

Eynsham Parish Grassland Enhancement Project

Baseline survey report

by Alison Muldal

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Summary

During July and August 2020, botanical surveys were carried out on four grassland sites in Eynsham, Oxfordshire: Eynsham Playing Fields South, St Leonard's Churchyard, grassland at Dovehouse Close, and grassland next to the Fishponds car park.

The aim of these surveys was to provide a baseline against which it will be possible to monitor the success of a project to enhance the biodiversity of the grassland sward at each of these sites. The enhancements being carried out in autumn 2020 involve spreading 'green hay' collected from Long Mead, a species-rich traditionally managed hay meadow near Swinford Toll Bridge, onto part of Eynsham Playing Fields South, and over-sowing yellow rattle seed into the grassland sward at the remaining three sites.

Prior to carrying out the sward enhancements, all four sites were found to be relatively species-poor amenity grasslands, therefore of low biodiversity value. Eynsham Playing Fields South is an 'improved' amenity grassland, dominated by perennial rye-grass with very few wildflowers. The grasslands at Dovehouse Close, Fishponds car park and St Leonard's Churchyard are semi-improved grasslands with somewhat more frequent wildflowers than at the Playing Fields.

Survey method

The Natural England 'Baseline Evaluation of Higher Tier Agreements' (BEHTA) Manual grassland survey methodology and criteria were used to assess the grassland sward. The BEHTA survey methodology is designed for sites being managed under agri-environment scheme agreements, but this survey technique is equally useful for other conservation projects, such as the Eynsham grassland enhancement project.

BEHTA surveys provide a simple way of measuring the biodiversity value of a site prior to starting active conservation management, i.e. baseline surveys.

When repeated in future years, this survey methodology enables the assessment of progress towards meeting conservation objectives.

BEHTA survey methodology

The BEHTA survey involves walking in a W-pattern across the grassland site, stopping randomly along the way, and then observing the vegetation within approximately one square metre. Each time the surveyor stops, the grasses and wildflower species present are noted. Ideally, between 10 and 20 'stops' are made across a grassland site, depending on the size and uniformity of the site.

The frequency of grass and wildflower species are then classified as:

Rare: for species occurring in 1 or 2 stops out of 10

Occasional: for species occurring in 3 or 4 stops out of 10

Frequent: for species occurring in 5 or more stops out of 10

Additionally, the percentage cover of perennial rye-grass and white clover, and the percentage cover of desirable wildflowers and sedges are noted for each 'stop'. Creeping and spear thistle, broad-leaved and curled dock, stinging nettle, common ragwort, creeping buttercup and white clover are deemed to be less desirable wildflowers, and are therefore excluded from this calculation.

These grassland characteristics are then used to determine whether the grassland meets the BEHTA Manual criteria for 'improved', 'semi-improved' or 'species-rich' grassland – see Appendix 1.

Eynsham Playing Field South and St Leonard's Churchyard were surveyed on 10 July 2020 by Alison Muldal, Catriona Bass and around 8 volunteers as an educational workshop. The participation of volunteers enabled us to complete 13 and 12 survey 'stops' respectively at Eynsham Playing Field South and St Leonard's Churchyard.

Dovehouse Close and Fishponds car park grasslands were surveyed by Alison Muldal and Catriona Bass on 21 August 2020. For these smaller grassland sites, just 4 'stops' were surveyed. These grasslands had been mown recently, making it impossible to easily identify grass species.

Results

Survey sheets for each grassland site are in the appended Excel workbook.

Eynsham Playing Fields South

The grassland sward fits the Natural England BEHTA Manual criteria for **species-poor improved grassland**.

The percentage cover of perennial rye-grass and white clover is very high, at around 80%. The sward is low in biodiversity with an average of only around 4 plant species/m² including grasses. The percentage cover of wildflowers and sedges is low, at around 11%.

Creeping buttercup, white clover and dandelion are frequent in the sward, with occasional greater plantain. Very few other wildflower species are present in the sward. The grass component is predominantly perennial rye-grass, with frequent rough meadow-grass.

This species composition is fairly typical of an amenity grassland such as a playing field which is likely to have been established by sowing an amenity grass seed mix, and is managed by frequent mowing, with the application of herbicide and fertiliser.

St Leonard's Churchyard

The grassland sward fits the Natural England BEHTA Manual criteria for **semi-improved species-poor grassland**.

The percentage cover of perennial rye-grass and white clover is fairly low around 13%, which is intermediate between a semi-improved and a species-rich grassland. The percentage cover of wildflowers and sedges is moderately high at around 50%. However the sward is relatively species-poor, with an average of just 7 species/m² including grasses.

Dandelion, germander speedwell and dog violet are frequent in the sward, with occasional ladies bedstraw and wood avens. Dog violet and wood avens are indicative of shading under the trees, while ladies bedstraw is an indicator species for species-rich meadows. The grass component is predominantly false oat-grass with occasional Yorkshire fog. There is very little perennial rye-grass in the sward.

This species composition is typical of an infrequently mown, ungrazed site such as a graveyard. The grassland does not appear to have been treated with herbicide or fertiliser.

Dovehouse Close

The grassland sward is **intermediate between a semi-improved species-poor grassland and an improved grassland**.

The percentage cover of perennial rye-grass and white clover is high at around 60%, while the percentage cover of wildflowers and sedges is moderate, at around 28%.

Dandelion, white clover and beaked hawksbeard are frequent, with rare to occasional creeping buttercup, daisy, common mouse-ear, cow parsley and yarrow. The sward had been recently mown, so we were unable to identify individual grass species, and therefore unable to provide figures for the number of species/m² including grasses.

This species composition is fairly typical of a frequently mown urban grassland road verge or amenity grassland.

Fishponds car park grassland

The grassland sward fits the Natural England BEHTA Manual criteria for **semi-improved species-poor grassland**.

The percentage cover of perennial rye-grass and white clover is around 20%. The percentage cover of wildflowers and sedges is fairly high at around 50%. However, there are no indicator species for species-rich grassland in the sward.

Daisy, dandelion and greater plantain are frequent, with rare to occasional wood avens, field bindweed, black medick, white clover, hogweed, common mouse-ear, ribwort plantain, cow parsley, dove's-foot geranium and green alkanet. The sward had been recently mown, so we were unable to identify individual grass species, and therefore unable to provide figures for the number of species/m² including grasses.

The species composition is fairly typical of a mown urban grassland road verge or amenity grassland.

References

Baseline Evaluation of Higher Tier Agreements (BEHTA) Manual, 2nd edition, May 2016. Natural England.

Appendix 1

BEHTA Manual definitions of grassland types

Improved grassland

At least **two** of the following apply:

- Cover of perennial rye-grass and white clover >30%
- The sward is species-poor – up to 8 species/m² including grasses
- Cover of wildflowers and sedges <10% (excluding white clover, creeping buttercup, injurious weeds such as creeping/spear thistle, broad-leaved/curled dock, stinging nettle, common ragwort)

Semi-improved grassland

At least **two** of the following apply:

- Cover of perennial rye-grass and white clover <30%
- The sward is moderately species-rich – 9 to 15 species/m² including grasses
- Cover of wildflowers and sedges >10% (excluding white clover, creeping buttercup, injurious weeds such as creeping/spear thistle, broad-leaved/curled dock, stinging nettle, common ragwort)

Species-rich grassland

At least **two** of the following apply:

- Cover of perennial rye-grass and white clover <10%
- The sward is species-rich – more than 15 species/m² including grasses
- Cover of wildflowers and sedges >30% (excluding white clover, creeping buttercup, injurious weeds such as creeping/spear thistle, broad-leaved/curled dock, stinging nettle, common ragwort)

Bent, common														
Bent, creeping					*								1/11	R
Brome (sp.)														
Cock's-foot				*	*								2/11	R
Dog's-tail, crested														
Fescue, meadow					*					*			2/11	R
Fescue, red							*						1/11	R
Fescue, tall														
Foxtail, meadow														
Hair-grass, tufted														
Meadow-grass, annual											*		1/11	R
Meadow-grass, rough						*		*	*				3/11	R
Meadow-grass, smooth		*	*							*			3/11	R
Oat-grass, false	*			*	*			*	*	*			6/11	F
Rye-grass, perennial									*				1/11	R
Sweet vernal grass														
Timothy														
Timothy, small														
Yorkshire fog			*	*				*		*			4/11	O
No. grass species/m2	1	1	2	2	5	1	1	3	3	4	1	24		2.2
% cover ryegrass/white clover	20		20	50	0	0	0	0	30		0			13.3
% cover wildflowers/sedges	80		80	50	5	30	70	25	30		90			51.1
No. species incl grasses/m2	4	4	5	11	8	8	8	7	8	10	3			6.9

Comments: This survey was carried out as a baseline prior to enhancement with yellow rattle seed in autumn 2020. The grassland is **intermediate** between Natural England BEHTA Manual criteria for **semi-improved and species-rich grassland** for the following reasons: cover of perennial rye-grass and white clover is less than 30%; the cover of wildflowers and sedges is greater than 30%, excluding white clover, creeping buttercup and injurious weeds. However the sward is relatively species-poor with an average of just 7 species/m2 including grasses. Dandelion, germander speedwell and dog violet were frequent in the sward, with occasional ladies bedstraw and wood avens. The grass component was predominantly false oat-grass with occasional Yorkshire fog. This is fairly typical for an infrequently mown, ungrazed site such as a graveyard. Perennial rye-grass was only rare in the sward.

Bent, creeping																
Brome (sp.)																
Cock's-foot		*												1/13	R	
Dog's-tail, crested																
Fescue, meadow																
Fescue, red																
Fescue, tall																
Foxtail, meadow																
Hair-grass, tufted																
Meadow-grass, annual																
Meadow-grass, rough		*	*	*					*	*	*	*		7/13	F	
Meadow-grass, smooth						*			*					2/13	R	
Oat-grass, false																
Rye-grass, perennial	*	*	*	*	*	*	*	*	*	*	*	*	*	13/13	F	
Sweet vernal grass																
Timothy					*			*						2/13	R	
Timothy, small											*			1/13	R	
Yorkshire fog					*								*	2/13	R	
No. grass species/m2	2	1	3	2	3	2	2	2	2	2	3	2	3			2.1
% cover ryegrass/white clover	99	90	90	80	75	85	80	85	80	85	80	70	40			79.9
% cover wildflowers/sedges	1	10	10	20	25	15	0	0	1	1	15	20	30			11.4
No. species incl grasses/m2 (excl creeping buttercup, white clover, injurious weeds)	1	3	4	4	4	4	4	2	3	5	5	4	5			3.7
Comments: This survey was carried out as a baseline prior to spreading 'green hay' collected from Long Mead in late July 2020. The grassland fits the Natural England BEHTA Manual criteria for species-poor improved grassland for the following reasons: cover of perennial rye-grass and white clover is more than 30%; the sward is species-poor with less than 9 species/m2 including grass species, but excluding undesirable species such as white clover, creeping buttercup and injurious weeds. The cover of wildflowers and sedges only very marginally meets the criteria for semi-improved grassland. Creeping buttercup, white clover and dandelion were frequent in the sward, with occasional greater plantain. The grass component was predominantly perennial rye-grass, with frequent rough meadow-grass, which is fairly typical of an amenity grassland such as a playing field.																

Brome (sp.)																		
Cock's-foot																		
Dog's-tail, crested																		
Fescue, meadow																		
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Sweet vernal grass																		
Timothy																		
Timothy, small																		
Yorkshire fog																		
No. grass species/m2																		
% cover ryegrass/white clover																		20.0
% cover wildflowers/sedges																		50.0
No. species incl grasses/m2 (excl creeping buttercup, white clover, injurious weeds)																		

Comments: This survey was carried out as a baseline prior to sowing with wildflower seed in autumn 2020. The grassland had been mown at the time of the survey, making it impossible to identify individual grass species. The grass sward meets the Natural England BEHTA Manual criteria for **semi-improved species-poor grassland** with more than 10% cover of wildflowers excluding creeping buttercup, white clover and injurious weeds) and less than than 30% cover of perennial rye-grass and white clover. Daisy, dandelion and greater plantain were frequent, with rare to occasional wood avens, field bindweed, black medick, white clover, hogweed, common mouse-ear, ribwort plantain, cow parsley, dove's-foot geranium and green alkanet . This is fairly typical of a mown urban grassland road verge or amenity grassland.

Dog's-tail, crested																
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Rye-grass, perennial																
Sweet vernal grass																
Timothy																
Timothy, small																
Yorkshire fog																
No. grass species/m2																
% cover ryegrass/white clover	60	0	90	80												57.5
% cover wildflowers/sedges	30	60	10	10												27.5
No. species incl grasses/m2 (excl creeping buttercup, white clover, injurious weeds)																

Comments: This survey was carried out as a baseline prior to sowing with yellow rattle seed in autumn 2020. The grassland had been mown at the time of the survey, making it impossible to identify individual grass species. The grass sward is currently **intermediate** between the Natural England BEHTA Manual criteria for **semi-improved species-poor grassland** (with more than 10% cover of wildflowers excluding creeping buttercup, white clover and injurious weeds) and **improved grassland** (with more than 30% cover of perennial rye-grass and white clover). Dandelion, white clover and beaked hawksbeard were frequent, with rare to occasional creeping buttercup, daisy, common mouse-ear, cow parsley and yarrow. This is fairly typical of a mown urban grassland road verge or amenity grassland.