

BRITISH STANDARD 5837

TREE SURVEYS ARBORICULTURAL IMPLICATION STUDIES

TPO/PLANNING ADVICE/ PROJECT MANAGEMENT

TREE INVENTORIES AND RISK ASSESSMENTS

WOODLAND MANAGEMENT PLANS

TREE PLANTING SCHEMES

TPO RE-SURVEY



Knowsley Safari Park, Proposed Baboon House

Ecological Scoping Assessment Report

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1 Introduction

1.1 Background

Kingdom Ecology have carried out an Ecological Assessment of an approximately 0.15ha area of land located at Knowsley Safari Park, Prescott, Halton (National Grid Reference SJ 4644 9497).

Survey has been carried out as part of a proposed planning application to construct a new baboon house immediately to the north of the existing baboon enclosure. The new baboon house will measure approximately 1400m² in area, with half of the structure comprising of a portal framed shed and the other half comprising of a netted compound. The location of the study site is shown on Figure 1 in the Appendix.

The purpose of the assessment was to identify any potential ecological constraints to the proposed works and to make recommendations to allow the development to deliver a biodiversity net gain. Field survey was undertaken on 12th July 2023. Surveys were carried out by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking protected species and habitat surveys as a professional ecological consultant with over twenty years' experience.

1.2 Purpose of Report

This report provides and outlines the findings of the field survey undertaken in July 2023.

Surveys aimed to identify habitats and species which are either of importance in terms of their conservation value or are afforded statutory legal protection. The presence of such habitats or species would form a material consideration during the planning process and could pose a constraint to the redevelopment of the site.

The field surveys comprised of an ecological walkover survey with a search for habitats that could support any protected species.

Following a description of the survey findings and an evaluation of habitats at the site, the report goes on to make recommendations for further works, mitigation and ecological enhancement measures to allow the development to deliver a biodiversity net gain.

1.3 Relevant Legislation

1.3.1 Birds

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs.

1.3.2 Brown Hare

Brown hare are listed as a species “of principal importance for the purpose of conserving biodiversity” covered under section 41 (England) of the NERC Act (2006) and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

2 Field Survey Methods

2.1 Survey Aims and Objectives

The survey aim was to assess the site as to its ecological importance by assessing the value of habitats and their suitability to support any protected or notable species. The purpose of this was to highlight any ecological constraints associated with future development proposals.

Field survey comprised of an Extended Phase 1 Habitat Survey, this included an assessment of habitats at the site in terms of their suitability to support any protected species.

Species that are considered unlikely to be significantly affected by the proposed development, even if known to be present in the general vicinity, were ‘scoped out’ of the assessment.

2.2 Extended Phase 1 Habitat Survey

2.2.1 Methods

An Extended Phase 1 Habitat Survey of the study site was undertaken on the 12th July 2023. Survey was carried out following standard methodologies as described in the *‘Handbook for Phase 1 Habitat Survey – a technique for environmental audit’* (JNCC, 2004¹).

The aims of the Extended Phase 1 Habitat Survey were to:

- identify and map all areas of semi-natural habitat within the study area;
- provide a botanical description of the semi-natural habitats surveyed;
- identify areas or habitats that are of particular ecological interest for nature conservation and which require more detailed investigation;
- provide additional information regarding incidental observations of protected species and the potential of habitats to support such species.

¹ JNCC (2004) ‘Handbook for Phase 1 Habitat Survey – a technique for environmental audit’

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A habitat map was produced and lists of dominant or notable vascular plant species were recorded in each of the major habitat types where relevant. Typical habitats recorded at the site are also shown in photographs in the Appendix.

3 Survey Results

3.1 Site Description

The study area comprises of an approximately 1500m² area of land located around the existing baboon enclosure at Knowsley Safari Park. Affected habitats within the enclosure include the existing baboon shelter and areas of short, modified grassland. Affected habitats outside of the enclosure include areas of gravelled parking, bramble scrub and unmanaged, species-poor, neutral grassland.

Immediately beyond the proposed new baboon house, further areas of unmanaged grassland extends out to the west. Other habitats immediately surrounding the proposed construction area include areas of continuous bracken to the east; whilst the existing baboon enclosure is located immediately to the south on the opposite side of a row of tall stock fencing. The adjacent baboon enclosure comprises of short grassland with scattered mature trees.

The site location and layout are shown on Figures 1 and 2 in the Appendix. Habitats are Target Noted on Figure 2 and are described below. Photographs of the site are provided in the Appendix.

3.2 Habitats and Protected Species

3.2.1 Habitats

The study site comprises of a combination of grassland and scrub habitats with areas of previously developed land. There is a gravelled track running along the northern edge of the existing baboon enclosure and leading to a small parking area adjacent to the existing baboon shelter (Target Note 3). The parking area comprises of compacted gravels.

The grassland area to the north of the baboon enclosure is flat and mostly dry. It comprises of a species-poor, neutral grassland habitat which is infrequently managed and so has grown tall and rank (Target Note 1 on Figure 2 in the Appendix). The grassland comprises of abundant red fescue with frequent Yorkshire fog, common bent and cock's foot with occasional false oat-grass, meadow fox-tail and rough meadow-grass, plus rare tufted hair-grass and hairy sedge. Herbs present are typical of unmanaged, relatively nutrient-rich grassland and comprise of frequent creeping thistle with occasional common ragwort, common sorrel, ribwort plantain, tufted vetch, field horsetail, nettle, broadleaved dock and creeping cinquefoil. With regards to further biodiversity net gain calculations, the grassland was assessed as representing 'other neutral grassland' in a 'moderate' condition.

There is a stand of bramble and tall herb vegetation located around the gravelled parking area (Target Note 2). This comprises of stands of great willowherb, colt's foot, mugwort, ribbed melilot, broadleaved dock and common ragwort with bramble and scattered willow and buddleia scrub.

Land within the baboon compound comprises of relatively short, modified grassland which comprises principally of perennial rye-grass with occasional Yorkshire fog and white clover. There are large patches of bare ground where the grassland has been trampled by the baboons. With regards to further biodiversity net gain calculations, the grassland was assessed as representing 'modified grassland' in a 'poor' condition.

Habitats recorded at the study site are shown on Photographs and Target Noted on Figure 2 in the Appendix.

3.2.2 Protected Species

The proposed development will not affect any areas of hedgerow or trees. However, works will affect a small patch of dense bramble scrub. This area of scrub could be used by nesting birds during the breeding season.

The existing baboon shelter is not considered to be suitable for roosting bats. The baboon shelter is a modern, portal framed structure clad in corrugated tin sheeting with a flat roof. The shelter measures approximately 15m x 6m in area. The shed does not support any obvious suitable roosting habitats for bats.

The affected areas of neutral grassland habitat are relatively small, nevertheless the habitat offers suitable habitat for brown hare. Brown hare were observed using grassland habitats within proximity to the study area.

There are no ponds or other significant water bodies located within 250m of the proposed works area, therefore it is considered to be very unlikely that great crested newt or other amphibians would be present.

No other protected or notable species are considered likely to be present at the study site.

4 Evaluation

4.1 Summary

4.1.1 Habitats

Development proposals will affect an approximately 0.15ha area of land comprising of modified grassland, compacted gravels, bramble scrub, the existing baboon shelter plus a small area of unmanaged, neutral grassland (approximately 400 m²).

The neutral grassland forms a small part of a much wider block of similar, unmanaged neutral grassland habitat which extends to the north of the existing baboon enclosure.

The grassland is not considered to be of any significant botanical value in its own right; with habitats present commonly occurring within similar areas of neglected agricultural land/ roadside verges etc.

Nevertheless, such habitats are still considered to be of minor biodiversity value. The grassland habitats are likely to provide habitat for various common local wildlife including small mammals, invertebrates and birds.

In order to compensate for the loss of grassland habitats and to ensure that the development proposal achieves a biodiversity net gain, it is recommended that other areas of low value grassland located at the Safari Park are enhanced to provide replacement neutral grassland habitat.

An appropriate area of grassland has been identified along the side the access road leading to the main car park. This is shown as grassland habitat 1 on Figure 3.

Further information on this grassland habitat, its future management and biodiversity net gain calculations are provided in Section 5.

4.1.2 Brown Hare

Brown hare are present in the surrounding landscape and have been observed within proximity to the proposed works area

It is recommended that a tidy works area is maintained throughout with any hazardous substances or materials fenced off from mammals.

Where any trenches or pits must be left open overnight, these should be fitted with mammal ramps or be engineered with sloping sides so that animals do not become trapped within.

4.1.3 Breeding Birds

The bramble and tall grassland areas may be used by nesting birds during the nesting bird season (March-August inclusive). Therefore, works to clear bramble and grassland habitats should be completed outside of the breeding bird season.

Where this is not possible, a check for breeding birds should be carried out a maximum of 48 hours before vegetation removal by an appropriately qualified ecologist.

5 Biodiversity Net Gain and Enhancement Recommendations

5.1.1 Overview

In order to ensure that the development achieves a biodiversity net gain, it is proposed that new areas of grassland habitat of biodiversity value are created at the Safari Park.

In order to calculate the appropriate area of compensation habitat required, the relative biodiversity value of the existing habitats at both the proposed development site and within the proposed mitigation grasslands have been calculated in terms of 'biodiversity units' following methodologies and using tools provided within the Natural England Biodiversity Metric Calculator Version 4.0.

An appropriate area of mitigation grassland has been identified on the access roads leading to/from the main entrance to the car parks. This is shown as Grassland Area 1 on Figure 3. Grassland Area 2 as shown on this plan is a further area of mitigation grassland to be provided as part of an additional planning application (the Africa Hoof House). It is proposed that the two areas of grassland are managed to create blocks of neutral grassland habitat which is managed to promote its biodiversity value.

5.1.2 Existing Grasslands in Mitigation Area

The existing grassland in areas 1 and 2 are of relatively limited biodiversity value. The grasslands are species-poor and grass dominated with an average of six species per metre square. The grasslands are mown short with the arisings left on site.

Grassland Area 1 extends to approximately 1500 m² whilst Grassland Area 2 extends to approximately 2500 m².

The grasslands comprise principally of perennial rye-grass and red fescue with occasional Yorkshire fog. Other grass species recorded include sweet vernal grass and common bent.

Forbs recorded in the sward include white clover, creeping buttercup, common mouse-ear, common ragwort, selfheal, cat's ear, common sorrel, dandelion, yarrow, bird's foot-trefoil, ox-eye daisy, meadow buttercup and rough hawkbit.

Although the species present are largely indicative of modified, nutrient enriched grasslands, there are some species present which indicate that the grasslands could be enhanced to provide a more species-rich habitat.

It is recommended that the grasslands are enhanced through some minor habitat creation and through modifications to how the grasslands are managed.

With regards to the biodiversity net gain calculation, the grasslands were assessed as representing 'modified grassland' in a 'moderate' condition. Proposals are to enhance this grassland to provide 'neutral grassland' also in a 'moderate' condition.

5.1.3 Habitats Creation and Management

Grassland Mitigation Area 1 covers an area of approximately 1500 m². This habitat currently comprise of relatively species-poor, modified grassland. The grassland is shown in Photograph 4 in the Appendix.

It is proposed that it is instead managed as a hay-meadow type habitat and species diversity within the grassland sward is enhanced through the creation of establishment gaps scattered throughout the grassland.

The establishment gaps should each measure approximately 4 m² in area. Approximately 40 such gaps should be scattered throughout the grassland. Within the gaps, areas of bare ground should be created by either digging, rotavating or raking. The establishment gaps should be over sown with an appropriate wildflower seed mix (e.g. Emorsgate EM1 General Purpose Meadow Mix). Management to allow the establishment of wildflowers within the establishment gaps should follow methodologies as provided by Emorsgate Seeds.

Once established, the grasslands should be managed as a hay meadow type habitat. The grassland should remain un-cut until late July. Following the hay cut, the grassland should be taken away from site. The cut grass must not be left on site to form a thatch as this can repress the establishment of more desirable plant species. Under no circumstances, should grasslands be fertilised.

It is considered that the enhancement of the grassland and management as hay meadow, will allow the grassland to develop into more species-diverse, neutral grassland habitats.

An appropriate habitat creation and management plan would be produced and the grasslands will be managed over a minimum 30 year period.

5.1.4 Biodiversity Metric Calculation Results

For the purposes of the biodiversity net gain calculation, it has been assumed that all the above recommended habitat enhancements will be incorporated into the development. Where this is not possible, the biodiversity metric calculation will need to be revised.

Based upon these assumptions and taking account of the on-site and off-site proposals, the relative biodiversity units at the site before and after the development's completion have been calculated following methodologies and using tools provided within the Natural England Biodiversity Metric Calculator Version 4.0.

A summary table of these calculations is provided in the Appendix. The full Biodiversity Metric Calculation Tool Spreadsheet for the site has also been submitted.

The baseline biodiversity units (i.e. the site's pre-development condition) has been calculated at 0.49 Habitat Units. These will all be lost to the development.

The baseline biodiversity units of the proposed mitigation grassland has been calculated at 0.3 Habitat Units. Following the completion of habitat and creation and management of the grassland these will result in an uplift to 0.93 Habitat units.

The combined net unit change between the development site and the mitigation site would therefore be **a net increase of 0.14 Habitat units representing a 29.36% biodiversity net gain.**

6 Appendix

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PHOTOGRAPHS

Photograph 1 - View of existing baboon shelter



Photograph 2 - Bramble habitats at Target Note 2



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Photograph 3 – Grassland habitats at Target Note 1



Photograph 4 – Existing proposed mitigation grassland habitats

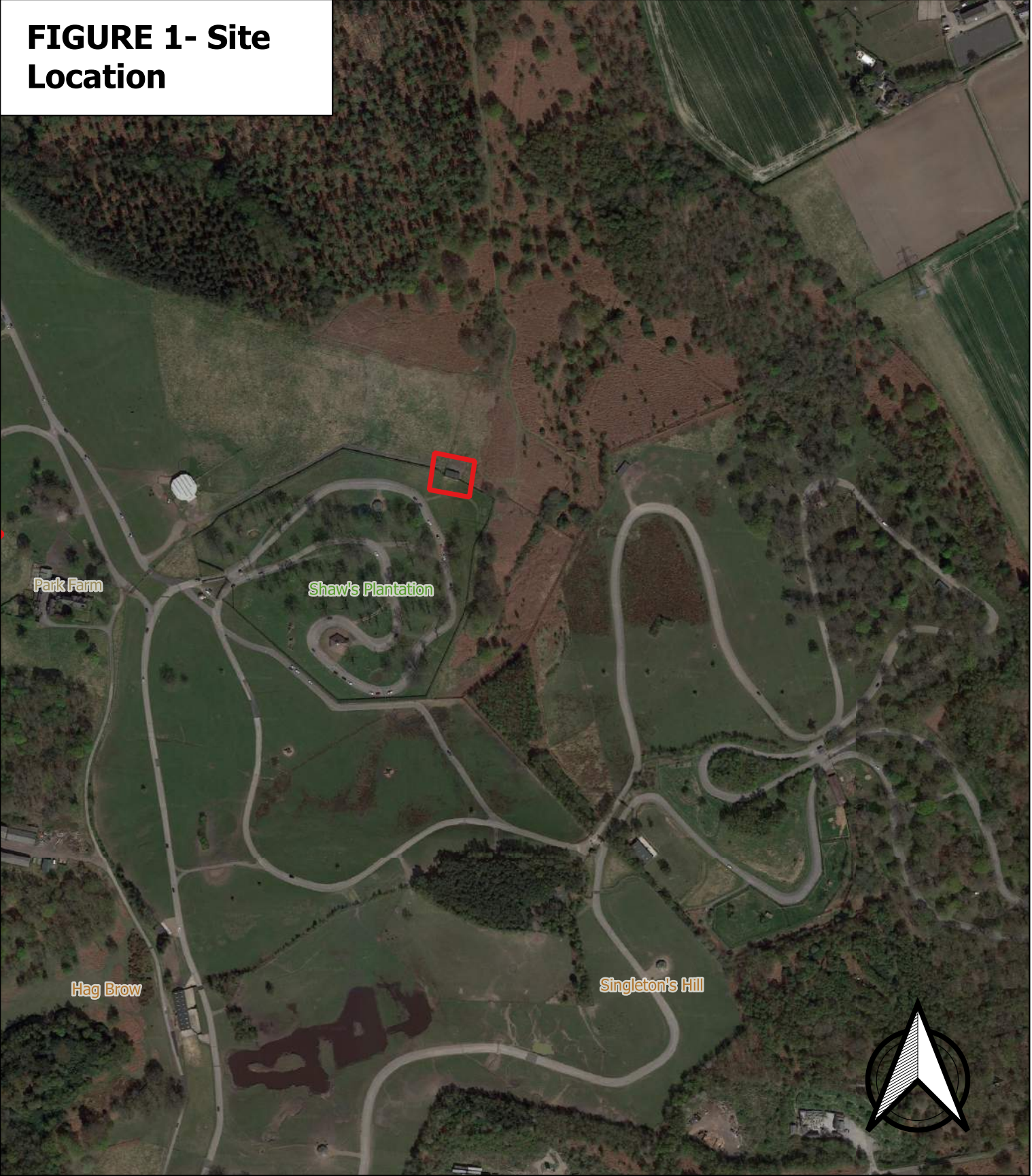


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Biodiversity Net Gain Summary

On-site baseline	Habitat units	0.49	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	-0.49	-100.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.30	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (including habitat retention, creation & enhancement)	Habitat units	0.93	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.63	210.08%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.14	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.14	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Total net % change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	29.36%	
	Hedgerow units	0.00%	
	Watercourse units	0.00%	

FIGURE 1- Site Location



KEY



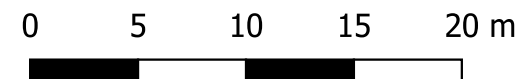
Study Site

**FIGURE 2- Habitat
Survey Results**

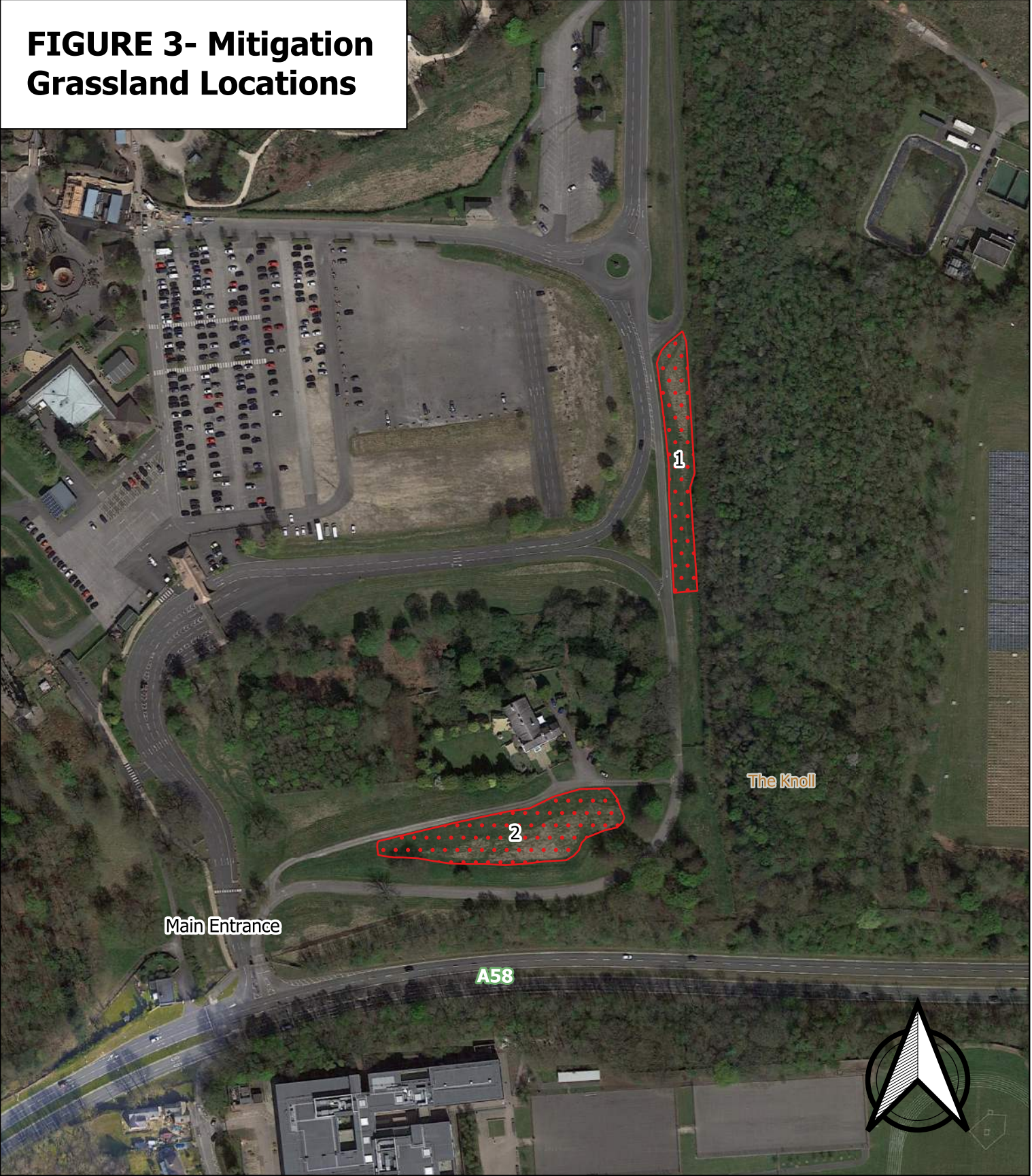


KEY

-  Study Site
-  Target Note
-  Continuous scrub
-  Neutral grassland - unimproved
-  Amenity grassland
-  Buildings
-  Hardstanding
-  Fence



**FIGURE 3- Mitigation
Grassland Locations**



KEY



Mitigation Grassland

