

Limits of semi-naturalness – a UK perspective



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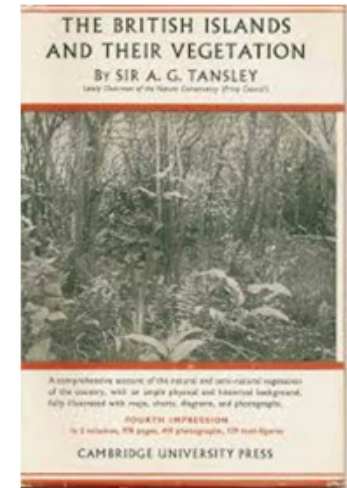


Attempts at defining 'semi-natural' grassland are not new

A.G. Tansley (1939)* divided 'semi-natural grassland' into:

1. **Rough grazings.** "Essentially natural communities."
2. **Permanent grass.** "Consists of native species and behaves in many respects like a natural plant community." But "less natural than rough grazings."

In the latter he included grasslands which had been manured and even ploughed and sown where they had altered in composition from the sown state over time so that they varied according factors such as the nature of the soil and amount of soil water.



* Tansley A.G. 1939. The British Islands and their vegetation. Cambridge University Press

Definitions of SNG focus broadly on two aspects



1. Management history
2. Floristic composition – species presence/absence and/or species abundances



Management history

- Lack of (recent) disturbance – ploughing, cultivation
- Lack of or low nutrient/fertiliser input
- Lack of or limited herbicide treatment
- Lack of recent (re-)sowing
- Low intensity management



Management history: definition problems

Disturbance/ploughing/cultivation –

Field could be ploughed but may revert back to semi-natural quickly if not fertilised



**Caeau Hirnant SSSI,
Radnorshire, Wales -**

= Ploughed in 1988

= Site of Special Scientific
Interest in 2000

Management history: definition problems

Lack of or low nutrient/fertiliser input or herbicide treatment –

“Semi-natural grassland is grassland that has not had significant fertilizer or herbicide applied to it” (Wikipedia)

- What are ‘significant’ levels of fertiliser or herbicide?
- Nutrients leach away quicker on well-drained soils
- Herbicides may be targeted and not affect most of the sward



Weed wiper



Manure
application

Management history: definition problems

- Sowing - but could revert if turned back to grass after one rotation.

And what about sites seeded with semi-natural seed mixes?

- Low intensity management – lack of clarity over meaning.

Raisbeck Meadows SSSI, Cumbria England

Supports 'mountain hay meadows' Annex 1 habitat (Habitats Directive).

Is cut, grazed, limed & fertilised, probably harrowed occasionally.

High or low intensity management?



Management history: definition problems

Conversely, grasslands which have had no herbicides nor ever been ploughed or reseeded could be species-poor due to hard grazing and manure application.



Management history: definition problems

And...

Some grasslands have never received agricultural management, e.g. those developed through natural colonisation in abandoned quarries.

These are most often semi-natural by floristic definitions, and may even have high nature conservation grassland.



Calaminarian grassland (Annex 1 habitat)

In UK, semi-natural grassland has therefore been defined largely on floristic composition



V



Very species-rich grasslands are obviously included

Some less species-rich grasslands, including rank *Arrhenatherum - Dactylis* grasslands and damp *Juncus* and *Deschampsia cespitosa* grasslands are also usually included

UK perspective: Environment Impact Assessment (Agriculture)



Implementation of EC Directive 337 - 1985.

Protect uncultivated land **and** semi-natural areas from agricultural damage.

Separate regulations in different parts of the UK.

England (2006)

1. Self-seeded or self-propagated vegetation naturally characteristic of the area.
2. Determined primarily by reference to the plants the land supports.
3. Other factors considered e.g. soil type & degree of cultivation.
4. Semi-improved neutral grasslands modified by artificial fertilisers in past 15 years are excluded.

Wales (2007)

“Uncultivated or semi-natural land is any area containing less than 25% of improved agricultural species” (e.g. ryegrass *Lolium perenne* and white clover *Trifolium repens*).

Scotland (2006)

1. Less than 30% of ryegrass (*Lolium species*) and/or white clover.
2. Has not been improved by management practices including liming or fertiliser.

Guidance: the land has not been cultivated, reseeded, drained or ploughed for 12-15 yrs.

Northern Ireland (2006)

Defined by habitat e.g. neutral grasslands included unless semi-improved.

Normally has had no major chemical or physical cultivation in past 15 years.

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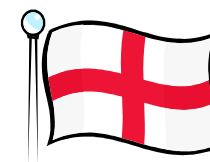
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UK perspective: Agri-environment schemes



ENGLAND - Higher Level Stewardship

- A tight definition based on BAP Priority Habitats
- Semi-improved grassland excluded
- Cover of rye-grass & white clover <10%
- At least 15 species per m²
- Wildflowers & sedges (excluding weeds etc) >30%



WALES – Tir Gofal/Glastir

- Cover of rye-grass & white clover <25%

OR

- Presence of one or more unimproved grassland marker species, e.g. *Lotus corniculatus*, *Succisa pratensis*, *Sanguisorba minor*



UK perspective: other sources of definition

Biodiversity Action Plan (BAP) Broad Habitat*

Neutral grassland broad habitat differs from improved by having:

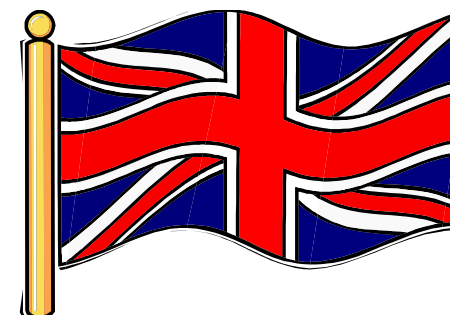
1. A lush sward
 2. A greater range and cover of herbs
 3. Usually less than 25% rye-grass *Lolium perenne*
- MG6 is part included

Countryside Survey#

Based on BAP broad habitat definitions

National Ecosystem Assessment[∅]

Based on BAP broad habitat definitions



* Jackson D.L. 2000. Guidance on the interpretation of the Biodiversity Broad Habitat Classification (terrestrial and freshwater types): Definitions and the relationship with other classifications. JNCC Report 307.

Carey P.D. et al. 2008. Countryside Survey: UK results from 2007. NERC/CEH.

∅ UK National Ecosystem Assessment. 2011. The UK National Ecosystem Assessment Technical Report. UNEP-WCMC, Cambridge.

UK perspective: summary

- Definition mainly on Floristic composition.
- Management history used as guidance, and sometimes as an additional (but not the principal) factor.
- Definition focused mainly on cover of agricultural species against presence/absence of unimproved grassland species.
- Broad consensus over definition of semi-natural grassland across the UK, but semi-improved grassland excluded in some definitions.