

The *Calthion*: a re-classification of the wetter floodplain meadow plant communities and their distribution in England and Wales

The *Calthion* alliance is the term used by European botanists to describe a group of plant communities found primarily on wet meadows and pastures across western and central Europe. In the British Isles, four communities defined by the National Vegetation Classification (NVC) are placed within the alliance. These are:

- MG8 marsh marigold - crested dogstail (*Caltha palustris* - *Cynosurus cristatus*) grassland;
- MG9 Yorkshire fog - tufted hair grass (*Holcus lanatus* - *Deschampsia cespitosa*) grassland;
- MG10 Yorkshire fog - soft rush (*Holcus lanatus* - *Juncus effusus*) rush pasture
- M22 Blunt flowered rush-marsh thistle (*Juncus subnodulosus* - *Cirsium palustre*) fen meadow.

Although they can be species-rich, communities of the *Calthion* have received much less attention than the *Alopecurus pratensis*-*Sanguisorba officinalis* floodplain grassland (MG4,) possibly because they have no European conservation status and they contain few rare species. There is little information on distribution and variation within these communities. Estimates for the extent of MG8 range from 300 to 800 ha (Rodwell et al 2000). Further, the description of the MG8 community within the NVC is described by Rodwell et al (2000) as being 'one of the least satisfactory parts of the mesotrophic grassland section of the National Vegetation Classification'. The Floodplain Meadows Partnership Steering Group therefore identified a more detailed characterisation of these communities and an assessment of their distribution as a priority. Funding was thus secured to undertake a desk study, field survey and data analysis in order to define the *Calthion* communities in the UK more precisely.



Methods and data sources

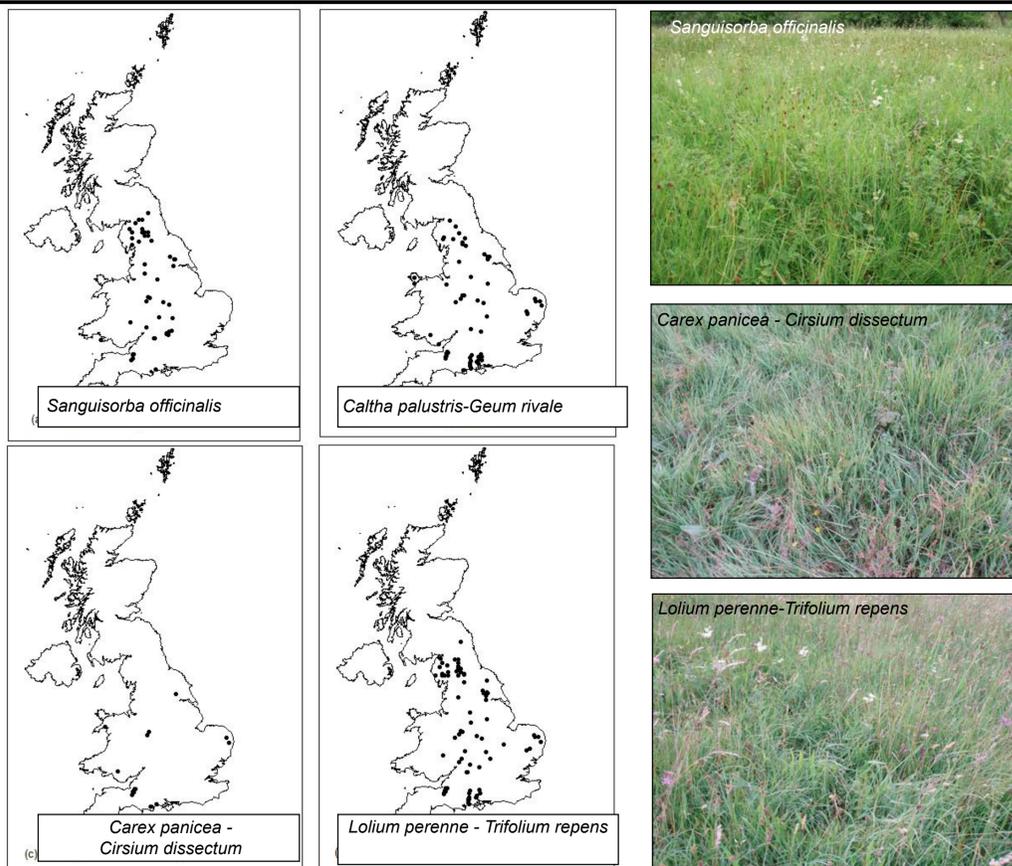
A total of 4706 samples of quadrat (mostly 1 x 1 m²) data have been collated from:

1. FMP database and previous related work (2470 quadrats)
2. Non FMP surveys known to include MG8, *Agrostis*-*Carex* and related plant communities (986 quadrats).
3. New data collected as part of this exercise (1250).

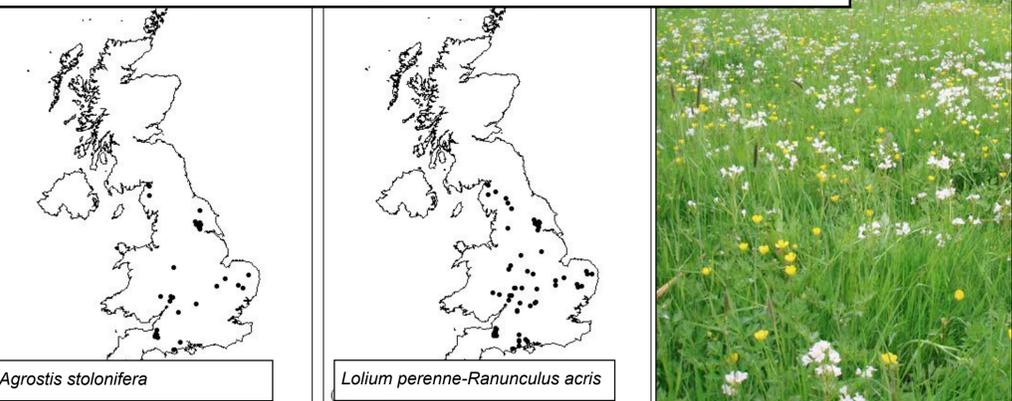
The full data set, comprising 4706 quadrats and 388 species was subject to Twinspan analysis. Mean Ellenberg scores were calculated for each quadrat using the original scores of Ellenberg (1988) and ordination techniques were used to interpret the principal environmental gradients. Floristic tables were produced for the different units identified, and maps of their distribution plotted. This new analysis suggests the need for defining new communities. Possible proposals are outlined in the adjacent table.

Distribution of proposed new communities

1. *Filipendula ulmaria* - *Cynosurus cristatus* Meadowsweet -crested dogstail: 4 proposed subcommunities

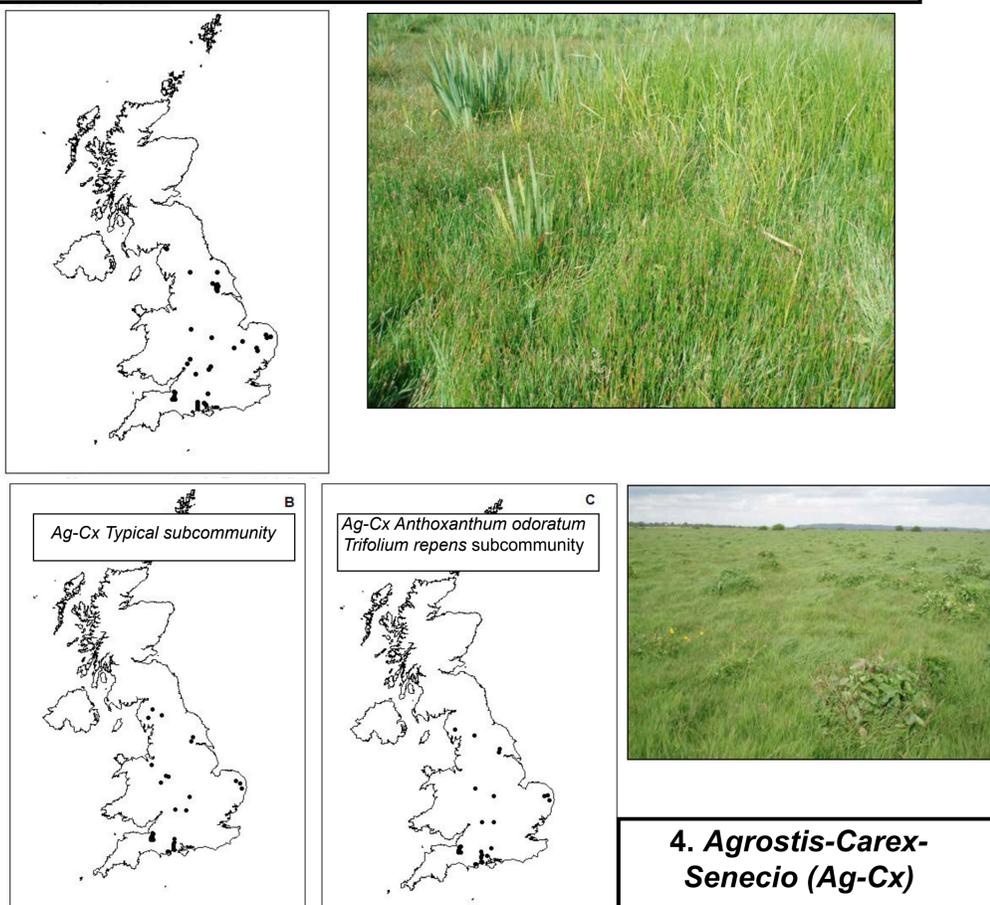


2. *Alopecurus pratensis* - *Poa trivialis* -*Cardamine pratensis* Meadow foxtail – meadow grass – cuckoo flower



Proposed new community	Subcommunity	Relationship to existing NVC
1. <i>Filipendula ulmaria</i> - <i>Cynosurus cristatus</i> Meadowsweet - crested dogstail	<i>Sanguisorba officinalis</i> Great burnet	New
	<i>Caltha palustris</i> - <i>Geum rivale</i> Marsh marigold - water avens	Vegetation that is closest to the MG8 community of Rodwell (1992).
	<i>Carex panicea</i> - <i>Cirsium dissectum</i> Carnation sedge - meadow thistle	New
	<i>Lolium perenne</i> - <i>Trifolium repens</i> Perennial ryegrass - white clover	New
2. <i>Alopecurus pratensis</i> - <i>Poa trivialis</i> - <i>Cardamine pratensis</i> Meadow foxtail – meadow grass – cuckoo flower	<i>Agrostis stolonifera</i> Creeping bent	MG7C of Rodwell. No change suggested
	<i>Lolium perenne</i> - <i>Ranunculus acris</i> Perennial ryegrass – meadow buttercup	A more species-rich expression of the MG7 <i>Filipendula</i> described by Gowing et al. 2002
3. <i>Eleocharis palustris</i> - <i>Agrostis stolonifera</i> inundation grassland. Common spike rush grassland.		<i>Eleocharis palustris</i> S19 swamp of Rodwell (1995) but more grassy
4. <i>Agrostis</i> - <i>Carex</i> - <i>Senecio</i> (Ag-Cx)	Typical	A species-poor expression of the grassland first described by Cox and Leach (1995).
	<i>Anthoxanthum odoratum</i> - <i>Trifolium repens</i>	A species-rich expression of the grassland first described by Cox and Leach (1995).

3. *Eleocharis palustris*-*Agrostis stolonifera* common spike rush inundation grassland



Consultation

These proposals, if accepted, would represent a significant departure from the current community descriptions of the NVC. We plan to undertake a consultation to gather views on whether revised communities are needed. Do you wish to be involved in these discussions? We would welcome any comments on the draft report and if you wish to be more involved in ongoing discussions, please contact us at floodplainmeadows.org.uk

References

- Cox, W. and Leach, S. 1995. *Agrostis stolonifera*-*Carex* spp. grassland: a new plant community described from the Somerset Levels. *Ecology in Somerset*, 4: 221-226
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