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Barn owl survey for new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire

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Non-technical summary

Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a barn owl survey on 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.

Methodology

CGO and its subconsultant Brindle & Green Ltd (B&G) undertook daytime walkovers to search for barn owl roosts/nests, and dusk and dawn surveys to identify roost use and foraging activity, within a Zone of Influence (ZoI) assumed to be a 100m buffer around the development site and Welland Avenue access road. A Preliminary Ecological Appraisal (PEA) by Ramboll Ltd identified roosts in two trees northwest of Welland Avenue. The surveys were led by Amy Trewick BSc (Hons) (CL29-license number 00456) and Chris Gleed-Owen, assisted by other suitably-experienced ecologists.

Results

A single barn owl emergence was observed in a tree identified previously by Ramboll (TN16) as containing a roost, outside the development area, but within the ZoI. No other barn owl activity was observed. No roosts or nest sites were identified in buildings or trees within the development area, and no foraging was observed over the development area. Barn owl activity within the ZoI is limited, and appears to be restricted to areas northwest of Welland Avenue. No evidence of breeding was observed, and the maximum count was one barn owl.

Conclusions, mitigation, enhancement recommendations

No barn owl roosts or nest sites, and no foraging activity, were identified on the development site. Three tree roosts are present within the ZoI northwest of Welland Avenue, of which at least one is in use. Any roosts in trees are potential nest sites, but no nesting activity has been observed within the ZoI.

Mitigation measures will include a sensitive lighting plan, with no new nocturnal lighting on Welland Avenue. If works take place during the April-June breeding season, a barn owl check must take place immediately beforehand. Any active nest must be avoided with at least a 30m standoff until any chicks have fledged.

As enhancements, two barn owl nestboxes will be installed. The first will be in a tree to the northwest of Welland Avenue, where grassland restoration will increase the area's carrying capacity for small mammals, and therefore for barn owls which prey upon them. A second nestbox will be installed in a tree on the southern perimeter of the development, to encourage the use of land to the southeast of Welland Avenue, and potentially develop a new territory.

Contents

1. Introduction

1.1. Background

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a barn owl (*Tyto alba*) survey of land adjacent to HMP Gartree, Market Harborough, Leicestershire (Figure 1). The Ministry of Justice proposes a development as part of its New Prisons Programme on land centred on (SP 7052 8873) (Figure 2). The Local Planning Authority (LPA) is Harborough District Council.

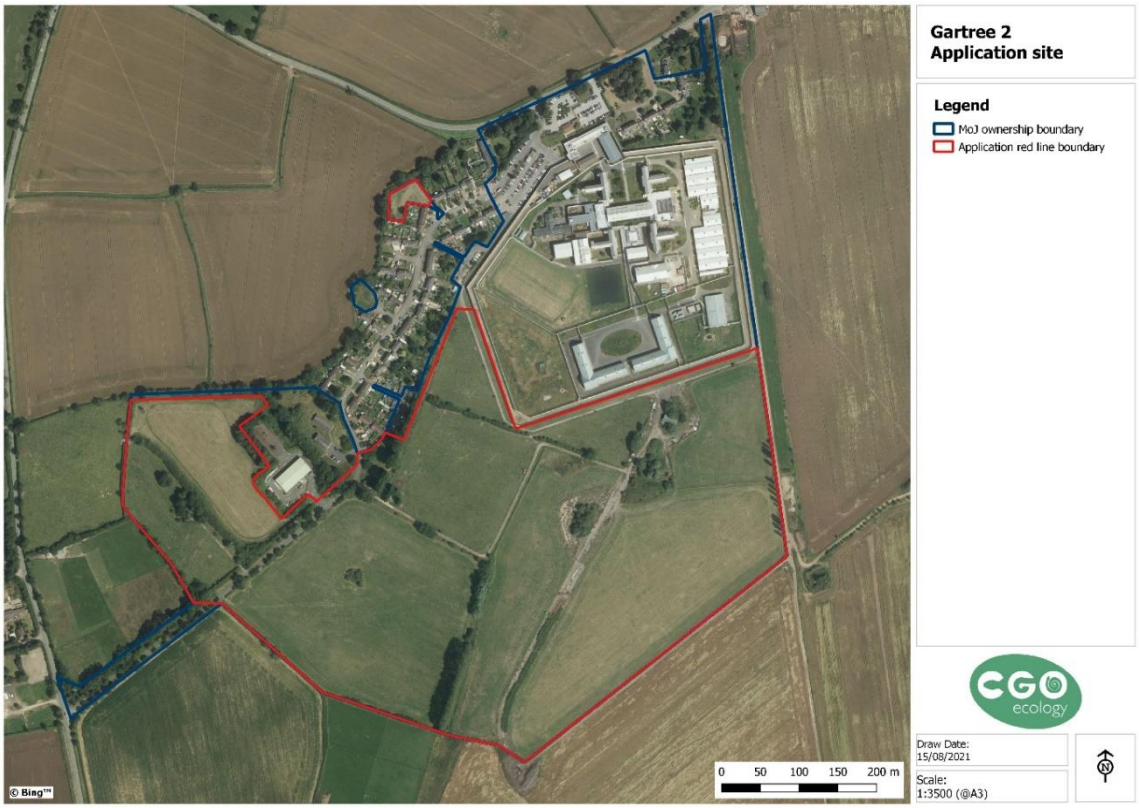

Figure 1 – Proposed development (red line), and MoJ ownership boundary (blue line).

Figure 2 – Proposed development and landscaping plan, produced by Pick Everard.

1.2. Legal protection

Barn owls and their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended). Barn owls may roost and/or nest in agricultural buildings, trees and other natural cavities. They forage over grassland, primarily at dusk and dawn, where they hunt small mammals such as field voles (*Microtus agrestis*).

1.3. Authors, surveyors

Lead author Dr Chris Gleed-Owen MCIEEM is Director and Principal Ecologist of CGO, project manager for the Gartree 2 phase 2 ecological surveys. He conducted daytime walkovers in February, March, April, and July, and a targeted dusk survey on 5th July 2021.

Amy Trewick ACIEEM (Natural England CL29 barn owl licence), formerly of Brindle & Green Ltd (B&G), is co-author of this report. She conducted the preliminary assessments of trees and buildings for barn owl roosts, and many nocturnal and daytime surveys.

B&G was commissioned to carry out most of the phase 2 ecology surveys as subconsultant to CGO. These were led by Amy Trewick initially, and then by Ellen Marshall, Adrian Cox, and John Harvey, assisted by Kinzie Watts, Veronica Cantero Sanchez, Kerry Baker, Phoebe Collier, and Reece Rockley.

This report aims to follow CIEEM (2017) guidance, and provide sufficient information to assist an EcIA conforming to CIEEM (2018) guidance.

1.4. Site context

The development site is land to the south of HMP Gartree, used primarily to graze sheep (*Ovis aries*). It comprises fields of poor semi-improved grassland, with hedgerows and lines of trees. The red line includes a wider area to the northwest of Welland Avenue, set aside for Biodiversity Net Gain (BNG) habitat enhancements.

The wider landscape in which HMP Gartree is situated is rural, with arable and pasture farming. It is primarily open in nature, with scattered residential properties and pockets of woodland. Hedgerows and treelines create interconnecting ecological corridors throughout the area. Within 1km to the southeast, a large new residential development at Airfield Farm is expanding the urban area of the town of Market Harborough.

1.5. Proposed works

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'.

2. Methodology

2.1. Desk study

A Preliminary Ecological Appraisal (PEA) conducted by Ramboll (Molesworth, 2020), including a Leicestershire and Rutland Environment Records Centre (LRERC) 2km search. This guided Mace's instruction of phase 2 ecological surveys.

CGO was instructed in December 2020, with a barn owl survey to be conducted in 2021. An updated LRERC search was sought by CGO in July 2021. The Defra MAGIC website was also queried (https://magic.defra.gov.uk/MagicMap.aspx).

2.2. Walkover surveys

CGO and B&G conducted daytime building and tree inspections and site walkovers targeting barn owl evidence in February, March, and July 2021. The Zone of Influence (ZoI) is considered to be the site and a buffer up to 100m wide where significant disturbance through construction activity is occurring. Incidental data was also gathered during daytime walkover surveys for badger and reptiles in April and May 2021. General methodology followed Shawyer (2011), adapted to fit the site and information gathered during PEA and phase 2 surveys. All observations used binoculars without disturbance to barn owls.

Ellen Marshall MRes (Natural England CL29 barn owl licence) and Amy Trewick ACIEEM (Natural England CL29 barn owl licence) assessed trees and buildings identified by Ramboll's as having barn owl roosts and/or potential. Amy also conducted daytime walkovers for badger (*Meles meles*) and reptiles. Significant daytime survey effort targeting reptiles (seven days) and badgers (21 days) was thereby applied to barn owl roost and activity detection.

2.3. Dusk and dawn surveys

A targeted barn owl dusk survey was conducted on 5th July 2021 by Chris Gleed-Owen. Dusk surveys of two trees (T3 and T4) with previous barn owl evidence (Molesworth, 2020) were also conducted by B&G, led by Ellen Marshall (CL29-licensed). Nocturnal survey effort applied for other species/groups was an important survey effort for barn owl. This included six nights of GCN survey, 18 dusk and dawn bat roost surveys, and four evenings of bat activity survey.

2.4. Limitations

There were no significant constraints on the surveys. The geographical spread of survey effort covered the entire site over many days and nights. The surveys covered a period of six months and three seasons, with no disturbance to barn owls, roosts, or nest sites.

3. Baseline ecological conditions

Ramboll (Molesworth, 2020) found barn owl pellets showing that two trees northwest of Welland Avenue are current or old barn owl roosts, both lying within the ZoI. These are referred to in CGO reports as T3 and T4, and by Ramboll as target notes TN19 and TN17 respectively.

The LRERC (2021) 2km search returned three records of barn owl from nearby villages of Lubenham and Foxton from 2010-2019. Building inspections and walkovers did not yield any further roost or nest site evidence.

During the 2021 walkovers, dusk and dawn surveys, no additional evidence of barn owl was found, such as pellets or feathers. No nests where identified. However, a barn owl was seen on only one occasion. It emerged from a roost in tree T5, referred to as TN16 in Ramboll's PEA (Molesworth, 2020), inside the ZoI, on the evening of 14th July 2021 during a targeted dusk survey. Location of barn owl roosts are shown in figure 3.

The lack of other observations is despite numerous nocturnal bat and GCN surveys between March-July, which provided significant opportunity to observe foraging and roosting barn owls. It is likely that the barn owl(s) using T3 (TN19), T4 (TN17) and T5 (TN16), do not forage over the development site, and instead forage over fields to the northwest of Welland Avenue.

Barn owls prefer a longer-sward grassland with a well-developed litter layer than supports a larger population of small mammals such as field vole. The fields southeast of Welland Avenue on the proposed new prison site are typically more intensively-grazed, and lack the 'thatch' that the fields northwest of Welland Avenue have. The well-developed scrub edges of the fields northwest of Welland Avenue also testify to the lower-intensity management regime applied there.

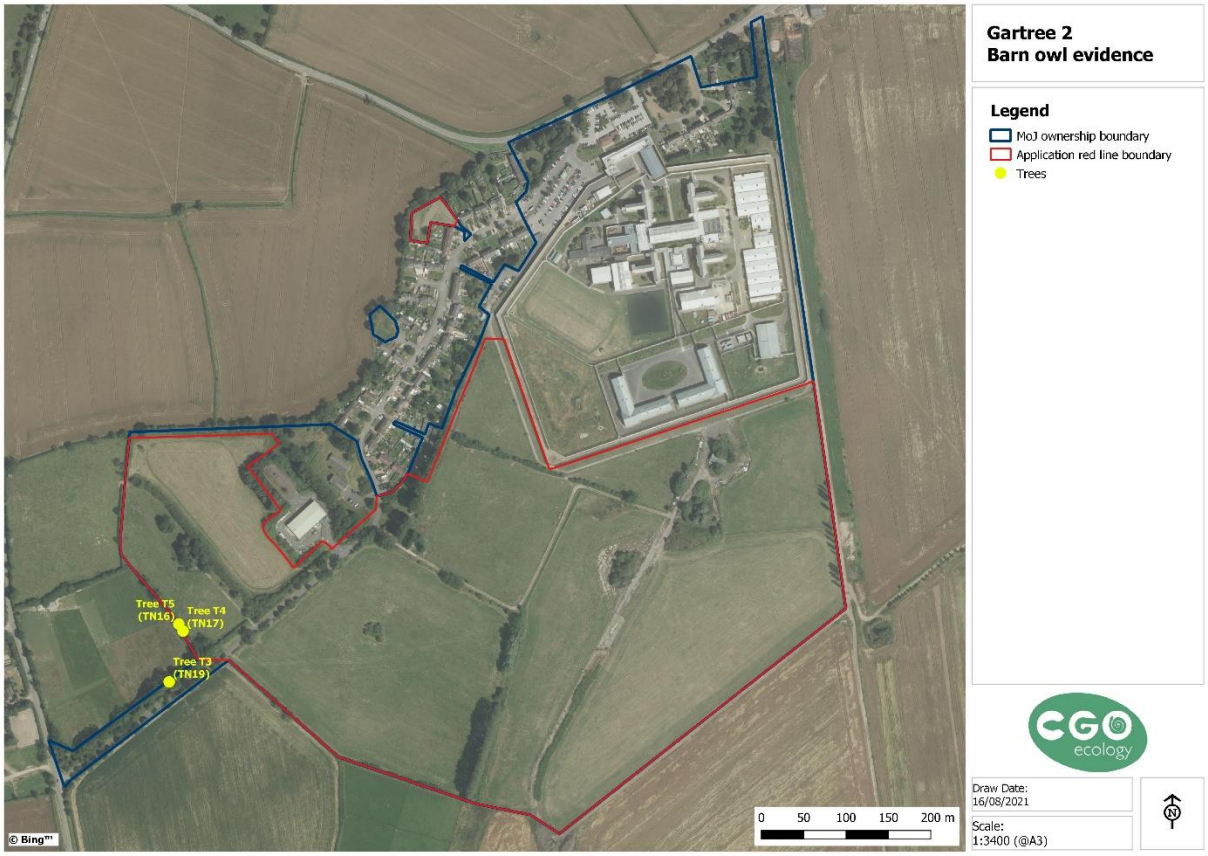

Figure 3 – Barn owl roost evidence.

4. Impact assessment

No barn owl roosts or nest sites were identified within the development area, and therefore nesting/roosting barn owls will not be lost to the development. Barn owl roosts are present within the ZoI to the northwest of Welland Avenue, however, and could be impacted by construction activities and/or operational effects. Construction could cause an increase in noise, lighting, and other effects along Welland Avenue, which might impact barn owl foraging areas.

5. Mitigation

Permanent lighting must be avoided on Welland Avenue, and a sensitive lighting plan be used during construction. Any temporary nocturnal lighting along Welland Avenue must avoid areas near the known barn owl roost, and must not shed light beyond the tree-line on the northwest side of Welland Avenue. No loss of roosts, nest sites or foraging habitat will occur, therefore no habitat mitigation is necessary.

Nest checks of trees with known barn owl roosts and roost potential within the ZoI must be undertaken immediately before development if it occurs during the April-June breeding season. Note that barn owls can breed as early as March, and as late as August, and have been known to nest at any time of year. If any nest is identified, works must avoid that area, or be minimised to a non-disturbing level. This will be at the discretion of an ecologist. Normally, at least a 30m stand-off must be imposed around an active nest.

6. Residual effects, enhancements

As enhancements, two barn owl nestboxes will be installed. The first will be in a tree to the northwest of Welland Avenue, where grassland restoration will increase the area's carrying capacity for small mammals, and therefore for barn owls which prey upon them. A second nestbox will be installed in a tree on the southern perimeter of the development, to encourage the use of land to the southeast of Welland Avenue, and potentially develop a new territory.

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