A ten-year trajectory of hydrological recovery in a restored blanket peatland

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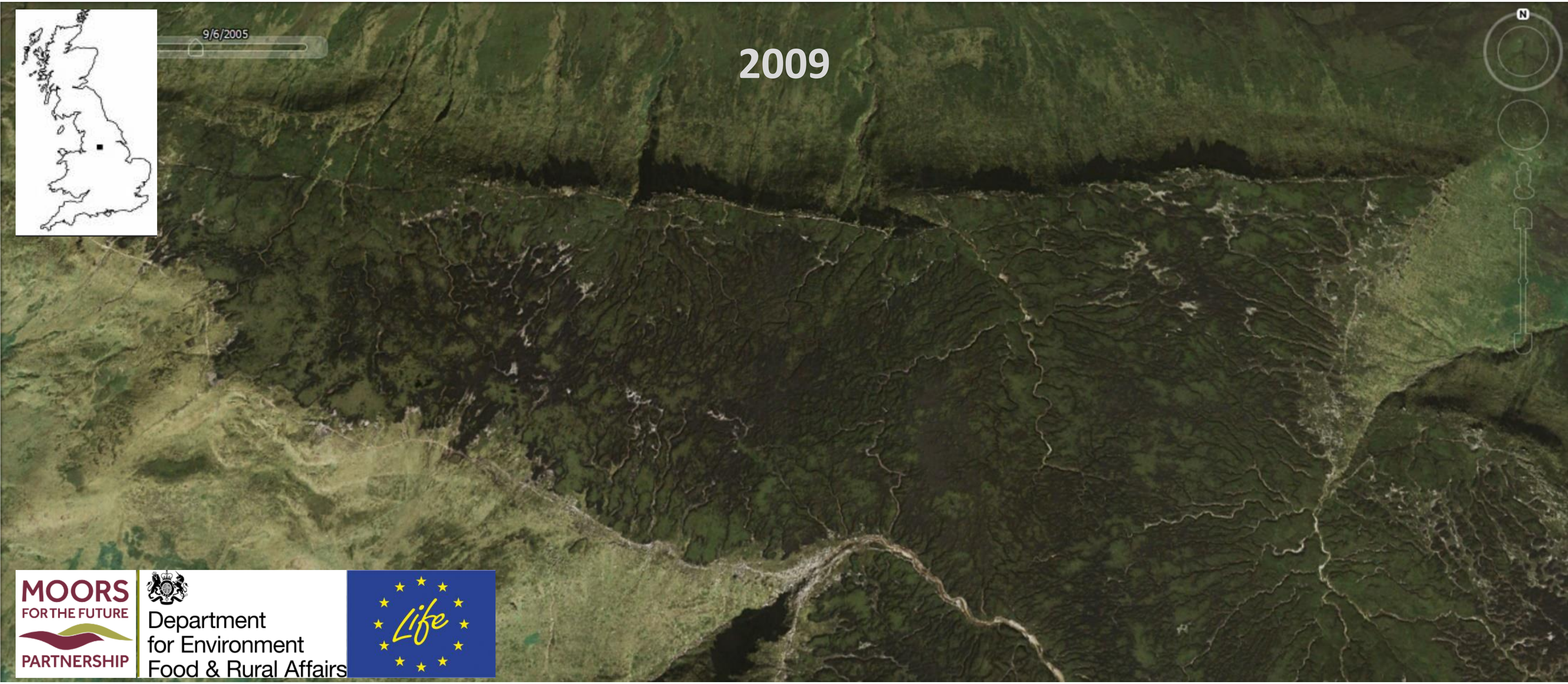
Restoration on Kinder Edge



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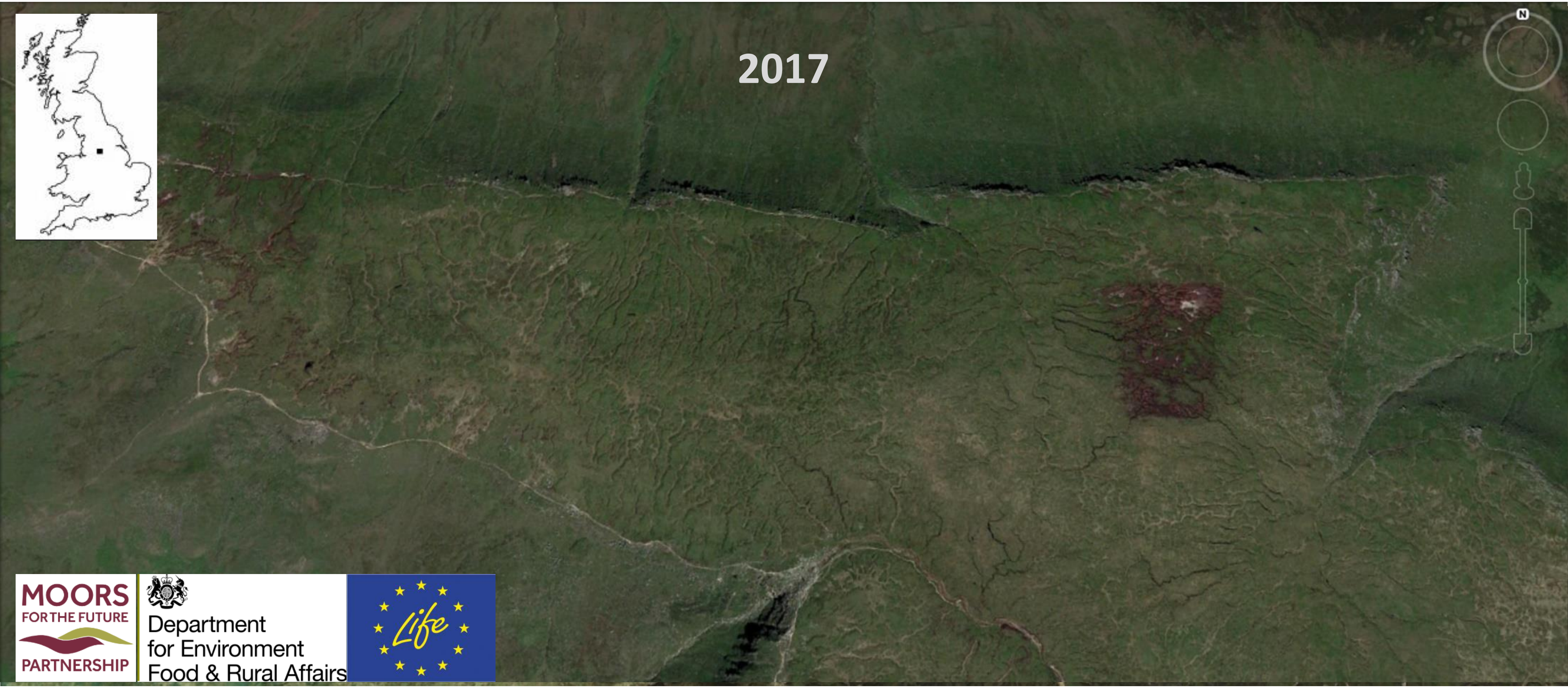
Restoration on Kinder Edge

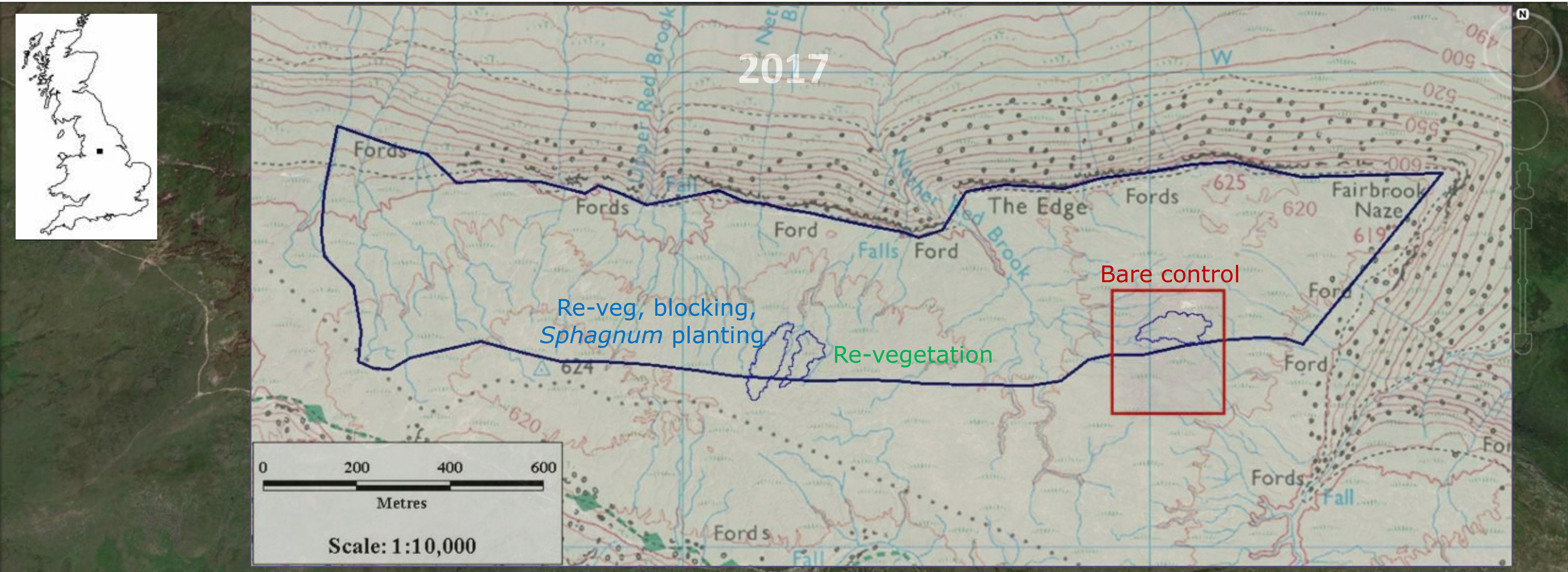


MOORS FOR THE FUTURE PARTNERSHIP

Department for Environment Food & Rural Affairs

Life

Restoration on Kinder Edge



Changes on the ground

2010

Intervention

2011

Lime, seed, fertiliser, mulch

LSFM + blocking

2014

Intervention

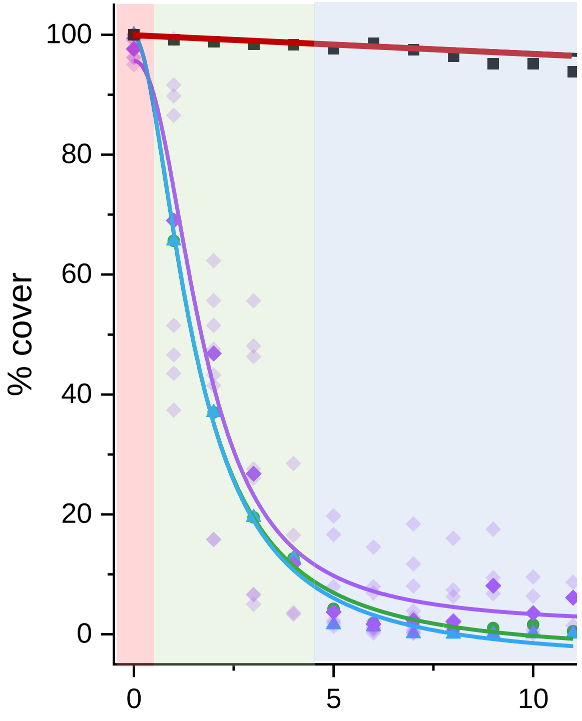
2015

Sphagnum

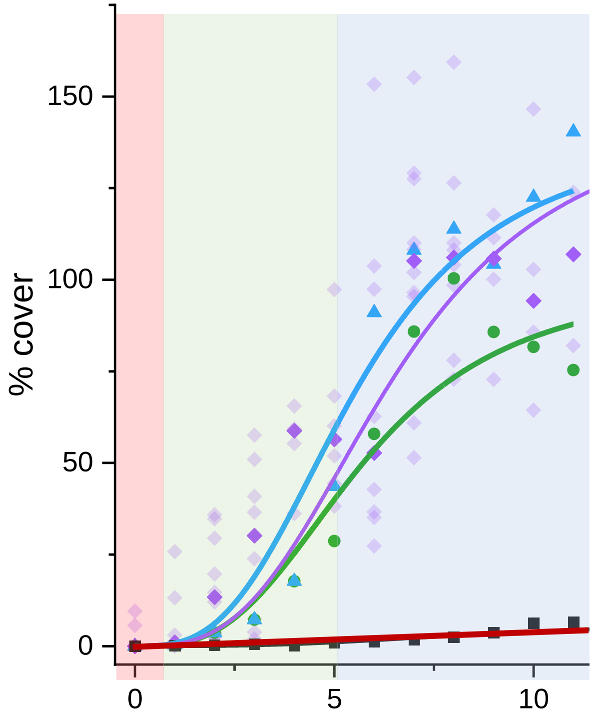
2019

VEGETATION

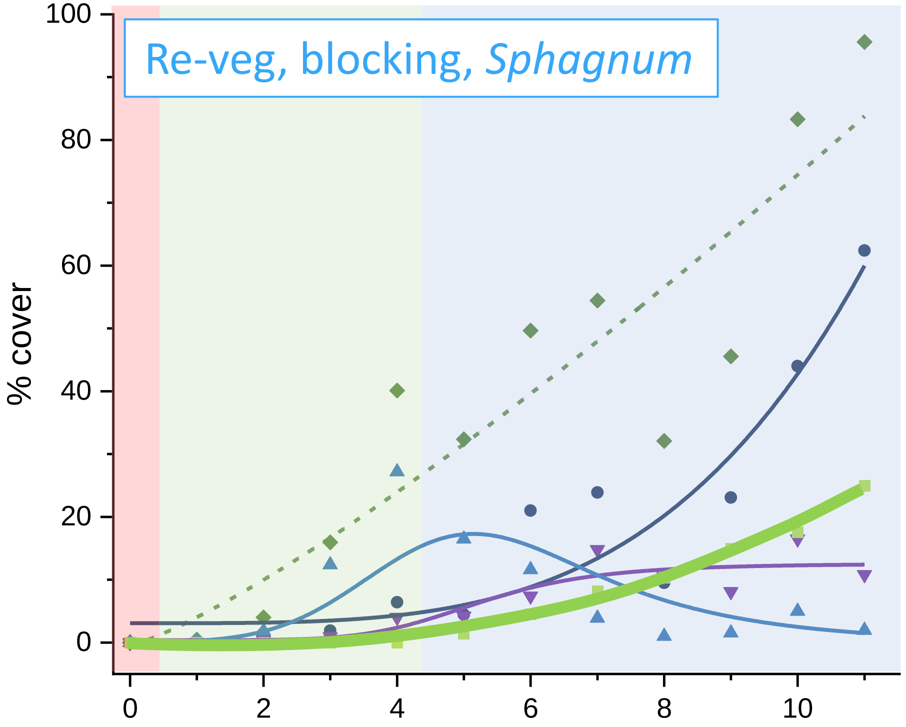
BARE PEAT COVER



INDICATOR SPECIES



BRYOPHYTES



Unrestored — Re-veg only — Re-veg, blocks, *Sphagnum*

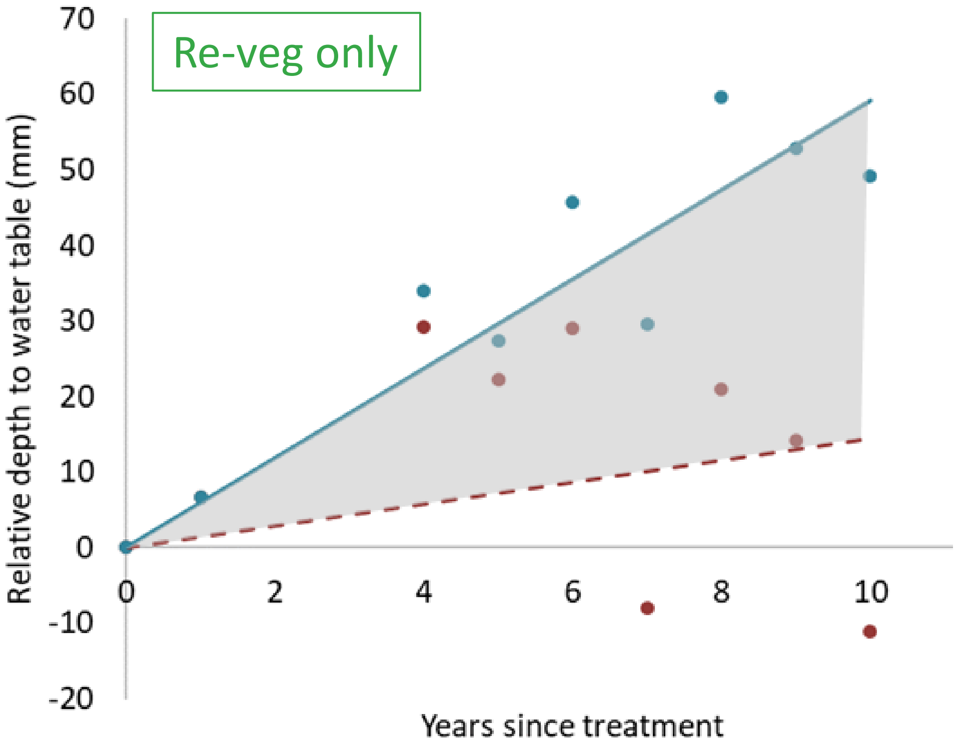
Sphagnum

Rapid reduction in bare peat cover

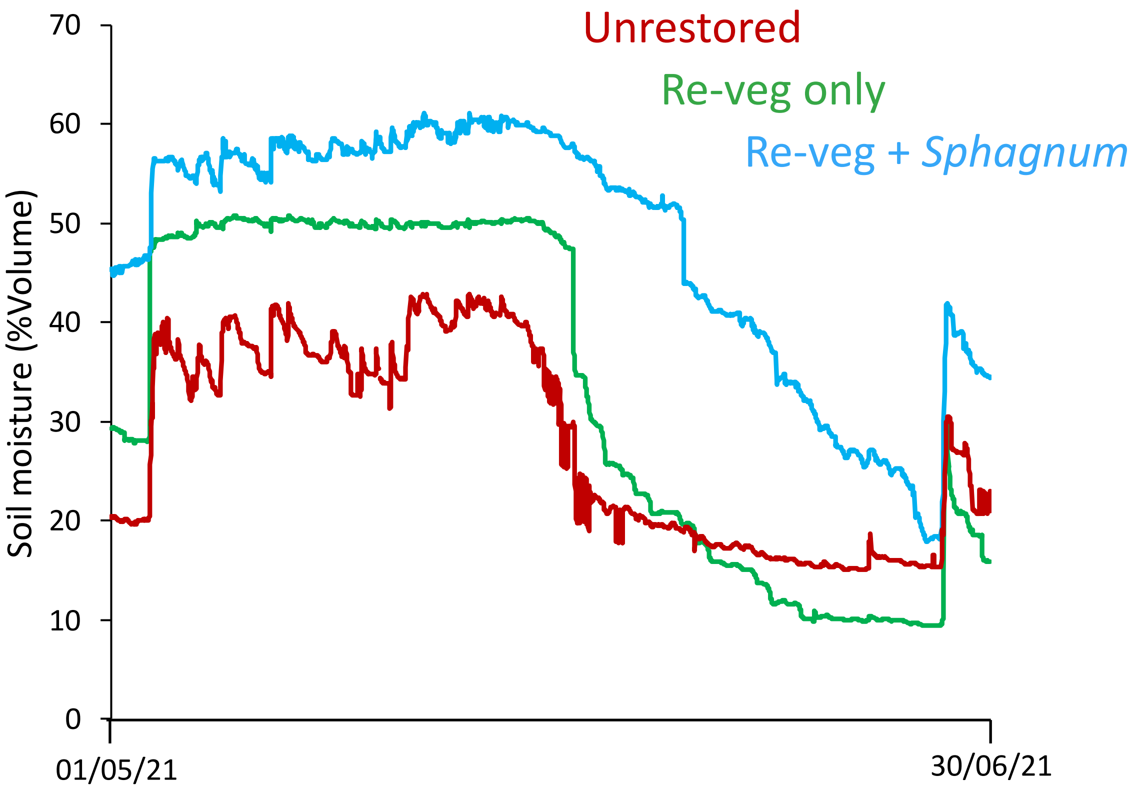
Trajectories diverge after application of *Sphagnum*

Progressive increase in *Sphagnum* cover after initial application

WATER TABLE



Steady, year-on-year improvements - restored water tables rising towards surface



Higher surface moisture and resistance to drying under *Sphagnum*

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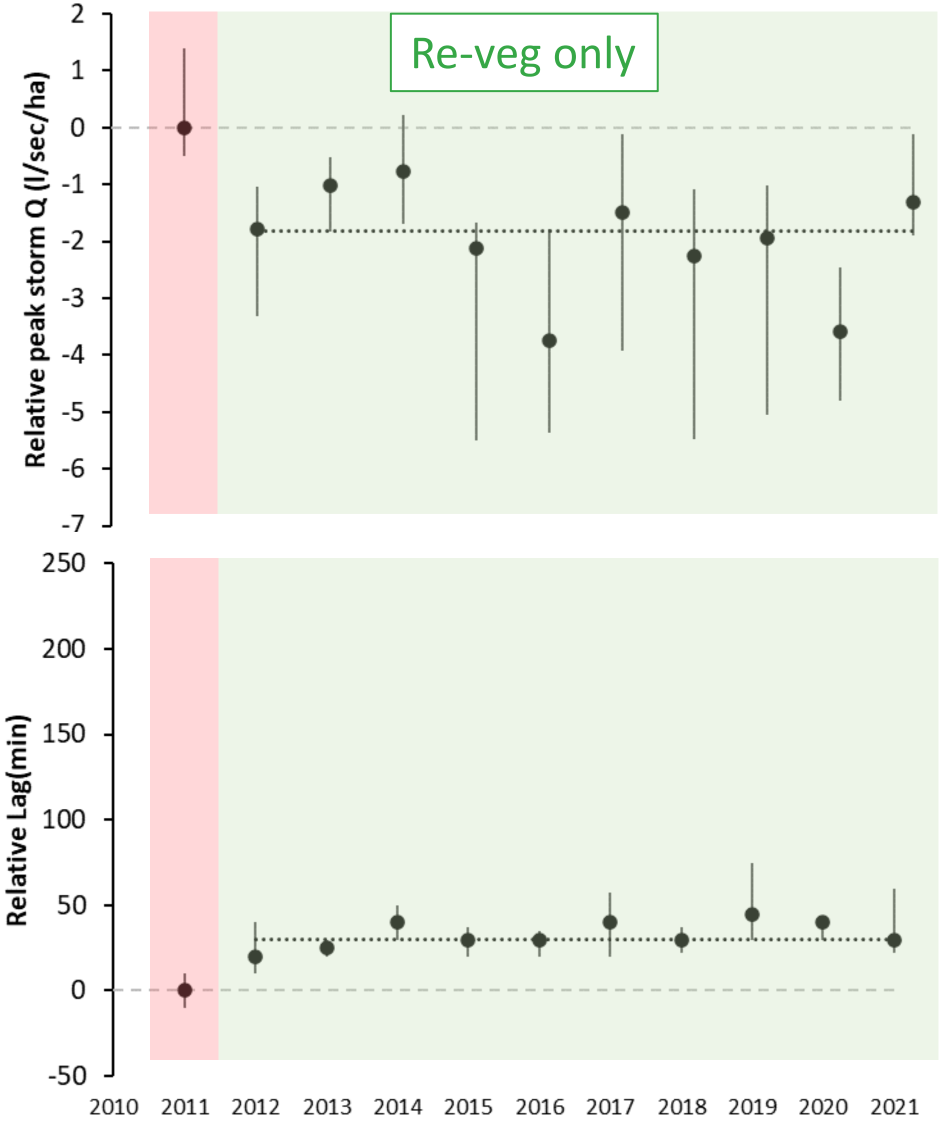
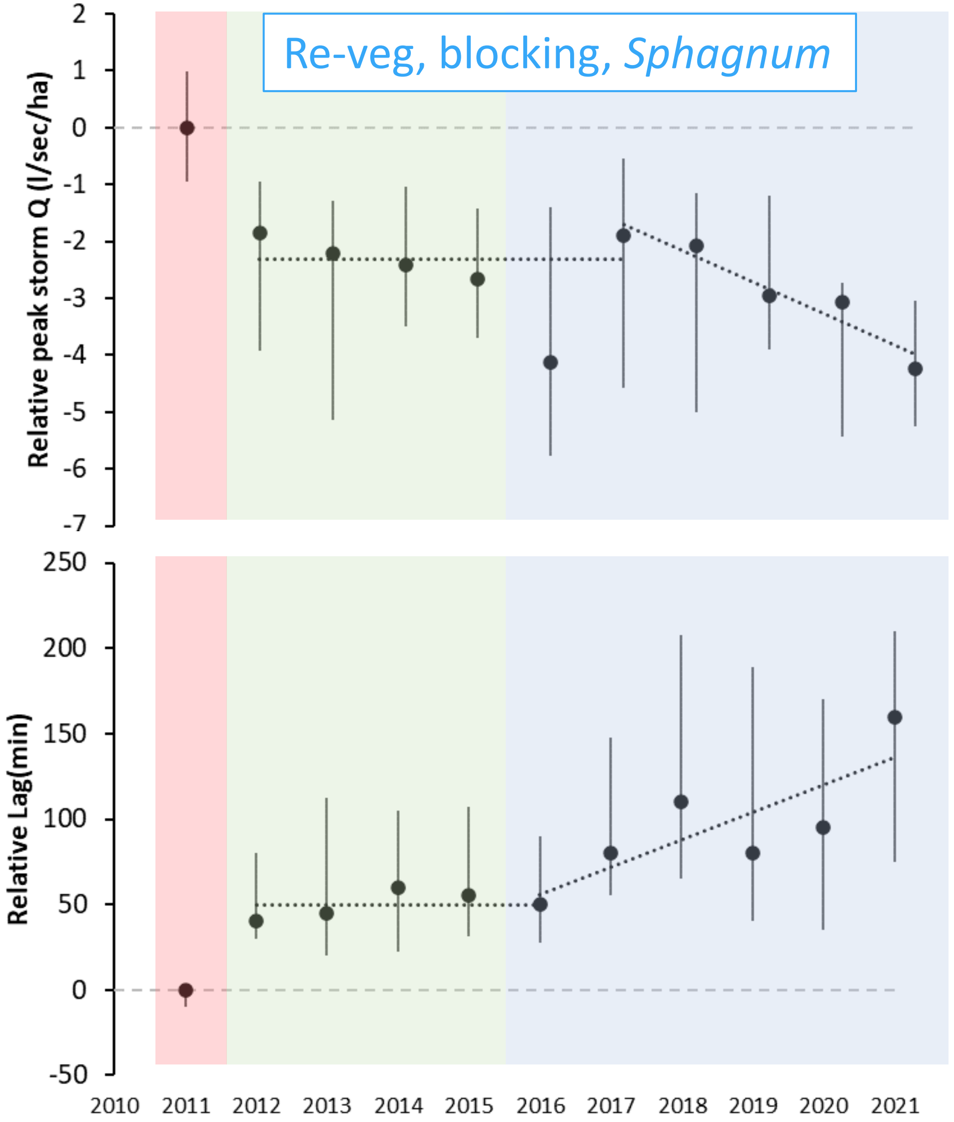
PROTECT NFM

WATER FLOW



Peak flows are lower

Lag times are longer



Step change following initial treatment, no further improvement

Step change following initial treatment, gradual improvement following *Sphagnum* planting

SUMMARY

- Restored **peat is getting wetter**!
- Addition of ***Sphagnum* maintains wetter conditions** better than 'standard' re-vegetation
- Peak discharges are lower, lag times are longer, but no change in volume of runoff → **surface roughness key driver of slowing the flow of water**
- Addition of *Sphagnum* provides further roughness to slow the flow
- **No conflict between re-wetting for *Sphagnum* and slowing runoff for flood risk management**

Find out more about what this means at the catchment scale later in the week…

Goudarzi et al., *Investigating process drivers of Natural Flood Management and its flood risk reduction potential across scales.*
Fri 27 May, 14:26–14:33 in HS 2.4.4
Hydrological extremes: from droughts to floods