

The fate of semi-natural grassland in England

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Semi-natural grasslands in England

- Semi-natural grasslands are sites of considerable conservation importance
- These grasslands decreased considerably in the UK during the second half of the 20th century
- Few studies have investigated and quantified the fate of large numbers of individual grassland areas in England
- Important for understanding the causes of decline, and consequently establishing new policies to conserve and restore lost habitats.



Aims

1. What is the extent of the decline in semi-natural grasslands?
2. What is the fate of lost grasslands?
3. Has national conservation policy succeeded in protecting semi-natural grasslands?



Assessing change

- Grasslands surveyed between 1960 and 1981
- Grassland assigned to NVC communities using Tablefit
- Classified into four grassland categories



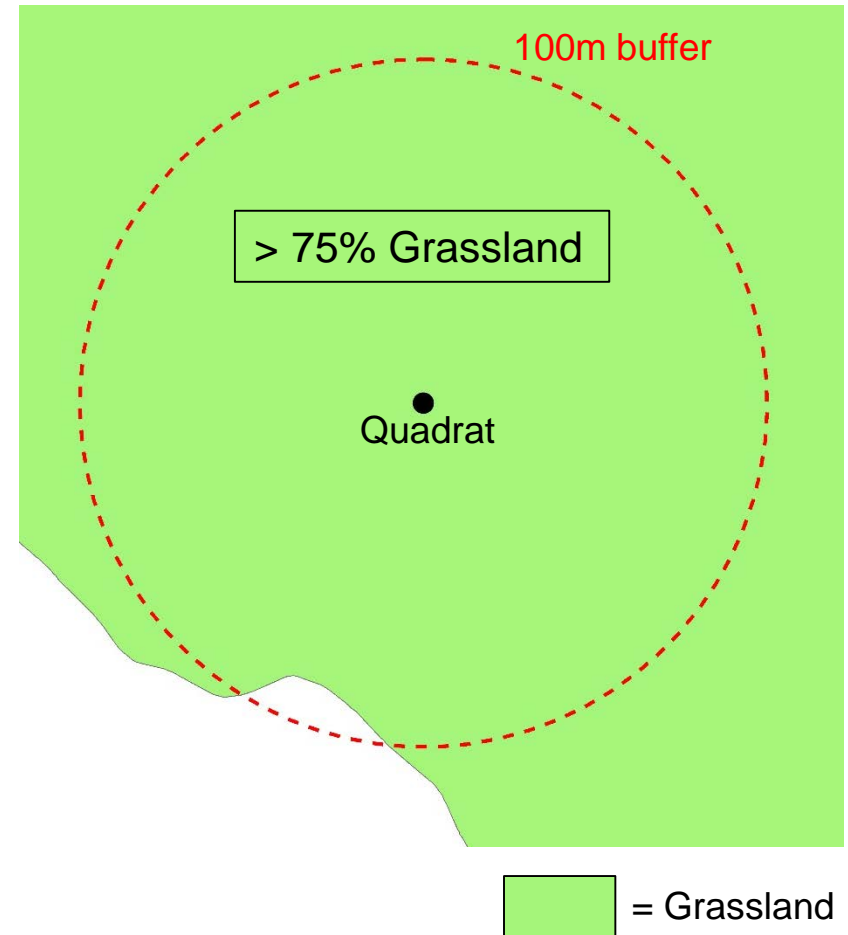
Grassland Type	NVC	Priority Habitat	Land Cover Type
<i>Calcareous grassland</i>	CG1-9	Lowland Calcareous Grassland, Upland Calcareous Grassland	Calcareous grassland
<i>Lowland heath and dry acid grassland</i>	U1-4 H1-H8	Lowland Dry Acid Grassland, Lowland Heathland, Lowland Meadows	Acid Grassland, Dwarf Shrub Heath
<i>Mesotrophic grassland</i>	MG4, MG5 MG1, MG6, MG9, MG10, MG3	Coastal & Floodplain Grazing Marsh, Lowland Calcareous Grassland, Lowland Dry Acid Grassland, Lowland Heathland, Lowland Meadows, Upland Heathland	Neutral Grassland
<i>Wet grassland</i>	M22-M26	Coastal & Floodplain Grazing Marsh, Lowland Fens, Lowland Meadows, Purple Moor Grass & Rush Pastures	Bog, Fen Marsh and Swamp, Neutral grassland

GIS analysis

- Quadrat locations entered into ArcGIS
- 100m buffer generated to match spatial accuracy

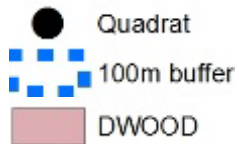
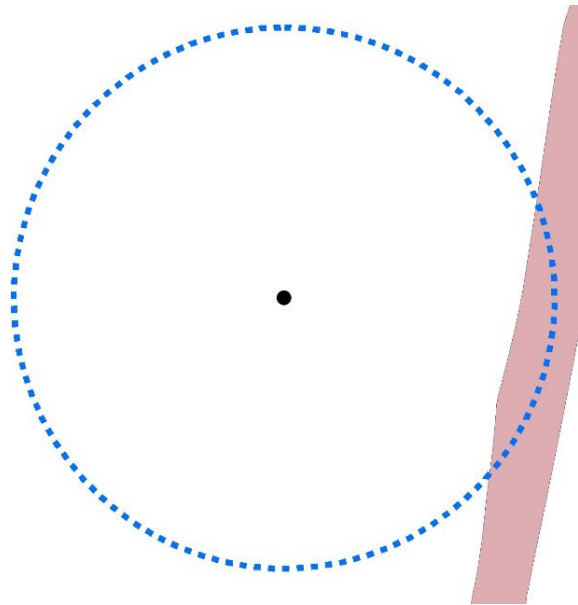
GIS layers:

- Natural England's "Priority Habitats' Inventory" 2013
- Land Cover Map 2007
- Digital boundary data for SSSIs



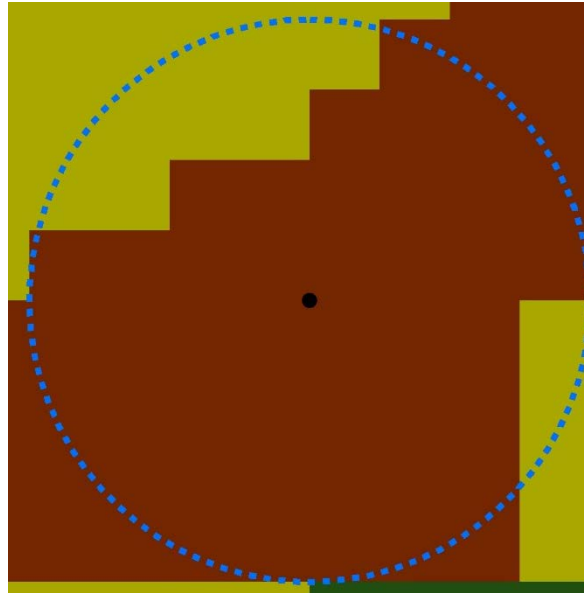
Extracting

1.



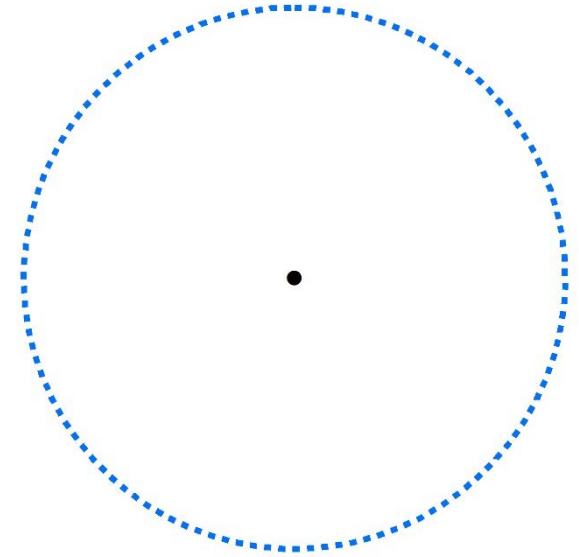
Priority habitats

2.



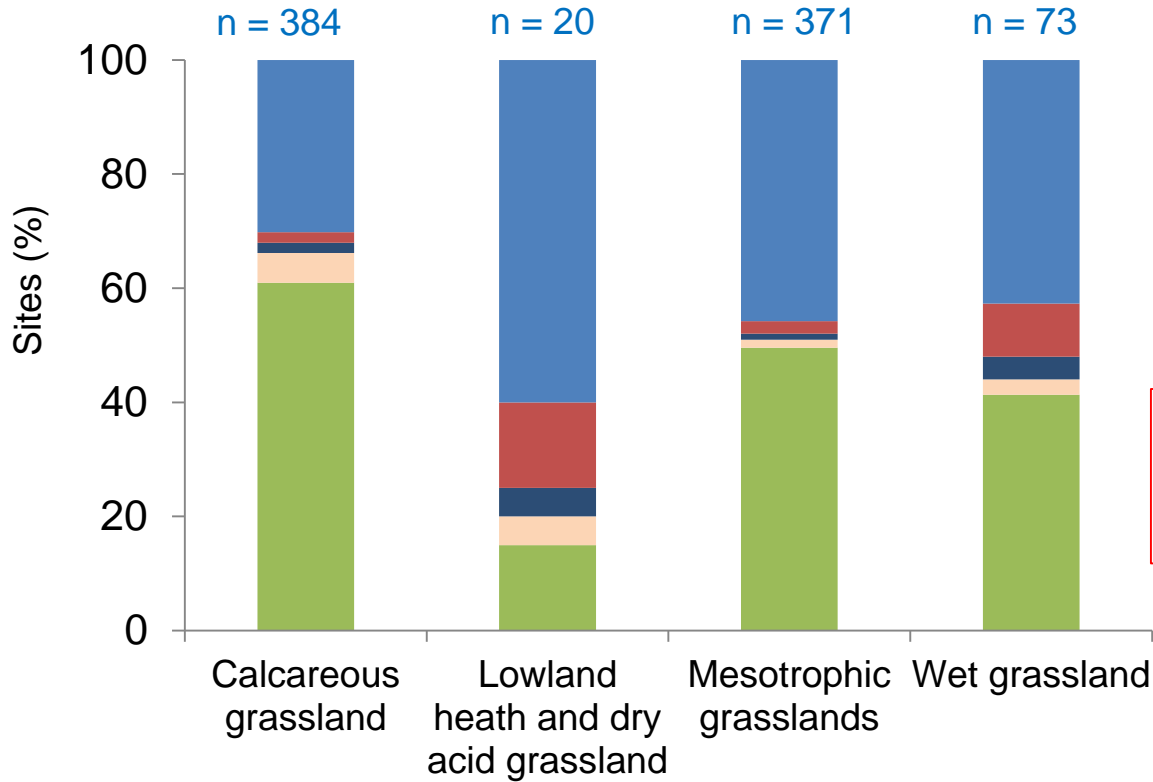
Land Cover Map

3.



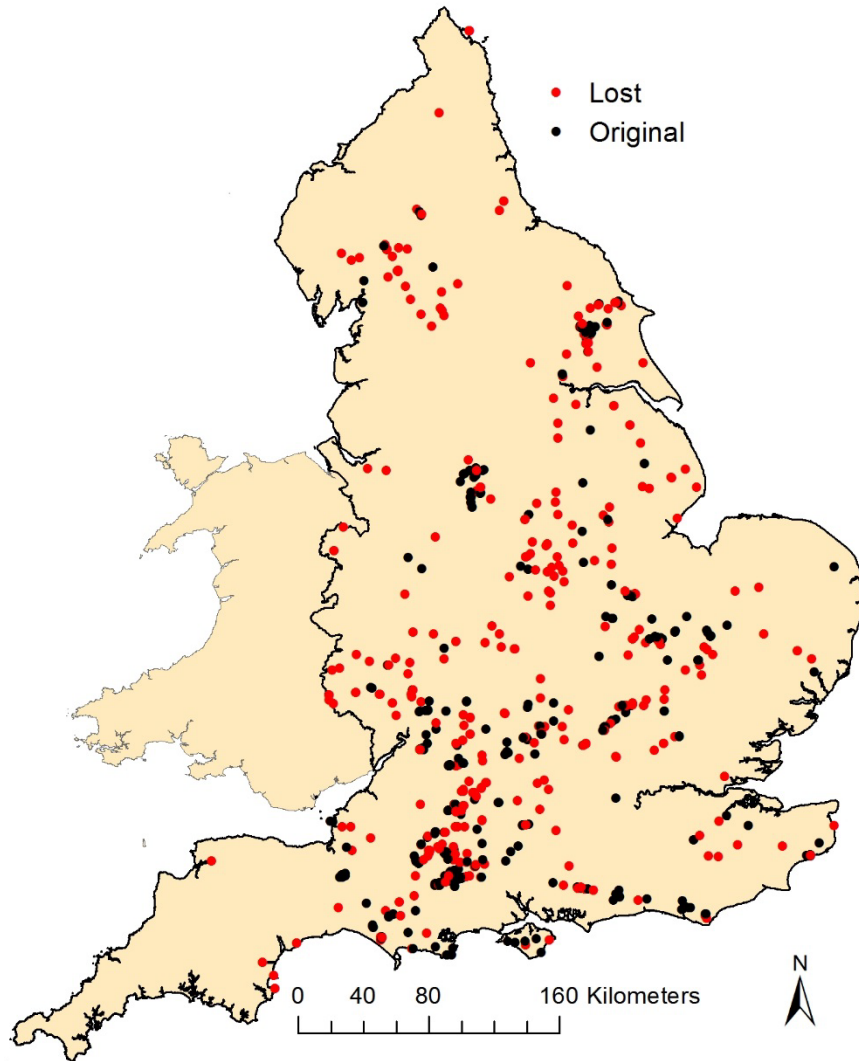
SSSI boundary

1. The decline in semi-natural grasslands



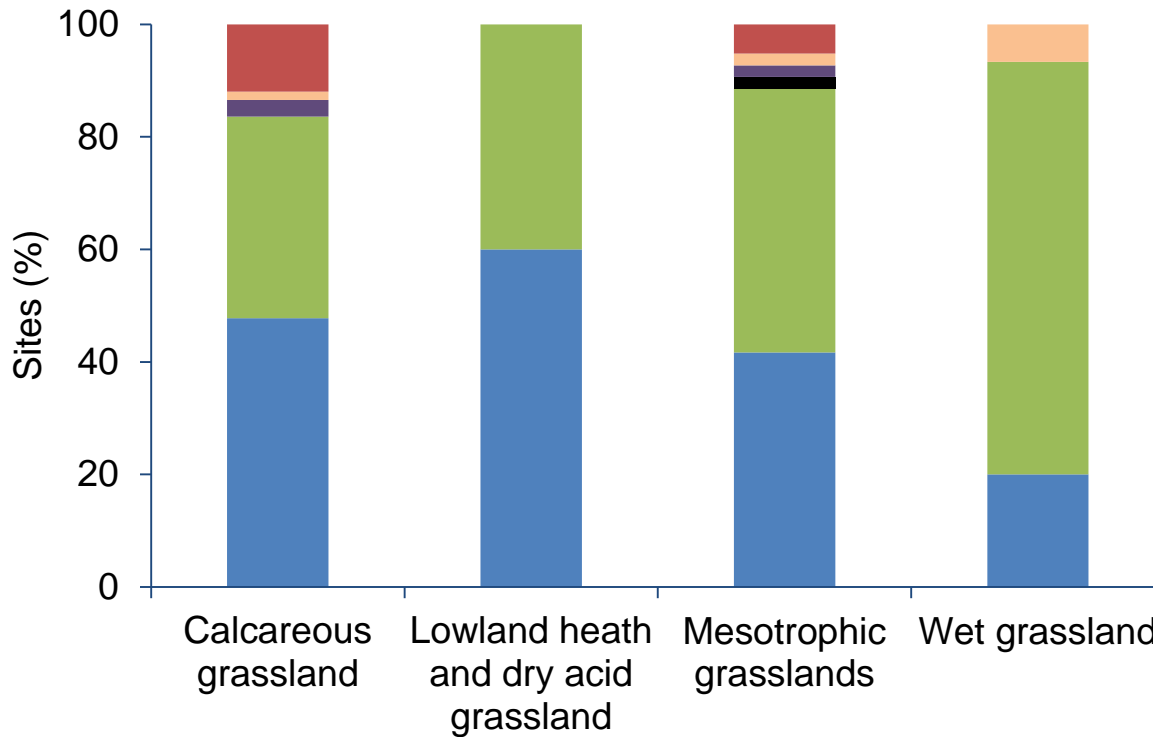
Over 47% of the semi-natural grasslands studied were no longer their original grassland type.

Grassland sites



399 out of the 848 semi-natural grasslands studied were lost.

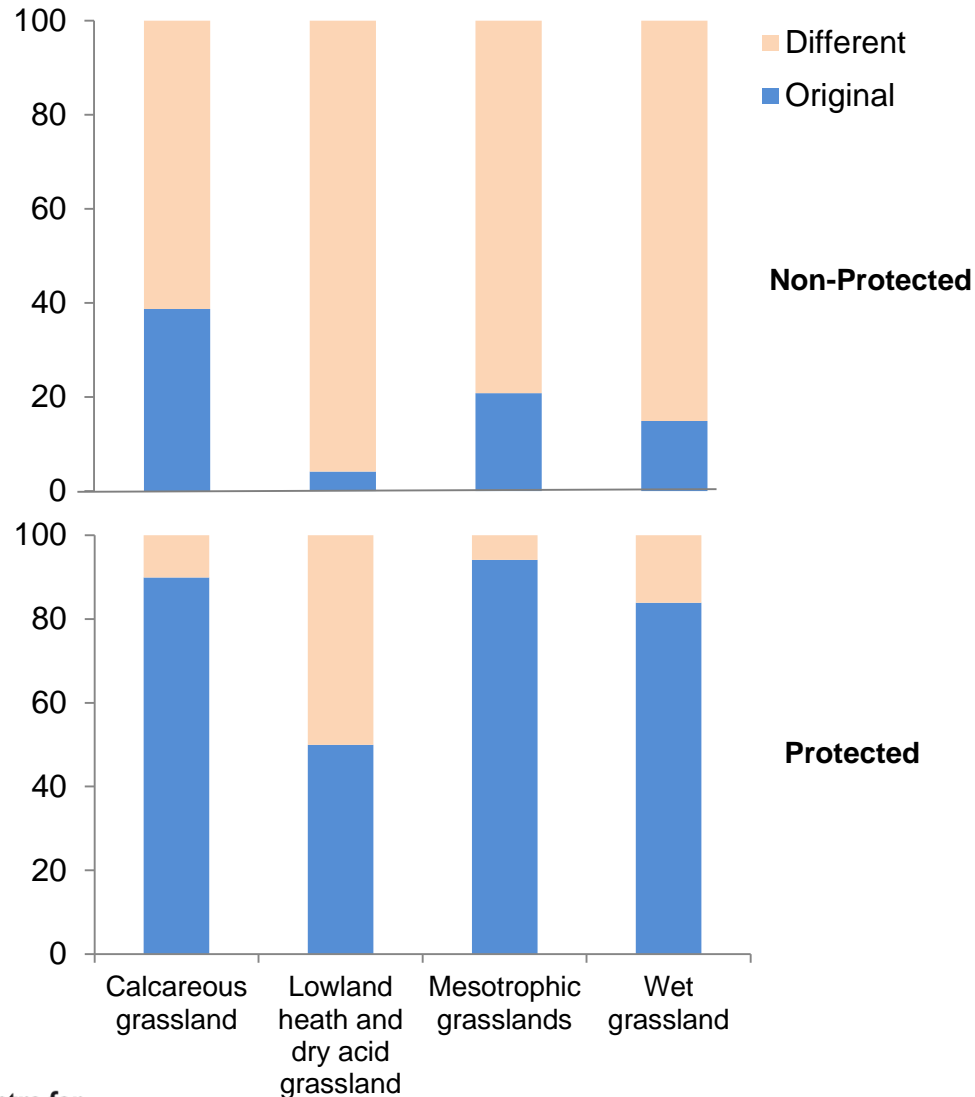
2. The fate of lost grasslands



Most of the grassland sites were lost to improved grassland (45%) or to arable (43%)

- Arable and horticulture
- Improved grassland
- Built up areas and gardens
- Rough low-productivity grassland
- Woodland
- Other

3. Protecting semi-natural grasslands



Protected sites retained considerably more semi-natural grassland than non-protected sites.

Conclusions

- Semi-natural grassland sites, in each four grassland types declined considerably in England between 1960 and 2013
- The majority of sites were lost to grassland improvement or arable cultivation
- Statutory designation of sites of high wildlife value is strongly beneficial in protecting sites from destruction
- Identifies the locations and potential for restoration and re-establishment of grasslands in sites lost to arable land or improved grassland.



Acknowledgements

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Sam Amy





Thank you

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[10.1016/j.gecco.2015.10.004](https://doi.org/10.1016/j.gecco.2015.10.004)