Updated Phase 1 habitat survey for new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire

CGO Ecology Ltd

Christchurch

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For client:
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1	18/08/2021	n/a

Executive summary

Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct an updated Phase 1 habitat survey of land adjacent to HMP Gartree, Market Harborough, Leicestershire. The Ministry of Justice proposes a development as part of its New Prisons Programme on land centred on (SP 7052 8873). The Local Planning Authority (LPA) is Harborough District Council. Ramboll conducted a Preliminary Ecological Appraisal (PEA) including a Phase 1 habitat survey in September 2020. Some inaccuracies in the Ramboll survey became apparent following phase 2 ecology surveys by CGO in 2021.

Methodology

An updated Phase 1 habitat survey was conducted on 5th July 2021, following standard JNCC 2010 methodology. A Geographical Information System was used to map habitats, and extract the revised habitat area figures. The habitat types were translated from Phase 1 to UKHab categories, and conditions assessed to enable use in Biodiversity Net Gain (BNG) calculations.

Results

The main habitat changes were from 'improved grassland' to 'poor semi-improved grassland' which occupies much of the site, and from 'scattered trees' to other woodland types. Two farm buildings were also added, a small area of 'continuous scrub' was converted to 'tall ruderal'. A pond was enlarged slightly, and minor adjustments were made to habitat edges, especially around hardstanding in the development area.

Discussion and conclusions

The updated Phase 1 habitat survey and conversion to UKHab has created a dataset that is accurate for use in BNG Metric 3.0. The most important change was from improved grassland to poor semi-improved grassland. This was because the grassland across the site is dominated by common bent and Yorkshire fog, and has only a minor proportion of seeded grasses and weeds indicative of improved status. It is understandable that this was not apparent in late September 2020 when originally surveyed by Ramboll. The woodland areas were incorrectly coded as scattered trees, however, including areas of plantation and seminatural broadleaved woodland, and areas of plantation mixed woodland.

Contents

1. Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct an updated Phase 1 habitat survey of land adjacent to HMP Gartree, Market Harborough, Leicestershire. The Ministry of Justice proposes a development as part of its New Prisons Programme on land centred on (SP 7052 8873). The Local Planning Authority (LPA) is Harborough District Council.

An Outline Planning Application (OPA) is proposed, with all matters reserved except for access and scale for the construction of a new Category B prison of up to 82,555m^2 GEA (gross external area) within a secure perimeter fence together with access parking, landscaping and associated engineering works on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire, LE16 7RP.

The indicative site layout proposes a range of buildings and facilities typical of a Category B resettlement prison, including seven new houseblocks (1,715 prisoners in total), supporting development including kitchen and other facilities, ancillary development including car parking (c.523 spaces), internal road layout, and perimeter fencing. The house blocks will be four storeys in height, whilst the other buildings will range from one to three storeys.

The new prison will be designed and built to be highly sustainable and to exceed local and national planning policy requirements in terms of sustainability. MoJ's aspirations include targeting near-zero carbon operations, 10% BNG, and at least BREEAM 'Excellent' certification, with endeavours to achieving BREEAM 'Outstanding'.

Ramboll Ltd conducted a Preliminary Ecological Appraisal (PEA) including a Phase 1 habitat survey in September 2020 (Molesworth, 2020). Some inaccuracies in the Ramboll survey became apparent following phase 2 ecology surveys by CGO in 2021. This was especially in relation to the grassland composition, but also the woodland types, and other more minor discrepancies from ground-truthing.

2. Methodology

An updated Phase 1 habitat survey was conducted on 5th July 2021, following standard JNCC 2010 methodology. The existing Ramboll Phase 1 habitat plan (Molesworth, 2020) was used as a basemap, and annotated to reflect any changes observed in the field. Further changes were made iteratively subsequently.

A Geographical Information System was used to map the revised habitats, and extract the revised habitat area figures for the whole site, the areas lost, and the areas retained and/or enhanced.

The habitat types were translated from Phase 1 to UKHab categories, and conditions assessed using Natural England (2021) to enable use in Biodiversity Net Gain (BNG) calculations.

3. Results

3.1. Overview

The main habitat changes were from 'improved grassland' to 'poor semi-improved grassland' which occupies much of the site, and from 'scattered trees' to other woodland types. Two farm buildings were also added, a small area of 'continuous scrub' was converted to 'tall ruderal'. A pond was enlarged slightly, and minor adjustments were made to habitat edges, especially around hardstanding in the development area.

Phase 1 habitat type	Area (ha)
Amenity grassland	0.45
Broad-leaved plantation woodland	0.47
Broadleaved semi-natural woodland	0.86
Building	0.04
Dense scrub	0.47
Hardstanding	1.68
Mixed plantation woodland	0.08
Poor semi-improved grassland	23.41
Scattered scrub	0.16
Standing Water	0.02
Tall ruderal	0.45
Total area	**28.09**

Table 1 – Phase 1 habitats in the whole application area (red line boundary).

Phase 1 habitat type	Total area (ha)
Amenity grassland	0.27
Broad-leaved plantation woodland	0.18
Broadleaved semi-natural woodland	0.31
Building	0.04
Hardstanding	1.41
Poor semi-improved grassland	0.14
Standing water	18.85
Tall ruderal	0.02
Total area	**21.62**

Table 2 - Phase 1 habitats that will be lost to the prison development.

Phase 1 habitat type	Area (ha)
Amenity grassland	0.18
Broad-leaved plantation woodland	0.55
Broadleaved semi-natural woodland	0.47
Dense scrub	0.27
Hardstanding	0.23
Mixed plantation woodland	4.56
Poor semi-improved grassland	0.16
Scattered scrub	0.05
Tall ruderal	0.18
Total area	**6.47**

Table 3 - Phase 1 habitats that will be retained, including those that will be enhanced.

3.2. Amenity grassland

This Phase 1 habitat is represented by seeded and regularly-mown grassland areas around the fringes of the existing prison. It is dominated by species such as red fescue (*Festuca rubra*) and perennial rye-grass (*Lolium perenne*), with variable cover of forbs such as white clover (*Trifolium repens*). The UKHab conversion is g4 Modified grassland.

3.3. Broad-leaved plantation woodland

A line of trees running through the development area is primarily composed of hybrid black poplar (*Populus x canadensis*), with a few native trees. A similar band of plantation woodland

also surrounds the MoJ maintenance buildings to the north of Welland Avenue. The UKHab conversion is w1g Other woodland; broadleaved. Metric 3.0 condition is 'fairly poor' as it fails at least four the condition assessment criteria (Natural England, 2021).

3.4. Broad-leaved semi-natural woodland

Seminatural broadleaved woodland within the development area is confined to small areas of trees comprising white willow (*Salix alba*), grey willow (*Salix cinerea*), hawthorn (*Crataegus monogyna*), wild cherry (*Prunus avium*), and other natives. To the north of Welland Avenue (within the red line, but retained) and further west along Welland Avenue (outside the red line, but within MoJ ownership) are willows, ash, sycamore (*Acer pseudoplatanus*), pedunculate oak (*Quercus robur*), apple (*Malus pumila*), plum (*Prunus domestica*), hawthorn, wild cherry, and others.

The UKHab conversion is w1g Other woodland; broadleaved. Metric 3.0 condition is 'fairly poor' as it fails at least four the condition assessment criteria (Natural England, 2021).

3.5. Building

Within the red line are three farm buildings which will be lost: a modern breeze-block metal-roofed barn, a World War II-era brick-ended barn with a curved concrete roof, and a small brick-built shed. The UKHab conversion is u1b Developed land; sealed surface.

3.6. Dense/continuous scrub

There are small areas of dense and scattered scrub around the site, comprising bramble (*Rubus fruticosus* agg.) and other native woody species. The UKHab conversion is h3h Mixed scrub.

3.7. Hardstanding

These are areas of asphalt, concrete, gravel or other sealed surface, mainly originating from the World War II airfield, but also the perimeter of the existing prison, and the road surface of Welland Avenue. The UKHab conversion is u1b Developed land; sealed surface.

3.8. Mixed plantation woodland

Along the northwest edge of the development is a line of Lombardy black poplar (*Populus nigra nigra* 'Italica' cultivar) and Leyland cypress (*Cupressus leylandii*). Another area of mixed plantation trees lies adjacent to the maintenance compound north of Welland Avenue. The UKHab conversion is w1h Other woodland; mixed. The Metric 3.0 condition is 'poor', as the trees are non-native species (Natural England, 2021).

3.9. Poor semi-improved grassland

As defined by Phase 1 (JNCC, 2010), this covers the agriculturally-improved grasslands with poor species diversity, but not dominated by seeded species such as perennial rye-grass (*Lolium perenne*) and of undesirable 'weeds' such as thistles, docks, and white clover (*Trifolium repens*) that would classify it as 'improved grassland'. This grassland was mapped as 'improved grassland' by Ramboll (Molesworth, 2020), but resurvey by CGO showed that all fields had tall sward dominated by common bent (*Agrostis capillaris*) and Yorkshire fog (*Holcus lanatus*), with never more than 20-30% of perennial rye-grass, and only patchy weed coverage.

Some areas have good local coverage of red clover (*Trifolium pratense*) and desirable tall herbs such as common knapweed (*Centaurea nigra*) which veer towards a more seminatural category.

All the grassland fields on site are used as pasture, grazed rotationally by sheep (*Ovis aries*), but there is no evidence of reseeding. Thus, the correct Phase 1 habitat is concluded to be 'poor semi-improved grassland' rather than 'improved grassland'.

The UKHab conversion is g4 Modified grassland. To reflect the difference between Phase 1 poor semi-improved grassland and improved grassland, its condition is described in the BNG Metric 3.0 as 'fairly poor' (as opposed to 'poor' for improved grassland).

3.10. Scattered scrub

A patch of scattered scrub adjacent to Welland Avenue is largely bramble, with coarse tall herbs, rank grass, and garden escapes. The best UKHab conversion is h3h Mixed scrub, as there is not direct translation for scattered scrub.

3.11. Standing water

One pond is within in the red line boundary, a small agricultural pond surrounded by hawthorn. Its water quality is poor, with little submerged aquatic plant growth, and shallow water. This is referred to as P1 in the GCN surveys. Several ditches will be lost to the new prison, which are seasonally wet but do not constitute watercourses. The UKHAB correspondence is r1a6 Other eutrophic standing waters.

3.12. Tall ruderal

Patches of nettle (*Urtica dioica*), fat-hen (*Chenopodium album*), redshank (*Persicaria maculosa*) and other agricultural weeds exist around the farm. There are also patches of these on manure piles along the main taxiway hardstanding in the development area. However, they are not mapped, because the primary habitat is hardstanding. There is no satisfactory UKHab correspondence.

3.13. Intact native species-poor hedgerow

Intact hedgerow in the farmland comprises mainly of hawthorn, with other natives such as elder (*Sambucus nigra*) and dog rose (*Rosa canina*). All 338m will be retained, and some will be extended by new planting. UKHab correspondence is h2b Other hedgerows.

3.14. Defunct species-poor hedgerow

Defunct sections of hawthorn-dominated hedgerow comes to around 332m in length. UKHab correspondence is h2b Other hedgerows.

3.15. Wet ditch

Within the development area is 393m of wet ditch, all of which will be lost. The ditches do not have notable species composition or diversity, and the water in them is a shallow trickle. None of them is significant enough to be classified as a watercourse in Phase 1 or UKHab terms (e.g. for BNG or BREEAM calculations). There is no UKHab primary habitat translation.

3.16. Dry ditch

Of a total of 427m of dry ditch on site, 251m will be lost to the development. There is no UKHab primary habitat translation.

4. Discussion and conclusions

The updated Phase 1 habitat survey and conversion to UKHab has created a dataset that is accurate for use in BNG Metric 3.0. The most important change was from improved grassland to poor semi-improved grassland. This was because the grassland across the site is dominated by common bent and Yorkshire fog, and has only a minor proportion of seeded grasses and weeds indicative of improved status. It is understandable that this was not apparent in late September 2020 when originally surveyed by Ramboll. The woodland areas were incorrectly coded as scattered trees, however, including areas of plantation and seminatural broadleaved woodland, and areas of plantation mixed woodland.

5. References

Joint Nature Conservation Committee (JNCC) (2010) *Handbook for Phase 1 habitat survey - A technique for environmental audit.* JNCC, Peterborough.

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

Natural England (2021) *The Biodiversity Metric 3.0 auditing and accounting for biodiversity - TECHNICAL SUPPLEMENT.* Natural England Joint Publication JP039. Natural England, York.

6. Appendices

Appendix 1 - Photographs

Appendix 2 - Gartree 2 updated Phase 1 habitat plan

Appendix 1 – Photographs

Plate 1- Detail of common-bent-dominated sward.

Plate 2 – West part of development area.

Plate 3 – West part of development area.

Plate 4 – Field northwest of Welland Avenue.

Plate 5 – Field northwest of Welland Avenue.

Plate 6 – Field northwest of Welland Avenue.

Plate 7 - Red clover, northwest of Welland Avenue.

Plate 8 – East end of development area.

Plate 9 – Southeast of development area.

Plate 10 – Southeast of development area.

Plate 11 – South of development area.

Plate 12 – Southwest of development area.

Plate 13 – Woodland beside Welland Avenue (not scattered trees).

Plate 14 – Woodland in east part of development area (not scattered trees).

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Legend

- Application red line boundary
- MoJ ownership boundary

Habitats

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- J1.2 - Amenity grassland
- J3.6 - Buildings
- G1 - Standing water
- Hardstanding
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.4 - Fence
- J2.6 - Dry ditch
- Wet ditch

CGO ecology

Draw Date: 18/08/2021

Scale: 1:3300 (@A3)

0 50 100 150 200 m

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