

**Baynham's Meadow**  
Botanical Monitoring  
Baseline Report 2024

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# 1 Introduction

## Background to Commission

- 1.1 BSG Ecology were commissioned by the University of Oxford on 04 June 2024 to undertake a suite of baseline botanical monitoring surveys at Baynham's Meadow in Wolvercote. The site required baseline botanical data to be collected immediately following management interventions intended to contribute to their long-term enhancement.

## Site Description

- 1.2 Baynham's Meadow is a single large field (reference P6174) approximately 2.4 hectares in extent, located in Wolvercote, and centred approximately on Grid Reference SP 4858 0975. The Meadow forms part of the Wolvercote Meadows SSSI, which itself is a constituent site of the Oxford Meadows Special Area of Conservation (SAC), designated predominantly for its internationally unique, traditionally managed floodplain meadows of the *Alopecurus pratensis*- *Sanguisorba officinalis* (meadow foxtail- great burnet) type (JNCC, accessed 2024). Baynham's Meadow is the largest meadow within the Wolvercote Meadows SSSI, and has historically been managed as horse-grazed permanent pasture. It contains floral species typical of unimproved floodplain meadows such as meadowsweet *Filipendula ulmaria*, great burnet *Sanguisorba officinalis*, pepper saxifrage *Silaum silaus*, devil's-bit scabious *Succisa pratensis*, and adder's-tongue fern *Ophioglossum vulgatum* (Natural England, 1986).
- 1.3 A line of tall poplars which formed the eastern boundary of Baynham's meadow have recently been felled to reduce the shading of the grassland. The surveys undertaken at the meadow are to serve as a baseline against which any changes in the plant community as a result of the reduction of shading can be measured against, to ensure that the SSSI grassland remains in favourable condition.

## Scope of Report

- 1.4 This report sets out the methods and results of the baseline botanical surveys carried out by BSG Ecology at Baynham's Meadow in June 2024.

## 2 Methods

2.1 The methodology followed across was based on the protocol for fine-grained vegetation monitoring detailed in the UK Environmental Change Network guidance (NERC, 1996), and is designed to be readily repeatable for future monitoring visits. The specific protocol followed for each site is detailed under the relevant subheading, below.

### Date of survey

2.2 Baseline data for Baynham's Meadow was collected on 13 June 2024 by Joe Grainger-Hull and Anna Senior, and on 18 June 2024 by Anna Senior and Tom Flynn, also Principal Ecologist at BSG Ecology.

### Protocol

2.3 The survey protocol employed at Baynham's Meadow is as follows:

- i) Two linear transects spanning the width of the field were aligned east-west using a compass and marked out for the duration of the survey using garden canes and string. The coordinates for each end of each transect were recorded using a handheld Garmin GPS device.
- ii) Cell locations were marked along the transects at 5 m intervals, starting at the eastern fence of the field, which runs approximately in line with the now-felled line of poplars. 40 cm x 40 cm quadrats were placed at these locations, with each marker point acting as the southeastern corner of the cell – i.e. cells were situated on the northern edge of the transect line, running from the marker point to 40 cm beyond it.
- iii) All rooted vascular plant species and any dominant bryophyte species within each cell were recorded, along with a DOMIN value representing percentage cover within the cell.
- iv) Two representative 10 m x 10 m quadrats were also marked out within the field, with 10 randomly selected sub-cells measured out for each, as per steps v and vi, below.
- v) The southern and western boundaries (X- and Y-axis) of each quadrat were aligned along the north-south and east-west axis, respectively, using a compass, and marked for the duration of the survey using garden canes and string. The coordinates of the southwestern corner of each quadrat were recorded using a handheld Garmin GPS device, and the southwestern, northwestern, and southeastern corners of each were marked using metal tent pegs, to be recovered using a metal detector during future monitoring visits. GPS coordinates for each quadrat are provided in Appendix 1.
- vi) The X and Y axis of each 10 m x 10 m quadrat was marked at 40 cm intervals, dividing it into 25 lengths, and dividing the quadrat into a grid of 625 40 cm x 40 cm sub-cells. Ten of these sub-cells were selected at random for each quadrat by using a random number generator to generate 10 X and 10 Y coordinates. The sub-cells can be relocated for future survey by measuring the X- and Y- distances within the quadrat (See Appendix 2 for sub-cell locations within all each quadrat).
- vii) All rooted vascular plant species and any dominant bryophyte species within each sub-cell were recorded, along with a DOMIN value representing percentage cover within the cell.

2.4 An additional list of species present throughout the meadow but not recorded in either the transect or quadrat sub-cells was made.

2.5 Any general observations, such as the presence of Invasive Non-Native Species, were noted.

### 3 Results

3.1 Data from transect sub-cells and quadrat sub-cells are provided in *Table 1* and *Table 2*, respectively.

*Table 1: Baynham's Meadow transect sub-cell data*

Transect 1												
Species	Sub-cell number and distance from eastern boundary (in brackets). Species presence indicated by DOMIN score.											
	1 (0)	2 (5)	3 (10)	4 (15)	5 (20)	6 (25)	7 (30)	8 (35)	9 (40)	10 (45)	11 (50)	12 (55)
<i>Agrostis capillaris</i> (common bent)			1								2	1
<i>Alopecurus pratensis</i> (meadow fox-tail)				3	2		1	2	4		1	1
<i>Anthoxanthum odoratum</i> (sweet vernal-grass)												2
<i>Arrhenatherum elatius</i> (false oat-grass)				1								
<i>Bromus racemosus</i> subsp. <i>commutatus</i> (meadow brome)		4	1		3	3	2	2	2	3		1
<i>Bromus hordeaceus</i> (soft brome)		2	2	3								
<i>Cardamine pratensis</i> (cuckooflower)						1						
<i>Carex flacca</i> (glaucous sedge)										6		
<i>Carex hirta</i> (hairy sedge)			1	2	3	3	1	1	3	4	1	1
<i>Centaurea nigra</i> (black knapweed)												1
<i>Cirsium arvense</i> (creeping thistle)	4											
<i>Cynosurus cristatus</i> (crested dog's-tail)				4					1	4	1	4
<i>Festuca rubra</i> (red fescue)					4	6					1	
<i>Filipendula ulmaria</i> (meadowsweet)	6	4	8	4	3	4	4			1	6	
<i>Galium verum</i> (lady's bedstraw)									1			
<i>Geranium dissectum</i> (cut-leaved cranesbill)					1	1						
<i>Holcus lanatus</i> (Yorkshire fog)		4	1	4	4	4	2	2	3	4	1	1
<i>Hordeum secalinum</i> (meadow barley)		1		3	4	2	4		2	2	2	4
<i>Lathyrus pratensis</i> (meadow vetchling)												2
<i>Lolium perenne</i> (perennial rye-grass)	2	2	1	4	4		4	1	1	1	1	2
<i>Lysimachia nummularia</i> (creeping jenny)		2				1						
<i>Plantago lanceolata</i> (ribwort plantain)											2	
<i>Poa pratensis</i> (smooth-stalked meadow-grass)									5	2		
<i>Poa trivialis</i> (rough-stalked meadow-grass)	2	4	2	2	4	3	2	3			1	
<i>Potentilla reptans</i> (creeping cinquefoil)					1		1	1		1	1	1
<i>Prunella vulgaris</i> (selfheal)										1		
<i>Ranunculus acris</i> (meadow buttercup)			4	2	1	1	2		1	4	5	2
<i>Ranunculus repens</i> (creeping buttercup)		1			1	4	4	8	5	5	5	1
<i>Rubus caesius</i> (dewberry)	4											

<i>Rumex acetosa</i> (common sorrel)				1	1	1	1	1				
<i>Rumex crispus</i> (curled dock)		1						2				
<i>Sanguisorba officinalis</i> (great burnet)				1	2						7	
<i>Stellaria graminea</i> (lesser stitchwort)					1							
<i>Taraxacum</i> agg. (dandelion)	2											
<i>Trifolium pratense</i> (red clover)								1		4	1	
<b>Transect 2</b>												
<i>Agrostis capillaris</i>		7	5	4	3	7	5	5	4	4	1	5
<i>Agrostis stolonifera</i> (creeping bent)											1	
<i>Ajuga reptans</i> (bugle)		1					1			1		
<i>Alopecurus pratensis</i>							1			8	3	2
<i>Angelica sylvestris</i> (wild angelica)					1							
<i>Anthoxanthum odoratum</i>				2	1		1	1				
<i>Arrhenatherum elatius</i>	6											
<i>Bromus racemosus</i> subsp. <i>commutatus</i>	5	1		1	2			1			2	
<i>Bromus hordeaceus</i>			1	1	1		1		1	1		
<i>Carex acuta</i> (slender tufted-sedge)			2	2	5		5	1	4	7	2	5
<i>Carex distans</i> (distant sedge)									1			
<i>Carex hirta</i>		3	1									
<i>Carex nigra</i> (common sedge)							1					1
<i>Centaurea nigra</i>									1			
<i>Cerastium fontanum</i> (common mouse-ear)				1								
<i>Cirsium arvense</i>	6											
<i>Dactylis glomerata</i> (cock's-foot)				1	1							
<i>Deschampsia cespitosa</i> (tufted hairgrass)										1		
<i>Festuca rubra</i>								2	1			
<i>Filipendula ulmaria</i>		2	6	5	6	5	5	5	5	8	6	7
<i>Glechoma hederacea</i> (ground ivy)	2											
<i>Holcus lanatus</i>	2		1	5	1	1	1	2		4	2	4
<i>Hordeum secalinum</i>		2										
<i>Juncus articulatus</i> (jointed rush)		8	7			7		7	7		5	7
<i>Lathyrus pratensis</i>		1	1	1				3	1			
<i>Lolium perenne</i>	2	8										
<i>Lysimachia nummularia</i>				1								
<i>Phalaris arundinacea</i> (reed canary-grass)											1	
<i>Poa trivialis</i>			2	4	4	4	2	1	2	5	3	
<i>Prunella vulgaris</i>											2	
<i>Ranunculus acris</i>				2	2	3	1			1	1	2
<i>Ranunculus repens</i>				5	4	2	1	1	2			
<i>Rumex acetosa</i>					1			4		1	1	2
<i>Rumex crispus</i>	4	1									1	
<i>Sanguisorba officinalis</i>		3	2		2	3	2	2	4	4	2	
<i>Schedonorus arundinaceus</i> (tall fescue)		1		2	2							
<i>Schedonorus pratensis</i> (meadow fescue)				1	1		1		1			
<i>Taraxacum</i> agg.				1								



Table 2: Baynham's Meadow quadrat sub-cell data

Quadrat 1										
Species	Sub-cell coordinates (presence indicated by DOMIN score)									
	(13,19)	(23,24)	(14,19)	(1,25)	(4,23)	(14,9)	(7,13)	(22,7)	(14,22)	(19,18)
<i>Agrostis stolonifera</i>	4	4	4	4	5	3	2	5	5	4
<i>Ajuga reptans</i>								1		2
<i>Alopecurus pratensis</i>				1						
<i>Anthoxanthum odoratum</i>	1	1		1						2
<i>Brachythecium</i> sp. (a feather-moss)	1				5	1	2			1
<i>Bromus racemosus subsp. commutatus</i>	1	1		1	1	1			1	
<i>Cardamine pratensis</i>									1	
<i>Carex acuta</i>								1		
<i>Carex flacca</i>		2	2				1			4
<i>Carex hirta</i>		3	3	2	2		2		2	2
<i>Carex ovalis</i> (oval sedge)				3						
<i>Cerastium fontanum</i>									1	
<i>Cynosurus cristatus</i>						1		1		
<i>Deschampsia cespitosa</i>	1			4	3					3
<i>Equisetum palustre</i> (marsh horsetail)									1	1
<i>Festuca rubra</i>	5	2			3		1	1	3	2
<i>Filipendula ulmaria</i>	5	4	4			5	5	4	4	2
<i>Holcus lanatus</i>	4	1	1	4	1	1		2	2	
<i>Juncus articulatus</i>	7	5	6	1		7	7	7	7	6
<i>Juncus bufonius</i> (toad rush)					1					
<i>Lathyrus pratensis</i>	4	1	2			4	4	1	2	2
<i>Lolium perenne</i>	1		1	1						
<i>Lotus corniculatus</i> (bird's-foot trefoil)		1						1		
<i>Luzula campestris</i> (field wood-rush)								1		
<i>Lysimachia nummularia</i>		1	2		2	2			2	2
<i>Phleum pratense</i> (Timothy grass)				2						
<i>Plantago lanceolata</i>										2
<i>Poa trivialis</i>	2		2	3		1	2	1	4	5
<i>Prunella vulgaris</i>	4		2			2			1	
<i>Ranunculus acris</i>		2	2	1	1	2	1	1	3	3
<i>Ranunculus repens</i>	4						3			
<i>Rumex acetosa</i>	1	1			1	2	1	1	1	2
<i>Sanguisorba officinalis</i>	4	4	2			4	4	2	4	4
<i>Schedonorus arundinaceus</i>	1	1	2		3	2	4	1	1	2
<i>Vicia cracca</i> (tufted vetch)								1	2	3
Quadrat 2										
Species	(11,8)	(7,12)	(19,24)	(11,11)	(18,3)	(23,12)	(7,14)	(22,15)	(21,2)	(16,24)
<i>Agrostis stolonifera</i>	6	6	5	7	6	8		7	6	5
<i>Alopecurus pratensis</i>			4		2	1		2	4	3

<i>Anthoxanthum odoratum</i>								1		
<i>Bromus racemosus subsp. commutatus</i>			2	1	1	1	1	1		1
<i>Carex acuta</i>	4		4	2		2	6	4	2	
<i>Carex distans</i>				1	1	1				
<i>Cynosurus cristatus</i>				1	3	1		1		1
<i>Deschampsia cespitosa</i>		1					4	2		
<i>Festuca rubra</i>					2		3	1	4	
<i>Filipendula ulmaria</i>	4	4	5	5	2	5	5	4	4	5
<i>Holcus lanatus</i>		1	4	1	2	4	2	2	4	5
<i>Juncus articulatus</i>									3	
<i>Lathyrus pratensis</i>				1	2					
<i>Lolium perenne</i>	1									
<i>Poa trivialis</i>	1	1	5	2	3	2	1	3	1	4
<i>Ranunculus acris</i>			2		3			1	2	2
<i>Rumex acetosa</i>	1	1		1	3		3		2	
<i>Rumex crispus</i>							1			
<i>Schedonorus pratensis</i>									1	
<i>Vicia sativa</i> (common vetch)								1		

### Additional species

- 3.2 Species present throughout the meadow though not recorded in any sub-cell include cut-leaved cranesbill *Geranium dissectum*, grass-vetchling *Lathyrus nissolia*, oxeye daisy *Leucanthemum vulgare*, hairy tare *Vicia hirsuta*, common hogweed *Heracleum sphondylium*, common spotted-orchid *Dactylorhiza fuchsii*, devil's-bit scabious *Succisa pratensis*, a hawk's-beard *Crepis sp.*, marsh thistle *Cirsium palustre*, and common reed *Phragmites australis*.

### General observations

- 3.3 A stand of Himalayan balsam *Impatiens glandulifera*, an invasive non-native species, was noted at the entrance to Baynham's Meadow, located approximately at Grid Reference SP 48573 09555.

## 4 References

NERC (1996) *The UK Environmental Change Network Protocols for Standard Measurements at Terrestrial Sites*. UK Centre for Ecology and Hydrology [accessed online: <https://ecn.ac.uk/sites/default/files/ECN/Protocols/V.pdf>]

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## 5 Figures

Figure 1: Baynham's Meadow quadrat/ transect locations



PROJECT TITLE  
PARK FARM & BAYNHAM'S MEADOW  
BOTANICAL BASELINE

DRAWING TITLE  
Figure 1: Baynham's Meadow quadrat/transect  
locations

DATE: 30/07/2024      CHECKED: AS      SCALE: 1:1,275  
DRAWN: JGH      APPROVED: AS      VERSION:1.0

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Projection: OSGB 1936/British National Grid - EPSG 27700  
Sources: BSG Ecology survey data

Legend

Fields/Compartments

 Field extent

 Quadrat/ transect

## Appendix 1: GPS coordinates of quadrats and transects

Table 1: Baynham's Meadow transects

Transect	Eastern end		Western end	
	Lat	Long	Lat	Long
T1	51.78301	-1.29637	51.78306	-1.2972
T2	51.78458	-1.29635	51.78464	-1.29721

Table 2: Baynham's Meadow quadrats (southwestern corners)

Quadrat	Lat	Long
1	51.78388	-1.29702
2	51.785	-1.29686

## Appendix 2: Sub-cell coordinates

Table 1: Baynham's Meadow

Quadrat	X	Y
1	13	19
	23	24
	14	19
	1	25
	4	23
	14	9
	7	13
	22	7
	14	22
	19	18
2	11	8
	7	12
	19	24
	11	11
	18	3
	23	12
	7	14
	22	15
	21	2
	16	24