Interreg
North-West Europe
Care-Peat
European Regional Development Fund

Winmarleigh Carbon Farm

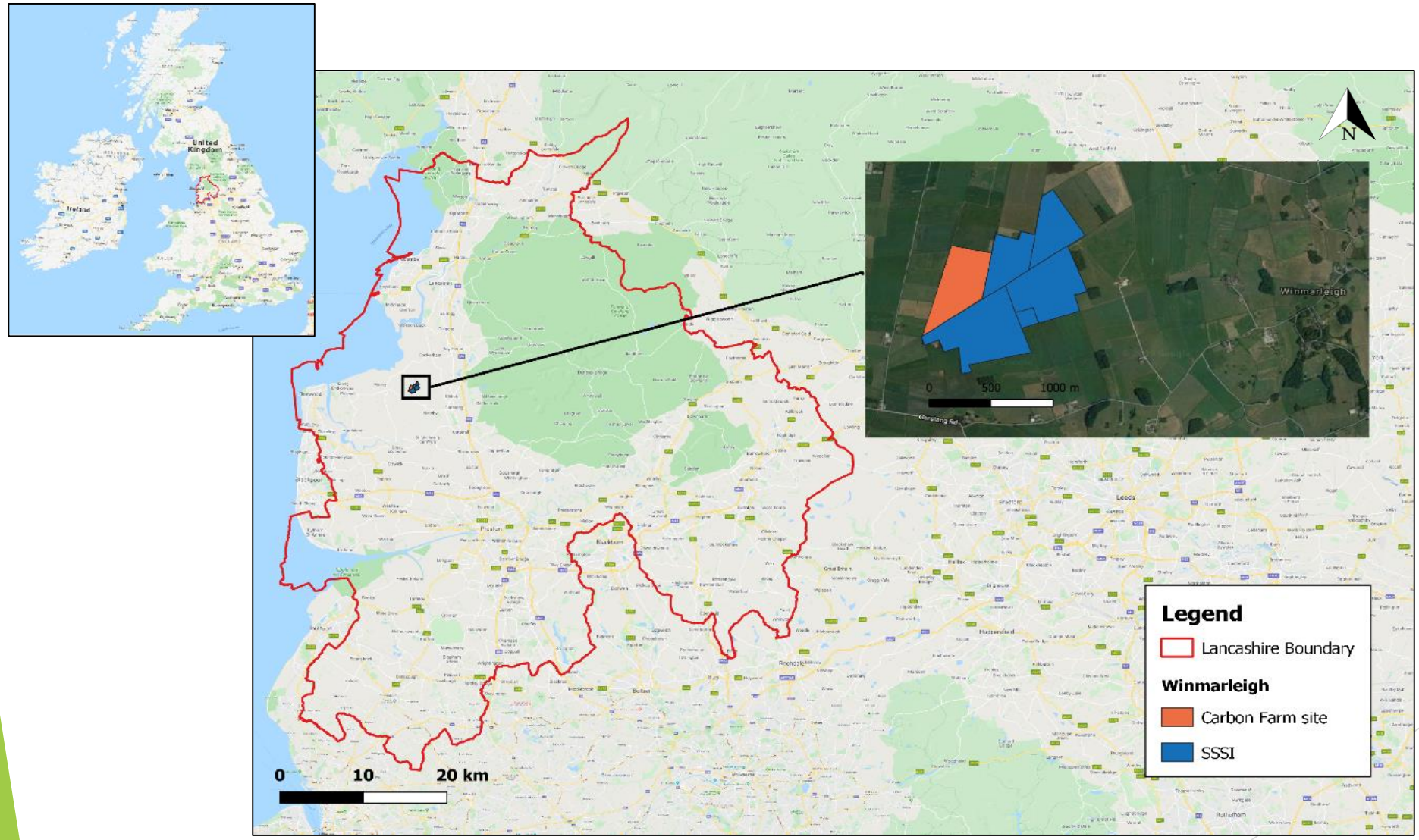
Carbon Farming

- Growing a permanent non-harvested crop of *Sphagnum* moss for the purpose of storing and protecting carbon in peat soils

Investigating:

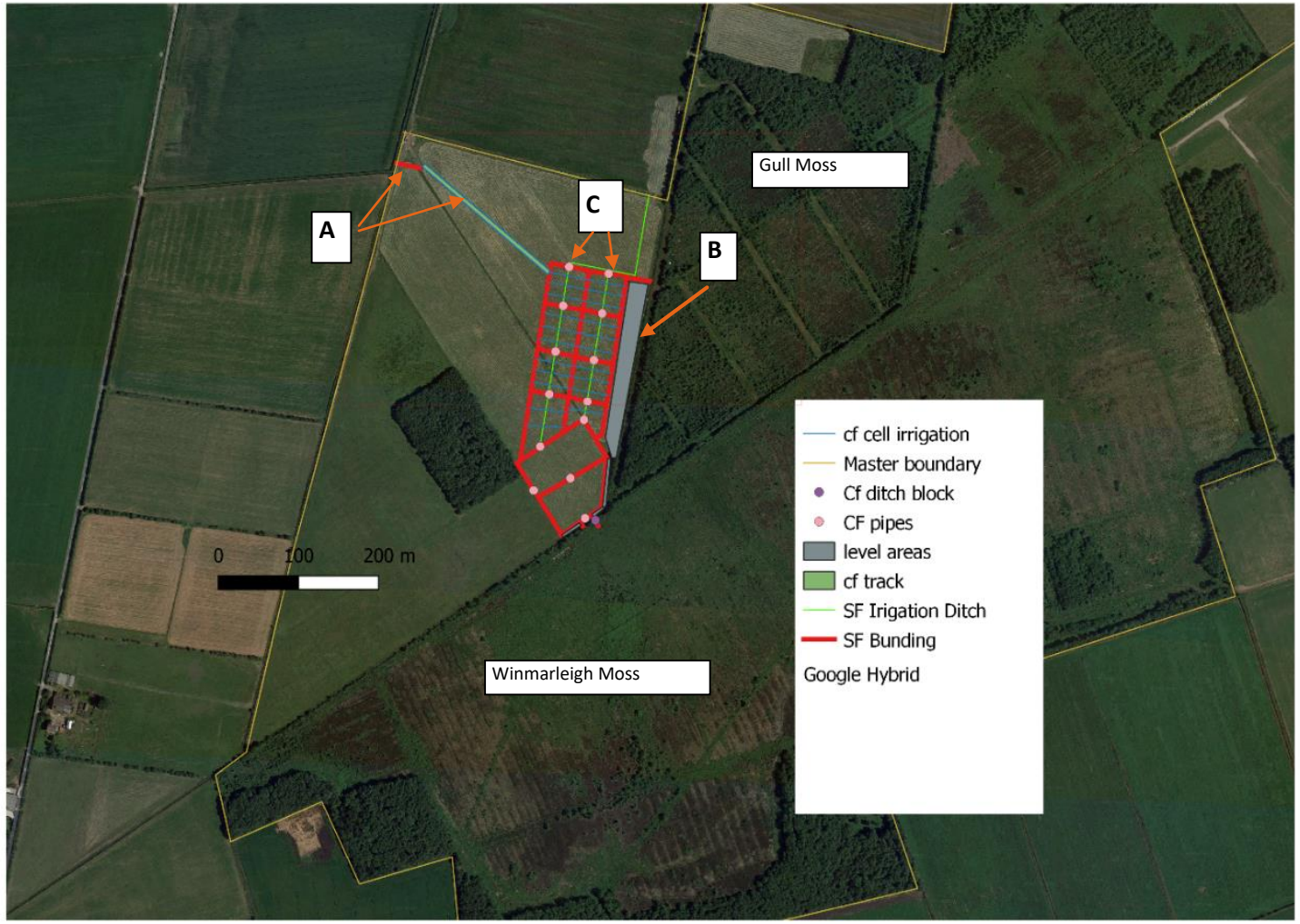
- Carbon emission reduction and carbon storage through farmland re-wetting and intensive planting of sphagnum
- Effect on the neighbouring conservation site through re-wetting of this buffer land
- Economic viability of alternative land management techniques for peat-based soils as well as benefits to society.

Carbon Farm pilot

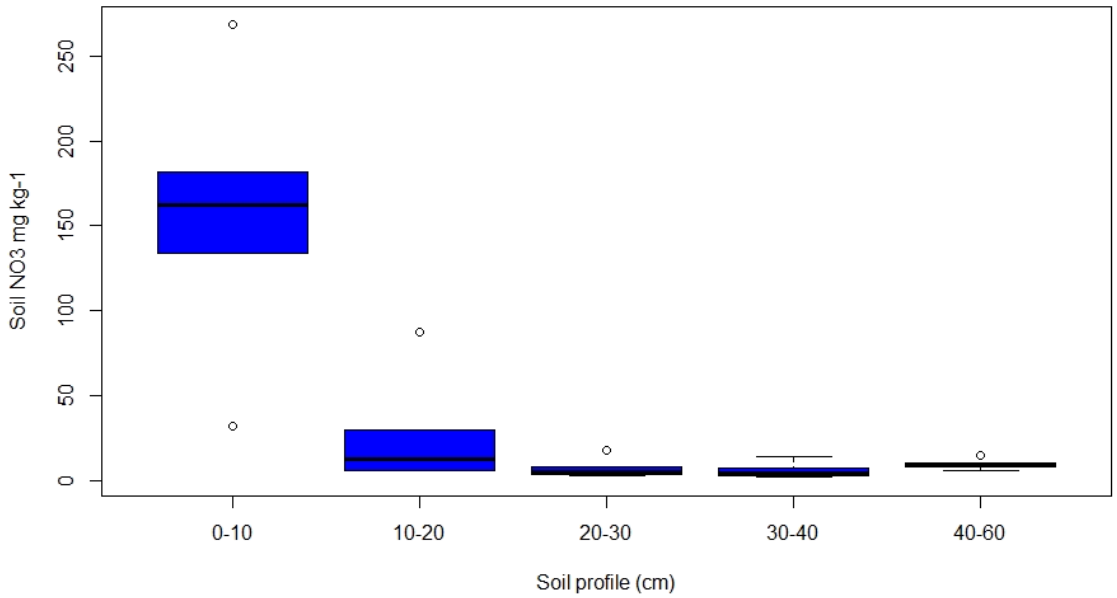


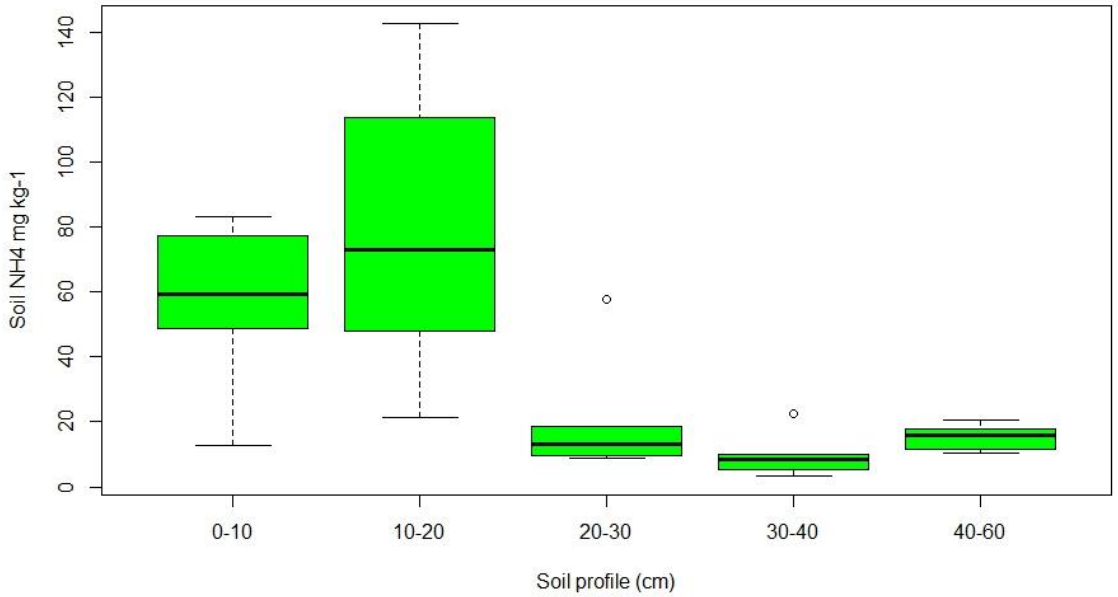
Overall restoration plan

- Strip top 10cm soil (to remove weeds seed and nutrients)
- Re-wet farmland by ditch-blocking and bund creation
- Create water storage areas and irrigation means
- Plant appropriate sphagnum moss species
- Monitor CO_2, C-storage & other GHG emissions on pilot site and control site
- Monitor effect of re-wetting buffer zone area on the adjoining SSSI



Pre works Winmarleigh plant available soil N by profile summer 2019.

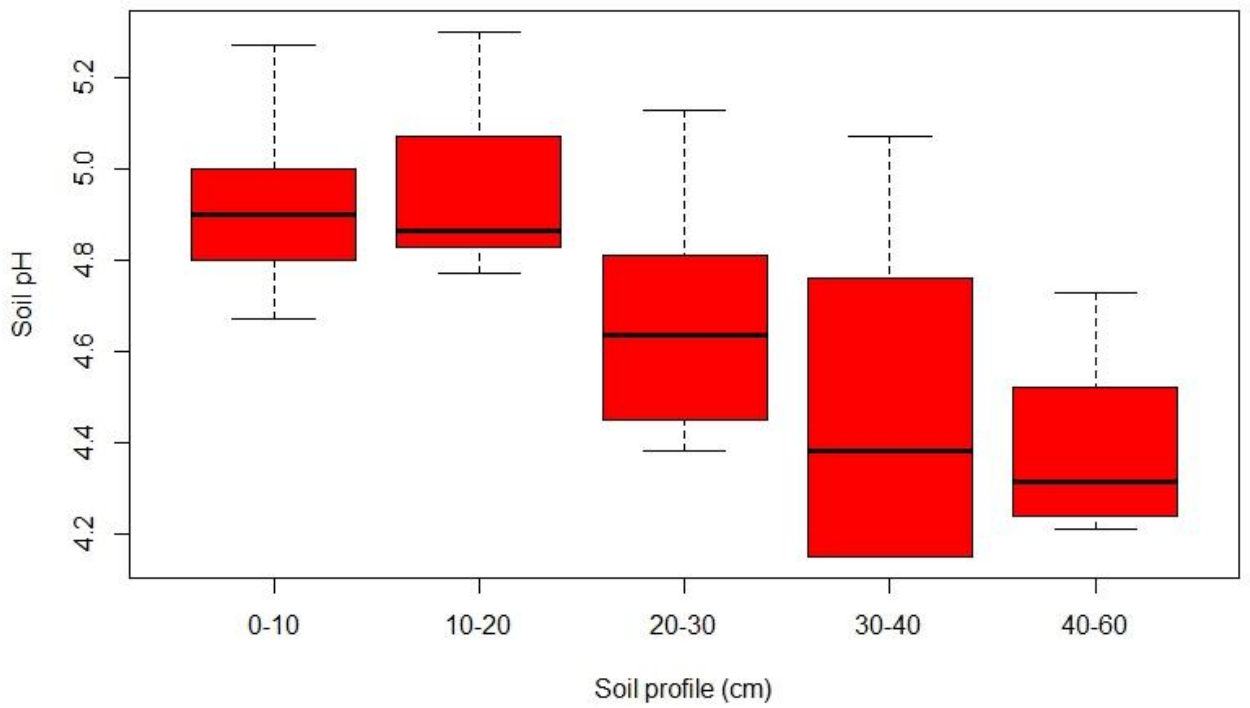




- UK bog survey range for top 15 cm (summer data): NO_3 0-33.5 mg kg^{-1}; NH_4 0-70.04 mg kg^{-1}

Carbon Farm area soil pH by profile before work commenced.

- raised bog pH<4.2
- poor fen pH 4.5-5.5
- rich fen pH 5.5-6.9



Work started beginning May- stripping the top soil and constructing bunds, irrigation channels, sump areas, and ditch blocking

Cells and irrigation ditches

planting 175,000 sphagnum plugs

Float control valve

Automated system allowing us to control the water levels remotely

GHG monitoring equipment

Hydrology

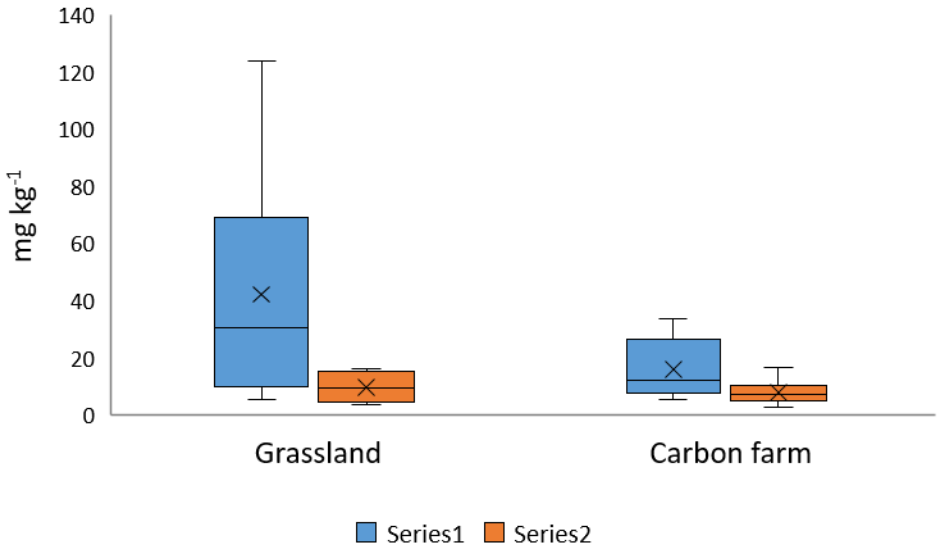
Chemical changes

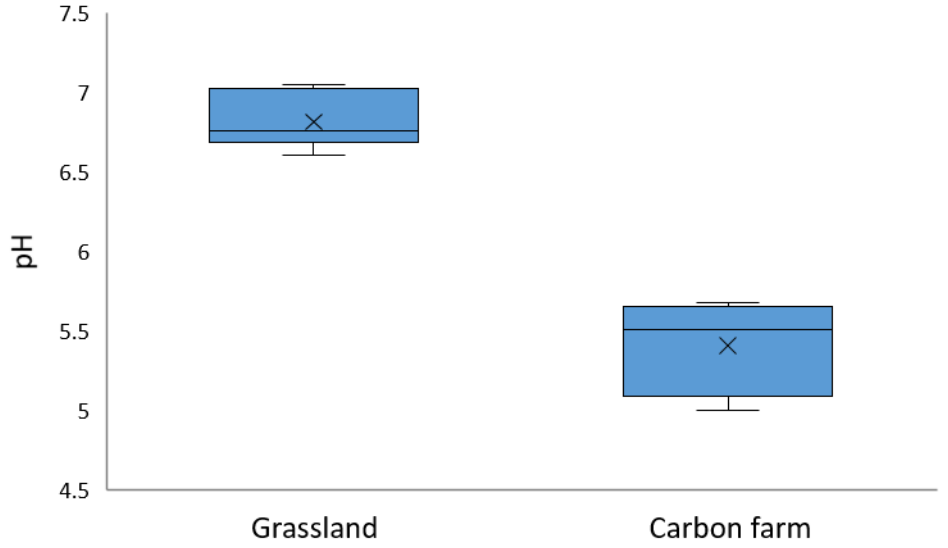
Vegetation changes

Control plot

Initial results?

Changes in chemical profile between control site and Carbon Farm February 21

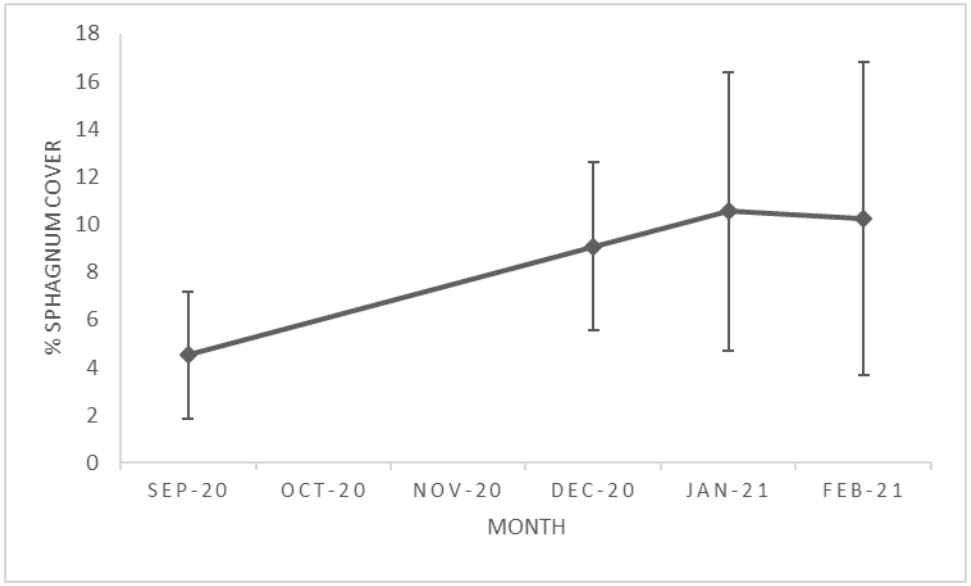




Initial results

- Soil Nitrate and Ammonium levels have dropped in the Carbon Farm compared to the control.
- pH as also reduced but still slightly high for Sphagnum growth.

% vegetation cover of Sphagnum moss on Carbon farm collars between September 20 & February 21.



Sphagnum plugs were planted in September 20

Issues to overcome

- Are nutrients required?
- Weeds control until Sphagnum established
- How to upscale and mechanise management

Potential funding opportunities

- **Exploring funding opportunities**

- ELMS- Environmental Land Management Services
- Biodiversity Net Gain
- Both of the above will hopefully work in tandem with the Peatland Strategy when published.
- Blended finance including contributions from Government and private businesses. With more and more companies looking to mitigate their carbon use whilst also working with them to reduce there emissions.

Questions?