



Mapping burning for game management in the UK uplands



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Why burn heather?

- Mosaic of ages
- Strips max 2 ha, up to 55m wide
(<https://www.gov.uk/heather-and-grass-burning>)
- Rotations 8 - 30 years



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6,600–17,000 km²

5–15% UK uplands

20–60% of heather moorland



Environmental concerns

- **Deep peat**

Carbon release?

Water quality: DOC, POC, pH

Invertebrates

(EMBER Brown et al 2014)



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- **Habitat condition**

Designated sites (SAC, SPA)

“Unfavourable” condition

53% of area (Natural England 2008)





Mapping burning

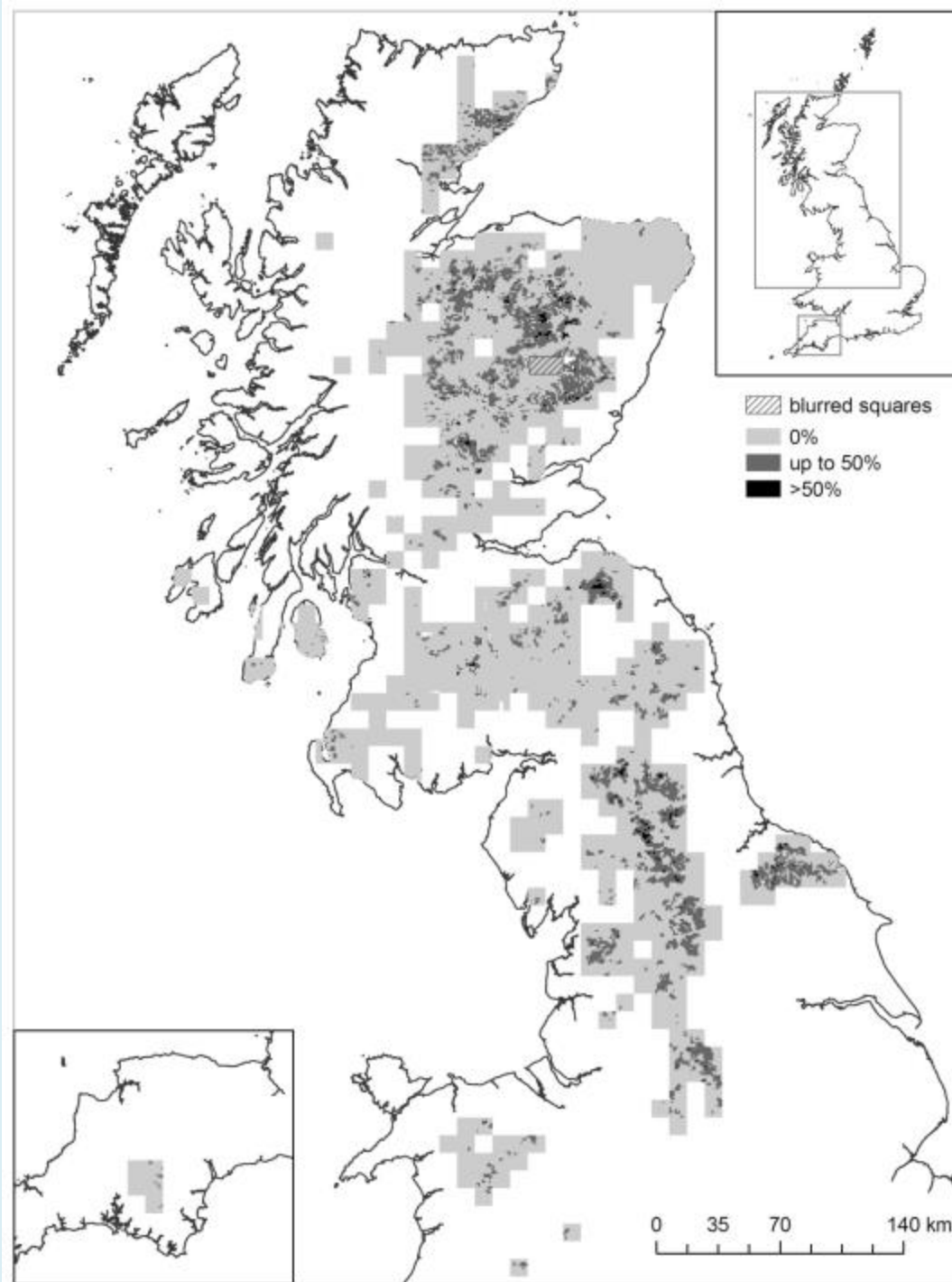
- Previously 10-km scale Eng, Sco, Wal (Anderson et al 2009)

Analyses

- Burning extent
- Overlap with deep peat
- Designated sites
- Trends in number of burns

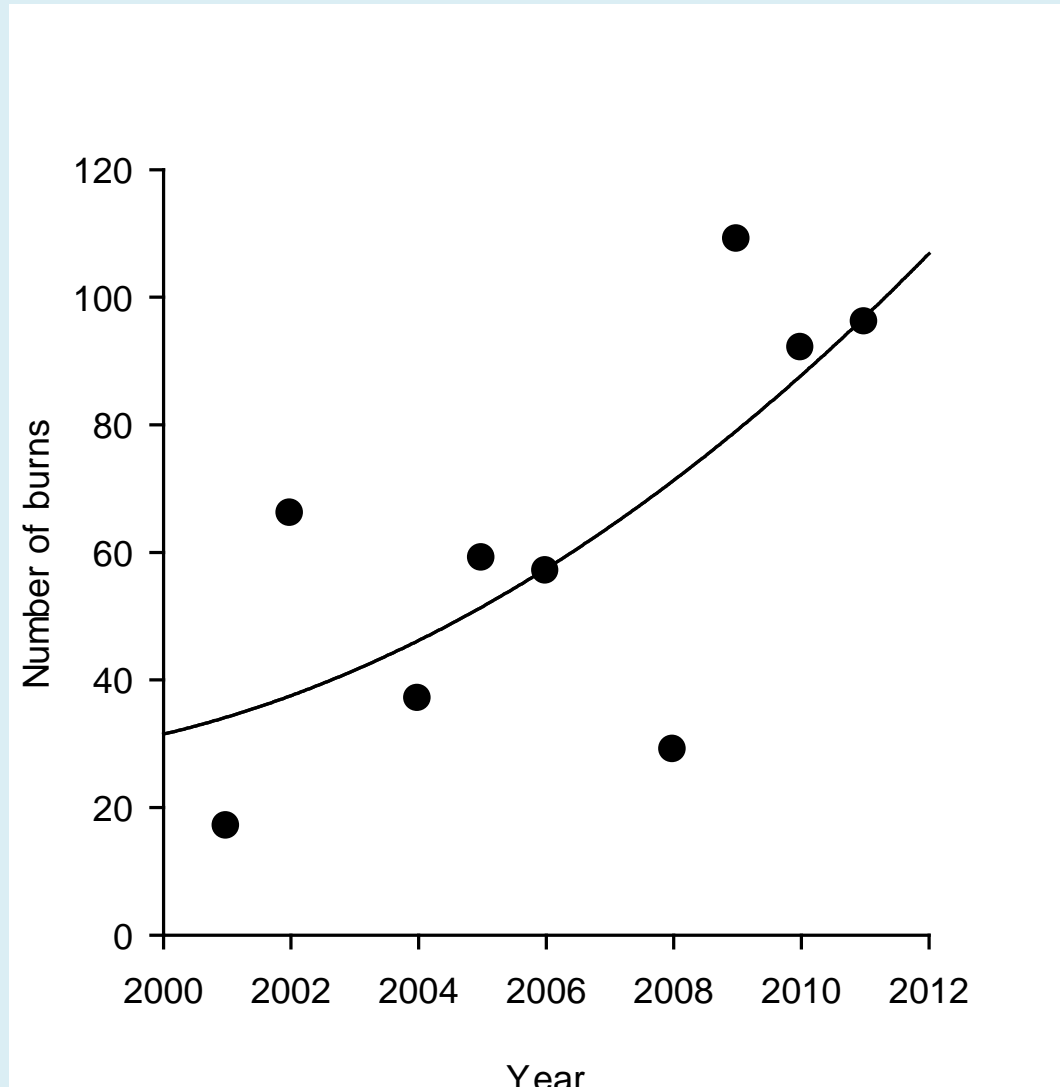
Results – burning extent

- 8551 burned squares
 - 5245 Scotland
 - 3139 England
 - 167 Wales

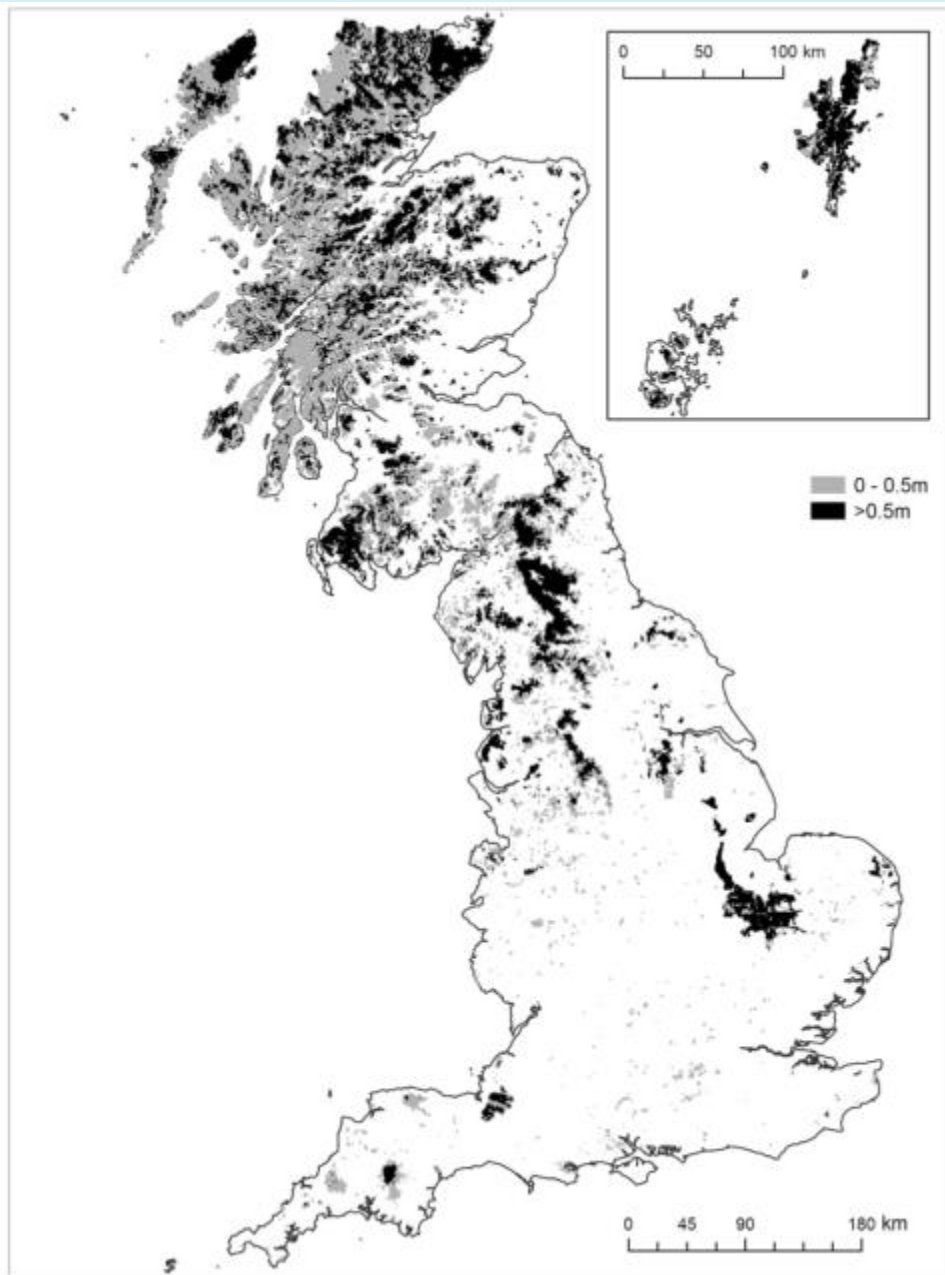


Trends in burning - GB

P < 0.001



Overlap with deep peat



Overlap with deep peat

Deep peat 33.5%

Shallow/no peat 66.5%

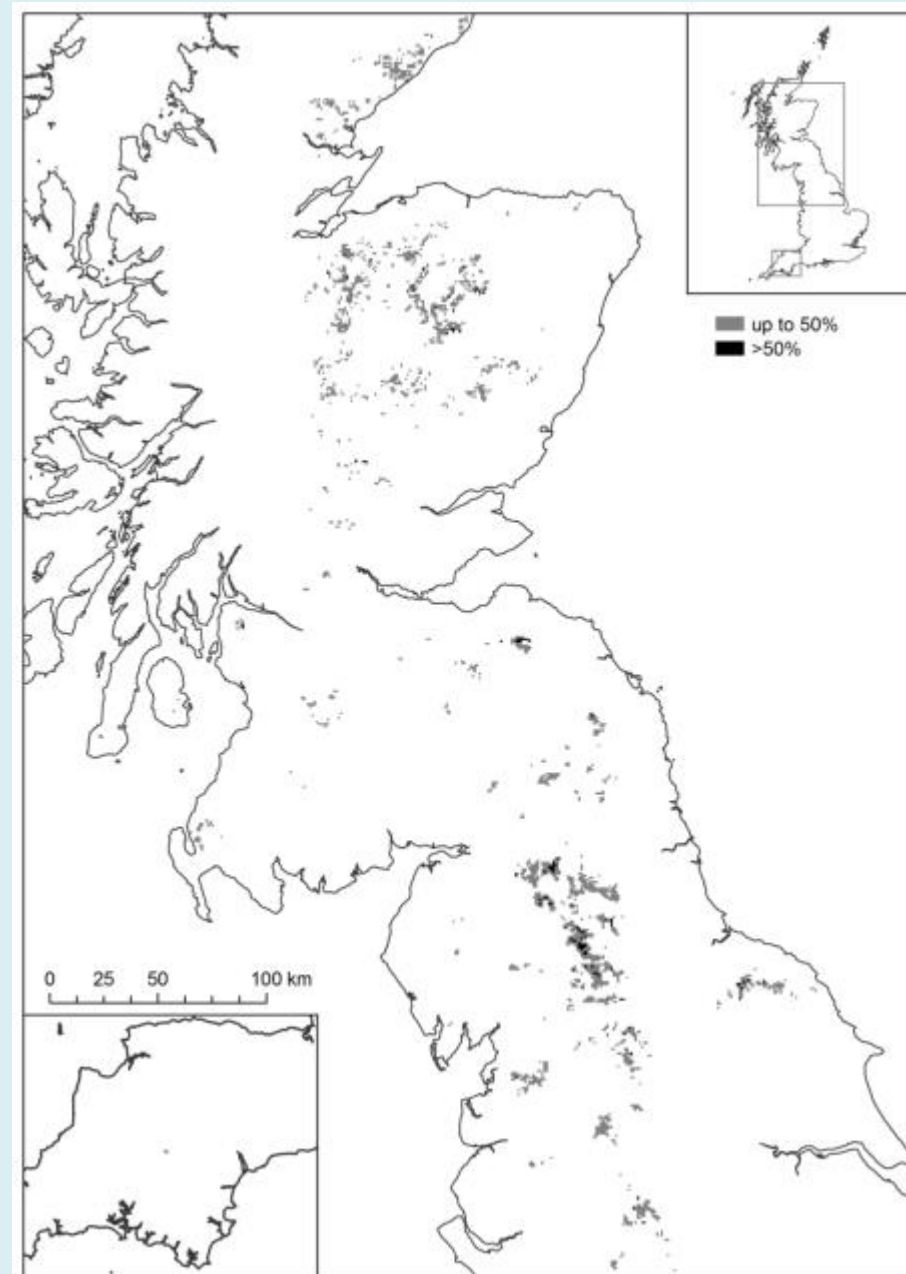
England: 44% deep peat

Scotland: 28%

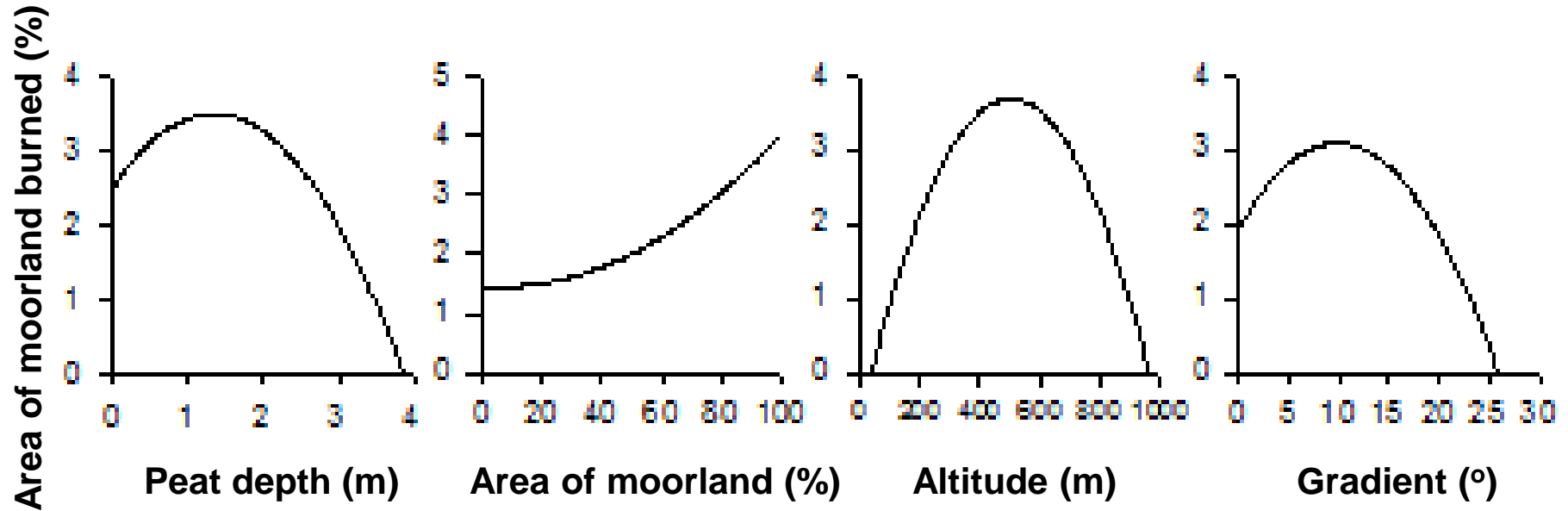
Area burned over deep peat

60% England

40% Scotland



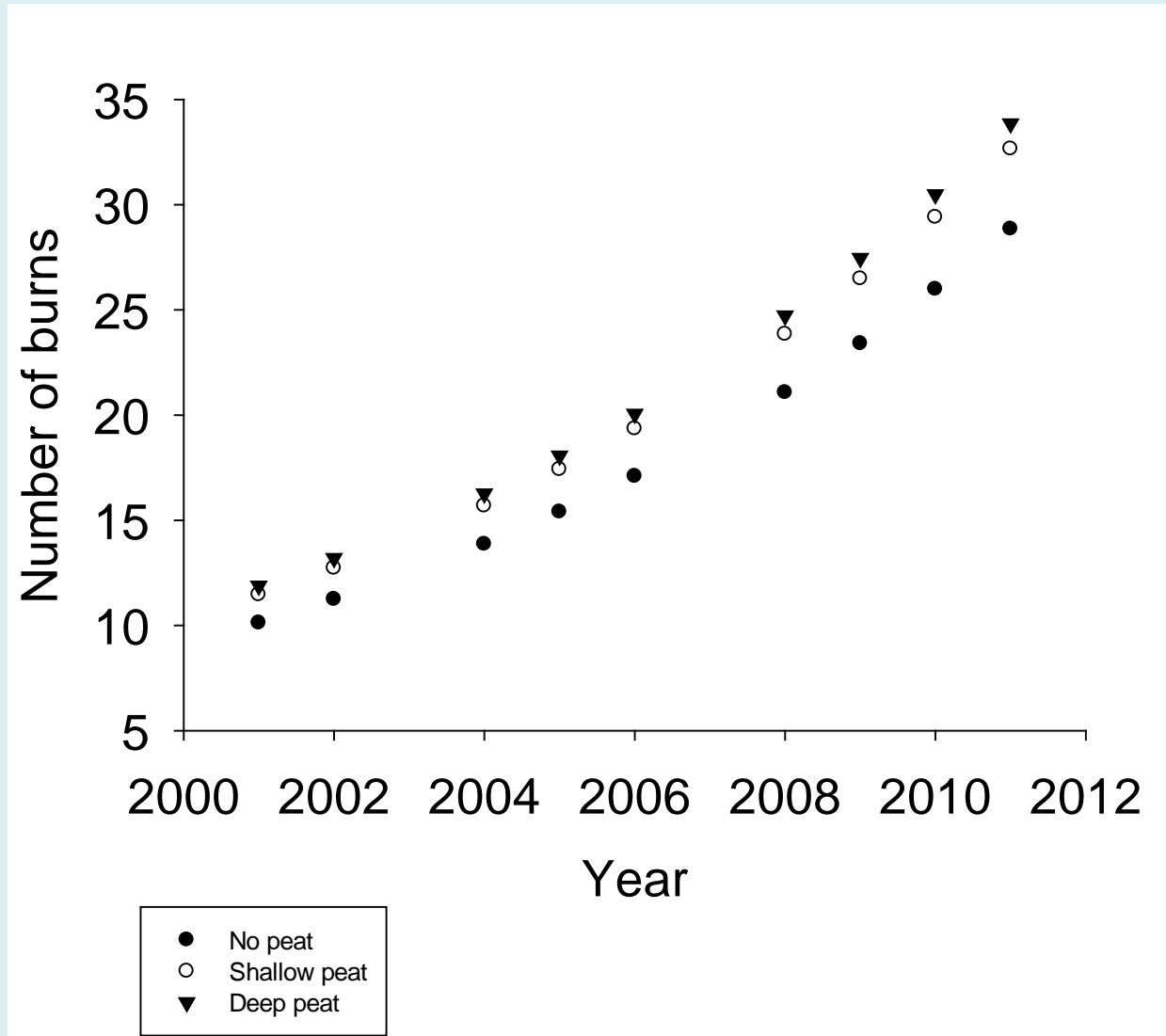
Correlates of area burned



Trends with peat depth

Overall
trend
 $P < 0.001$

Peat depth
types: no
difference
 $P = 0.926$



Designated sites

SAC: 26 out of 47 (55%)

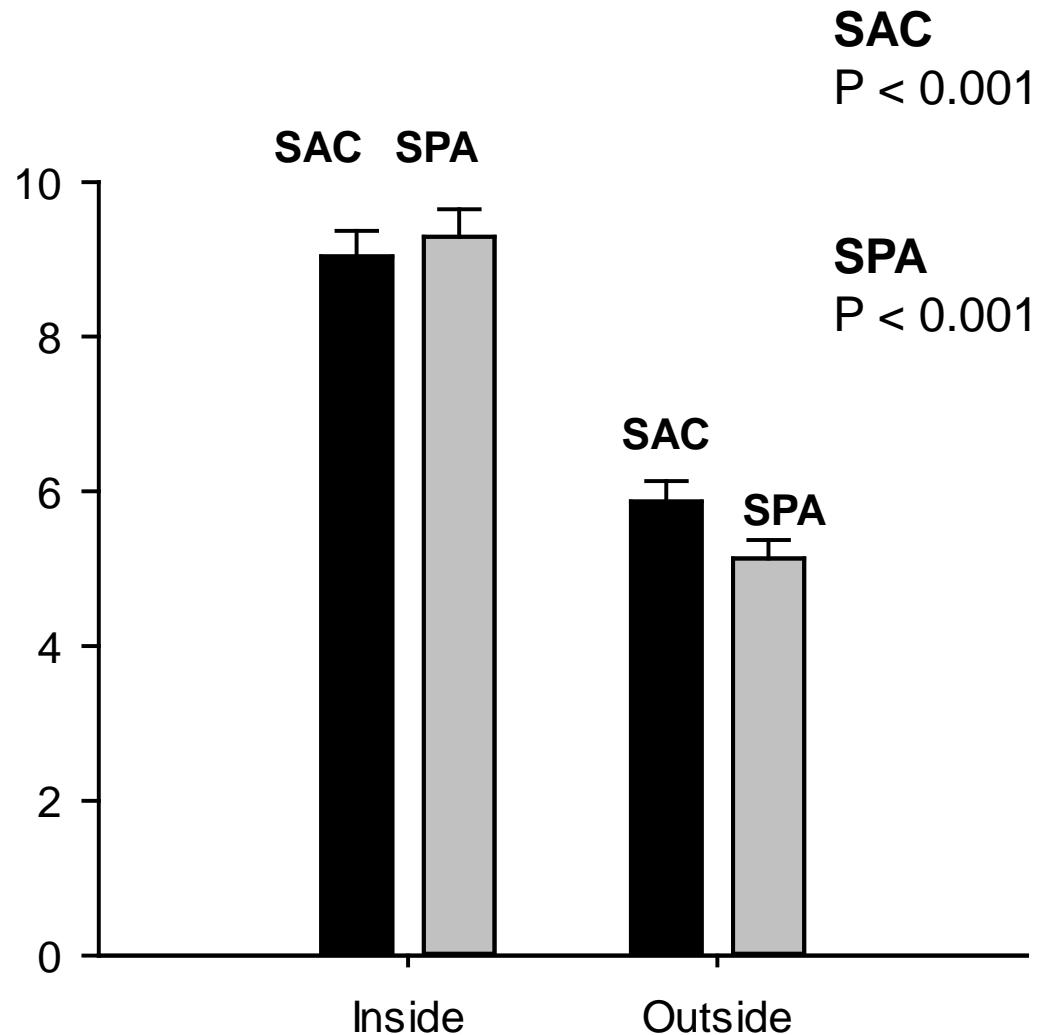
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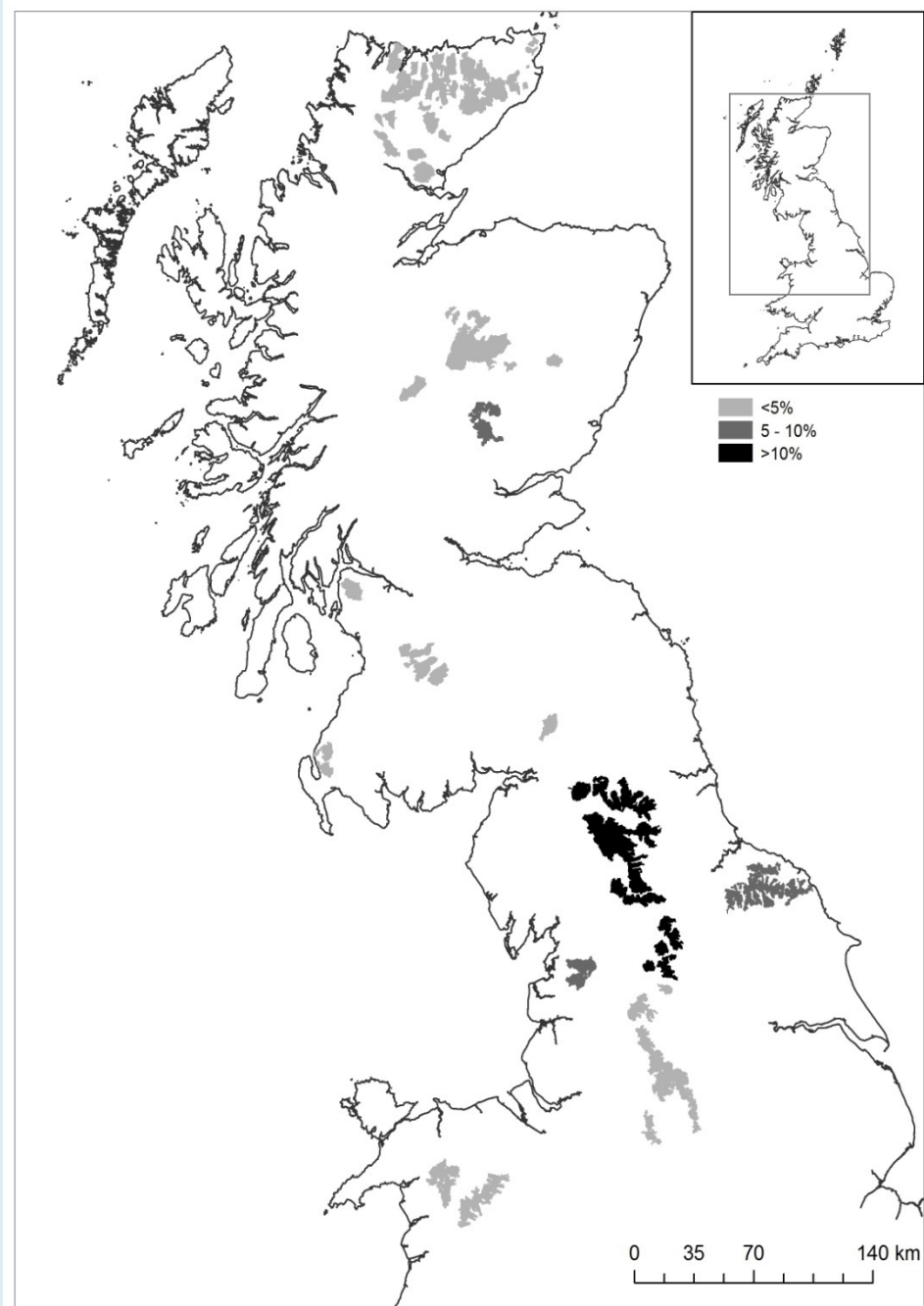
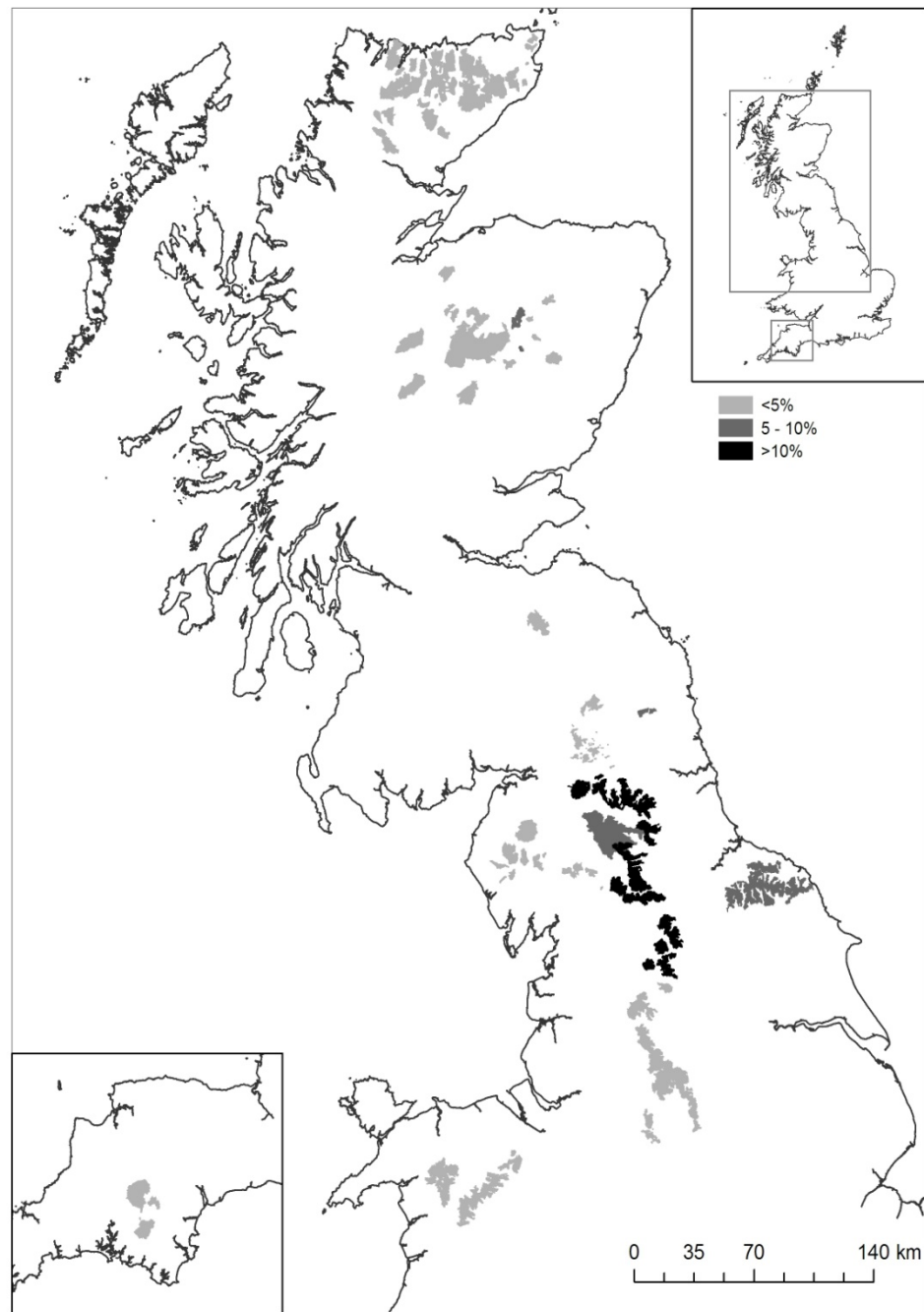
**Mean
area
moorland
burned
(%)**



SAC

Designated sites

SPA



Summary

- Burning widespread across GB uplands
- Number of burns increasing

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- Northern England region of high burning

Thanks

- Trevor Smith and Tessa Cole
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- Natural England and James Hutton Institute