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 20\textsuperscript{th} 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

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

> 75% Grassland

100m buffer

Quadrat

= Grassland
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.
399 out of the 848 semi-natural grasslands studied were lost.
Most of the grassland sites were lost to improved grassland (45%) or to arable (43%).
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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Thank you