

A summary of the survey :

- Four distinct and homogeneous communities were identified and studied.
- | | | |
|----------|-----------|---|
| Field 1 | Community | 1. Floristically rich dry grassland, south-east facing slope |
| | | 2. Flat poorly drained coarse grassland near stream and ponds. |
| Field 2- | Community | 3. Floristically rich south and east facing slopes on both sides of the wet flush area. |
| | | 4. Spring/wet flush area running east into stream. |

The survey established that the area represents a typical 'old meadow', a mesotrophic grassland of type M G 5 i.e. a Lowland Midland grassland-circum neutral brown soils, generally loamy or clayey with a range of pH and calcium content.

Grassland type - M G 5 Cynosurus cristatus {Crested Dog's-tail} -Centaurea nigra {Common Knapweed} with sub-community - Galium verum {Ladies Bedstraw}.

This is the typical grassland of grazed hay-meadow treated in the traditional fashion on circum neutral brown soils throughout the lowlands of Britain.

This survey adds quantitative detail and support to the extensive site description included in the original Site Preparation Plan produced by Stuart Rampling of the Worcestershire Wildlife Consultancy.

Appendices

- A - Dynamic equilibria of mesotrophic grasslands.
- B - M G 5 Grassland - Character, management and threats.
- C - Inkberrow Millennium Green - Hedgerow Survey produced by Elliot Mowbray and Wendy Johnson {Sept 1999}.

References

- Nomenclature : Field Flora of the British Isles
Clive Stace, Cambridge University Press
- : British Plant Communities - Vol. 3
Grasslands and montane communities.
Editor J.S.Rodwell; Cambridge University Press.

Many thanks to the following members of the field survey team:-
Charlotte Lemmon [nee Armitage], John Longstreeth, Mike Mills, Elliot Mowbray, Marcus Chamberlayne, Sue Southall, Anthony Hopkins, Wendy Johnson, Chris Szweda, Stuart Rampling, Gareth Thomas and Doug Vann {Supervisory trustee.}

Survey of the Angiosperms [Flowering Plants] of Church Hill, Millennium Green.

Data collection has been carried out during the Summer using the criteria and methods proposed in the National Vegetation Classification { N V C - 1975. }

The sampling technique required recording of all species within each quadrat [sampling area] of the homogeneous plant community being studied.

Each community or sub-community required 5-x 2m² quadrats to be studied with all species being measured for FREQUENCY and ABUNDANCE.

A quantitative measure of the ABUNDANCE of each species was recorded using the DOMIN scale - cover being assessed by eye as a vertical projection on to the ground of all the live, above ground parts of the plants in the quadrat.

Cover of 91-100%	is recorded as DOMIN	10
76-90%		9
51-75%		8
34-50%		7
26-33%		6
11-25%		5
4-10%		4
<4%	with many individuals	3
<4%	with several individuals	2
<4%	with few individuals	1

In this context the term 'abundance' is used to describe how much of a plant species is present in a sample, irrespective of how frequent or rare it is among the samples.

A quantitative measure of the FREQUENCY refers to how often a plant is found on moving from one sample of the vegetation to the next irrespective of how much of that species is present in each sample. Thus a species found in all 5 quadrats would have frequency V - the maximum possible { shown in Roman numerals}.

Species of frequency classes IV and V represent the CONSTANTS of a community.

- class III - common or frequent species
- class II - occasional
- class I - scarce

Because of the limitations of time and expertise the initial survey has concentrated on Higher Plants [Angiosperms or Flowering Plants]. Ongoing surveys will need to cover Lower Plants - Fungi, Mosses, Ferns etc. as well as all animal species.

Field 1. Lower Grasslands near ponds and streams

Species	Quadrats					fr.	dom.
	4/8	4/8	4/8	4/8	4/8		
Ranunculus repens - Creeping Buttercup	1					I	1
Rumex acetosa - Common Sorrel	3		1	1	4	IV	1-4
Toriiis japonica - Upright Hedge-parsley	1		1			II	1
Ranunculus acris - Meadow Buttercup	1		1	1	1	IV	1
Cerastium fontanum - Common Mouse-ear	1	1	1			III	1
Phleum pratense - Timothy	6	5	5	4		IV	4-6
Holcus lanatus - Yorkshire Fog	8	7	7	8		IV	7-8
Agrostis capillaris - Common Bent	6	7			5	III	5-7
Cynosurus cristatus - Crested Dog's-tail	4	4	4			III	4
Cirsium arvense - Creeping Thistle		1	1	1		III	1
Stellaria holostea - Greater Stitchwort		2				I	2
Cirsium vulgare - Spear Thistle		1				I	1
Geranium dissectum - Cut-leaved Crane's-bill		1			1	II	1
Potentilla reptans - Creeping Cinquefoil		2	1			II	1-2
Dactylis glomerata - Cock's-foot		4	7	5		III	4-7
Festuca ovina - Sheep's Fescue		4				I	4
Festuca arundinacea - Tall Fescue		4				I	4
Quercus robur - Common Oak			1			I	1
Agrostis stolonifera - Creeping Bent			5	4		II	4-5
Festuca pratensis - Meadow Fescue			4			I	4
Cirsium palustre - Marsh Thistle				1		I	1
Urtica dioica - Stinging Nettle				1		I	1
Rumex obtusifolius - Broad- Leaved Dock				1		I	1
Rumex sanguineus - Wood Dock				1		I	1
Rumex conglomeratus - Clustered Dock				1		I	1
Taraxacum officinale - Dandelion					4	I	4
Arrhenatherum elatius - False Oat Grass					1	I	1
Alopecurus pratensis - Meadow Foxtail					4	I	4
					2	I	2

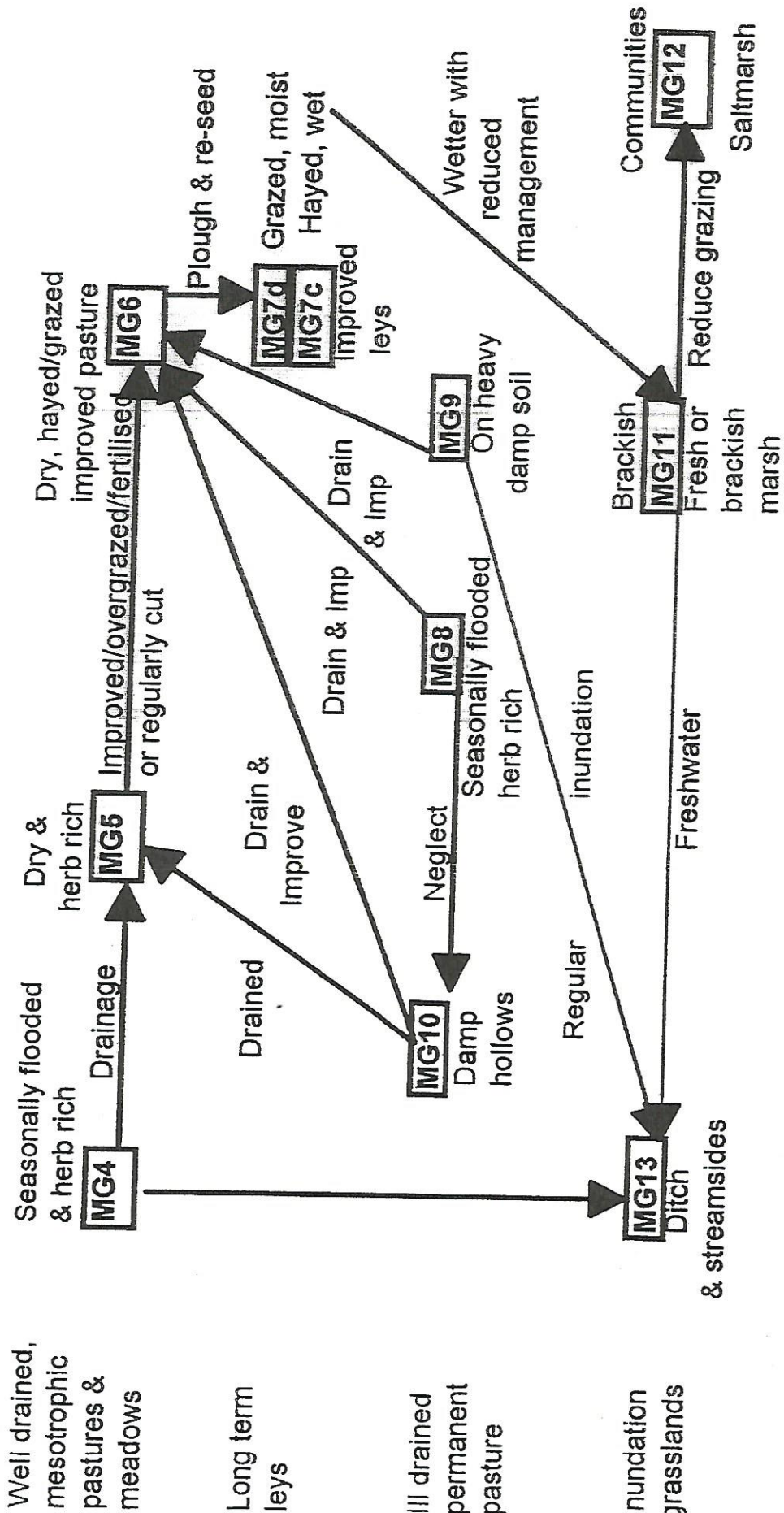
Field 2. Slopes

Quadrats

Species	Quadrats					fr.	dom.
	30/6	30/6	30/6	6/7	6/7		
	1	2	3	4	5		
Primula veris - Cowslip	5	2	3	4	5	V	2-5
Sanguisorba minor - Salad Burnet	5	5	6			III	5-6
Galium verum - Lady's Bedstraw	6	3	5	5		IV	3-6
Lotus corniculatus - Bird's-foot trefoil	4	1	3	1		IV	1-4
Potentilla reptans - Creeping Cinquefoil	4	4	5	5	5	V	4-5
Achillea millefolium - Yarrow	4	1	2	1		IV	1-4
Agrimonia eupatoria - Agrimony	1	1	2			III	1-2
Plantago lanceolata - Ribwort Plantain	1	1	2	5	4	V	1-5
Trifolium repens - White Clover	5	1	3	4		IV	1-5
Bellis perennis - Daisy	1					I	1
Taraxacum officinale - Dandelion	1	1				II	1
Centaurea nigra - Black Knapweed	2	1	1			III	1-2
Rumex acetosa - Common Sorrel	2		1	1		III	1-2
Prunella vulgaris - Selfheal	2	1	2	1		IV	1-2
Trifolium pratense - Red Clover	3				1	II	1-3
Cerastium fontanum - Common Mouse-ear	1	1	2		1	IV	1-2
Crepis capillaris - Smooth Hawksbeard	1	1				II	1
Cirsium arvense - Creeping Thistle	2				1	II	1-2
Cirsium vulgare - Spear Thistle	2	1	3			III	1-3
Senecio jacobaea - Common Ragwort	1					I	1
Ranunculus repens - Creeping Buttercup	1					I	1
Medicago lupulina - Black Medick	1	1	5	3		IV	1-5
Leontodon hispidus - Rough Hawkbit	1			1		II	1
Knautia arvensis - Field Scabious			2			I	2
Holcus lanatus - Yorkshire Fog	P	2		4	6	IV	1-6
Phleum pratense - Timothy	P		1	1		III	1
Lolium perenne - Perennial Rye Grass	P	4	1			III	1-4
Agrostis stolonifera - Creeping Bent	P				3	II	1-3
Anthoxanthum odoratum - Sweet Vernal Grass	P					I	1
Cynosurus cristatus - Crested Dog's-tail	P	4				II	1-4
Trisetum flavescens - Yellow Oat Grass	P					I	1
Arrhenatherum elatius - False Oat Grass		1			6	II	1-6
Carex flacca - Glaucous Sedge		2		4	1	III	1-4
Poa pratensis - Smooth Meadow Grass		5	5			II	5
Alopecurus pratensis - Meadow Foxtail		1	2			II	1-2
Bromus erectus - Upright Brome		5	3			II	3-5
Festuca rubra - Red Fescue		4				I	4
Dactylis glomerata - Cock's-foot			1	1	4	III	1-4
Plantago media - Hoary Plantain			1			I	1
Quercus robur - Common Oak			1			I	1
Helictotrichon pratense - Meadow Oat Grass				4	5	II	4-5
Festuca ovina - Sheep's Fescue				4	6	II	4-6
Crepis capillaris - Smooth Hawksbeard					1	I	1

Field 2. Wet Spring Flush area

Species	Quadrats					fr.	dom.
	21/7	28/7	28/7	28/7	28/7		
	1	2	3	4	5		
Potentilla anserina Silverweed	7			1		II	1-7
Cirsium arvense Creeping Thistle	4	4			1	III	1-4
Urtica dioica Stinging Nettle	3		1		1	III	1-3
Rumex acetosella Sheep's Sorrel	3				1	II	1-3
Ranunculus repens Creeping Buttercup	3	1		2	2	IV	1-3
Rumex crispus Curled Dock	1	4	1	2	2	V	1-4
Potentilla reptans Creeping Cinquefoil	1					I	1
Cerastium fontanum Common Mouse-ear	2					I	2
Cardamine pratensis Cuckoo Flower	2		1		1	III	1-2
Ranunculus acris Meadow Buttercup	1					I	1
Trifolium pratense White Clover	1					I	1
Centaurea nigra Black Knapweed	1					I	1
Veronica beccabunga Brooklime		7		7	1	III	1-7
Berula erecta Lesser Water Parsnip		2	4	2	1	IV	1-4
Rorippa nasturtium aquaticum Watercress		1				I	1
Cirsium vulgare Spear Thistle		1				I	1
Scrophularia auriculata Water Figwort			6		2	II	2-6
Solanum sp. Nightshade			4			I	4
Juncus articulatus Jointed Rush		1				I	1
Juncus inflexus Hard Rush		7	8	6	8	IV	6-8
Epilobium hirsutum Great Willowherb			4		1	II	1-4
Carex acutiformis Lesser Pond Sedge	2	1	2			III	1-2
Alopecurus geniculatus Marsh Foxtail	5					I	5
Holcus Lanatus Yorkshire Fog	4	4	1	1		IV	1-4
Agrostis capillaris Common Bent	5					I	5
Glyceria fluitans Floating Sweet Grass		3		5		II	3-5
Arrhenatherum elatius False Oat Grass		1		1	3	III	1-3
Rumex conglomeratus Clustered Dock					2	I	2
Festuca ovina Sheep's Fescue			1			I	1
Epilobium palustre Marsh Willowherb			1		1	II	1
Fraxinus excelsior Ash				2		I	2
Agrostis stolonifera Creeping Bent					1	I	1
Glyceria decinata Small Vernal Grass					1	I	1
Hypnum cupressiforme Moss		4				I	4



Well drained, often flower rich meadows

MG4. *Alopecurus pratensis* (Meadow foxtail)-*Sanguisorba officinalis* (Great burnet) grassland grassland. (No sub-communities).

Character: Species rich mixture of herbs and grasses, including tall herbaceous plants. Rarities can include *Fritillaria meleagris*, *Oenanthe silaifolia*, and *Taraxicum* sp.

Soils: Mostly free draining, neutral to calcareous, clay-rich or silty alluvials, sometimes gleyed, or occasionally peaty mineral soils, pH 5.8-8.3

Hydrology: River valley floodplains or streamsides, seasonal flooding, usually fresh water in winter/spring.

Management: Very traditional hay meadows, often within laid down conditions on common land. Any early grazing finishes Feb-Apr, hay cut July, aftermath grazing autumn and winter, usually cattle

Fertiliser: Via winter floods and possibly light applications of organic manure

Distribution: Lowland England and Wales only. Yorkshire, (Derwent Ings), Midlands and S. England (Portholme Meadow, Cambs, Cricklade Meadows, Wilts, Yarnton Meads, Oxon.)

Threats: Less than 1500ha of this community remains (Only 7 ha in Wales). Much reduced by agricultural improvement, neglect of common grazings and cutting rights, alteration of water regimes, and destruction from mineral workings on river gravels

Indicator Species: *Sanguisorba officinalis*, *Ranunculus acris*, *Rumex acetosa*, *Filipendula ulmaria*, *Taraxicum* sp., *Trifolium pratense*, *Alopecurus pratensis*, *Lathyrus pratensis*.

MG5. *Cynosurus cristatus* (Crested Dogstail)-*Centaurea nigra* (Common knapweed) grassland. Three sub-communities.

Character: A herb rich dry grassland, often characterised by common rather than rare species. Mosses can be abundant. Varies between short sward or tall, lush growth depending on grazing pressure. Old ridge and furrow sometimes present. Can be called 'old meadow community'. Rarities can include *Cirsium tuberosum*.

Soils: Deep circumneutral brown soils, generally loamy or clayey. Range of pH and calcium content.

Hydrology: Free draining and not normally subject to flooding.

Management: Very traditional with winter grazing through to end of April, mown for hay in June and aftermath grazing.

Fertiliser: Light organic manuring in spring.

Distribution: Lowlands only, centred on Midlands clay. Fields, churchyards, road verges, railway embankments etc.

Threats: Agricultural improvement, neglect, high fertiliser levels, fundamental changes in management.

Sub-communities:

- a) *Lathyrus pratensis* on heavy, low-calcium soils-widespread
- b) *Galium verum* on lighter calcareous soils-widespread
- c) *Danthonia decumbens* on acid oligotrophic soils-on upland fringes

Indicator species: *Centaurea nigra*, *Trifolium pratense*, *Lotus corniculatus*, *Agrostis capillaris*.

MG6. *Lolium perenne* (Perennial rye grass)-*Cynosurus cristatus* (Crested dog`s-tail grass) grassland. Three sub-communities.

Character: Generally grass dominated short sward with unvarying, poorer complement of flowering plants. No rarer species. Combination of *L. perenne* and *C. cristatus* is definitive.

Soils: Circumneutral brown soils.

Hydrology: free drainage is a requirement of this community.

Management: Mainly grazed pastures for dairy and fatstock, occasionally cut for hay or silage.

Fertiliser: Usually chemical fertilisers, plus lime on more acid soils

Distribution: Widespread in farm fields and recreational areas throughout lowlands.

Threats: Poor grazing practices, over-use of fertilisers, use of herbicides.

Sub-communities:

- a) Typical. varied structure depending on grazing/haying ratios and hydrology, often on wetter areas.
- b) *Anthoxanthum odoratum*. On more acid brown earths.
- c) *Trisetum flavescens*. On more base rich brown earths.

Indicator species: *Lolium perenne*, *Cynosurus cristatus*.

Leys and related grasslands

MG7. *Lolium perenne*-Plantaginion leys. Six communities. (Only two are relevant to wet grasslands)

A). *Lolium perenne*-*Alopecurus pratensis*-*Festuca pratensis* grassland.

B). *Lolium perenne*-*Alopecurus pratensis* grassland.

Character: Both tall species poor swards dominated by grasses with few herbs.

Soils: Moist and fertile alluvial soils, with A also on drained fen peats.

Hydrology: A in seasonally flooded stretches of river valleys, B on rather drier soils less subject to seasonal inundation, and in moist hollows.

Management: A is usually cattle grazed and B cut for hay and after grazed.

Fertiliser: Both organic and artificial are used and A has the benefit of winter silt deposition.

Distribution: Widespread in lowlands

Inkberrow Millennium Green
Site Plan (plan 1)

Scale: 1:2500

Grid reference centred on
NGR: SP 01705732

Map showing

Communities 1-4

Hedgerows H1-H6

Map reproduced for
indicative purposes only

