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Phase II botanical survey of land at Horpit Lane, Swindon

Client: Futures Ecology

Date: June 2021



Summary

A Phase II (NVC) Botanical Survey was undertaken of an area of land to the north of Horpit Lane near Swindon. The surveys were undertaken on 26th May & 18th June 2021.

Five large meadows were surveyed, with the majority of the area supporting relatively low-diversity semi-improved grassland. NVC analysis revealed this to be a type of **MG6 Lolium perenne-Cynosurus cristatus grassland**, which occurs commonly in agricultural landscapes.

Of some note was the dominance of the grass Meadow Foxtail, which had formed a dense sward across most of the site, likely as a result of nutrient input over a long period of time, combined with poor soil drainage. Although some plants of interest that might indicate a wet meadow habitat, such as Cuckooflower, were found throughout the site, these were recorded at extremely low levels relative to the grass cover. By the time the second surveys were carried out in mid-June the grass cover had reached even higher levels, with a very small non-grass visual component to the sward.

The western half of the long narrow field (Area 2 on the map) did contain a slightly more diverse grassland, with more variety between the raised ridges and sunken furrows, and separate vegetation sampling was carried out in these areas. However, despite the initial visual variation in the sward here, due to relatively low sward diversity the NVC analysis revealed these still to belong to the standard MG6 grassland type. On returning to the site in mid-June these areas were also dominated by a dense grass-dominated sward.

Due to the higher botanical interest in Area 2 it is recommended that where possible this portion of the site is retained and a conservation management plan written to conserve and enhance these areas of grassland.

Introduction

Ecological Context

The site sits within an agricultural context, surrounded by meadows supporting similar botanical communities. There is evidence of large construction projects being undertaken in the wider area.

Constraints

2021 has been an unusual year for botany, with a dry early spring spell followed by an exceptionally cold and wet May. This has meant that many species have had a delayed start to the year, and it is probable that some species will not have managed to emerge this year. A follow-up visit was carried out to catch any later species, and enough information was gathered to make an accurate habitat assessment, although possibly not an exhaustive species list relative to more temperate years.

Methodology

Botanical Survey

The area was initially surveyed on 26th May with a follow-up survey on 18th June. The entire area was subjected to a walkover survey, which resulted in the mapping of three vegetation types (one covering most of the site, and the other two forming a mosaic of ridge and furrow in Area 2). Once the boundaries of these stands were delimited, five 2x2m quadrats were surveyed in each area.

The quadrats were spread out fairly evenly across each area, but ultimately located randomly by throwing an object from a distance.

Within each quadrat, every species was recorded and then given a cover reading using percentage values. Once the quadrats were recorded, each area was then walked over to record any additional species not found in the plots.

This data was then analysed using MATCH software (Hill, 2016) which assigns a best fit for community type to each plot (Rodwell 1992).



Sward dominated by Meadow Foxtail

Site Map

Resolute

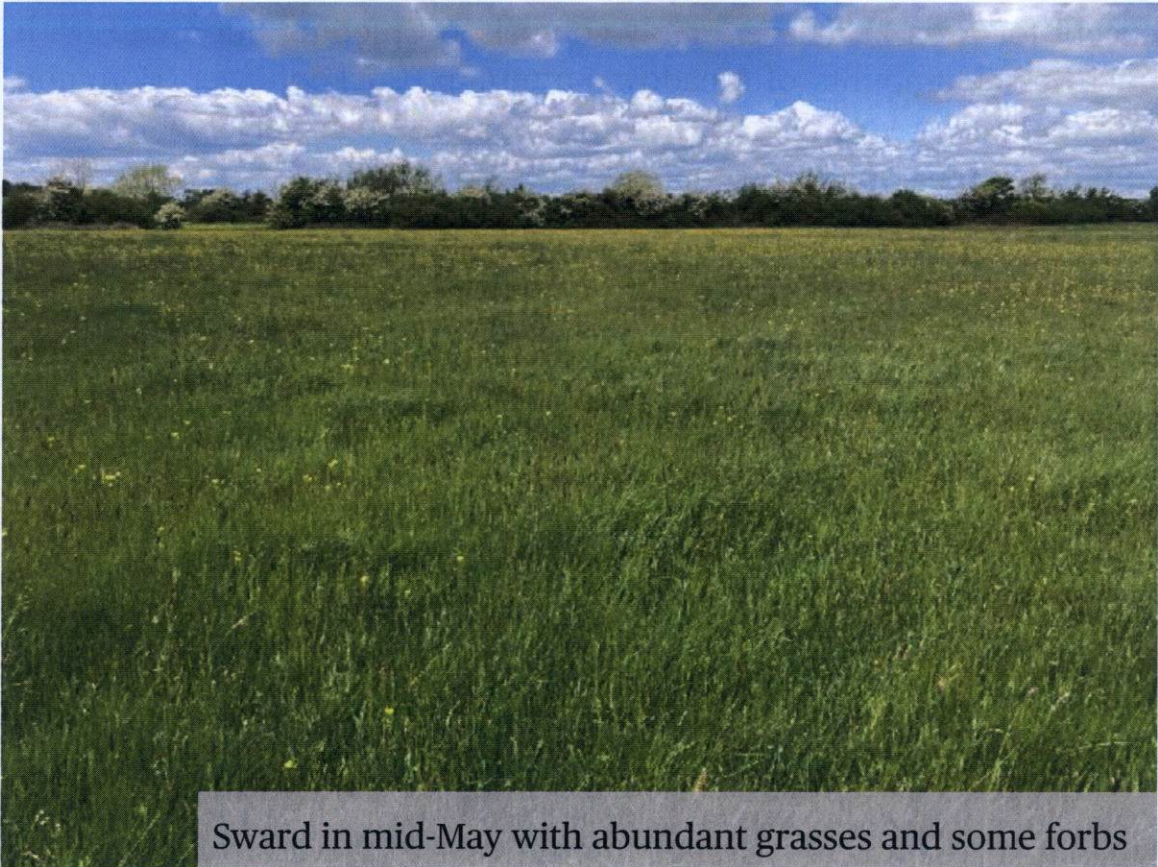


Results

The meadows supported a fairly typical form of lowland meadow, although with a slightly limited overall suite of species. The vegetation had formed on heavy clay soils and the ground was exceedingly damp at the time of survey, but this was mainly due to the period of extremely heavy rainfall in the weeks leading up to the survey. The waterlogged conditions were not evidenced by the development of any damp meadow vegetation such as rushes. Most of the inundated areas had dried up by the time the follow-up survey was carried out.

The dominant plant throughout the site was Meadow Foxtail, which often formed dense stands. Where this dominance dropped and a more open sward occurred other grasses such as Sweet Vernal-grass, Red Fescue and Smooth Meadow-grass occurred at lower levels. Perennial Ryegrass (indicative of lower conservation-status grasslands) was recorded throughout the fields, but at low levels.





Sward in mid-May with abundant grasses and some forbs



Sward in mid-June dominated by tall and rank Meadow Foxtail

The forbs recorded were fairly consistent throughout all of the fields (except for Area 2). These mainly comprised Creeping Buttercup, with much lesser amounts of Meadow Buttercup, Cuckooflower, Common Sorrel, Meadow Vetchling, and Common Mouse-ear. Very low levels of Common Bird's-foot Trefoil were also recorded.

Area 2, at the southern tip of the site, had a slightly more diverse assemblage of plants. In May the levels of Meadow Foxtail were lower, and a remnant ridge and furrow structure on the ground had created a much more heterogenous makeup to the sward; with dry raised areas supporting large stands of Common Rattle, and damper depressions supporting stands of Meadowsweet. Due to the persistence of moisture in these damper areas, species such as Hairy Sedge and Marsh Foxtail were also recorded here. The damp depressions still lacked any species of rush and true indicators of damp grassland such as Ragged-Robin and Marsh Marigold, meaning the inundation is unlikely to persist throughout the year.

When this area was re-surveyed in mid-June (to check for the presence of further positive indicator species such as Orchids) it had become much closer in character to the rest of the site, with a dense species-poor grass-dominated sward.



Area 2 showing ridges and Rattle plants, with damper furrow to the rear



In mid-May Area 2 appeared to support a much more forb-rich sward;

but by mid-June this area had also become dominated by a dense grass-dominated sward



NVC Analysis

Once the overall vegetation has been mapped, 15 quadrats were placed and recorded (5 in Area 1, 5 in Area 2/dry, and 5 in Area 2/damp).

This data was then fed through MATCH software to establish which NVC communities were represented. This had been hard to ascertain during field survey with no obvious immediate fit - partly due to the unusual concurrence of inundated areas of soil but with non-corresponding largely dry meadow vegetation.

The full results of the analysis are given in Appendix 2, and the main community matches shown below

AREA 1	Community	% match
NVC:	MG6d	51.16
NVC:	MG4c	49.92
NVC:	MG8d	49.23
NVC:	MG4b	48.67
NVC:	MG15b	46.68
AREA 2W (WET)	Community	% match
NVC:	MG6d	57.09
NVC:	MG4c	55.02
NVC:	MG4b	53.77
NVC:	MG4v2	51.58
NVC:	MG15b	51.52

AREA 2D (DRY)	Community	% match
NVC:	MG6d	51.43
NVC:	MG4b	51.09
NVC:	MG8d	50.34
NVC:	MG4c	49.37
NVC:	MG4v2	48.60

The communities present in the analysis are as follows

MG6d	MG6d <i>Lolium perenne</i> - <i>Cynosurus cristatus</i> grassland, <i>Filipendula ulmaria</i> sub-community
MG4c	MG4c <i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland, <i>Holcus lanatus</i> sub-community
MG8d	MG8d <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland, <i>Caltha palustris</i> - <i>Bellis perennis</i> sub-community
MG4b	MG4d <i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland, <i>Agrostis stolonifera</i> sub-community
MG15b	MG15b <i>Alopecurus pratensis</i> - <i>Poa trivialis</i> - <i>Cardamine pratensis</i> grassland, <i>Lolium perenne</i> - <i>Ranunculus acris</i> sub-community
MG4v2	<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland

Results

None of the areas surveyed gave significantly high coefficients to any communities, with the overarching results showing a low match to MG6 grassland. These low results are likely to be as a result of a slightly unusual vegetation type, where damp underlying soils were supporting a species-poor flora typical of drier soils, and therefore not directly conforming to known vegetation types.

Area 1

This area demonstrated no significant affinity to any NVC type (ideally a match of over 65% is needed), but had the closest fit to **MG6d Lolium perenne-Cynosurus cristatus grassland, Filipendula ulmaria sub-community**. MG6 grasslands are a widely occurring community, occurring on soil of moderately high fertility. They are typically grass dominated and well represented in agricultural landscapes.

The levels of Perennial Rye grass can be extremely variable within the parameters of the community type - achieving almost dominant levels where nitrate inputs are higher (e.g. with intensive muck-spreading) but present at much lower cover levels in less intensive system, as was the case at Horpits.

MG6d is a relatively newly proposed habitat type (Floodplains Partnership 2016) which covers the occurrence of this community on damper soils. The link to this community is likely to be due to the relatively high occurrence of Cuckooflower throughout the meadows, although the lack of Meadowsweet in the wider area meant the match coefficient was relatively low (compared to Area 2W)

Two other grassland types appeared in the list of matches, **MG4c Alopecurus pratensis - Sanguisorba officinalis grassland, Holcus lanatus sub-community** and **MG8d Cynosurus cristatus-Caltha palustris grassland, Caltha palustris-Bellis perennis sub-community**. Both of these are considered as types of damp grassland,

however the lack of key indicator species and the coefficient value being below 50% means these are not considered to be descriptive of the habitat type.

Area 2W

Despite the prevalence of damper vegetation such as Meadowsweet and Marsh Foxtail in these areas, the analysis still produced a similar set of match coefficients to the main area, with no significant link that would define it as the rare Lowland Floodplain type of grassland.

Area 2D

Despite this areas supporting a slightly higher diversity of species than the remainder of the site and the only area where Rattle was found, the NVC analysis produced a similar result to the main areas, with a low match to **MG6d Lolium perenne-Cynosurus cristatus grassland, Filipendula ulmaria sub-community**.

Evaluation

The fields at Horpit represent a large area of unbroken meadow habitat, but due to their relatively species-poor composition are not analogous with any of the rare meadow habitat to be found in lowland Britain. Due to the sward being largely dominated by dense stands of Meadow Foxtail, this has prevented a more diverse vegetation assemblage developing on the site.

The NVC analysis for this site was hampered by the low diversity of the vegetation, but to some extent the habitat simply failed to match any of the prescribed grassland types, which does often occur - but this lack of match does not directly affect the conservation status of the grassland.

The meadows would qualify as **Lowland Meadows** under the Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 - Habitats and Species of Principal Importance in England. But they are of medium conservation importance due to their low diversity, and would be unlikely to be considered as a candidate for inclusion in the county wildlife sites register, unless there was a strong need to guard against the loss of all lowland meadows at a local level.

Whether this low diversity is due to inherent natural high productivity in the soil, or the additional inputs of nutrients through much-spreading, is not known, but due to relatively much higher levels of diversity in the neighbouring fields to the south of the site (observed en route to the survey) it would suggest the latter.

Recommendations

Despite the NVC analysis releasing non-significant botanical variation across the site, Area 2 does undoubtedly support more species and has more variety within it, and it is strongly recommended to retain this area within the development.

Although this portion of the site was also found to support a relatively species-poor grass dominated sward, the presence of forb species such as Rattle and Meadowsweet, although at very low levels, suggest this site could have the potential for significant biodiversity enhancement, if the soil nutrient levels could be decreased.

Access would need to be retained to allow haycutting equipment in, and a long-term management plan drafted to include an annual cycle of hay cutting, to lower the nutrient status of the soil and potentially boost biodiversity in the longterm.

References

Floodplain Partnership (2016) <https://www.floodplainmeadows.org.uk/sites/www.floodplainmeadows.org.uk/files/MG6%20constancy%20for%20web%20page%20V2.pdf>

Hill (2016) MAVIS Software.

<https://www.ceh.ac.uk/services/modular-analysis-vegetation-information-system-mavis>

Rodwell, JS, ed (1992) British plant communities Volume 3: Grasslands and montane communities. Cambridge University Press

Appendix 1 - Species List

1 - Area 1

2D - Area 2 Dry ridges

2W - Area 2 Wet furrows

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare
L-	Locally, indicating clumpy distribution

AREA		1	P1	P2	P3	P4	P5
<i>Agrostis stolonifera</i>	Creeping Bent	R	5	5	3	2	
<i>Alopecurus pratensis</i>	Meadow Foxtail	A-LD	70	60	30	20	70
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	A		2	20	5	
<i>Arrhenatherum elatius</i>	False Oat-grass	O					
<i>Bromus hordeaceus</i>	Soft-brome	R					
<i>Cynosurus cristatus</i>	Crested Dog's-tail	A					
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	R					
<i>Festuca rubra</i>	Red Fescue	A	10	15	10	15	20
<i>Holcus lanatus</i>	Yorkshire-fog	A		5	8	3	5
<i>Hordeum secalinum</i>	Meadow Barley	R-LF					
<i>Lolium perenne</i>	Perennial Ryegrass	F	10	5	3	20	
<i>Poa pratensis</i>	Smooth Meadow-grass	F	3	3	25	8	
<i>Bellis perennis</i>	Daisy	R					1
<i>Cardamine pratensis</i>	Cuckooflower	O		3		3	
<i>Cerastium fontanum</i>	Common Mouse-ear	O-LF	5		3	15	
<i>Cirsium arvense</i>	Creeping Thistle	R-LF		3	5		5
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	R				2	
<i>Geranium molle</i>	Dove's-foot Crane's-bill	R		1			
<i>Heracleum sphondylium</i>	Hogweed	R					2
<i>Lathyrus pratensis</i>	Meadow Vetchling	O-LA		5		5	
<i>Leucanthemum vulgare</i>	Oxeye Daisy	R					
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	R	5	3			
<i>Medicago lupulina</i>	Black Medick	O	4			4	
<i>Ranunculus acris</i>	Meadow Buttercup	F	2	10	20	10	2
<i>Ranunculus repens</i>	Creeping Buttercup	F		10		20	
<i>Rumex acetosa</i>	Common Sorrel	F		3			2
<i>Taraxacum agg.</i>	Dandelion	R					
<i>Trifolium pratense</i>	Red Clover	O	15	3	5	20	3
<i>Trifolium repens</i>	White Clover	R					
<i>Vicia sativa</i>	Common Vetch	R					

AREA		2D	P1	P2	P3	P4	P5
<i>Agrostis stolonifera</i>	Creeping Bent	R		2			
<i>Alopecurus geniculatus</i>	Marsh Foxtail	R				5	
<i>Alopecurus pratensis</i>	Meadow Foxtail	A	50	70	60	55	25
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	A	2	3	20	5	20
<i>Arrhenatherum elatius</i>	False Oat-grass	O		3		3	
<i>Cynosurus cristatus</i>	Crested Dog's-tail	A	5		5		5
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	R					
<i>Festuca rubra</i>	Red Fescue	A	10	10	5	20	5
<i>Holcus lanatus</i>	Yorkshire-fog	R					
<i>Hordeum secalinum</i>	Meadow Barley	O-LA					
<i>Lolium perenne</i>	Perennial Ryegrass	R	5		3		5
<i>Luzula campestris</i>	Field Wood-rush	R					
<i>Poa pratensis</i>	Smooth Meadow-grass	F	15	12	6	12	15
<i>Bellis perennis</i>	Daisy						
<i>Cardamine pratensis</i>	Cuckooflower	O				2	
<i>Cerastium fontanum</i>	Common Mouse-ear	O			3		
<i>Cirsium arvense</i>	Creeping Thistle	O					
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill			2			2
<i>Lathyrus pratensis</i>	Meadow Vetchling	O		8			6
<i>Leucanthemum vulgare</i>	Oxeye Daisy	R					
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	R	5		5		
<i>Medicago lupulina</i>	Black Medick			3			
<i>Potentilla reptans</i>	Creeping Cinquefoil	R					
<i>Ranunculus acris</i>	Meadow Buttercup	F	8	7	4	10	8
<i>Ranunculus repens</i>	Creeping Buttercup	O	10	10	10		10
<i>Rhinanthus minor</i>	Yellow-rattle	O-LA	15		12		15
<i>Rumex acetosa</i>	Common Sorrel	O	5	5		2	
<i>Taraxacum agg.</i>	Dandelion	R					
<i>Trifolium pratense</i>	Red Clover		2	10	4	15	10
<i>Vicia sativa</i>	Common Vetch			5			5

AREA		2W	P1	P2	P3	P4	P5
<i>Agrostis stolonifera</i>	Creeping Bent						
<i>Alopecurus geniculatus</i>	Marsh Foxtail	F		2		5	
<i>Alopecurus pratensis</i>	Meadow Foxtail	A	80	60	80	60	50
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	A	15	20	20		15
<i>Arrhenatherum elatius</i>	False Oat-grass	R		3			
<i>Bromus hordeaceus</i>	Soft-brome	R					
<i>Carex hirta</i>	Hairy Sedge	A		14		15	20
<i>Cynosurus cristatus</i>	Crested Dog's-tail	A				3	
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	R		20		10	
<i>Festuca rubra</i>	Red Fescue	A	2		2	2	
<i>Holcus lanatus</i>	Yorkshire-fog	R		15		3	2
<i>Hordeum secalinum</i>	Meadow Barley	O					
<i>Lolium perenne</i>	Perennial Ryegrass	O	3		3		
<i>Poa pratensis</i>	Smooth Meadow-grass	F		5	8		
<i>Cardamine pratensis</i>	Cuckooflower	O	6		8	8	5
<i>Cerastium fontanum</i>	Common Mouse-ear	O		2		2	
<i>Cirsium arvense</i>	Creeping Thistle	O	1				1
<i>Filipendula ulmaria</i>	Meadowsweet	A	5	20	20	5	5
<i>Lathyrus pratensis</i>	Meadow Vetchling		3		3		1
<i>Leucanthemum vulgare</i>	Oxeye Daisy						
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	R			2		
<i>Ranunculus acris</i>	Meadow Buttercup	F		10		5	8
<i>Ranunculus repens</i>	Creeping Buttercup	O-LF					
<i>Rumex acetosa</i>	Common Sorrel	O	3		3		
<i>Taraxacum agg.</i>	Dandelion	R					
<i>Trifolium pratense</i>	Red Clover			2			1

Appendix 2 - NVC analysis

Main area

Plot 0: Q1>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.2; Wetness 5.0; pH 6.2; Fertility 6.0

CSR: 1 species with no data: Algae

CSR: C: 3.40 S: 2.27 R: 2.49

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 9%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 9%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 4%

BIO: Eurosiberian Temperate 9%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 19%

BIO: Eurasian Southern-temperate 4%

Plot 1: Q2>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.1; Wetness 5.4; pH 6.0; Fertility 5.9

CSR: 1 species with no data: Algae

CSR: C: 3.41 S: 2.25 R: 2.52

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 9%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 9%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 4%

BIO: Eurosiberian Temperate 9%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 19%

BIO: Eurasian Southern-temperate 4%

Plot 2: Q3>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.1; Wetness 5.4; pH 5.8; Fertility 5.3

CSR: 1 species with no data: Algae

CSR: C: 3.13 S: 2.61 R: 2.72

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 9%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 9%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 4%

BIO: Eurosiberian Temperate 9%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 19%

BIO: Eurasian Southern-temperate 4%

Plot 3: Q4>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.1; Wetness 5.5; pH 6.0; Fertility 5.5

CSR: 1 species with no data: Algae

CSR: C: 2.90 S: 2.29 R: 3.03

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 9%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 9%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 4%

BIO: Eurosiberian Temperate 9%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 19%

BIO: Eurasian Southern-temperate 4%

Plot 4: Q5>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.2; Wetness 5.1; pH 6.1; Fertility 6.3

CSR: 1 species with no data: Algae

CSR: C: 3.72 S: 2.23 R: 2.28

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 9%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 9%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 4%

BIO: Eurosiberian Temperate 9%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 19%

BIO: Eurasian Southern-temperate 4%

Group O: MAIN

NVC: MG6d 51.16

NVC: MG4c 49.92

NVC: MG8d 49.23

NVC: MG4b 48.67

NVC: MG15b 46.68

NVC: MG6b 46.68

NVC: MG4v2 46.06

NVC: MG4 45.18

NVC: MG5a 44.06

NVC: MG6 43.57

Area 2 - Wet

Plot O: Q1>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.1; Wetness 5.4; pH 5.7; Fertility 6.1

CSR: 1 species with no data: Algae

CSR: C: 3.55 S: 2.18 R: 2.28

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%
BIO: European Temperate 14%
BIO: Eurosiberian Temperate 4%
BIO: Eurasian Temperate 4%
BIO: European Southern-temperate 9%
BIO: Eurasian Southern-temperate 4%

Plot 1: Q2>

CVS: 1 species with no data: Algae
CVS: class 40
ELL: No data for 1 species: Algae
ELL: Light 6.9; Wetness 5.9; pH 5.8; Fertility 5.4
CSR: 1 species with no data: Algae
CSR: C: 3.43 S: 2.40 R: 2.22
BIO: 1 species with no data: Algae
BIO: Eurasian Wide-boreal 4%
BIO: Circumpolar Wide-boreal 14%
BIO: European Boreo-temperate 4%
BIO: Eurosiberian Boreo-temperate 19%
BIO: Eurasian Boreo-temperate 4%
BIO: Eurosiberian Wide-temperate 4%
BIO: Circumpolar Wide-temperate 9%
BIO: European Temperate 14%
BIO: Eurosiberian Temperate 4%
BIO: Eurasian Temperate 4%
BIO: European Southern-temperate 9%
BIO: Eurasian Southern-temperate 4%

Plot 2: Q3>

CVS: 1 species with no data: Algae
CVS: class 40
ELL: No data for 1 species: Algae
ELL: Light 7.0; Wetness 5.7; pH 5.7; Fertility 5.8
CSR: 1 species with no data: Algae
CSR: C: 3.47 S: 2.27 R: 2.23
BIO: 1 species with no data: Algae
BIO: Eurasian Wide-boreal 4%
BIO: Circumpolar Wide-boreal 14%
BIO: European Boreo-temperate 4%
BIO: Eurosiberian Boreo-temperate 19%
BIO: Eurasian Boreo-temperate 4%
BIO: Eurosiberian Wide-temperate 4%
BIO: Circumpolar Wide-temperate 9%
BIO: European Temperate 14%
BIO: Eurosiberian Temperate 4%
BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%
BIO: Eurasian Southern-temperate 4%

Plot 3: Q4>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.0; Wetness 5.8; pH 6.0; Fertility 6.0

CSR: 1 species with no data: Algae

CSR: C: 3.58 S: 2.12 R: 2.30

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Plot 4: Q5>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.0; Wetness 5.9; pH 5.9; Fertility 5.7

CSR: 1 species with no data: Algae

CSR: C: 3.53 S: 2.24 R: 2.29

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Group 0: WET

- NVC: MG6d 57.09
- NVC: MG4c 55.02
- NVC: MG4b 53.77
- NVC: MG4v2 51.58
- NVC: MG15b 51.52
- NVC: MG4 51.30
- NVC: MG6b 49.72
- NVC: MG8d 49.52
- NVC: MG4a 48.90
- NVC: MG6 47.70

Area 3 - 11

This page contains information regarding the various models and their associated costs. The models listed include MG4, MG4a, MG4b, MG4c, MG4v2, MG6, MG6b, MG6d, MG8d, and MG15b. The costs are listed in dollars and cents.

The following table provides a summary of the models and their costs:

Model	Cost
MG6d	57.09
MG4c	55.02
MG4b	53.77
MG4v2	51.58
MG15b	51.52
MG4	51.30
MG6b	49.72
MG8d	49.52
MG4a	48.90
MG6	47.70

This information is provided for your reference and is subject to change without notice.

Area 2 - Dry

Plot 0: Q1>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.1; Wetness 5.4; pH 5.7; Fertility 6.1

CSR: 1 species with no data: Algae

CSR: C: 3.55 S: 2.18 R: 2.28

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Plot 1: Q2>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 6.9; Wetness 5.9; pH 5.8; Fertility 5.4

CSR: 1 species with no data: Algae

CSR: C: 3.43 S: 2.40 R: 2.22

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Plot 2: Q3>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.0; Wetness 5.7; pH 5.7; Fertility 5.8

CSR: 1 species with no data: Algae

CSR: C: 3.47 S: 2.27 R: 2.23

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Plot 3: Q4>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.0; Wetness 5.8; pH 6.0; Fertility 6.0

CSR: 1 species with no data: Algae

CSR: C: 3.58 S: 2.12 R: 2.30

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Plot 4: Q5>

CVS: 1 species with no data: Algae

CVS: class 40

ELL: No data for 1 species: Algae

ELL: Light 7.0; Wetness 5.9; pH 5.9; Fertility 5.7

CSR: 1 species with no data: Algae

CSR: C: 3.53 S: 2.24 R: 2.29

BIO: 1 species with no data: Algae

BIO: Eurasian Wide-boreal 4%

BIO: Circumpolar Wide-boreal 14%

BIO: European Boreo-temperate 4%

BIO: Eurosiberian Boreo-temperate 19%

BIO: Eurasian Boreo-temperate 4%

BIO: Eurosiberian Wide-temperate 4%

BIO: Circumpolar Wide-temperate 9%

BIO: European Temperate 14%

BIO: Eurosiberian Temperate 4%

BIO: Eurasian Temperate 4%

BIO: European Southern-temperate 9%

BIO: Eurasian Southern-temperate 4%

Group 0: WET

NVC: MG6d 57.09

NVC: MG4c 55.02

NVC: MG4b 53.77

NVC: MG4v2 51.58

NVC: MG15b 51.52

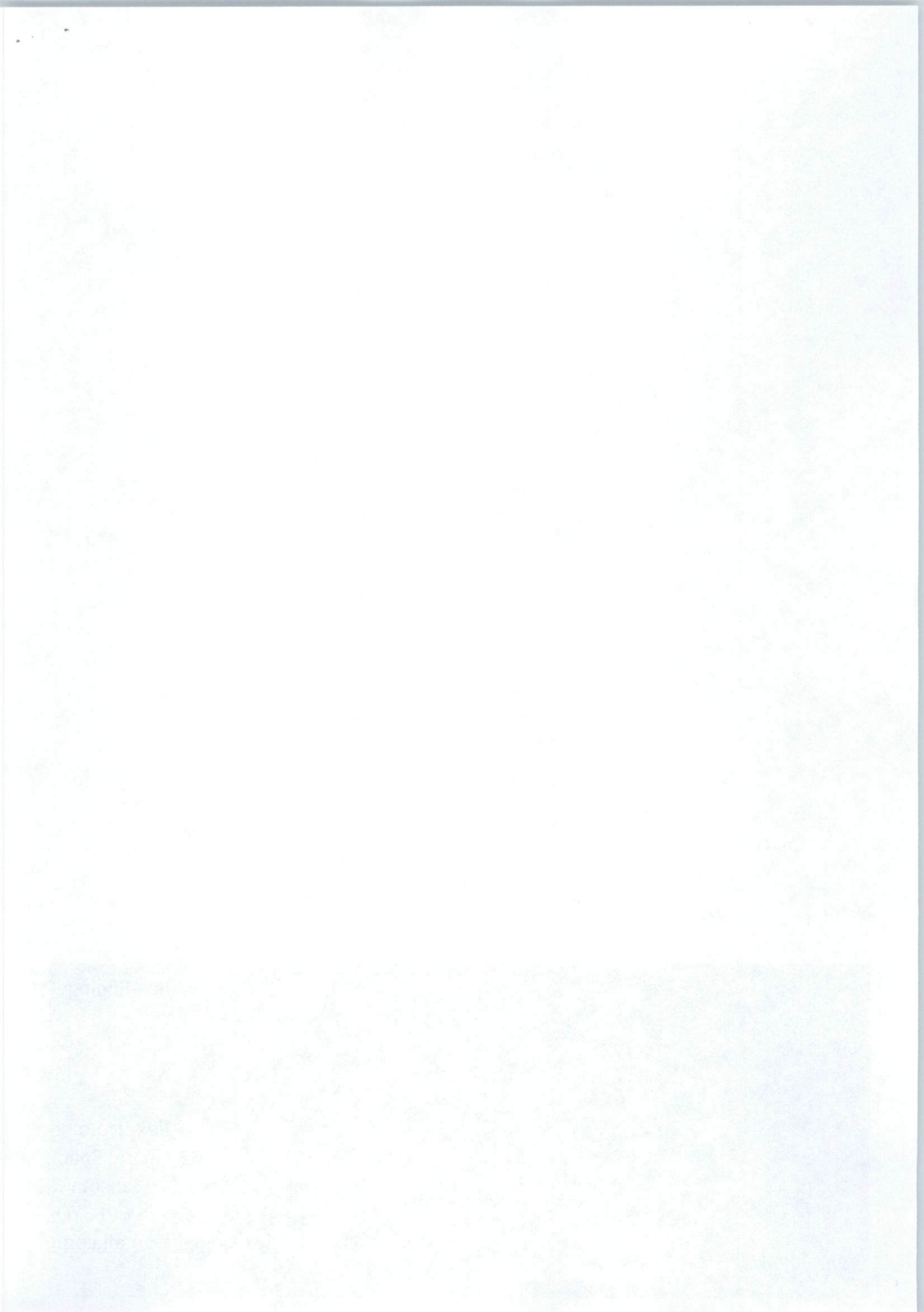
NVC: MG4 51.30

NVC: MG6b 49.72

NVC: MG8d 49.52

NVC: MG4a 48.90

NVC: MG6 47.70



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