CGO Ecology Ltd 27a Ridgefield Gardens Christchurch Dorset BH23 4QG UK

Biodiversity Net Gain for proposed new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire

CGO Ecology Ltd

Christchurch

3rd November 2021

Author:
Dr Chris Gleed-Owen MCIEEM, Director & Principal Ecologist

Volume code: GTX0000 Project wide

Project: Gartree 2

Document number: 661277-0000-CGO-GTX0000-XX-RP-X-0008

Issue number: P02

Suitability code: S3 Suitable for Review & Comment

Date of issue: 03/11/2021

Classification: Official

For client:
Mace Ltd
155 Moorgate
London
EC2M 6XB

(+44) 01202 798126
enquiries@cgoecology.com
www.cgoecology.com

Registered Company in England and Wales, number 6532052
Registered office: Suite 8 Bourne Gate, 25 Bourne Valley Road, Poole, Dorset, BH12 1DY, UK

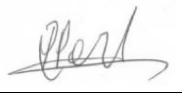
Project: MoJ NPP Gartree 2

Deliverable: Biodiversity Net Gain report

Our reference: RAVN BNG

Version: 2

Date: 3rd November 2021

Author:	Dr Chris Gleed-Owen BSc (Hons) PhD MCIEEM	
Checked by:	Rebecca Perl BA MA	
Approved by:	Dr Chris Gleed-Owen BSc (Hons) PhD MCIEEM	

Issued to: Mace Ltd. Anticipated circulation includes Mace internal use, Ministry of Justice, other appointed consultancies, Harborough District Council, Natural England, and other relevant stakeholders.

Version control:

Version	Date	Summary of changes
1	21/10/2021	n/a
2	03/11/2021	Minor typographical correction

Non-technical summary

Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice (MoJ), to provide Biodiversity Net Gain (BNG) provisions on land to the south of HMP Gartree, Market Harborough, Leicestershire. The MoJ proposes a development as part of its New Prisons Programme on a 25ha site (SP 7052 8873). The Local Planning Authority (LPA) is Harborough District Council. It is MoJ policy to achieve at least 10% BNG in all its developments.

Methodology

Biodiversity Metric 3.0 was completed by Dr Chris Gleed-Owen MCIEEM of CGO in August 2021 and submitted with an Outline Planning Application. This was the culmination of an iterative process beginning in February 2021, involving close liaison between CGO, Mace, and the Pick Everard design team. Metric 2.0 was originally used in June 2021, but the data were transferred to Metric 3.0 in August 2021. Baseline habitat data were extracted from a Phase 1 survey by Ramboll in 2020, redrawn and revised to incorporate an updated Phase 1 survey by CGO in July 2020. Post-development habitat creation and enhancement figures were provided by Pick Everard. UKHab classifications and conditions were translated from their Phase 1 equivalents with the aid of Natural England's Higher Level Stewardship (HLS) Farm Environment Plan (FEP) manual.

Results

The proposed scheme will provide 26.29% net gain in habitat units, and 25.26% net gain in hedgerow units. There are no running waterways on site.

The main baseline habitat loss will be 18.85ha of UKHab classification 'modified grassland' in 'fairly poor' condition, translated from Phase 1 habitat type 'poor semi-improved grassland' following the HLS FEP grassland guidance. Small areas of woodland and scrub will be lost, including planted non-natives.

Habitat creation will be primarily within the new prison, dictated by design and security considerations. Native planting and seed mixes will be used as far as possible. A belt of native broadleaved woodland will be planted around the entire southern and eastern perimeter of the new prison (2.03ha). Together with 0.73km of new hedgerow, this presents a significant gain in linear habitat connectivity. Two ponds will be created in the area northwest of Welland Avenue.

Habitat enhancement will be conducted on two areas of land northwest of Welland Avenue, and north of the prison. This will involve 4.56ha of fairly-poor modified grassland enhanced to 'other neutral grassland' by cutting hard, scarifying, and seeding with a biodiverse, native, location-appropriate mix.

Conclusions and recommendations

Both the area and linear habitat elements of Biodiversity Metric 3.0 have been completed, and the proposed new prison will achieve aver 25% BNG for both. Habitat trading rules are satisfied. The BNG enhancements must be provided within one year of commencement of the development.

Contents

1. Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice (MoJ), to provide Biodiversity Net Gain (BNG) provisions on land to the south of HMP Gartree, Market Harborough, Leicestershire. The MoJ proposes a development as part of its New Prisons Programme on a 25ha site (SP 7052 8873). The Local Planning Authority (LPA) is Harborough District Council. It is MoJ policy to achieve at least 10% BNG in all its new prisons.

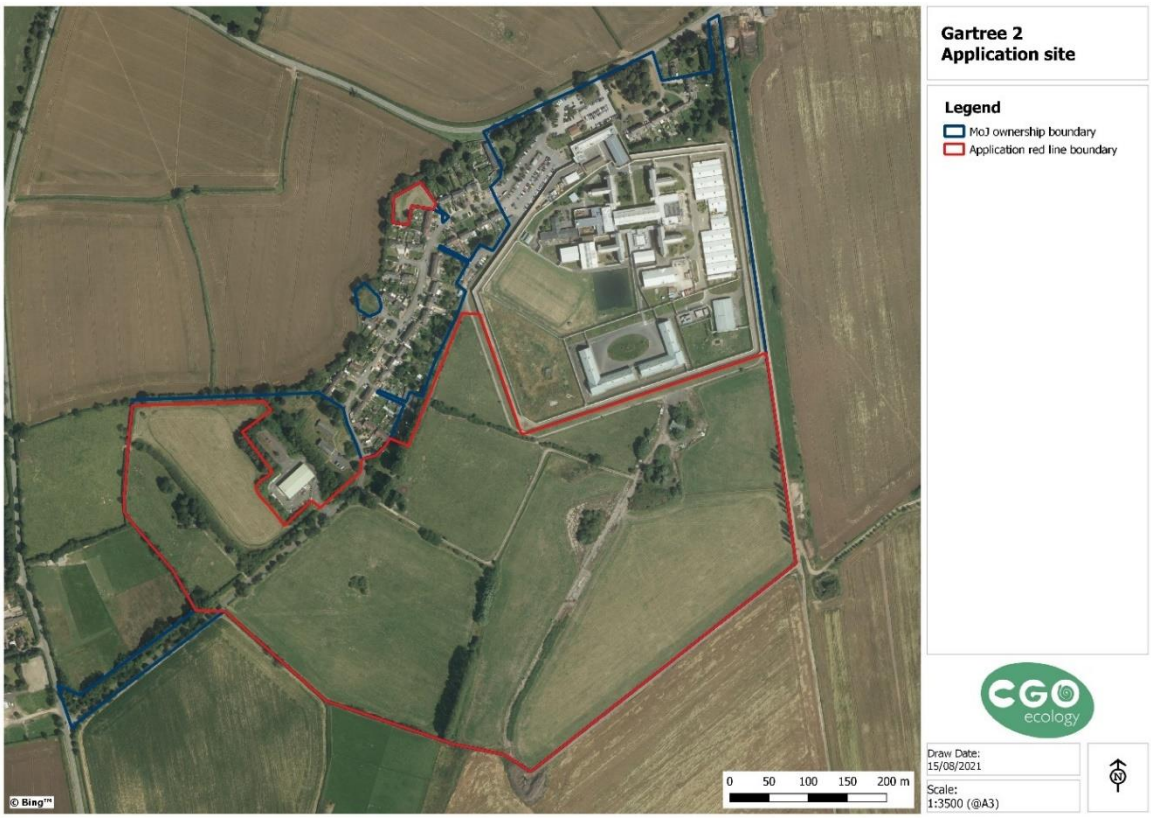


Figure 1 – Development site boundary (red line) and MoJ ownership boundary (blue line).

Figure 2 – Proposed development and landscaping plan, with habitat areas for BNG purposes, produced by Pick Everard.

A Preliminary Ecological Appraisal (PEA) conducted by Ramboll (Molesworth, 2020). The Phase 1 habitat survey was updated in July 2021 by CGO (Gleed-Owen, 2021). A series of phase 2 species surveys were also conducted.

2. Methodology

Biodiversity Metric 3.0 was completed by Dr Chris Gleed-Owen MCIEEM of CGO in August 2021 and submitted with an Outline Planning Application. This was the culmination of an iterative process beginning in February 2021, involving close liaison between CGO, Mace, and the Pick Everard design team.

Metric 2.0 was originally used in June 2021, but the data were transferred to Metric 3.0 in August 2021. Baseline habitat data were extracted from the Ramboll Phase 1 survey (Molesworth, 2020), redrawn and revised to incorporate the updated Phase 1 survey by CGO (Gleed-Owen, 2021). Post-development habitat creation and enhancement figures were provided by Pick Everard. UKHab classifications and conditions were translated from their Phase 1 equivalents with the aid of Natural England's (2010) Higher Level Stewardship (HLS) Farm Environment Plan (FEP) manual.

The author Dr Chris Gleed-Owen BSc (hons) PhD MCIEEM is Director & Principal Ecologist of CGO Ecology Ltd, an ecological consultant since 2008 (13 years). Survey licences: CL09 great crested newt (GCN, *Triturus cristatus*), sand lizard (*Lacerta agilis*), smooth snake (*Coronella austriaca*), natterjack toad (*Epidalea calamita*), Roman snail (*Helix pomatia*). Previous mitigation licence-holder for smooth snake and/or sand lizard (6), and badger (*Meles meles*) sett closure (3). Experienced practitioner of Phase 1 habitats, National Vegetation Classification (NVC), flora (FISC level 4 botanist), vertebrates, invertebrates, BNG, EcIA/EIA, BREEAM.

Plans and extracted baseline habitat areas and lengths were produced by CGO GIS officer Jack Parker.

3. Results

The proposed scheme will provide 26.29% net gain in habitat units, and 25.26% net gain in hedgerow units. There are no running waterways on site.

The main baseline habitat loss will be 18.85ha of UKHab classification 'modified grassland' in 'fairly poor' condition, translated from Phase 1 habitat type 'poor semi-improved grassland' following the HLS FEP grassland guidance. Small areas of woodland and scrub will be lost, including planted non-natives.

Habitat creation will be primarily within the new prison, dictated by design and security considerations. Native planting and seed mixes will be used as far as possible. A belt of native broadleaved woodland will be planted around the entire southern and eastern perimeter of the new prison (2.03ha). Together with 0.73km of new hedgerow, this presents a significant gain in linear habitat connectivity. Two ponds will be created in the area northwest of Welland Avenue.

Habitat enhancement will be conducted on two areas of land northwest of Welland Avenue, and north of the prison. This will involve 4.56ha of fairly-poor modified grassland enhanced to 'other neutral grassland' by cutting hard, scarifying, and seeding with a biodiverse, native, location-appropriate mix.

The Metric's habitat trading rules are satisfied.

4. Conclusions and mitigation recommendations

Both the area and linear habitat elements of Biodiversity Metric 3.0 have been completed, and the proposed new prison will achieve over 25% BNG for both. Habitat trading rules are satisfied. The BNG enhancements must be provided within one year of commencement of the development.

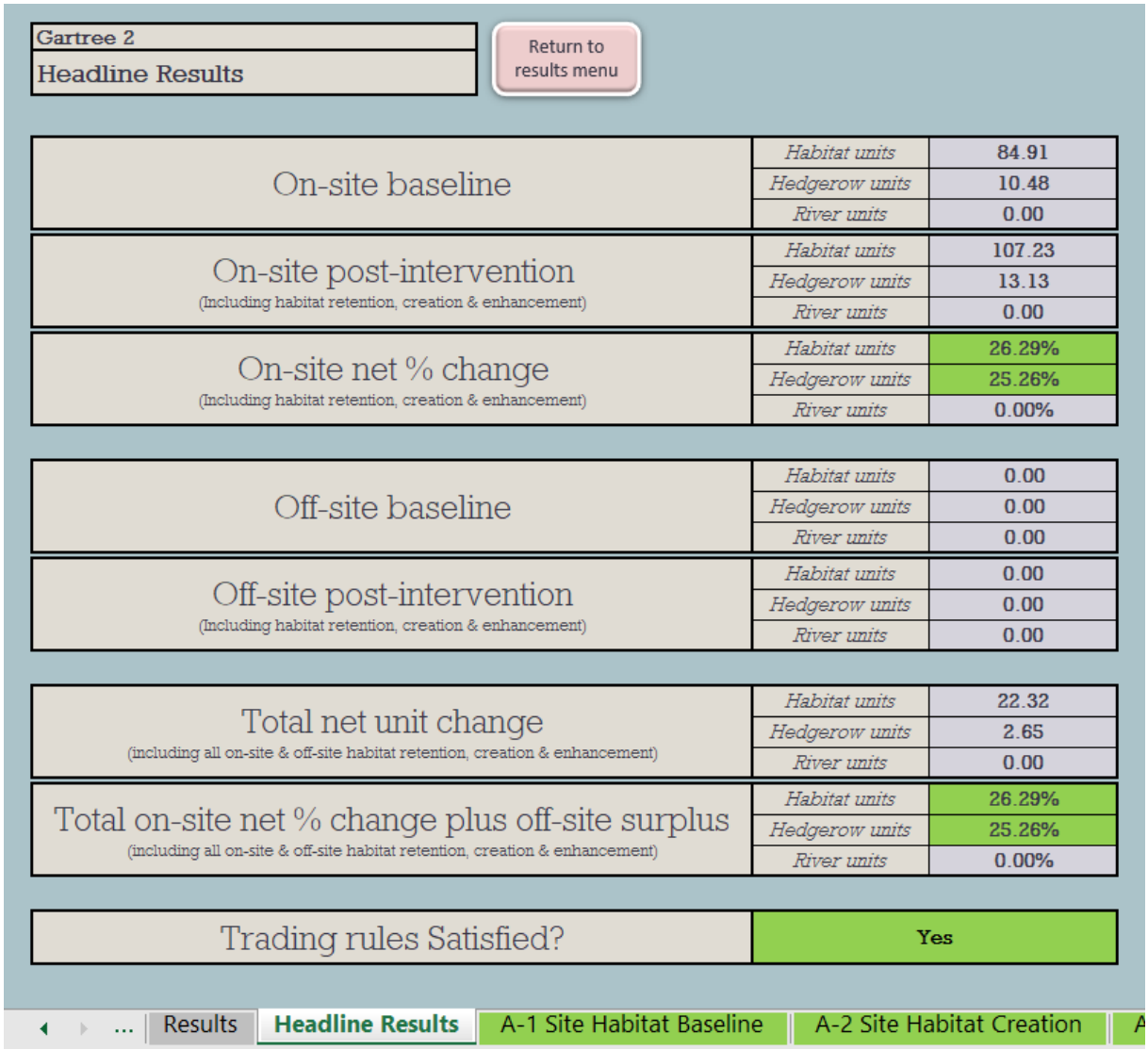
5. References

Molesworth, J. (2020) *Raven. Preliminary Ecological Appraisal.* Ramboll, Exeter.

Gleed-Owen, C. (2021) *Updated Phase 1 habitat survey for new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire*. CGO Ecology Ltd, Christchurch.

Natural England (2010) *Higher Level Stewardship - Farm Environment Plan (FEP) Manual (3rd edition)*. Natural England, York.

6. Appendix (Biodiversity Metric 3.0 extracts)



Gartree 2

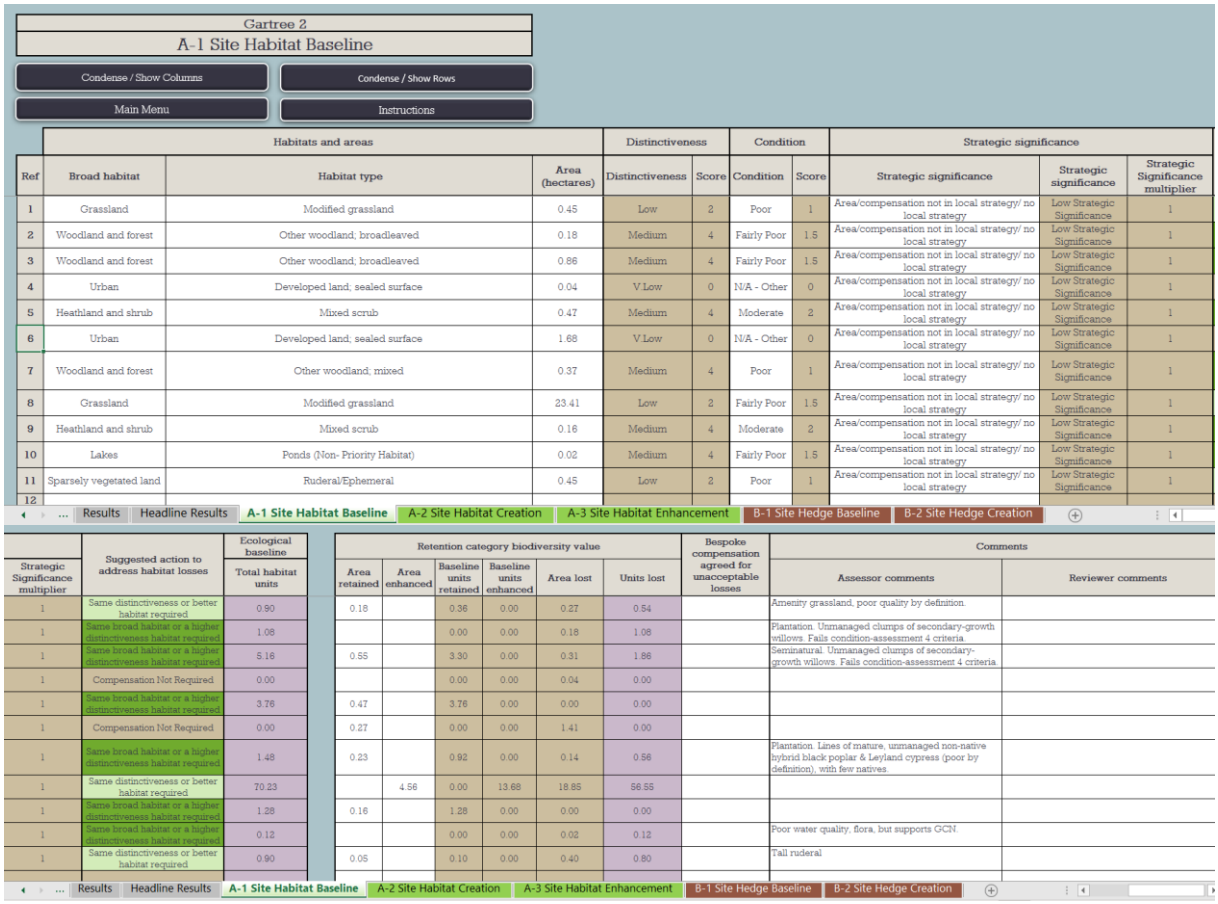
Headline Results

Return to results menu

On-site baseline	*Habitat units*	84.91
	Hedgerow units	10.48
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	107.23
	Hedgerow units	13.13
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	26.29%
	Hedgerow units	25.26%
	River units	0.00%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	22.32
	Hedgerow units	2.65
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	26.29%
	Hedgerow units	25.26%
	River units	0.00%
Trading rules Satisfied?		Yes

... Results | Headline Results | A-1 Site Habitat Baseline | A-2 Site Habitat Creation | A

Figure 3 – Headline BNG results extracted from Biodiversity Metric 3.0.



Gartree 2

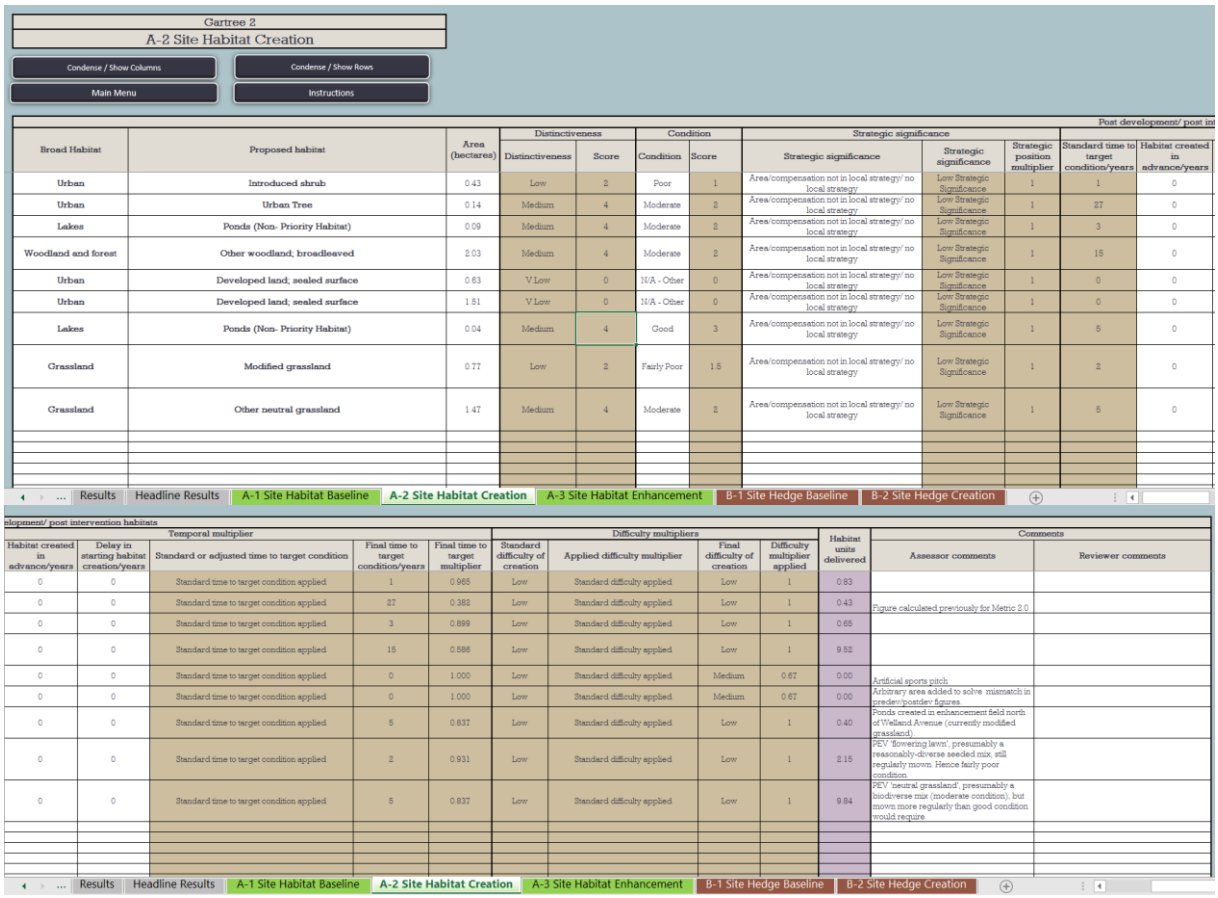
A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Ref	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier	Strategic Significance	Suggested action to address habitat losses	Ecological baseline: Total habitat units	Retention category biodiversity value: Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area lost	Units lost	Bespoke compensation agreed for unacceptable losses	Comments: Assessor comments	Reviewer comments
1	Grassland	Modified grassland	0.45	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same distinctiveness or better habitat required	0.90	0.18		0.36	0.00	0.27	0.54		Amenity grassland, poor quality by definition.	
2	Woodland and forest	Other woodland; broadleaved	0.18	Medium	4	Fairly Poor	1.5	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	1.08			0.00	0.00	0.18	1.08		Plantation. Unmanaged clumps of secondary-growth willows. Fails condition-assessment 4 criteria.	
3	Woodland and forest	Other woodland; broadleaved	0.86	Medium	4	Fairly Poor	1.5	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	5.16	0.55		3.30	0.00	0.31	1.86		Semi-natural. Unmanaged clumps of secondary-growth willows. Fails condition-assessment 4 criteria.	
4	Urban	Developed land; sealed surface	0.04	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Compensation Not Required	0.00			0.00	0.00	0.04	0.00			
5	Heathland and shrub	Mixed scrub	0.47	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	3.76	0.47		3.76	0.00	0.00	0.00			
6	Urban	Developed land; sealed surface	1.68	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Compensation Not Required	0.00	0.27		0.00	0.00	1.41	0.00			
7	Woodland and forest	Other woodland; mixed	0.37	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	1.48	0.23		0.92	0.00	0.14	0.56		Plantation. Lines of mature, unmanaged non-native hybrid black poplar & Leyland cypress (poor by definition), with few natives.	
8	Grassland	Modified grassland	23.41	Low	2	Fairly Poor	1.5	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same distinctiveness or better habitat required	70.23		4.56	0.00	13.68	18.85	56.55			
9	Heathland and shrub	Mixed scrub	0.16	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	1.28	0.16		1.28	0.00	0.00	0.00			
10	Lakes	Ponds (Non- Priority Habitat)	0.02	Medium	4	Fairly Poor	1.5	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same broad habitat or a higher distinctiveness habitat required	0.12			0.00	0.00	0.02	0.12		Poor water quality, flora, but supports GCN.	
11	Sparsely vegetated land	Ruderal/Ephemeral	0.45	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	Same distinctiveness or better habitat required	0.90	0.05		0.10	0.00	0.40	0.80		Tall ruderal	
12																						

Results | Headline Results | A-1 Site Habitat Baseline | A-2 Site Habitat Creation | A-3 Site Habitat Enhancement | B-1 Site Hedge Baseline | B-2 Site Hedge Creation

Figure 4 – Baseline area-based habitats extracted from Biodiversity Metric 3.0.



Gartree 2

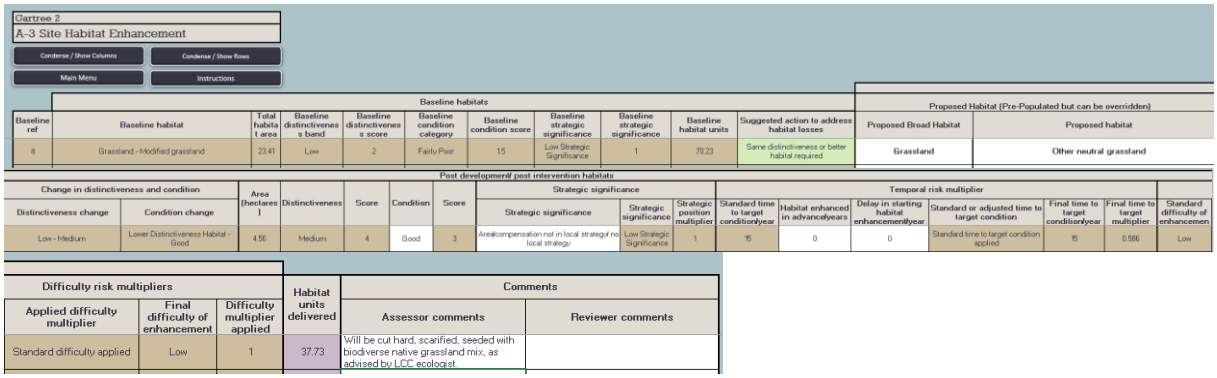
A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat created in advance/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Habitat units delivered	Comments: Assessor comments	Reviewer comments
Urban	Introduced shrub	0.43	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0	0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.83		
Urban	Urban Tree	0.14	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	27	0	0	0	Standard time to target condition applied	27	0.382	Low	Standard difficulty applied	Low	1	0.43	Figure calculated previously for Metric 2.0.	
Lakes	Ponds (Non- Priority Habitat)	0.09	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	3	0	0	0	Standard time to target condition applied	3	0.899	Low	Standard difficulty applied	Low	1	0.65		
Woodland and forest	Other woodland; broadleaved	2.03	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0	0	0	Standard time to target condition applied	15	0.586	Low	Standard difficulty applied	Low	1	9.52		
Urban	Developed land; sealed surface	0.63	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	0	0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00	Artificial sports pitch	
Urban	Developed land; sealed surface	1.51	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	0	0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00	Arbitrary area added to solve mismatch in pre-dev/post-dev figures.	
Lakes	Ponds (Non- Priority Habitat)	0.04	Medium	4	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5	0	0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.40	Ponds created in enhancement field north of Welland Avenue (currently modified grassland).	
Grassland	Modified grassland	0.77	Low	2	Fairly Poor	1.5	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	2	0	0	0	Standard time to target condition applied	2	0.931	Low	Standard difficulty applied	Low	1	2.15	PEV 'flowering lawn', presumably a reasonably-diverse seeded mix, still regularly mown. Hence fairly poor condition.	
Grassland	Other neutral grassland	1.47	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5	0	0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	9.84	PEV 'neutral grassland', presumably a biodiverse mix (moderate condition), but mown more regularly than good condition would require.	

Results | Headline Results | A-1 Site Habitat Baseline | A-2 Site Habitat Creation | A-3 Site Habitat Enhancement | B-1 Site Hedge Baseline | B-2 Site Hedge Creation

Figure 5 – Area-based habitat creation extracted from Biodiversity Metric 3.0.



Gartree 2

A-3 Site Habitat Enhancement

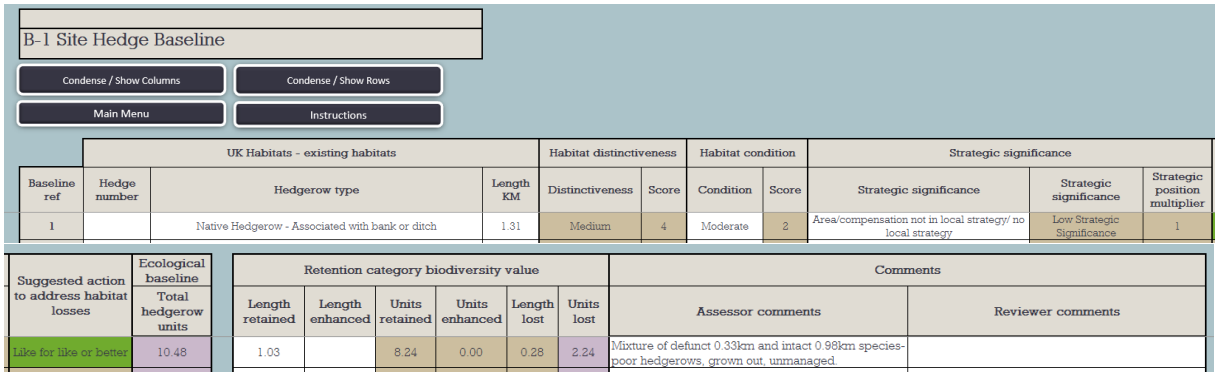
Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Baseline habitats										Proposed Habitat (Pre-Populated but can be overridden)	
Baseline ref	Baseline habitat	Total habitat area	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance	Baseline strategic significance	Baseline habitat units	Suggested action to address habitat losses	Proposed Broad Habitat	Proposed habitat
8	Grassland - Modified grassland	23.41	Low	2	Fairly Poor	1.5	Low Strategic Significance	1	70.23	Same distinctiveness or better habitat required	Grassland	Other neutral grassland

Post development/ post intervention habitats															
Change in distinctiveness and condition		Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance			Temporal risk multiplier					
Distinctiveness change	Condition change						Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/year	Habitat enhanced in advance/years	Delay in starting habitat enhancement/year	Standard or adjusted time to target condition	Final time to target condition/year	Final time to target multiplier	Standard difficulty of enhancemen
Low - Medium	Lower Distinctiveness Habitat - Good	4.56	Medium	4	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0	0	Standard time to target condition applied	15	0.586	Low

Difficulty risk multipliers			Habitat units delivered	Comments	
Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied		Assessor comments	Reviewer comments
Standard difficulty applied	Low	1	37.73	Will be cut hard, scarified, seeded with biodiverse native grassland mix, as advised by LCC ecologist.	

Figure 6 – Area-based habitat enhancement extracted from Biodiversity Metric 3.0.



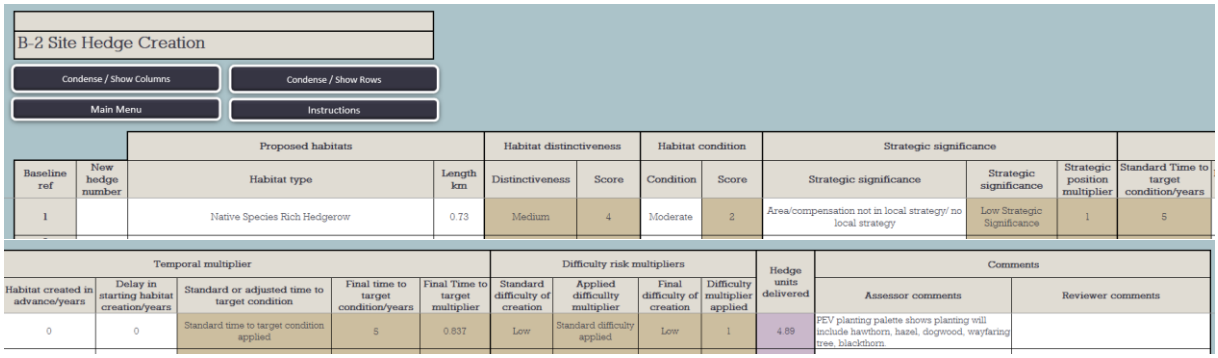
B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance		
Baseline ref	Hedge number	Hedgerow type	Length KM	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier
1		Native Hedgerow - Associated with bank or ditch	1.31	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1

Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Comments	
	Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
Like for like or better	10.48	1.03		8.24	0.00	0.28	2.24	Mixture of defunct 0.33km and intact 0.98km species-poor hedgerows, grown out, unmanaged.	

Figure 7 – Baseline hedgerow extracted from Biodiversity Metric 3.0.



B-2 Site Hedge Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			
Baseline ref	New hedge number	Habitat type	Length km	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years
1		Native Species Rich Hedgerow	0.73	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5

Temporal multiplier					Difficulty risk multipliers				Hedge units delivered	Comments	
Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied		Assessor comments	Reviewer comments
0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	4.89	PEV planting palette shows planting will include hawthorn, hazel, dogwood, wayfaring tree, blackthorn.	

Figure 8 - Hedgerow creation extracted from Biodiversity Metric 3.0.