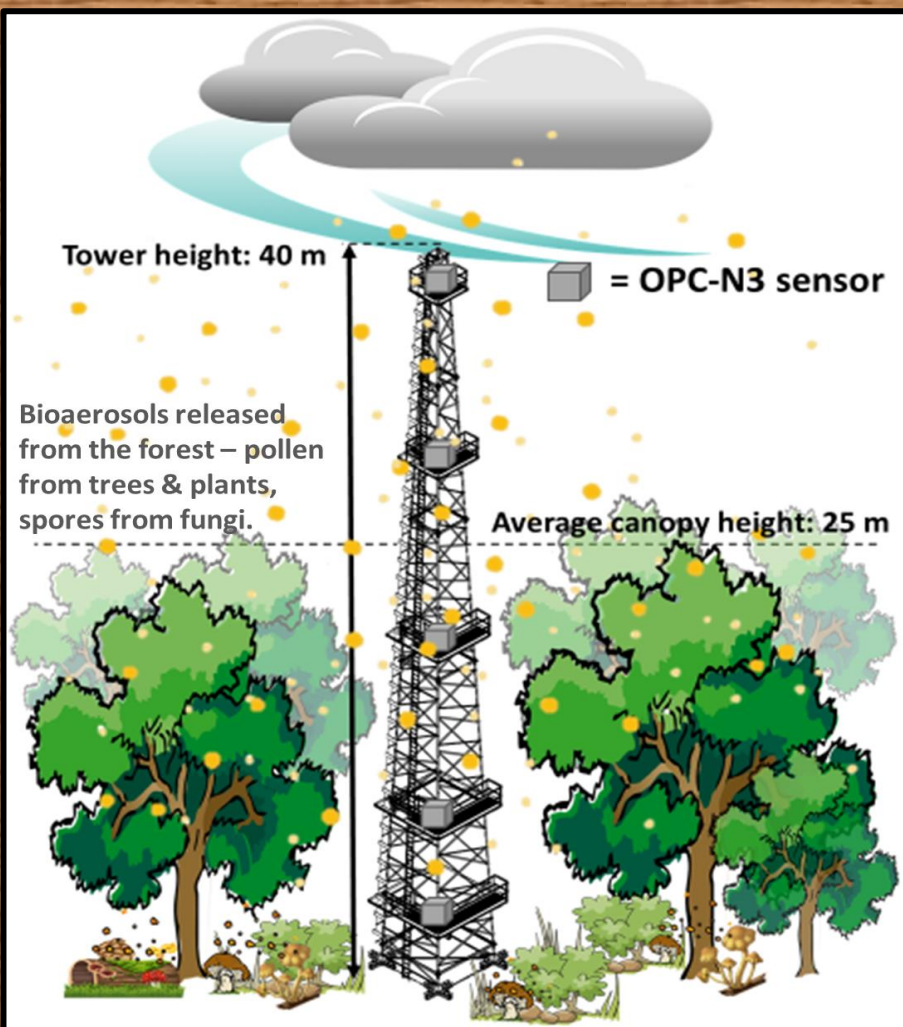
Background

- Forests are a major source of bioaerosols (i.e. pollen & fungal spores) which concern the propagation of genetic material, cloud interactions & climate, and public health.
- Bioaerosol sources may be affected by future climate & increasing levels of CO₂, resulting in changes in season, productivity and allergenicity or toxicity.
- The BIFoR FACE facility provides a unique opportunity to experimentally investigate the forest as a bioaerosol source and the potential effect of elevated CO₂.

MORE CO₂ = MORE POLLEN



<https://www.climatecentral.org/gallery/graphics/more-co2-more-pollen>

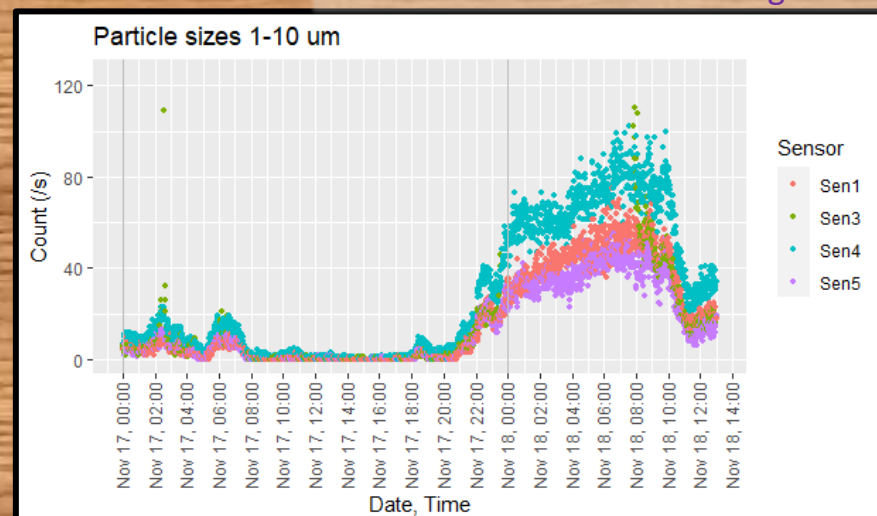
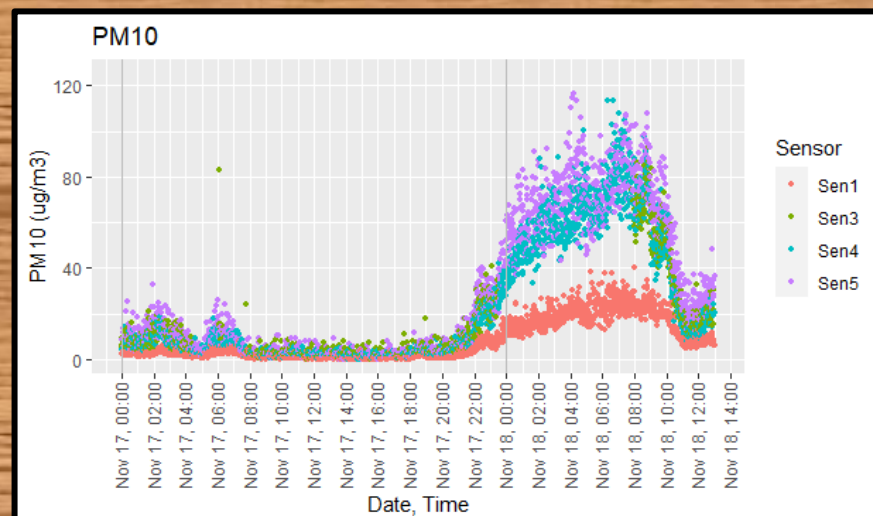


Methods

- To investigate the effect of atmospheric CO₂ levels on pollen productivity, oak flowers will be sampled from the BIFoR FACE facility's ambient (current-level) and elevated (future-level) CO₂ arrays and the pollen content measured.
- Meanwhile, low-cost OPC sensors are being implemented to investigate airborne bioaerosol concentrations in the forest.
- The experiment detailed in the diagram is intended to investigate the vertical mixing of pollen and spores in the forest as they are released, and the extent of their release above the canopy into the atmosphere.
- A test run for this experiment has just been carried out for Nov/Dec, and will be repeated for the oak pollen season in spring.

Sensors 1-5 from lowest to highest.

Results TBC...



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