



Wiswell Manor Draft BNG Report

Biodiversity Net Gain and Management/Monitoring
Report for Solar Project, rear of Wiswell Manor
Clitheroe

3/2024/0826 Wiswell Manor

Date: 09/12/2024

By: Dominic Rigby MCIEEM

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NOTICE

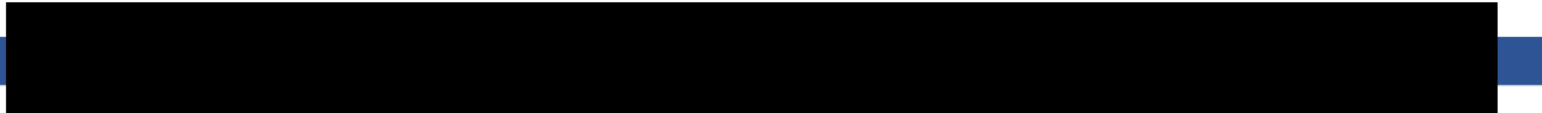
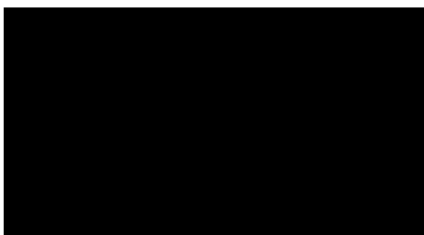
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The results and any advice contained here is based on the information available during the agreed period of study and within the resources available. All reasonable effort has been taken to ensure that an accurate assessment of the subject is provided at the time of the survey. However, the absence of recorded evidence should not be taken as an absolute guarantee that the site was not being used by a particular species.

Any future readers should note that both the physical state of the site and the relevant environmental legislation may have changed since this report.

Revision Schedule				
1	09/12/2024	Dominic Rigby MCIEEM	Joe Riley Shaw & Jagger	Gareth Lowe CCNW

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Wiswell Manor Solar Project

Draft Biodiversity Net Gain Report

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December 2024

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1. Summary

Conservations Contracts Northwest Ltd. (CCNW) were contracted in November 2024 to undertake a Biodiversity Net Gain (BNG) calculation for land at the rear of Wiswell Manor, Wiswell, Clitheroe. The project site comprised of a grazed, improved grassland and introduced shrubs at the rear of Wiswell Manor. This parcel at the rear of the grazed field was proposed to house several domestic solar panels and a small building for the workings. There were no irreplaceable habitats.

The exercise was to ensure that the development resulted in a 10% or more gain for biodiversity, to meet the provisions of the Environment Act (2021) and satisfy Local Plan Policy *Key Statement EN4*. Of the 1700m² site a total of 590m² of good-condition modified grassland and 157m² of introduced shrub would be lost to the development, but the remaining 953m² of grassland could be enhanced, with small patches of poor modified grassland created under the solar panels.

The BNG calculation used the latest metric (Statutory Metric, published 07/24). A net gain of 10.25% was achieved for the development. This was accomplished by uplifting the condition of the remaining grassland compartment within the project red line, adopting a change in management through cessation of spring/summer grazing within the newly fenced off redline area alongside the creation of a small orchard.

As the site was small this report included a section detailing the management and monitoring, as a Habitat Management and Monitoring Plan using the DEFRA template may seem disproportionate.

To achieve the projected gain Section Six demonstrated feasibility and Section Seven outlines the management prescriptions, milestones and monitoring events required.

2. Introduction

2.1 Principal Author

This report was compiled by Dominic Rigby MCIEEM, Senior Ecologist at CCNW. He has over 35 years' professional experience in the ecology sector and holds survey/disturbance licences in England and Wales for great crested newts, bats and barn owls.

In 2023/24 he attended courses on UK Habitat Classification 2.0, Biodiversity Net Gain (Intermediate), Condition Assessment (Advanced) and QGIS for BNG (Intermediate).

2.2 Site Description

Land at rear of Wiswell Manor, Pendleton Road, Wiswell

Nearest postcode: BB7 9BZ

National Grid reference: SD7499638160

District/County: Ribble Valley/Lancashire

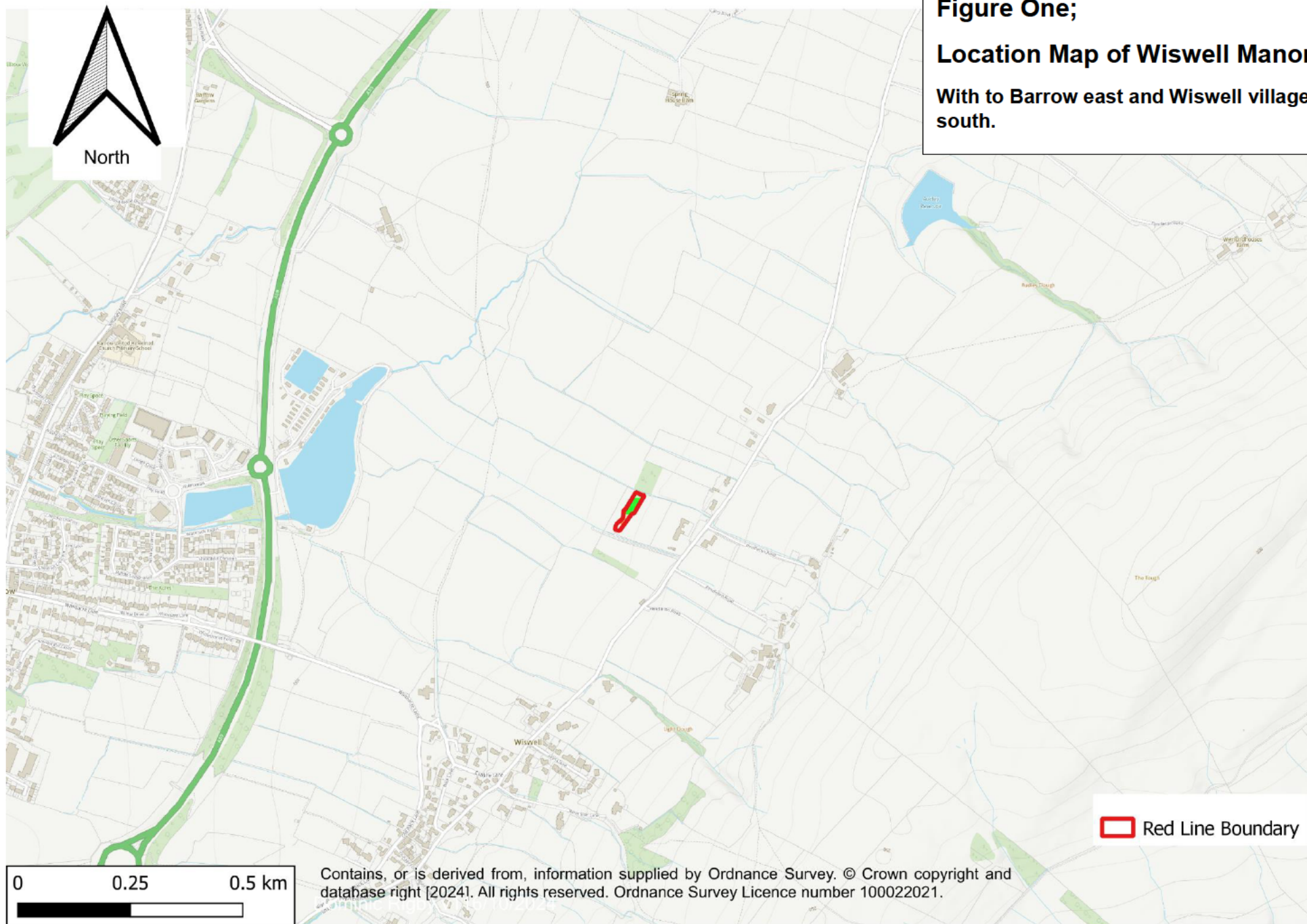
The site was a strip of improved grassland at the rear of a grazed field at the back of Wiswell Manor, see Figure One, below.

There was a desire to reduce the property's environmental footprint by installing solar panels within the landowner's blue line, to create electricity for domestic use.

2.3 Purpose of Report

- To inform the current plans to ensure that there would be a significant gain in biodiversity, using habitat as a proxy.
- To show how biodiversity gain could be achieved with the development.

Figure One;
Location Map of Wiswell Manor,
With to Barrow east and Wiswell village
south.



3. Legislation and Policy

3.1 Legislation

Environment Act, 2021

Biodiversity Net Gain

This concept of biodiversity net gain was then incorporated into the Environment Act 2021, the secondary legislation to enable this was introduced in February 2024.

Thus, the current project would have to prove a 10% or more gain to meet this legislation.

3.2 Planning Policy

Core Strategy 2008-2028: A Local Plan for Ribble Valley, (Adopted December 2014)

KEY STATEMENT EN4: BIODIVERSITY AND GEODIVERSITY

Negative impacts on biodiversity through development proposals should be avoided. Development proposals that adversely affect a site of recognised environmental or ecological importance will only be permitted where a developer can demonstrate that the negative effects of a proposed development can be mitigated, or as a last resort, compensated for. It will be the developer's responsibility to identify and agree an acceptable scheme, accompanied by appropriate survey information, before an application is determined. There should, as a principle be a net enhancement of biodiversity.

Among the sites listed relevant to this statement were:

- *Lancashire Biodiversity Action Plan priority habitats and species*
- *European Directive on Protected Species and Habitats - Annexe 1 Habitats and Annexe II Species*
- *Habitats and Species of Principal Importance in England*

4. Methodology

The site was assessed in November 2024 using the Statutory Biodiversity Metric (the most recent iteration of the BNG metric); and the habitat compartments were surveyed on 6th November 2024. The baseline habitat was largely homogenous modified grassland, five one-metre square quadrats were randomly placed across the site to assign, and condition assess the baseline using UK Hab v2.0 and the condition assessments that accompanied the Statutory Metric. The remainder of the red line was introduced non-native shrub.

The habitat information was collected at the smaller (5m²) minimum mapping unit, as the development layout was small and the post-development imprint was known, thus it was easier to input all information (baseline and proposed) onto the master layer of the BNG/QGIS template simultaneously.

The resulting habitat details (from paper copies) and proposed development information (from pdf) were inputted into the BNG for QGIS template into QGIS v3.28.

This information was then transposed using the (Defra) GIS import tool in to the Statutory Biodiversity Metric Tool.

3.1 Limitations and Assumptions

- **Determining Strategic Significance**

The ecological networks in Lancashire (sourced online as vector shape files via the Lancashire County Council nature recovery website) were used to determine strategic significance in the absence of a Local Nature Recovery Map through the Local Nature Recovery Network (LNRS) – there were none. Orchards, as part of the Lancashire BAP, were classed as “formally identified in a strategy”.

- **UK Hab and Condition Assessment**

The target conditions of retained, enhanced and created habitats were based on what was realistically achievable balancing financial, maintenance and ground conditions criteria.

- **Time of Year**

The survey was undertaken in November, this was outside the preferred grassland survey season. However, the grassland on site contained characteristic species to diagnose a “Modified grassland”. The condition assessment (“poor” or “good” depending on quadrat”) was considered sound given the vegetative make-up of the grassland; condition was upgraded to “Good” throughout to take account of the sub-optimal survey season

- **Deviations from Statutory Metric Rules**

None

5. Baseline Conditions

5.1 On-Site Baseline: Modified Grassland

- Grassland: modified - The site was a relatively homogenous improved grassland, seasonally grazed by sheep. Rye grass and fine-leaved (commercial red -type) fescues occurred across most of the site, with white clover and creeping buttercup nearly constant (see Photographs One and Two below).

The five random quadrats characteristic of the site revealed the following species lists:

Q1 Rye grass, "red" fescue, white clover, creeping buttercup, daisy (5spp) (see Photograph 1 below)

Q2 Rye grass, "red" fescue, annual fescue, white clover, ribwort plantain, lesser trefoil, creeping buttercup, dandelion (8)

Q3 Rye grass, white clover, soft rush, creeping buttercup, broad-leaved dock, broad-leaved willowherb, lesser trefoil (7)

Q4 Rye grass, white clover, creeping bent, creeping buttercup, daisy (5)

Q5 Rye grass, creeping bent, soft brome, soft rush, nettle (5)

The average number of species per quadrat was 6. Six to eight species per quadrat was an essential criteria for reaching "Moderate" or "Good" condition.

The Condition assessment sheet for the project is presented on p19.

Photographs One and Two: White clover and rye were constants throughout the sward.



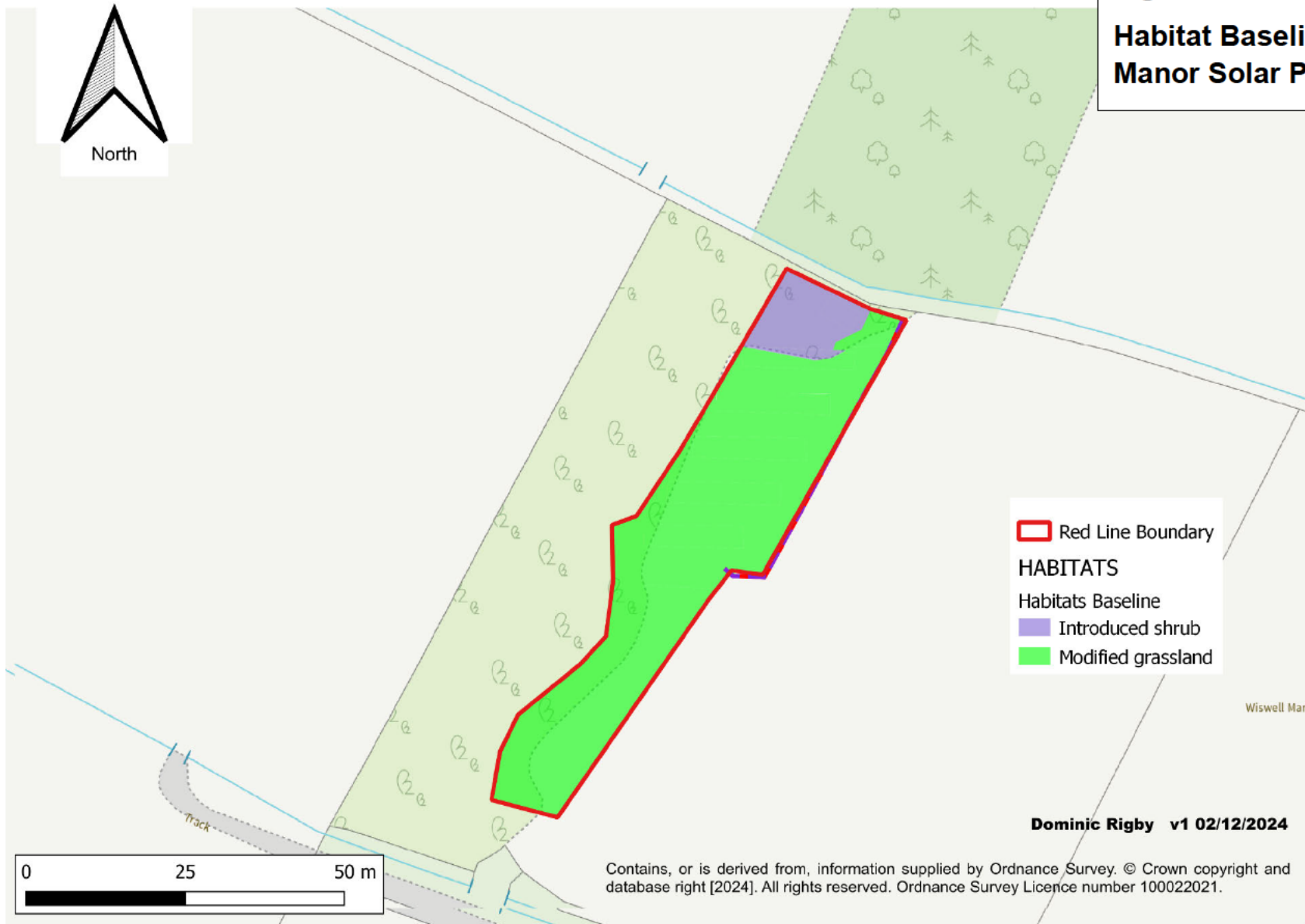
Photograph Three: Area allocated for solar panels, with Introduced shrubs in corner



The only other habitat at baseline was a small area of Introduced shrub from the rear bund that wrapped around the northern corner of the site.

The baseline habitats were mapped using UK Habitat classification symbology overleaf (Figure Two).

Figure Two:
Habitat Baseline, Wiswell Manor Solar Project



6. Proposed Post-development Habitats and Calculations

6.1 Post-Development Calculations

The post-development calculations have been based on the placement and dimensions of the solar panels and service building, as depicted on Drawing 137/03 (02) 003 Location and Alignment of Solar Panels Updated (Shaw & Jagger Architects Ltd.).

The site was small, and the baseline low-distinctiveness habitats meant that a relatively small area was required to provide a 10% biodiversity uplift. Uplifting the remaining grassland condition within the red line boundary led to a suitable increase in habitat quality (10.25%).

Additionally, a non-native ornamental hedge was to be added to screen the panels and infrastructure from Wiswell Manor. This was a linear habitat and therefore not relevant to the area habitat calculation and was from a zero percent hedgerow baseline and therefore not calculatable within the BNG metric.

- **Change in Ecological Value**

Figure Three (below) summarised the net habitat unit change, Figure Four (p13) mapped the post development habitats, from which the metric calculation was derived.

Although there was a loss of 0.51 low-distinctiveness habitat units to the development, this was more than balanced by the post-intervention management of the remaining grassland within the red-line (on-site) and the creation of a 343m² traditional orchard (approximately fruit 25 trees).

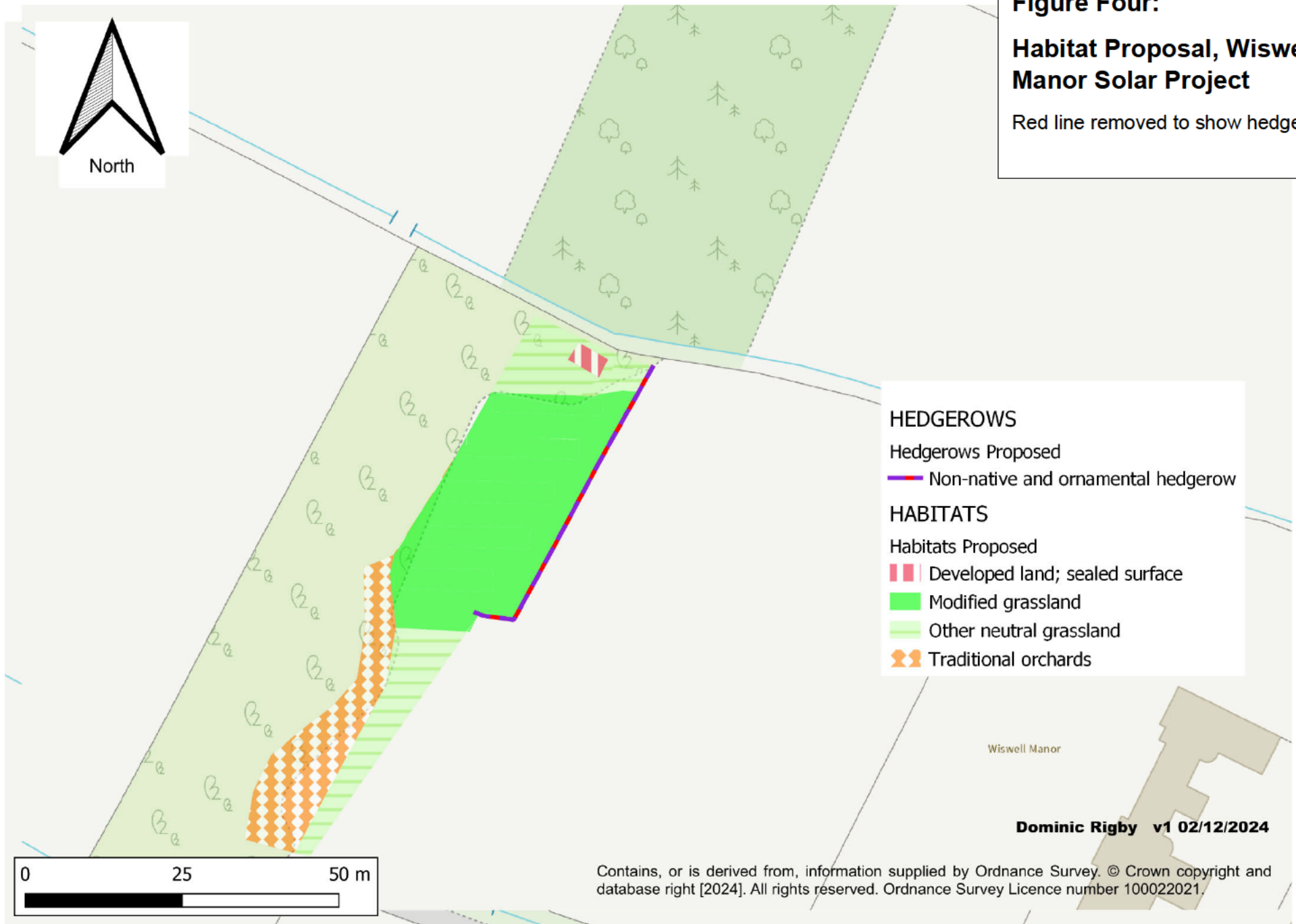
Figure Three: BNG Results Summary

FINAL RESULTS				
Total net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	<i>Habitat units</i>			0.09
	<i>Hedgerow units</i>			0.00
	<i>Watercourse units</i>			0.00
Total net % change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	<i>Habitat units</i>			10.25%
	<i>Hedgerow units</i>			0.00%
	<i>Watercourse units</i>			0.00%
Trading rules satisfied?	Yes ✓			

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
<i>Habitat units</i>	10.00%	0.93	1.02	0.00	No additional area habitat units required to meet target ✓
<i>Hedgerow units</i>	10.00%	0.00	0.00	0.00	No additional hedgerow units required to meet target ✓
<i>Watercourse units</i>	10.00%	0.00	0.00	0.00	No additional watercourse units required to meet target ✓

Trading rules were satisfied as the lost modified grassland was compensated by uplifting the condition of the same habitat (neutral grassland and orchard).

Figure Four:
Habitat Proposal, Wiswell Manor Solar Project
Red line removed to show hedgerow



Dominic Rigby v1 02/12/2024

6.1.1 Proposal Assumptions

The modified grassland under the solar panels was assumed to lose condition and thus were allocated as Lost/Created (poor condition) in the metric, see Figure Five below. This was to account for the loss (but not absence) of light under the panels.

It was assumed that the condition of the grassland between the panels could be maintained, accounting for a one-two year recovery following the installation of the panels.

6.2 Feasibility of Habitat Enhancement

Bordering the western edge of the red line was a bund planted with introduced shrubs. Where the shrubs were more extensively planted a neutral grassland was evident. This provided the confidence that if the current grazing was removed from the red line area (between November-July at least), there was a reservoir of other germinating grasses (false oatgrass, Yorkshire fog, crested dog's tail) that could colonise and thrive in the more extensively managed conditions and the project area could uplift to at least "moderate" condition "other neutral grassland" within the target time specified in the metric (15 years), probably sooner. Mowing in late July/early August (and collection) and mowing in early April would reduce nutrient levels and help achieve target condition, with re-evaluation following monitoring at least every 5-years. Aftermath grazing in August/September would negate the need for an April cut.

Photograph Four: Ungrazed grassland immediately west of Project Area was "other neutral grassland"

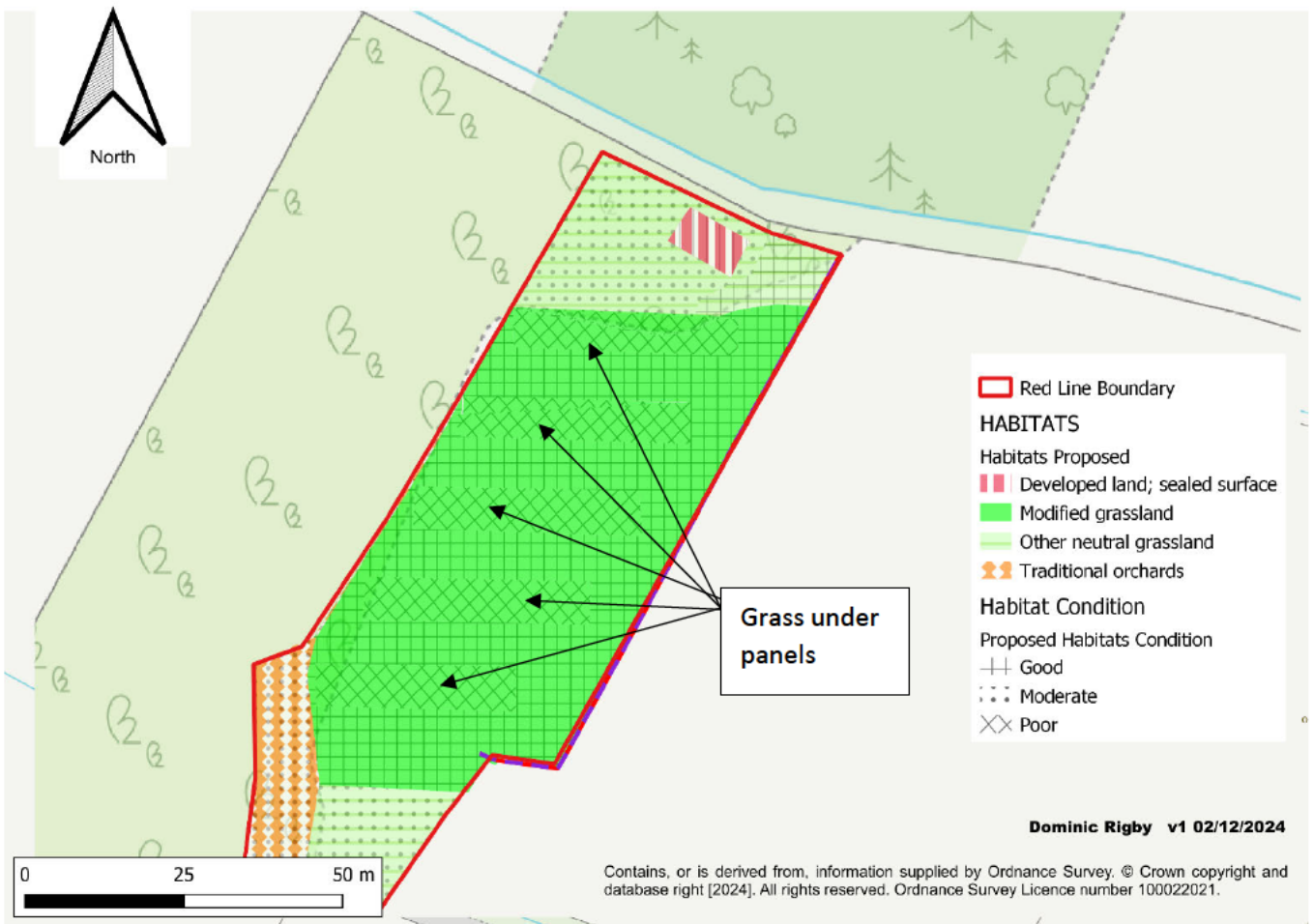


6.3 Biodiversity Net Gain

This scheme required a minimum 10% net gain, and this target has been achieved, with 10.25% gain in habitat units, of the same broad habitat.

The completed Biodiversity Metric Calculation Tool was submitted in tandem with this report and should be considered alongside. The Condition Assessment sheet is presented on p19 below.

Figure Five: Proposed Condition of Grassland in Solar Panel Zone



7. Habitat Management and Monitoring Plan

To reach the target habitat types and conditions the red line boundary would require fencing off. This would separate/isolate it from the grazed meadow and divide it from the bund, which could be considered as part of the garden curtilage.

7.1 Modified Grassland (Good condition) enhanced to Other Neutral Grassland (Moderate)

The retained grassland immediately SW of the solar installation's modified grasslands parcel would be enhanced to other neutral grassland with a minimum of "moderate" condition. Recruitment of grassland species from the abutting bund was likely, alongside a mowing regime that would both reduce nutrient load and provide micro bare-ground patches for seed germination.

Years One-Three:

Red line area fenced off. Grazing to cease November to July inclusive. April cut/collect. No mowing until August followed, by monthly mows/collect resuming monthly until/including September. No more mowing after September until the following April.

Year Three: Monitoring. Transects July. Prior to first cut. Review

Years Four-Five:

As above aftermath sheep grazing could be introduced to replace the post-August cut. If aftermath grazing was introduced there would be no necessity for an April cut the following spring.

July Year Five:

Review of progress/condition of the proposed neutral grassland parcel. Revisit management if necessary to maintain/reach moderate condition.

Years Five onwards:

Continuation of Yr4-5 management unless prescribed otherwise in Year Five review.

This management should enable the proposed parcel to achieve "other neutral grassland" "Moderate" condition within 15 years. "Good" condition may be achievable, but criteria F ""There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type" may not be met, hence "Moderate" target.

Years Seven, Ten, Fifteen

Monitoring against Condition Assessment criteria for medium distinctiveness grasslands, with management reviews to meet objective of other neutral grassland, moderate condition by Year 15.

Yrs15-30 Management to continue as "Yrs 5 onwards" to maintain or improve condition by Year 30.

7.2 Traditional Orchard

Traditional orchards were classed as grassland habitats in the Defra BNG Metric, with a standard time to target condition of 20 years.

Year One:

Planting of bare root fruit stock at 4m centres in mulched pits. Tree protection cones and stakes/ties and mulch around base.

Summer watering regime, late autumn form pruning in centres of apple/pairs. *Prunus* types limited to essential pruning and in summer only.

Autumn cut/collect of grass. Aftermath grazing can be introduced if the trees suitably protected from sheep and poaching does not occur.

Years Two-Three:

Repeat of Year One maintenance (winter mulching/autumn form pruning to minimise cross branches in tree centres) and replacement of failed trees and poor specimens.

Autumn grassland cut/collect

Monitor.

Years Four-Five:

Continuation of replacement of dead stock; Cessation of watering from Year Four; mulching/pruning to continue.

Monitor, including grassland surveying (should be tending away from modified grassland and taking on a more neutral grassland character).

Years Six-Fifteen:

Replacement of any failed stock. Tree protection cones and stakes and mulch around base, summer watering (*new stock only*). Winter pruning as necessary for tree health/form. Check and change of any ties/cones as necessary.

Grassland maintenance to continue. Monitoring every three years.

Years Fifteen -Twenty

Replacement of any failed stock. Tree protection cones and stakes and mulch around base, summer watering (*new stock only, and for first three years only*). Winter pruning as necessary (see above).

Removal of all remaining stakes, ties and cones on all established stock (Year 15).

Yrs20-30 Management to continue to maintain or improve condition by Year 30.

7.3 Retained Modified Grassland

The grassland under and around the solar panels will be maintained as modified grassland. It is recognised that the grass retained beneath the panels would struggle to uplift from poor grassland. Thus, that condition is assumed. The relaxation of mowing prior to July was not thought to compromise the efficiency of the solar panels, given the current composition of the sward (no coarse grasses).

Years One-Five:

The mowing regime would be relaxed: one spring cut/collect in April. "No Mow May" and "Let it Bloom, June" would be followed, with monthly mows/collect resuming monthly late July to September. No more mowing after September until the following April.

July Year Five:

Review of condition of the modified grassland parcel. Revisit management if necessary to maintain/reach good condition.

Years Five onwards:

Continuation of Yr4-5 management unless prescribed otherwise in Year Five review.

7.4 Introduced Shrub to Other Neutral Grassland (Moderate)

A 136m² parcel of Introduced Shrub will be removed and a battery storage building built and this will be surrounded by a created neutral grassland. The shrubs currently in place are growing among a neutral grassland, so establishment should be straightforward.

Year One:

Careful removal of existing shrubs leaving as much of the grassland intact.

August/September distribution of cut seeded stems of grasses from the established bund adjacent.

Year Two:

No mowing until August. Thresh arisings over any gaps in turf where shrubs were moved or where the ground was poached by construction activities.

Years Three Onwards:

See 7.1 Years Four/Five onwards

Monitoring as 7.1.

7.5 Ornamental Hedge

A 52-length Portuguese laurel hedge is proposed to be planted on the eastern edge of the site to screen the panels and battery room from the residential property.

Figure Six: Baseline Grassland Condition Assessment (overleaf p19).

UK Habitat Classification (UKHab) Habitat Type																					
Grassland - Modified grassland																					
Habitat Description																					
A sheep grazed improved grassland																					
ukhab - UK Habitat Classification																					
On-site or off-site, site name and location	Wiswell Manor Meadow				Survey date and Surveyor name	06/11/2024 D Rigby (am)															
	Survey reference (if relating to a wider survey)	3/2024/0826 Wiswell Manor																			
Limitations (if applicable)	November				Habitat parcel reference						Notes (such as justification)										
	1	2	3	4	5																
Condition Assessment Criteria	Grid reference										Criterion passed (Yes or No)										
	375022.4 9,438179 .30	375026. 13,4381 67.27	375004.4 4,438138 .29	374997. 15,4381 22.61	374984. 39,4381 15.50																
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.				5 no	8 yes	7 Yes	5 no	5 no												
	Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.																				
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.				n	n	n	n	n											sheep grazed to short (<5cm) sward	
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.				y	y	y	y	y												
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.				y	y	y	y	y												
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens ²).				y	y	y	y	y												
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.				y	y	y	y	y												
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).				y	y	y	y	y												
Essential criterion achieved (Yes or No)				n	y	y	n	n													
Number of criteria passed				5	6	6	5	5													
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score			Score Achieved $\times \checkmark$																	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)			N	Y	Y	N	N													
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)																				
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)			Y			Y	Y													
Suggested enhancement interventions to improve condition score																					
Given the time of year, certain species would be absent, particularly perennial Poas and Cardamine spp. Thus it has been assumed that all quadrats would pass Criterion A and "Good" condition has been assigned.																					

7. References

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