

Flaxlands Solar Farm

National Vegetation Classification Survey Report

Ampyr Solar Europe

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Table of Contents

1.	Executive Summary	1
2.	Introduction	2
2.1	Site Location and Description	2
2.2	Survey Area	3
2.3	The Proposed Development	3
2.4	Objectives	3
3.	Legislation and Policy	4
3.1	Relevant Legislation	4
3.2	Good Practice	4
3.3	Quality Assurance	4
4.	Methodology	5
4.1	Desk-Based Assessment	5
4.2	Field Survey	5
4.3	Data Analysis	6
4.4	Evaluation	6
4.5	Limitations	7
5.	Results	8
5.1	Desk-Based Assessment	8
5.2	Field Survey	8
6.	Conclusions and Recommendations	10
6.1	Conclusions	10
6.2	Potential Impacts and Constraints	10
6.3	Mitigation	10
6.4	Monitoring	11
6.5	Enhancement	11
	Appendix A Figures	12
	Appendix B Photographs	13
	Appendix C Floristic Tables	14

Tables

Table 4-1: Central location of each quadrat	5
Table 4-2: Domin Scale	6
Table 4-3: Vegetation Frequency Class	6

1. Executive Summary

AECOM Limited (hereafter referred to as 'AECOM') have been instructed by Ampyr Solar Europe to carry out a National Vegetation Classification (NVC) survey to support the proposed installation of a solar photovoltaic array and Battery Energy Storage System (BESS) (hereafter referred to as 'the Proposed Development') within land north of Royal Wootton Bassett, Wiltshire (hereafter referred to as the 'Site'). The Site boundary of the Proposed Development is shown on Figures 1a and 1b.

This report presents the methodology, results, and recommendations of the NVC survey undertaken by AECOM in July 2024. The NVC survey focussed on the five fields identified as priority habitat in the desk-based assessment of the Preliminary Ecological Appraisal Report (PEAR), which includes lowlands meadows and calcareous grassland.

1.1.1 Results: Desk-Based Study

The desk-based study conducted by AECOM identified that Flaxlands Manor Local Wildlife Site (LWS) lies within the Site boundary within part of the southern section of the eastern land parcel, and within the northern section of the western land parcel. Calcareous grassland and lowland meadows (which are priority habitats listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) were identified within and adjacent to the Site boundary and Flaxlands Manor LWS.

The desk-based study identified no notable plant species within 2 km of the Site.

1.1.2 Results: Field Survey

1.1.2.1 Results

The NVC survey identified MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland (hereafter 'MG5 grassland') present within the Survey Area in Fields 1 to 3. Fields 4 and 5 were recorded as modified grassland, so were not subject to further NVC survey.

1.1.2.2 Evaluation of Results

The MG5 grassland qualifies as the Section 41 priority habitat lowland meadows. Lowland meadows are included in the Wiltshire Biodiversity Action Plan under unimproved neutral grassland.

1.1.3 Conclusions and Recommendations

In the absence of mitigation, the vegetation clearance necessary for the Proposed Development will reduce the extent of the MG5 grassland, particularly in Fields 1 and 2. Furthermore, the retained MG5 grassland has the potential to be impacted indirectly from trampling, tracking, storage of materials, runoff, and dust deposition.

The Local Planning Authority (Wiltshire Council) has a duty to protect and conserve MG5 grassland (lowland meadows priority habitat). It is therefore recommended that the solar photovoltaic array is redesigned to avoid loss of MG5 grassland.

If MG5 was removed, then the Proposed Development would need to compensate for its loss and provide Biodiversity Net Gain in accordance with the National Planning Policy Framework.

Following the completion of the Proposed Development, a Landscape Environmental Management Plan (LEMP), or similar, should be produced and include full details of the habitat management and monitoring proposals post-development.

2. Introduction

AECOM Limited (hereafter referred to as 'AECOM') have been instructed by Ampyr Solar Europe (hereafter referred to the 'Client') to carry out a National Vegetation Classification (NVC) survey to support the proposed installation of a solar photovoltaic array and Battery Energy Storage System (BESS) (hereafter referred to as 'the Proposed Development') within land north of Royal Wootton Bassett, Wiltshire (hereafter referred to as the 'Site'). The Site boundary of the Proposed Development is shown on Figures 1a and 1b (Appendix A), and Plate 1 (red line boundary).

During the desk-based assessment within the initial Preliminary Ecological Appraisal Report (PEAR)¹, the priority habitats lowland meadows and calcareous grassland were identified within, and directly adjacent to (respectively), the Site boundary as shown in Plate 1. Furthermore, the Flaxlands Manor Local Wildlife Site (LWS) lies partly within Site and is designated for its grassland habitats including neutral pastures and hay meadows. The Flaxlands Manor LWS contains the priority habitats lowland meadows and calcareous grassland, and its location is shown on Figures 1a and 1b. As such, there is potential for the Proposed Development to lead to the loss or degradation of priority habitats.



Plate 1: Location of priority habitats (lowland meadows and calcareous grassland) (Google Maps, 2024²)

As a result, an NVC survey was recommended in the PEAR¹ to determine the presence and distribution of potential priority habitat (under Section 41 of NERC Act (2006)) within the areas of priority habitat and Flaxlands Manor LWS identified during the desk-based assessment, and to understand impacts to such habitat.

This report presents the methodology, results, and recommendations of the NVC survey undertaken by AECOM in July 2024.

2.1 Site Location and Description

The Site is located approximately 1.7 km north of the town of Royal Wootton Bassett, and approximately 250 m north of the M4, within Wiltshire County boundary centred at Ordnance Survey National Grid Reference (OS NGR) SU 06584 85463. The Site is comprised of two land parcels, a north-western and a south-eastern land parcel,

¹ AECOM (2024) Flaxlands Solar Farm. Preliminary Ecological Appraisal Report. June 2024. V2.

² Google Maps (2024) Land North of Royal Wootton Bassett. Available from: <https://www.google.co.uk/maps/place/Royal+Wootton+Bassett,+Swindon/@51.5663819,-1.9084287,2892m/data=!3m1!1e3!4m6!3m5!1s0x487142626b18c851:0x442de98735eb9d16!8m2!3d51.541395!4d-1.902318!16zL20vMDVzd180?entry=ttu>

joined via Flaxlands Lane. Both parcels consist of multiple fields bounded by hedgerows which contain mature broadleaved trees and existing farm tracks. Wet ditches, assumed to be associated with the drainage of fields, are present in several locations throughout the Site, as are standing bodies of water.

The Site is surrounded by agricultural grassland fields which are common throughout the immediate landscape. The urban developed area of Royal Wootton Bassett lies to the south which is separated from the Site by the M4 which runs east to west, approximately 250 m south of the Site.

2.2 Survey Area

The survey focussed on the five fields identified as priority habitat from the desk-based assessment¹, as shown on Plate 1 (lowlands meadows and calcareous grasslands) and labelled Fields 1 to 5 on Figures 1a and 1b. The five fields are hereafter collectively referred to as the 'Survey Area'. Fields 1 to 3 are within the Flaxlands Manor LWS and lie within the Site boundary. Fields 4 and 5 are outside the Site boundary, with Field 4 adjacent to the west, and Field 5 approximately 0.2 km west, of the Site. A walkover of the Site was also undertaken to identify any further habitats with the potential to be priority habitat within the Site boundary.

2.3 The Proposed Development

The Proposed Development includes the installation of a 49.9 MW solar farm and 49.9 MW Battery Energy Storage System (BESS) within the Site. Solar photovoltaic arrays will be situated in both western and eastern land parcels with the location of the BESS in the north of the Site. It is understood that the Proposed Development will require clearance of vegetation, tracking for plant to access working areas, and widening of gaps within hedgerows for access purposes. Given the legislative requirement to achieve a 10% Biodiversity Net Gain (BNG) for all developments, areas have been identified as possible locations for habitat creation and enhancement within the Site.

In relation to the fields targeted for the NVC survey (Fields 1 to 5; Figures 1a to 1b), Fields 1 and 2 are proposed areas for solar photovoltaic arrays; Field 3 is a proposed BNG area; and Fields 4 and 5 are outside the Site boundary to face no direct impacts.

2.4 Objectives

The purpose of this report is to provide an assessment of the presence and distribution of NVC communities within the Survey Area (Fields 1 to 5; Figures 1a to 1b) and identify the presence of priority habitats.

This report relates the findings of the survey in relation to the Proposed Development and provides recommendations for ecological best practice, as required.

3. Legislation and Policy

3.1 Relevant Legislation

The status of the plant communities and plant species recorded within the Survey Area has been determined to identify any flora species or habitats protected by European or UK legislation, including:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
- The Countryside and Rights of Way (CRoW) Act 2000;
- NERC Act (2006); and,
- National Planning Policy Framework³.

Records of notable and priority plant species were also made including any in the following categories:

- The Vascular Plant Data Red List for Great Britain (2024)⁴;
- The England Vascular Plant Red List (2014)⁵; and,
- Section 41 list of Species of Principal Importance for Conservation in England⁶.

The following biodiversity action plan and guidelines were also consulted:

- Wiltshire Core Strategy⁷; and,
- Wiltshire Biodiversity Action Plan (BAP)⁸.

Please refer to original source documents for full details.

3.2 Good Practice

Current guidance stresses the need for developers to maintain protected species and habitats within their current range at a favourable status. To achieve this, developers are often required to include mitigation strategies that describe how the project will identify and remediate potential adverse effects. The hierarchy of mitigation in descending order of preference is to avoid, mitigate and compensate⁹.

3.3 Quality Assurance

This survey and subsequent report were undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to maintaining our certification to the international standards BS EN ISO 9001:2015 and ISO 14001:2015 and BS ISO 45001 2018.

All AECOM ecologists who worked on this project follow the CIEEM code of professional conduct¹⁰ when undertaking ecological work.

³ Department for Levelling Up, Housing & Communities (2023) National Planning Policy Framework. December 2023. [online] Available at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec00f1f8c46/NPPF_December_2023.pdf

⁴ Botanical Society of Britain and Ireland (2024). A Vascular Plant Red List for Great Britain. Botanical Society of Britain and Ireland. Revised list for March 2024 available online: <https://bsbi.org/taxon-lists>

⁵ Stroh et al. (2014). A Vascular Plant Red Data List for England. Botanical Society of Britain and Ireland. Available online: https://bsbi.org/wp-content/uploads/dlm_uploads/England_Red_List_1.pdf

⁶ Department for Environment, Food & Rural Affairs, and Natural England (2022) Natural Environment and Rural Communities (NERC) Act 2006 - Section 41 – lists of the habitats and species of principal importance in England.

⁷ Wiltshire Council (2015) Wiltshire Core Strategy. Adopted 20 January 2015. [online] Available at: <https://www.wiltshire.gov.uk/media/372/Wiltshire-Core-Strategy-adopted-2015/pdf/Wcs.pdf?m=1574343137353>

⁸ Wiltshire Wildlife Trust (2008) Wiltshire Biodiversity Action Plan [online] Available at: <https://docslib.org/doc/8139744/wiltshire-biodiversity-action-plan-bap>

⁹ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Hampshire.

¹⁰ CIEEM (2022). Code of Professional Conduct. Available online <https://cieem.net/resource/code-of-professional-conduct/>

4. Methodology

4.1 Desk-Based Assessment

The PEAR¹ prepared for the Site in June 2024 comprised a desk-based assessment undertaken in May 2024. This included consultation with the following resources:

- The online Multi Agency Geographic Information for the Countryside (MAGIC) database¹¹ (searching for statutory designated sites within 2 km of the Site, extended to 10 km for international sites, and priority habitats within and adjacent to the Site); and
- the Wiltshire & Swindon Biological Records Centre (WSBRC) (searching for non-statutory designated sites and protected, priority, and rare species within 2 km of the Site).

4.2 Field Survey

The NVC field survey focussed on the five fields within the Survey Area (Fields 1 to 5) as described in Section 2.2 (Figures 1a and 1b). A walkover of the Site was also undertaken to identify any further habitats with the potential to be priority habitat.

The grassland habitat was surveyed by a suitably experienced botanical surveyor and an assistant ecologist on 9 and 10 July using the NVC system¹² and in accordance with NVC survey guidelines¹³. July lies within the optimal period for grassland NVC surveys. The NVC system provides a standardised method for classifying and mapping semi-natural habitats and ensures that surveys are carried out to a consistent level of detail and accuracy.

The grassland communities were subject to a walkover survey to record homogeneous stands and mosaics of vegetation present. During the walkover survey, Fields 4 and 5 were recorded as modified grassland and therefore were scoped out of needing NVC surveys. From each homogenous stand, five samples were conducted to determine the frequency of species present. These samples were taken using a 2 by 2 m quadrat. Table 4-1 provides the central OS NGR of each quadrat. The locations of the quadrats are shown on Figure 1b. For Field 3, quadrats were concentrated to the southern end of the field as the species appeared more diverse. Therefore, it was more likely that a complete list of species was recorded to better characterise the habitat.

Table 4-1: Central location of each quadrat

Field	Quadrat Number	Central OS NGR
1	1	SU 06813 85659
	2	SU 06831 85648
	3	SU 06853 85645
	4	SU 06866 85633
	5	SU 06894 85618
2	1	SU 07065 84834
	2	SU 07079 84816
	3	SU 07093 84799
	4	SU 07122 84745
	5	SU 07160 84746
3	1	SU 07377 84693
	2	SU 07382 84689
	3	SU 07389 84687
	4	SU 07394 84681
	5	SU 07403 84678

The presence and percentage cover for every plant species was recorded within each quadrat. In the NVC this is estimated using the Domin Scale by which a score is attributed to different ranges of abundance, as summarised in Table 4-2.

¹¹ www.magic.gov.uk

¹² Rodwell, J.S. (Ed), et al. (1991 – 2000). British Plant Communities (5 volumes). Cambridge, Cambridge University Press.

¹³ Rodwell, J.S. (2006). NVC Users' Handbook. ISBN 978 1 86107 574 1.

Table 4-2: Domin Scale

Cover/Abundance	Domin score
91-100%	10
76-90%	9
51-75%	8
34-50%	7
26-33%	6
11-25%	5
4-10%	4
<4% (many individuals)	3
<4% (several individuals)	2
<4% (few individuals)	1

For each quadrat, results were tabulated to provide figures for cover expressed as a Domin value, range and frequency of occurrence across the five quadrats. The range is given by the Domin score of any one plant found within any of the survey squares. For example, if creeping buttercup *Ranunculus repens* is found in two quadrats out of the five sampled, and the Domin score in these quadrats was 6 and 7, this means that the abundance range is 6 to 7.

The term frequency is used to describe how often a species is encountered in different stands or samples of a vegetation type, irrespective of species cover within each stand or sample. It is summarised in floristic tables using the Roman numerals I-V and referred to in descriptions of vegetation types using the terms listed in Table 4-3.

Table 4-3: Vegetation Frequency Class

Frequency Class	Range of Frequency Class	Terms used to Describe Frequency Class
I	1-20% (i.e. 1 stand in 5)	Scarce
II	21-40%	Occasional
III	41-60%	Frequent
IV	61-80%	Constant
V	81-100%	Constant

Botanical nomenclature in this report follows that of Stace¹⁴ for vascular plants and Atherton *et al.*¹⁵ for bryophytes.

4.3 Data Analysis

Following the field survey, NVC communities were attributed using surveyor experience and matching sample field data against published NVC floristic tables. Stands were classified to sub-community level where possible, although in some cases the vegetation was mapped to community level only because some areas exhibited features or fine-scale patterns of two or more sub-communities.

The computer programme MATCH¹⁶ was also used to analyse the sample field data. MATCH mathematically compares the sample data with the constancy profiles for all NVC plant communities/sub-communities and produces a list of similarity coefficients which is ranked in order of the best fits. The sample field data is considered a good match for a NVC plant community/sub-community if the similarity coefficient is between 50 and 59.

4.4 Evaluation

The intrinsic values of the identified habitats within the Survey Area and conservation importance of these habitats were evaluated with reference to the priority habitats identified in Section 41 of NERC Act (2006). Individual species were evaluated against the species listed in Schedule 8 of WCA, Schedule 5 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, priority species identified in Section 41 of NERC Act (2006)⁶,

¹⁴ Stace, C.A. (2019). New Flora of the British Isles. 4th Edition. C&M Floristics.

¹⁵ Atherton, I., Bosanquet, S. & Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland: a field guide. British Bryological Society.

¹⁶ Malloch, A.J.C. (1999). *Match 2.14 for Windows*. Unit of Vegetation Science, University of Lancaster.

and the Vascular Plant Red Data List for England⁵. The importance of habitats and species were also evaluated with reference to the Wiltshire Core Strategy⁷ and Wiltshire BAP⁸.

4.5 Limitations

If the area for development or other details of this project are amended in future, the NVC assessment should be reviewed and revised as appropriate. Ecosystems are dynamic and constantly changing. Therefore, species distributions and abundance within the Survey Area may shift. For this reason, and in accordance with current guidance, the existing survey data has a 'shelf-life' of 18 months from the date of survey in July 2024. The survey data should not be relied upon beyond January 2026. After this date, update surveys are likely to be required and advice sought from an appropriately qualified ecologist to determine survey scope and methods.

Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a survey, they can contribute to a robust ecological assessment of a site.

5. Results

5.1 Desk-Based Assessment

The desk-based assessment¹ identified:

- Flaxlands Manor LWS lies within the Site boundary within part of the southern section of the eastern land parcel, and within the northern section of the western land parcel (Figures 1a and 1b). The LWS is designated for its grassland habitats including neutral pastures and hay meadows.

Fields 1 to 3 lie within Flaxlands Manor LWS. Field 1 was recorded as modified grassland, and Fields 2 and 3 were recorded as other neutral grassland, during the UK Habitat Classification habitat survey as described in the PEAR¹.

The desk-based assessment identified no notable species of plant within 2 km of the Site.

5.2 Field Survey

5.2.1 Summary of NVC Survey

The walkover of the Survey Area confirmed that only Fields 1 to 3 supported lowland meadows priority habitat. The NVC communities that were recorded within the Survey Area are described below, with the field locations shown on Figures 1a and 1b, and the quadrat locations shown on Figure 1b. Photographs are presented in Appendix C and the floristic tables summarising the quadrat survey data are provided in Appendix D.

The NVC survey confirmed the following NVC plant communities present within the Survey Area in Fields 1 to 3:

- MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland

Fields 4 and 5 were recorded as modified grassland and were thus scoped out of needing NVC surveys. These two fields were dominated by species typical of modified grassland, including perennial rye *Lolium perenne* and white clover *Trifolium repens* (Appendix C; Photographs 4 and 5). Fields 4 and 5 are not considered further in this report.

The remaining fields, evaluated during the Site walkover, support agriculturally improved (modified) grassland to the north and west and slightly less improved (neutral) grassland mainly in the south and one field to the north of Flaxlands Lane.

No protected, rare, or scarce plant species were recorded during the survey.

5.2.1.1 Field 1 Description: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland

Field 1 is located within the northern section of the north-western land parcel. Recorded as modified grassland in the PEAR¹, during the NVC survey Field 1 was determined to be MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland. The sampled plant community was located on the well-drained upper section of a south-facing slope. It had a mean sward height of 33 cm with no bare ground present. The mean species per quadrat was approximately 20, with a range of 14 to 23 species per quadrat.

This plant community supported 13 constant species, seven of which were recorded in every quadrat. Constant species were red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus*, red clover *Trifolium pratense*, white clover, perennial rye, common bird's-foot-trefoil *Lotus corniculatus*, greater knapweed *Centaurea scabiosa*, yellow oat-grass *Trisetum flavescens*, false oat-grass *Arrhenatherum elatius*, cock's-foot *Dactylis glomerata*, rough hawkbit *Leontodon hispidus*, yarrow *Achillea millefolium*, and common sedge *Carex nigra*. Red fescue, Yorkshire fog, red clover, white clover, common bird's-foot-trefoil, and cock's-foot are typical constants for MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland.

A review of the sample data indicates that Field 1 is characteristic of MG5b *Cynosurus cristatus* - *Centaurea nigra* grassland *Galium verum* sub-community with a good MATCH coefficient of 50.6. This is due to the constant presence of yellow oat-grass, frequent presence of lady's bedstraw *Galium verum* and field scabious *Knautia arvensis*, and the variety of grass species present (fifteen species total).

5.2.1.2 Field 2 Description: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland

Field 2 is located within the southern section of the south-eastern land parcel, adjacent to the east of the Site boundary. Recorded as other neutral grassland in the PEAR¹, Field 2 was determined to be MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland. The sampled plant community was located on level ground with slightly

impeded drainage at the base of south facing slope. It has a mean sward height of 38 cm with no bare ground present. The mean species per quadrat was approximately 21, with a range of 16 to 23 species per quadrat.

This plant community supported 15 constant species, ten of which were recorded in every quadrat. Constant species were common bent *Agrostis capillaris*, Yorkshire fog, betony *Betonica officinalis*, pointed spear-moss *Calliergonella cuspidata*, crested dog's tail *Cynosurus cristatus*, common knapweed *Centaurea nigra*, red fescue, meadow buttercup *Ranunculus acris*, meadow foxtail *Alopecurus pratensis*, common sorrel *Rumex acetosa*, sweet vernal *Anthoxanthum odoratum*, common bird's-foot-trefoil, red clover, meadow vetchling *Lathyrus pratensis*, and cock's-foot. Common bent, sweet vernal, common knapweed, crested dog's tail, cock's-foot, red fescue, Yorkshire fog, common bird's-foot-trefoil, and red clover are typical constants for MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland.

Review of the sample data indicates that Field 2 is characteristic of MG5c *Cynosurus cristatus* - *Centaurea nigra* grassland *Danthonia decumbens* sub-community with a good MATCH coefficient of 58.8. This is due to the constant presence of red fescue and common bent, and abundance of common knapweed and betony.

5.2.1.3 Field 3 Description: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland

Field 3 is located within the southern section of the south-eastern land parcel, towards the easternmost Site boundary. Recorded as modified grassland in the PEAR¹, Field 3 was determined to be MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland. The sampled plant community was located on level ground with slightly impeded drainage at the southern end of gentle south facing slope. It has a mean sward height of 34 cm, and no bare ground. The mean species per quadrat was approximately 17, with a range of 14 to 19 species per quadrat.

This plant community supported 14 constant species, ten of which were recorded in every quadrat. Constant species were common knapweed, common bent, sweet vernal, betony, meadow buttercup, yellow rattle *Rhinanthus minor*, Yorkshire fog, tufted hairgrass *Deschampsia cespitosa*, red fescue, common sorrel, greater knapweed, meadow vetchling, crested dog's tail, and pointed spear-moss. Patches of jointed rush *Juncus articulatus* were also recorded in Field 3 but outside of the sampled quadrats. Common bent, sweet vernal, common knapweed, crested dog's tail, red fescue, and Yorkshire fog are typical constants for MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland.

A review of the sample data indicates that Field 3 is characteristic of MG5c *Cynosurus cristatus* - *Centaurea nigra* grassland *Danthonia decumbens* sub-community with a good MATCH coefficient of 55.9. This is due to the presence of red fescue and common bent, and abundance of common knapweed and betony.

5.2.1.4 Fields 1 to 3 Evaluation: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland

Field 1 supports a slightly different MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland sub-community to Fields 2 and 3 because it is better drained.

The MG5 grassland sub-communities within Fields 1 to 3 are representative of lowland meadows¹⁷ which is a Section 41 priority habitat of nature conservation importance.

Lowland meadows are included in the Wiltshire BAP⁸ under unimproved neutral grassland.

6. Conclusions and Recommendations

6.1 Conclusions

The NVC survey identified MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland habitat community (hereafter 'MG5 grassland') present within Fields 1 to 3 within the Survey Area. Fields 4 and 5 were recorded as modified grassland.

MG5 grassland is a Section 41 priority habitat 'lowland meadows' and is included in the Wiltshire BAP⁸ under unimproved neutral grassland.

6.2 Potential Impacts and Constraints

In the absence of mitigation, the vegetation clearance necessary for the Proposed Development will reduce the extent of the MG5 grassland, in particular in Fields 1 and 2 which are targeted areas for the construction of solar photovoltaic arrays. Furthermore, the retained MG5 grassland has the potential to be impacted indirectly from trampling, tracking, storage of materials, runoff, and dust deposition.

As the MG5 grassland is a priority habitat, impacts to this habitat must be avoided in the first instance. This includes direct impacts from clearance and indirect impacts, such as from pollution. As impacts to the MG5 grassland are unavoidable under the current Proposed Development, the Local Planning Authority (Wiltshire Council) must be consulted regarding such impacts prior to the Proposed Development commencing.

6.3 Mitigation

Mitigation for the MG5 grassland must be discussed and agreed with the Local Planning Authority (Wiltshire Council) prior to the Proposed Development commencing. Recommended mitigation will likely include the following:

In the first instance, impacts to the MG5 grassland must be avoided by retaining them where possible, and protecting them from indirect impacts. This can be done by excluding Fields 1 and 2 from the proposed areas to construct solar photovoltaic arrays. Any retained MG5 grassland must be fenced off with an appropriate buffer during construction to ensure no trampling by personnel, tracking by machinery/plant, and storage of materials occurs within them.

All works should be carried out following the CIRIA C715 Environmental Good Practice on Site handbook¹⁸ and pollution prevention measures must be put in place to protect retained MG5 grassland. A construction document, such as a Construction Environmental Management Plan (CEMP), should be produced and include full details of mitigation measures stated above to be implemented by the Proposed Development.

Where MG5 grassland cannot be retained, the loss must be compensated for to contribute towards Biodiversity Net Gain. The MG5 grassland established to replace the area lost must be of equal or greater value for biodiversity than that lost. If compensation within the Site is not possible, compensation must occur off Site and must be agreed prior to the Proposed Development commencing.

Such mitigation coincides with maintaining the current extent of the neutral grassland resource under action NG1 of objective NGO1 (protect the existing resource) of the Wiltshire BAP⁸ for unimproved neutral grassland.

Under the Wiltshire Council's core strategy ('Core Policy 50 – Biodiversity and Geodiversity'), *'there is an expectation that such features [of nature conservation] shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource and secure the integrity of local ecological networks and provision of ecosystem services'*. Furthermore, 'Core Policy 52 – Green Infrastructure' states that *'development shall make provision for the retention and enhancement of Wiltshire's green infrastructure network'*, which includes the MG5 grassland.

If Fields 1 and 2 are retained, as well as Field 3, then it is recommended that they are sympathetically managed by mowing in late-July and the arisings removed off site to enhance their floristic and biodiversity value.

¹⁸ Law and D'Aleo. (2016) PUB C762 Environmental good practice on site pocket book. 4th edition. Ciria, London

6.4 Monitoring

Following the Proposed Development and mitigation, the Site should be monitored for the re-establishment of MG5 grassland, where recoverable, and the establishment of new compensatory habitat(s). The composition of the colonising plant species should be identified along with the need for any additional management measures, such as removal of pernicious weeds or encroaching scrub that may be detrimental to the habitats. A Landscape Environmental Management Plan (LEMP), or similar should be produced and should include full details of monitoring and management proposals to be implemented by the Proposed Development.

Monitoring the condition and extent of the MG5 grassland coincides with action NGA2 of objective NGO1 (protect the existing resource) of the Wiltshire BAP⁸ for unimproved neutral grassland. Action NGA2 states that old sites mapped as neutral grassland must be revisited to confirm that they are still in existence⁸.

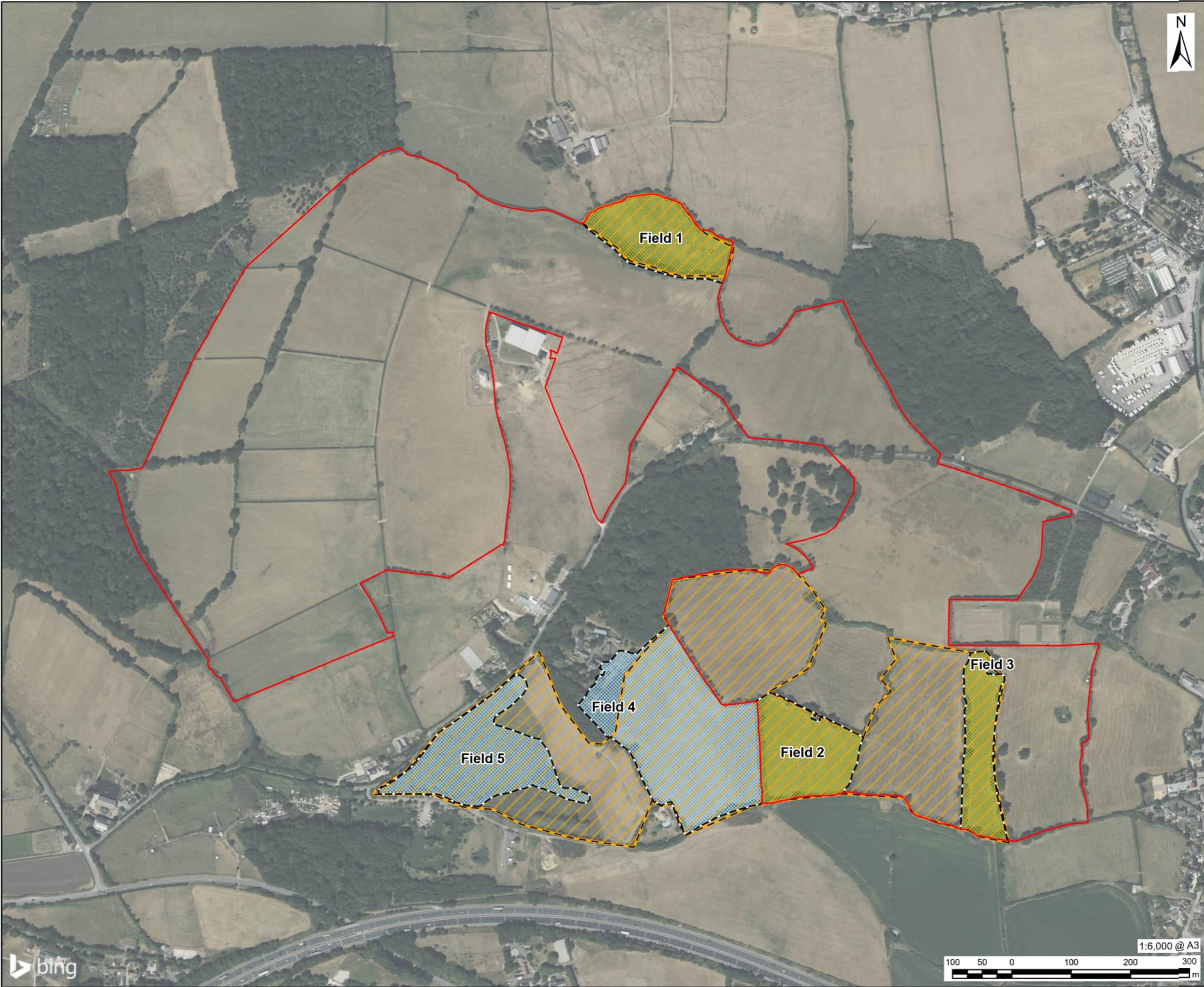
6.5 Enhancement

Recommendations for Biodiversity Net Gain are not covered in this report. Please refer to Section 4 of the PEAR¹.

Appendix A Figures

Figure 1a: NVC Survey Overview Map

Figure 1b: NVC Survey Quadrat Location Map



AECOM

PROJECT

Flaxlands Solar Farm

CLIENT

Ampyr Solar Europe

CONSULTANT

AECOM Limited
3rd Floor, Portwall Place
Portwall Ln
Bristol, BS1 6NA
www.aecom.com

LEGEND

- Site Boundary
- Field Boundary
- Flaxlands Manor Local Wildlife Site (LWS)
- Modified Grassland
- NVC Classification
 - MG5 Cynosurus cristatus - Centaurea nigra grassland

NOTES

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ISSUE PURPOSE

NVC Survey

PROJECT NUMBER

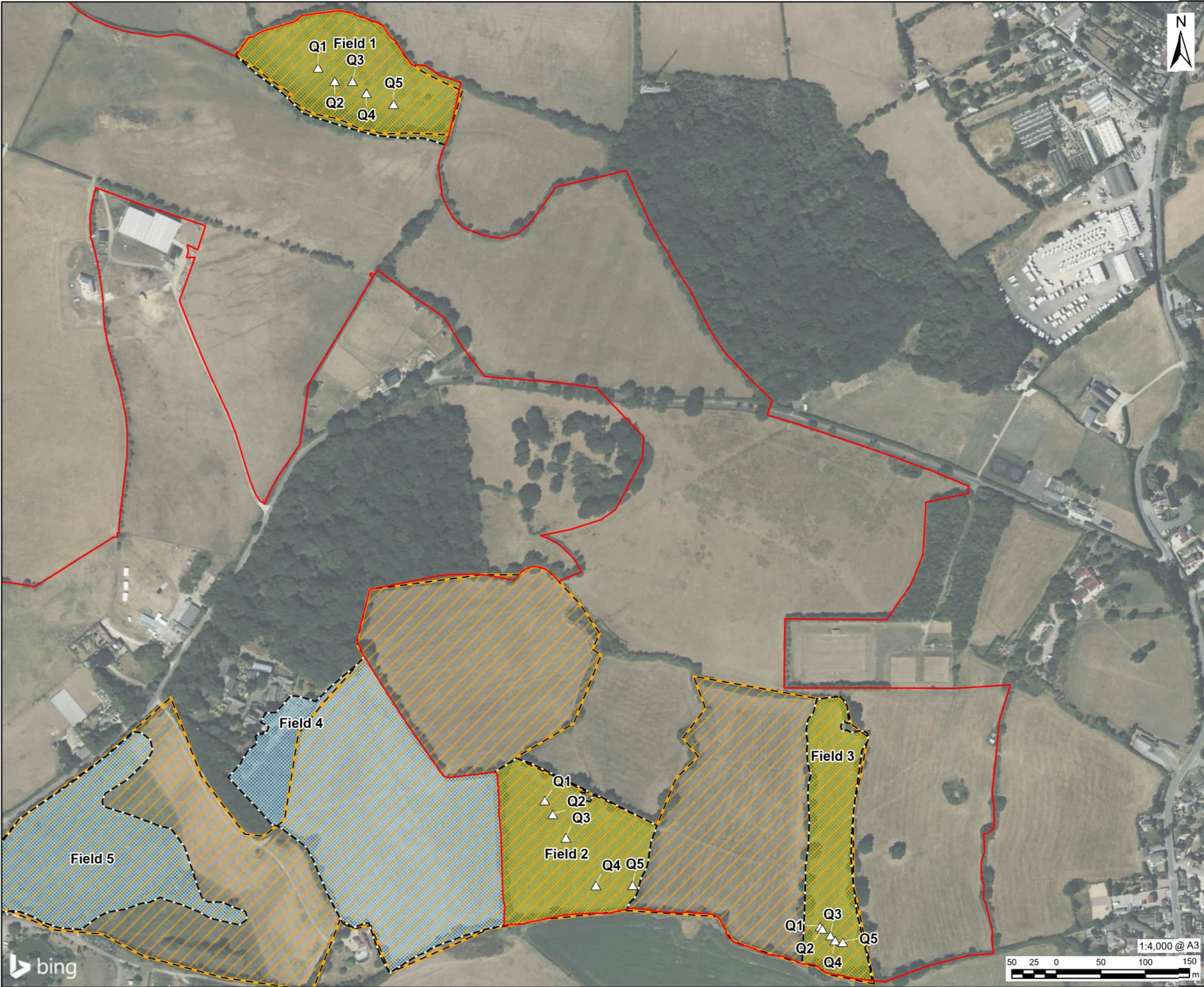
60727989

FIGURE TITLE

National Vegetation Classification
Survey Map - Overview

FIGURE NUMBER

Figure 1a



AECOM

PROJECT

Flaxlands Solar Farm

CLIENT

Ampyr Solar Europe

CONSULTANT

AECOM Limited
3rd Floor, Portwall Place
Portwall Ln
Bristol, BS1 6NA
www.aecom.com

LEGEND

- Site Boundary
- Field Boundary
- Quadrat Location
- Flaxlands Manor Local Wildlife Site (LWS)
- Modified Grassland
- NVC Classification
 - MG5 Cynosurus cristatus -
 - Centaurea nigra grassland

NOTES

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ISSUE PURPOSE

NVC Survey

PROJECT NUMBER

60727989

FIGURE TITLE

National Vegetation Classification
Survey Map - Quadrat Locations

FIGURE NUMBER

Figure 1b

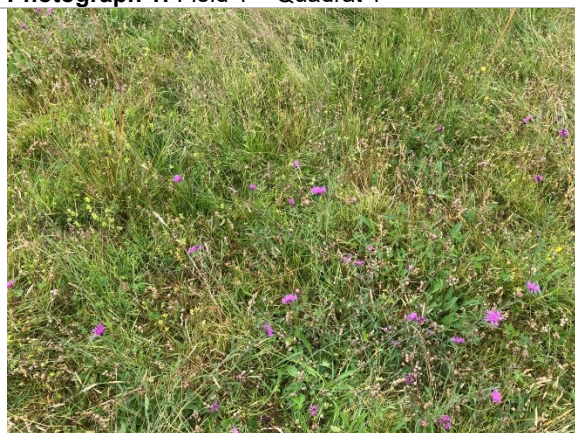
Appendix B Photographs



Photograph 1: Field 1 – Quadrat 1



Photograph 2: Field 2 – Quadrat 1



Photograph 3: Field 3 – Quadrat 1



Photograph 4: Field 4



Photograph 5: Field 5

Appendix C Floristic Tables

Table D1 – Field 1: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland Floristic Table

Common name	Scientific Name	Q1*	Q2*	Q3*	Q4*	Q5*	Frequency	Abundance
Red fescue	<i>Festuca rubra</i>	8	6	8	7	6	V	6-8
Crested dog's tail	<i>Cynosurus cristatus</i>	-	4	-	-	4	II	4
Bird's-foot-trefoil	<i>Lotus corniculatus</i>	4	4	3	4	3	V	3-4
Ribwort plantain	<i>Plantago lanceolata</i>	2	-	1	-	1	III	1-2
Yorkshire fog	<i>Holcus lanatus</i>	6	5	4	4	3	V	3-6
Cock's-foot	<i>Dactylis glomerata</i>	2	3	3	-	2	IV	2-3
White clover	<i>Trifolium repens</i>	5	4	4	4	4	V	4-5
Sweet vernal	<i>Anthoxanthum odoratum</i>	-	4	-	-	2	II	2-4
Red clover	<i>Trifolium pratense</i>	4	6	1	2	3	V	1-6
Perennial rye	<i>Lolium perenne</i>	5	4	4	2	2	V	2-5
Oxeye daisy	<i>Leucanthemum vulgare</i>	-	-	3	-	2	II	2-3
Field scabious	<i>Knautia arvensis</i>	2	-	3	-	2	III	2-3
Lady's bedstraw	<i>Galium verum</i>	5	-	-	4	2	III	2-5
Yellow oat-grass	<i>Trisetum flavescens</i>	4	5	3	-	6	IV	3-6
Yarrow	<i>Achillea millefolium</i>	2	2	2	-	2	IV	2
Autumn hawkbit	<i>Scorzoneroideis autumnalis</i>	3	-	-	1	2	III	1-3
Field wood-rush	<i>Luzula campestris</i>	-	1	-	1	-	II	1
Rough hawkbit	<i>Leontodon hispidus</i>	-	2	1	1	3	IV	1-3
Quaking-grass	<i>Briza media</i>	-	3	-	1	3	III	1-3
Hogweed	<i>Heracleum sphondylium</i>	1	-	-	-	-	I	1
False oat-grass	<i>Arrhenatherum elatius</i>	4	3	3	4	-	IV	3-4
Spring turf-moss	<i>Rhytidiadelphus squarrosus</i>	3	2	2	-	-	III	2-3
Smooth meadow grass	<i>Poa pratensis</i>	-	2	-	-	-	I	2
Meadow foxtail	<i>Alopecurus pratensis</i>	-	-	2	-	-	I	2
Timothy grass	<i>Phleum pratense</i>	-	-	1	-	-	I	1
Pointed spear-moss	<i>Calliergonella cuspidata</i>	2	-	-	2	-	II	2
Greater knapweed	<i>Centaurea scabiosa</i>	2	2	1	2	4	V	1-4
Common sedge	<i>Carex nigra</i>	2	2	1	-	2	IV	1-2
Meadow oat-grass	<i>Helictotrichon pratensis</i>	-	3	1	-	2	III	1-3
Field bindweed	<i>Convolvulus arvensis</i>	3	2	-	-	-	II	2-3
Black medick	<i>Medicago lupulina</i>	-	-	2	-	2	II	2
Common restharrow	<i>Ononis repens</i>	-	3	-	-	-	I	3
Tor-grass	<i>Brachypodium pinnatum</i>	-	-	-	-	2	I	2
Meadow barley	<i>Hordeum secalinum</i>	-	1	-	-	-	I	1
Bare ground (%)		0	0	0	0	0		
Sward height (cm)		32	30	32	35	37		
Species per quadrat		20	23	21	14	23		

*Q = quadrat

Table D2 – Field 2: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland Floristic Table

Common name	Scientific Name	Q1*	Q2*	Q3*	Q4*	Q5*	Frequency	Abundance
Red fescue	<i>Festuca rubra</i>	5	3	4	4	4	V	3-5
Crested dog's tail	<i>Cynosurus cristatus</i>	2	3	4	4	6	V	2-6
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	5	6	-	3	3	IV	3-6
Ribwort plantain	<i>Plantago lanceolata</i>	-	-	-	3	-	I	3
Yorkshire fog	<i>Holcus lanatus</i>	5	4	6	5	4	V	4-6
Cock's-foot	<i>Dactylis glomerata</i>	2	2	2	2	-	IV	2
White clover	<i>Trifolium repens</i>	-	3	-	-	2	II	2-3
Common knapweed	<i>Centaurea nigra</i>	4	5	4	3	3	V	3-5
Common bent	<i>Agrostis capillaris</i>	7	7	6	6	6	V	6-7
Sweet vernal	<i>Anthoxanthum odoratum</i>	6	6	4	5	-	IV	4-6
Red clover	<i>Trifolium pratense</i>	2	3	2	3	-	IV	2-3
Perennial rye	<i>Lolium perenne</i>	2	2	3	-	-	III	2-3
Meadow vetchling	<i>Lathyrus pratensis</i>	2	3	3	1	-	IV	1-3
Oxeye daisy	<i>Leucanthemum vulgare</i>	-	-	1	-	-	I	1
Lady's bedstraw	<i>Galium verum</i>	2	-	3	4	-	III	2-4
Self-heal	<i>Prunella vulgaris</i>	-	1	-	-	-	I	1
Field wood-rush	<i>Luzula campestris</i>	-	1	-	-	2	II	1-2
Heath-grass	<i>Danthonia decumbens</i>	-	1	-	-	-	I	1
Betony	<i>Betonica officinalis</i>	4	4	2	5	6	V	2-6
Pignut	<i>Conopodium majus</i>	2	-	-	-	-	I	2
Meadow buttercup	<i>Ranunculus acris</i>	4	2	3	4	3	V	2-4
Common sorrel	<i>Rumex acetosa</i>	3	2	1	2	2	V	1-3
Yellow rattle	<i>Rhinanthus minor</i>	5	-	-	5	6	III	5-6
Hogweed	<i>Heracleum sphondylium</i>	-	1	-	2	-	II	1-2
False oat-grass	<i>Arrhenatherum elatius</i>	-	-	2	1	-	II	1-2
Meadow foxtail	<i>Alopecurus pratensis</i>	2	3	3	3	2	V	2-3
Timothy grass	<i>Phleum pratense</i>	-	-	2	-	-	I	2
Pointed spear-moss	<i>Calliergonella cuspidata</i>	5	6	3	2	2	V	2-6
Creeping cinquefoil	<i>Potentilla reptans</i>	-	-	-	2	-	I	2
Meadow barley	<i>Hordeum secalinum</i>	-	4	7	1	-	III	1-7
Hairy sedge	<i>Carex hirta</i>	-	-	3	1	1	III	1-3
Goat's beard	<i>Tragopogon porrifolius</i>	2	-	-	-	-	I	2
Tufted hairgrass	<i>Deschampsia cespitosa</i>	-	-	-	-	2	I	2
Pedunculate oak (seedling)	<i>Quercus robur</i>	-	1	-	-	-	I	1
Bare ground (%)		0	0	0	0	0		
Sward height (cm)		39	32	34	49	35		
Species per quadrat		20	23	21	23	16		

*Q = quadrat

Table D3 – Field 3: MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland Floristic Table

Common name	Scientific Name	Q1*	Q2*	Q3*	Q4*	Q5*	Frequency	Abundance
Red fescue	<i>Festuca rubra</i>	4	3	4	2	3	V	2-4
Crested dog's tail	<i>Cynosurus cristatus</i>	3	3	3	-	1	IV	1-3
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	-	-	-	-	4	I	4
Ribwort plantain	<i>Plantago lanceolata</i>	-	-	8	3	2	III	2-8
Yorkshire fog	<i>Holcus lanatus</i>	5	5	2	4	2	V	2-5
White clover	<i>Trifolium repens</i>	-	-	1	-	-	I	1
Common knapweed	<i>Centaurea nigra</i>	7	5	7	5	6	V	5-7
Common bent	<i>Agrostis capillaris</i>	6	4	5	4	4	V	4-6
Sweet vernal	<i>Anthoxanthum odoratum</i>	4	6	5	5	4	V	4-6
Red clover	<i>Trifolium pratense</i>	-	2	4	2	-	III	2-4
Meadow vetchling	<i>Lathyrus pratensis</i>	2	3	2	2	-	IV	2-3
Self-heal	<i>Prunella vulgaris</i>	-	-	4	3	1	III	1-4
Field wood-rush	<i>Luzula campestris</i>	1	-	-	-	-	I	1
Betony	<i>Betonica officinalis</i>	4	4	6	3	6	V	3-6
Meadow buttercup	<i>Ranunculus acris</i>	3	4	6	5	5	V	3-6
Common sorrel	<i>Rumex acetosa</i>	2	2	1	3	2	V	1-3
Common mouse-ear	<i>Cerastium fontanum</i>	2	-	2	1	-	III	1-2
Yellow rattle	<i>Rhinanthus minor</i>	6	5	2	6	6	V	2-6
Spring turf-moss	<i>Rhytidiadelphus squarrosus</i>	2	-	-	-	-	I	2
Meadow foxtail	<i>Alopecurus pratensis</i>	-	-	-	1	-	I	1
Tufted vetch	<i>Vicia cracca</i>	-	-	-	3	-	I	3
Pointed spear-moss	<i>Calliergonella cuspidata</i>	3	3	2	1	-	IV	1-3
Tufted hairgrass	<i>Deschampsia cespitosa</i>	3	5	1	4	1	V	1-5
Greater knapweed	<i>Centaurea scabiosa</i>	3	4	3	2	-	IV	2-4
Compact rush	<i>Juncus conglomeratus</i>	-	2	-	-	-	I	2
Marsh foxtail	<i>Alopecurus geniculatus</i>	-	2	-	-	-	I	2
Bare ground (%)		0	0	0	0	0		
Sward height (cm)		39	28	38	34	32		
Species per quadrat		17	17	19	19	14		

*Q = quadrat

