

National Vegetation Classification Survey



Oxpens, Wigginton

On behalf of Seymour Smith Architects

July 2019

Ecology by Design Ltd,

Hampden House, Monument Park, Chalgrove, Oxfordshire, OX44 7RW

Tel 07487700305 www.ecologybydesign.co.uk

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Prepared by	Anna Gundrey MCIEEM	28/06/2019
Checked by	Lindsay Stronge MA Cantab, MSc, ACIEEM	01/07/2019

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1 Executive Summary

Ecology by Design Ltd were commissioned by Seymour-Smith Architects on behalf of a private client to undertake a botanical survey using the National Vegetation Classification (NVC) methodology of land at Oxpens near Wigginton in Oxfordshire. The client seeks to secure planning permission under Paragraph 79 for the construction of a new residential dwelling on the site.

This report details the findings of the NVC survey undertaken on the site as recommended in the preliminary ecological appraisal (Ecology by Design, 2019) and should be read in conjunction with this report.

- The NVC survey was undertaken on 17th May 2019;
- One plant community was identified – the entire field was assigned to MG4;
- The MG4 community was assessed as being of National Value for conservation;
- This is a new recorded site for MG4 grassland in Oxfordshire and the Floodplain Meadow Partnership have added it to the national inventory of this habitat type;
- 35 plant species were recorded;
- No NERC Section 41 species of principal importance for nature conservation were noted;
- An opportunity exists to improve the condition of the meadow by implementing an appropriate habitat management plan;
- A Construction Environmental Management Plan (CEMP) should be produced detailing measures to protect the meadow during construction works associated with the proposed development in the woodland.

2 Introduction

2.1 Background and Survey Objectives

Seymour-Smith Architects on behalf of a private client seek to secure planning permission under Paragraph 79 for the construction of a new residential dwelling on land at Oxpens near Wigginton in Oxfordshire.

Ecology by Design Ltd were commissioned by Seymour-Smith Architects to undertake a preliminary ecological appraisal of the site (Ecology by Design, 2019). The PEA report recommended that a botanical survey was undertaken.

The purpose of this report is to present the findings of the NVC survey including classifying and mapping all the vegetation types present on the site.

The botanical monitoring objectives are:

- To establish baseline information on distribution and composition of the plant communities present on the site.

2.2 Site Description

The site is a triangular field on the western outskirts of Wigginton, located c. 170m to the west of the unclassified road that runs between Wigginton and Swerford. It is accessed via a newly-surfaced hardcore track that runs west from the unclassified road and continues along the north-east boundary of the site. The site is bounded by hedgerows and lies adjacent to a rectangular broadleaved plantation in which a large lake is located. This area lies within the same ownership.

The field itself, which is the subject of this survey, is a meadow that appears not to be currently managed but has been so until recently. It is divided by two deep ditches that run from the western boundary and meet at the eastern end of the north-east boundary.

2.3 Proposed Works

The proposed development is at an early stage but will include a residential development under Paragraph 79 along with associated hard and soft landscaping and access.

2.4 Limitations/ Constraints

The wildlife and wider ecological interest of a site can change. The report presented here is a statement of the findings of surveys carried out during May 2019. Any appreciable delay in making reference to this report or changes to the proposed development boundary may necessitate a re-survey.

3 Methods

3.1 National Vegetation Classification Survey

A NVC survey was conducted on 17th May 2019 by Anna Gundrey MCIEEM an ecologist with over 20 years of habitat surveying experience. The methodology followed guidance from the NVC Users' Handbook (Rodwell, 2006). An initial walkover of the site was undertaken to provide an overview of the range of habitats present. Seven survey points were then positioned across the site. As the vegetation was found to be fairly uniform, these points were located so as to give a good coverage across the site. At each point a 1m² quadrat was placed, and all vascular plant species within that quadrat were identified and assigned a relative abundance score using the DAFOR scale (Appendix 5). A note was also taken of any plant species observed on the site that were not recorded within any of the quadrats, to provide a comprehensive species list of the grassland. Communities were assigned to NVC types using the judgement and experience of the surveyor and the keys, floristic tables and descriptions provided in Rodwell (1991 – 2000).

The nomenclature follows Stace, 2019.

4 Results

The initial walkover indicated that, whilst there were slight variations in species abundance across the site, the field consisted of a uniform assemblage of species. A single plant community could therefore be assigned to the entire field.

4.1 Communities

The survey revealed that the field falls into the NVC community MG4 *Alopecurus pratensis* – *Sanguisorba officinalis* grassland. This is a lowland neutral grassland community characterised by a species-rich sward including frequent bulky perennials such as great burnet *Sanguisorba officinalis*, meadowsweet *Filipendula ulmaria* and meadow vetchling *Lathyrus pratensis*. Using the Key to Mesotrophic grassland provided in Rodwell, 1992, the grassland on Site keyed unambiguously into this community.

There are 16 species listed as ‘constants’ of this community in Rodwell 1992. Of these species, 13 were present with the Site and all were found in quadrats. Of the 35 species recorded in the grassland of the site, only six would be considered untypical of the MG4 community, and these were all infrequently encountered.

The grassland on Site can therefore be considered to have an assemblage of species typical of the MG4 community. However, the constancy with which many of these species occur is lower than that which would be found in a ‘good’ example of the community. For example, great burnet, meadowsweet, red clover *Trifolium pratense*, which are characteristic of the community, would all be expected to be widespread and occur in every quadrat, but in fact great burnet was only present in three quadrats, whilst meadowsweet and red clover were only present in one quadrat each. Conversely, the sward was dominated by red fescue *Festuca rubra* and meadow buttercup *Ranunculus acris*, both of which would be expected to be a constant in the community, but at more moderate levels.

5 Discussion

MG4 grassland is lowland grassland characteristic of areas where traditional hay meadow treatment has been applied to seasonally flooded land with alluvial soils. This would usually entail the taking of an annual hay crop followed by light winter grazing and light application of manure (Rodwell 1992). This once widespread community is now has a localised distribution centred on the midlands of England, with many of the richer examples being found in Oxfordshire (for example Oxford Meadows Special Area of Conservation).

MG4 grassland falls within the definition of a lowland meadow and as such is ‘habitat of principal importance for the conservation of biodiversity under the provisions of the Natural Environment and Rural Communities Act (NERC) 2006 (See Section 7.2). It would also qualify for notification as a nationally designated and legally protected Site of Special Scientific Interest (SSSI), on the basis that all examples of MG4 grassland over 0.5 hectares, meet the qualifying criteria (Jefferson et al. 2014). As such it could be classed as being of National conservation value. The Floodplain Meadow Partnership have been advised of the existence of this site and have added it to their national inventory of this habitat type.

The Site is therefore of high conservation value, but is lacking the species-richness of a typical MG4 meadow. However this does not appear to be due to inappropriate agricultural management. There is very little perennial rye grass *Lolium perenne* and no white clover *Trifolium repens* present, the presence of which might have indicated that the site has been agriculturally ‘improved’ by fertilization or reseeding in recent years. There are also no weed species such as broad-leaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense* or nettle *Urtica dioica* that would indicate enrichment and overgrazing.

It appears that the reduced abundance of species may be due to the drying out of the site. MG4 grasslands are typically found adjacent to rivers and are seasonally flooded. The field at Oxpens does not lie alongside a major river, but a stream runs into the northern tip of the field down its western boundary, then turns a right-angle and runs along the southern portion of the field. It is the flooding of the field by this stream that is likely to have resulted in the formation of the flood meadow community. Before entering the field, the stream is intercepted by a man-made lake. Examination of aerial photographs on GoogleEarth suggests that this was created just prior to 2004. It seems likely that this lake has intercepted any excess water from upstream so the field no longer gets flooded. This drying of the field, may account for the reduced coverage of typical MG4 species such as great burnet and meadowsweet, and the higher occurrence of dryer meadow species such meadow buttercup and red fescue

6 Recommendations and Mitigation strategy

In order to restore the flood meadow habitat of the field, it is recommended that the historic flood regime of the stream is restored. The lake lies within the same ownership as the field, so opportunities should be explored to allow the stream to return to its natural course.

In order to retain and enhance the current habitat, a traditional management regime should be followed on the site. This would entail leaving the sward to grow long throughout the spring and summer, and then cut for hay in late July-August when the plants have set seed. The hay should be baled and removed from the site. Light aftermath grazing by cattle should then be applied during the autumn, and early winter before the ground gets too wet. Artificial fertilizers should not be used, but a light dressing of farmyard manure would be acceptable if deemed necessary.

7 Relevant Legislation and Policy

7.1 Natural Environment & Rural Communities Act 2006

Section 40 of the NERC Act, 2006 places a duty upon all local authorities in England to promote and enhance biodiversity in all of their functions. Section 41 lists habitats and species of principal importance to the conservation of biodiversity. These are all the habitats and species in England that have been identified as requiring action in the UK. These species and habitats are a material consideration in the planning process.

7.2 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was updated in February 2019 thereby replacing the older version of July 2018. The new framework sets out in section 15 that to protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following should be given the same protection as habitats sites:

- potential Special Protection Areas and possible Special Areas of Conservation;

- listed or proposed Ramsar sites; and
- sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

7.3 Local Planning Policy

The following relevant parts of policy is taken from the Cherwell Local Plan 2011-2031.

Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment

Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources
- The protection of trees will be encouraged, with an aim to increase the number of trees in the District
- The reuse of soils will be sought
- If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, compensation then development will not be permitted.
- Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity...
- Development proposals will be expected to incorporate features to encourage biodiversity and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity...

- Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value.
- Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably.
- A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.

8 References

Ecology by Design (2019) *Preliminary Ecological Appraisal, Oxpens*, Ecology by Design, Oxfordshire

Jefferson, R.G., Smith, S.L.N. and MacKintosh, E.J (2014) *Guidelines for the Selection of Biological SSSIs. Part 2 Chapter 3 Lowland Grasslands* Natural England, Peterborough.

Rodwell, J.S., (2006) *NVC Users' Handbook*, JNCC

Rodwell (1991 – 2000) *British Plant Communities*, Vols. 1-5, Cambridge University Press

Stace (2019) *New Flora of the British Isles* 4th edition, Cambridge University Press

Appendix 1 - Photographs



Photo 1: Overview of field looking south-east



Photo 2: Close-up of sward

Appendix 2 – NVC Map

NVC Locations

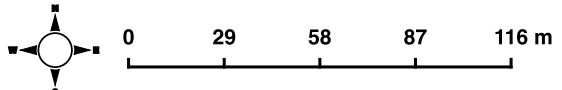
- Site Boundary
- NVC Quadrats Locations



Project: **Oxpens, Wigginton**

Client: **Seymour-Smith Architects**

Drawing Title: **NVC Quadrat Locations**



SCALE (@A3): 1:2,297 Drawn by BG Date: 18 July 2019

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Appendix 3 – Quadrat data MG4

Species	Q1	Q2	Q3	Q4	Q5
Graminoids					
<i>Agrostis capillaris</i>	R	A	R	F	A
<i>Alopecurus pratensis</i>	O	-	O	F	R
<i>Anthoxanthum odoratum</i>	F	-	O	F	F
<i>Bromus hordeaceus</i>	-	R	-	-	-
<i>Carex hirta</i>	R	-	-	-	-
<i>Cynosurus cristatus</i>	-	-		-	O
<i>Dactylus glomerata</i>	-	-	-	O	-
<i>Festuca rubra</i>	A	A	A	O	A
<i>Holcus lanatus</i>	O	R	R	O	O
<i>Lolium perenne</i>	R	R	R	-	-
<i>Luzula campestris</i>	-	-	R	O	O
<i>Phleum pratense</i>	O	F	-	F	-
Forbs					
<i>Cardamine pratensis</i>	-	R	R	-	R
<i>Centaurea nigra</i>	-	F	R	O	-
<i>Conopodium majus</i>	-	-	-	R	-
<i>Filipendula ulmaria</i>	-	-	D	-	-
<i>Lathyrus pratensis</i>	O	O	F	O	O
<i>Lotus corniculatus</i>	-	-	R	-	-
<i>Potentilla reptans</i>	-	-	-	-	O
<i>Ranunculus acris</i>	D	F	F	F	A
<i>Ranunculus ficaria</i>	R	-	-	R	-
<i>Ranunculus repens</i>	F	O	R	O	O
<i>Rumex acetosa</i>	O	O	O	O	O
<i>Sanguisorba officinalis</i>	-	O	O	A	-
<i>Stellaria graminea</i>	-	O	-	-	-
<i>Taraxacum officinalis agg.</i>	-	-	-	R	-

Species	Q6	Q7			
Graminoids					
<i>Agrostis capillaris</i>	A	F			
<i>Alopecurus pratensis</i>	F	O			
<i>Anthoxanthum odoratum</i>	A	F			
<i>Cynosurus cristatus</i>	-	O			
<i>Dactylus glomerata</i>	O	-			
<i>Festuca rubra</i>	F	A			
<i>Holcus lanatus</i>	O	O			
<i>Lolium perenne</i>	-	O			
<i>Luzula campestris</i>	F	-			
<i>Poa pratensis</i>	-	O			
Forbs					
<i>Cardamine pratensis</i>	-	R			
<i>Centaurea nigra</i>	F	R			
<i>Filipendula ulmaria</i>	-	A			
<i>Lathyrus pratensis</i>	F	O			
<i>Plantago lanceolata</i>	O	-			
<i>Ranunculus acris</i>	F	F			
<i>Ranunculus ficaria</i>	F	-			
<i>Ranunculus repens</i>	O	O			
<i>Rumex acetosa</i>	O	-			
<i>Stellaria graminea</i>	R	-			
<i>Taraxacum officinalis agg.</i>	R	-			
<i>Trifolium pratense</i>	R	-			
<i>Vicia sativa</i>	O	-			
Extras					
<i>Angelica sylvestris</i>					
<i>Cirsium palustre</i>					
<i>Deschampsia cespitosa</i>					
<i>Festuca arundinacea</i>					
<i>Glyceria sp.</i>					
<i>Rhinanthus minor</i>					

Appendix 4 – Site Species List

Common Name	Latin
	Graminoids
Common bent	<i>Agrostis capillaris</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Soft brome	<i>Bromus hordeaceus</i>
Hairy sedge	<i>Carex hirta</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Cock's-foot	<i>Dactylus glomerata</i>
Tufted hair-grass	<i>Deschampsia cespitosa</i>
Tall fescue	<i>Festuca arundinacea</i>
Red fescue	<i>Festuca rubra</i>
Sweet-grass sp.	<i>Glyceria sp.</i>
Yorkshire fog	<i>Holcus lanatus</i>
Perennial rye-grass	<i>Lolium perenne</i>
Meadow woodrush	<i>Luzula campestris</i>
Timothy	<i>Phleum pratense</i>
Smooth meadow grass	<i>Poa pratensis</i>
	Forbs
Wild angelica	<i>Angelica sylvestris</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Black knapweed	<i>Centaurea nigra</i>
Marsh Thistle	<i>Cirsium palustre</i>
Pignut	<i>Conopodium majus</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Meadow buttercup	<i>Ranunculus acris</i>
Lesser celandine	<i>Ranunculus ficaria</i>
Creeping buttercup	<i>Ranunculus repens</i>
Yellow rattle	<i>Rhinanthus minor</i>
Common sorrel	<i>Rumex acetosa</i>
Great burnet	<i>Sanguisorba officinalis</i>
Lesser stitchwort	<i>Stellaria graminea</i>
Dandelion	<i>Taraxacum officinalis agg.</i>
Red clover	<i>Trifolium pratense</i>
Common vetch	<i>Vicia sativa</i>

Appendix 5 – DAFOR scale

DAFOR score	Relative Abundance
D	<i>Dominant</i>
A	<i>Abundant</i>
F	<i>Frequent</i>
O	<i>Occasional</i>
R	<i>Rare</i>

Appendix 6 – Definitions of the level of Habitat Value

Geographic level of Value	Examples
International value	Ramsar Sites, Special Protection Areas, Biosphere Reserves, Special Areas of Conservation. Sites supporting populations of internationally important species.
National value	SSSIs or non-designated Sites meeting SSSI selection criteria, NNRs, Marine Nature Reserves, NCR Grade 1 Sites. Sites containing viable areas of key habitats identified in the UK Biodiversity Action Plan.
Regional value	Sites containing viable areas of threatened habitats listed in a Regional BAP (or some Natural Areas), comfortably exceeding SINC criteria, but not exceeding SSSI criteria.
County / Metropolitan	Sites meeting the criteria for county or metropolitan designation (SINC, CWS, etc.). Ancient semi-natural woodland, LNRs or viable areas of key habitat types listed in county BAPs/Natural Areas.
District / Borough	Undesignated Sites or features considered to appreciably enrich the habitat resource in the District or Borough.
Parish / Neighbourhood	Undesignated Sites or features which appreciably enrich the habitat resource within the Parish or Neighbourhood.
Negligible value	Low grade and widespread habitats.