

BADGER SURVEY

RAVEN

APPENDIX 2 RELEVANT LEGISLATION AND POLICY

Ecological features are protected under various United Kingdom (UK) and European legislative instruments. These are described below. European legislation is not included as it is incorporated in UK legislation by domestic provisions.

The Conservation of Habitats and Species (EU Exit) Regulations, 2019 (as amended)

The Habitats Directive (Council Directive 92/43/EEC)¹³ came into force in 1992 and provides for the creation of a network of protected wildlife areas across the European Union, known as 'Natura 2000'. The Natura 2000 network consists of Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive (Council Directive 79/409/EEC)¹⁴. These sites are part of a range of measures aimed at conserving important or threatened habitats and species.

The Conservation of Habitats and Species (EU Exit) Regulations 2019 (as amended)¹⁵ commonly known as 'the Habitats Regulations' transposes the Habitats Directive into national law and set out the provisions for the protection and management of species and habitats of European importance, including Natura 2000 sites. The 2019 bill consolidated all previous versions of the regulations and subsequent amendments since initial transposition, bringing them all under the single heading, and made a number of minor amendments. It extends to England and Wales, and to a limited extent Scotland and Northern Ireland. In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the Conservation (Natural Habitats & c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transposes the Habitats Directive in relation to Northern Ireland.

In addition to providing for the designation and protection of Natura 2000 sites, the Habitats Regulations provide strict protection for plant and animal species as European Protected Species. Derogations from prohibitions are transposed into the Habitats Regulations by way of a licensing regime that allows an otherwise unlawful act to be carried out lawfully for specified reasons and providing certain conditions are met. Under the Habitats Regulations, competent authorities have a general duty, in the exercise of any of their functions, to have regard to the Habitats Directive and Wild Birds Directive including in the granting of consents or authorisations. They may not authorise a plan or project that may adversely affect the integrity of a European site, with certain exceptions (considerations of overriding public interest).

The Countryside and Rights of Way Act 2000

The Countryside and Rights of Way Act 2000¹⁶ primarily extends to England and Wales. It provides a new statutory right of access to the countryside and modernises the rights of way system, bringing into force stronger protection for both wildlife and countryside.

The Act is divided into five distinct sections, Part III is of relevance to ecology:

Part III - Nature Conservation and Wildlife Protection: The Act details a number of measures to promote and enhance wildlife conservation. These measures include improving protection for Sites of Special Scientific Interest (SSSIs) and increasing penalties for deliberate damage to SSSIs. Furthermore, the Act affords statutory protection to Ramsar Sites which are wetlands designated under the International Convention on Wetlands¹⁷.

¹³ European Commission (1992). Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. European Commission, Brussels.

¹⁴ European Commission (1979). Council Directive 79/409/EEC on the conservation of wild birds, European Commission, Brussels.

¹⁵ Secretary of State (2019). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations. Her Majesty's Stationery Office (HMSO).

¹⁶ Secretary of State (2000). The Countryside and Rights of Way Act. HMSO.

¹⁷ United Nations Educational, Scientific and Cultural Organization (UNESCO) (1971). Convention on Wetlands of International Importance especially as Waterfowl Habitat, as amended in 1982 and 1987. Ramsar, Iran Published in Paris, 1994.

Wildlife and Countryside Act 1981, as Amended in Quinquennial Review and by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006

The Wildlife and Countryside Act 1981¹⁸ forms the basis of much of the statutory wildlife protection in the UK. Part I deals with the protection of plants, birds and other animals and Part II deals with the designation of SSSIs.

This Act covers the following broad areas:

- Wildlife - listing endangered or rare species in need of protection and creating offences for killing, disturbing or injuring such species. Additionally, the disturbance of any nesting bird during breeding season is also noted as an offence, with further protection for species listed on Schedule 1. Measures for preventing the establishment of non-native plant and animal species as listed on Schedule 9 are also provided;
- Nature Conservation - protecting those Sites which are National Nature Reserves (NNR) and SSSI;
- Public Rights of Way - placing a duty on the local authority (normally the County Council) to maintain a definitive map of footpaths and rights of way. It also requires that landowners ensure that footpaths and rights of way are continually accessible; and
- Miscellaneous General Provisions.

The Act is enforced by Local Authorities.

Natural Environment and Rural Communities (NERC) Act 2006

Under the NERC Act 2006¹⁹ Section 40, public authorities must show regard for conserving biodiversity in all their actions. Public authorities should consider how wildlife or land may be affected in all the decisions that they make. The commitment to the biodiversity duty must be measured by public authorities.

NERC Act 2006 Section 41 requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England.

Protection of Badgers Act 1992

The Protection of Badgers Act 1992²⁰ consolidated previous legislation relating specifically to badgers and protects both badgers and their setts. Under the Act, it is an offence to:

- Wilfully kill, injure or take, or attempt to kill, injure or take, a badger;
Possess a dead badger or any part or derivative of a badger;
- Cruelly ill-treat a badger;
- Dig for a badger;
- Damage a badger sett or any part of it;
- Destroy a badger sett;
- Obstruct access to, or any entrance of, a badger sett;
- Cause a dog to enter a badger sett; or
- Disturb a badger when it is occupying a badger sett.

¹⁸ Secretary of State (1981). Wildlife and Countryside Act. HMSO.

¹⁹ Natural Environment and Rural Communities Act (2006). HMSO.

²⁰ Secretary of State (1992). Protection of Badgers Act 1992. HMSO.

Biodiversity Action Plans

In 1994, Government produced the UK Biodiversity Action Plan (BAP)²¹, a national strategy for the conservation of biodiversity. This led to the creation of the UK Biodiversity Steering Group, which has listed 1,150 Species Action Plans (SAPs) and 65 Habitat Action Plans (HAPs). Regional and District/Borough BAPs apply the UK BAP at a local level.

From July 2012, the UK Post-2010 Biodiversity Framework²² succeeds the UK BAP and Conserving Biodiversity - the UK Approach. This is as a result of a change in strategic thinking following the publication of the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011 - 2020 and its 20 'Aichi targets', at Nagoya, Japan in October 2010, and the launch of the new EU Biodiversity Strategy (EUBS) in May 2011.

The UK Post-2010 Biodiversity Framework constitutes the UK's response to these new 'Aichi' strategic goals and associated targets. The Framework recognises that most work which was previously carried out under the UK BAP is now focussed on the individual countries of the United Kingdom and Northern Ireland, and delivered through each countries' own strategies.

Following the publication of the new Framework, the UK BAP partnership no longer operates. However, many of the tools and resources originally developed under the UK BAP remain of use. The UK list of priority species has been used to help draw up statutory lists of priorities in England, Scotland, Wales and Northern Ireland. For England, this is in line with the NERC Act 2006 Section 41.

Biodiversity in the Planning Process

Administrative and policy guidance on the application of some of these statutory obligations is provided through relevant government policy guidance and advice. In England, this includes National Planning Policy Framework 2012, National Planning Practice Guidance, Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System, Biodiversity 2020 and Natural Environment White Paper The natural choice: securing the value of nature.

National Planning Policy Framework, 2019

The National Planning Policy Framework (NPPF)²³ adopted in 2019 sets out the Government's planning policies for England and how these are expected to be applied. The NPPF contains the following statements which are of relevance (not an exhaustive list, but including those of highest relevance):

- Section 15, paragraph 170 states that the planning system should contribute to and enhance the natural and local environment by: *"minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"*;
- Section 15, paragraph 174 states that planning applications should: *"promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity"*;
- Section 15, paragraph 174 states that: *"To protect and enhance biodiversity and geodiversity, plans should: identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and*

²¹ Her Majesty's Stationery Office, 1994. Biodiversity: The UK Action Plan. London.

²² JNCC and Defra (on behalf of the Four Countries' Biodiversity Group), 2012. UK Post-2010 Biodiversity Framework. July 2012. jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

²³ Department for Communities and Local Government, 2019. National Planning Policy Framework (NPPF). London. HMSO.

locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation"; and

- Section 15, paragraph 175 states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles: *"if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused"*. It also states that planning permission should be refused for: *"development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees)... unless there are wholly exceptional reasons and a suitable compensation strategy exists"*.

Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.

This circular²⁴ provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the national planning policy in the National Planning Policy Framework and the Planning Practice Guidance.

Natural Environment White Paper. The natural choice: securing the value of nature

The Natural Environment White Paper²⁵ outlines the government's vision for the natural environment over the next 50 years, shifting the emphasis to an integrated landscape-scale approach. It describes the actions that will be taken to deliver that goal.

Biodiversity 2020

The Biodiversity 2020²⁶ strategy for England builds on the Natural Environment White Paper and provides a comprehensive picture of how England is implementing its international and EU commitments. It sets out the strategic direction for biodiversity policy on land (including rivers and lakes) and at sea.

The mission for this strategy is to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.

It is anticipated that this will be delivered through:

- a more integrated large-scale approach to conservation on land and at sea;
- putting people at the heart of biodiversity policy;
- reducing environmental pressures; and
- improving knowledge.

Local Planning Policy

Leicestershire and Rutland Biodiversity Action Plan

This Action Plan was modelled on the national UK Action Plan but concentrated on habitats and species of local conservation concern. The plan has been updated three times since, most

²⁴ Office of the Deputy Prime Minister (2005). Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. Available at: <https://www.gov.uk/government/publications/biodiversity-and-geological-conservation-circular-06-2005>

²⁵ Defra (2011). Natural Environment White Paper. The natural choice: securing the value of nature. Available at: <https://www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature>

²⁶ Defra, 2011. Biodiversity 2020. Available at: <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services>

recently in in 2016. The plan is now called Space for Wildlife: Leicester, Leicestershire and Rutland Biodiversity Action Plan (LLRBAP) 2016 – 2026.

The Leicester, Leicestershire and Rutland Biodiversity Action Plan includes 16 Species Action Plans and 20 Priority BAP Habitats, listed in the table below:

LLRBAP Habitats	Leicestershire Species Action Plans
Broadleaved woodland	Barn Owl
Calcareous grassland	Bats
Eutrophic standing water	Black Hairstreak butterfly
Field margins	Black Poplar
Heath-grassland	Dingy and Grizzled Skipper butterflies
Hedgerows	Dormouse
Lowland wood-pasture and parkland	Nightingale
Mesotrophic lakes	Otter
Neutral grassland	Purple Small-reed
Reedbed	Redstart
Wet woodland	Sand Martin
Rivers (in preparation)	Violet Helleborine
Fast-flowing streams	Water Vole
Floodplain wetland	White-clawed Crayfish
Mature trees	Wood Vetch
Roadside verges	Swifts, Swallows and House Martins
Rocks and built structures	
Sphagnum ponds	
Springs and flushes	
Urban habitats	

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APPENDIX 3
SITE PHOTOGRAPHS (NOVEMBER 2020)



Photo 1. A typical view of S1, from adjacent to the farm track



Photo 2. An S1 entrance which undermines the farm track

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 3. Another typical S1 entrance, showing large, fresh spoil and bedding



Photo 4. One of a huge number of latrines found around the vicinity of S1

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 5. Badger hair found at the single S2 entrance



Photo 6. A typical view on the vegetated mound in which S3 is set

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 7. A typical view of S4 (entrance indicated with an arrow)



Photo 8. A typical view of S5 (entrances indicated with arrows)

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 9. S5 entrance which was flooded at the time of the survey



Photo 10. A typical view of S6, showing collapsed tunnel (on-site) and spoil heap behind the fence (located off-site and indicated with an arrow)

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 11. A typical view inside the S6 tunnel, taken through the collapsed tunnel



Photo 12. Badger path crossing a field in the western portion of the site

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 13. Multiple badger prints on a well-worn badger path (TN2)



Photo 14. Badger prints on the farm track at TN3

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 15. Badger hair caught on a barbed wire fence above a well-worn badger path



Photo 16. Badger path in the northwest portion of the site

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020



Photo 17. Typical badger foraging signs



Photo 18. Snuffle holes along the verge of Welland Avenue

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: December 2020

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APPENDIX 4
SITE PHOTOGRAPHS (FEBRUARY 2021)



Photo 1. A typical view of S6, showing entrance (right) and collapsed tunnel (left), which has been trampled by livestock



Photo 2. A typical view inside the tunnel of S6 (which extends north, into the site)

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 3. Entrances – from which a rabbit emerged during the survey and where no badger field signs were found – along the southern boundary to the east of S6



Photo 4. A typical view of entrances at S3 – now active

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 5. Badger paw prints at a typical S3 entrance



Photo 6. Fresh badger latrine found at S3

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 7. A typical S7 entrance



Photo 8. A badger latrine (containing snail shells) found at S7

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 9. Badger hair found at a S7 entrance



Photo 10. The single entrance of S8

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 11. A typical view of S9 (western portion), with entrances indicated



Photo 12. A typical view of S9 (eastern portion), with entrance indicated (rabbit entrance to the right)

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 13. A typical S9 entrance, showing fresh earth removal (with debris) and polished path leading up the spoil heap



Photo 14. Entrance at SP 70657 88838 where no badger field signs were found and with the internal tunnel constricting to a size/ shape typical of rabbit – to be monitored closely

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



Photo 15. A typical view of S10



Photo 16. A typical S10 entrance, showing fresh earth removal and badger paw prints in the spoil heap

Title: Badger Survey – Photographic Log	Client: Mace Group
Site: Raven	Date: February 2021



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Badger bait-marking survey for proposed new prison on land adjacent to HMP Gartree, Gallow Field Road, Market Harborough, Leicestershire

CGO Ecology Ltd
Christchurch

16th August 2021

Author:

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Version control:

Version	Date	Summary of changes
1	27/04/2021	n/a
2	07/05/2021	MoJ document control info added. Table 1 sett coords corrected.
3	16/08/2021	Title change, document control corrections, updated drawings.
4	16/08/2021	Correct table title.

Non-technical summary

Introduction

CGO Ecology Ltd was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a badger bait-marking survey to the south of HMP Gartree, Market Harborough, Leicestershire. The Ministry of Justice 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.

Methodology

A PEA and subsequent badger survey by Ramboll identified seven setts and several latrines. Resurvey Dr Chris Gleed-Owen MCIEEM in February 2021 and then Amy Trewick ACIEEM in March 2021 identified two additional setts, enlarged another, and concluded that two of the Ramboll setts were tunnels under fences rather than setts. A new sett numbering system was introduced. On 8th March 2021, a mixture of peanuts, syrup, and coloured inert plastic pellets (bait) was placed in sett tunnel entrances, with a different pellet colour at each. Over 21 days between 9th March and 8th April 2021, all latrines were visited, the pellet colours visible in dung were recorded, and further bait was left at each sett.

Results

The setts are as follows: two main setts (S1 and S2, the latter which is arguable a main sett and three subsidiaries), a subsidiary sett (S3), and four outliers (S4-S7). The results showed uptake of bait at all seven setts, and wide movement of badgers in all directions across the site. S7 is just a tunnel under a fence, so only S1-S6 are technically habitable setts. Four of the six setts will be lost to the development. There was no evidence to suggest the presence of more than one territory. This confirms that a single clan territory is present on site. The territory appears to extend into arable fields beyond the south and east site boundaries, but it is largely contained within the 25ha site.

Mitigation recommendations

To accommodate the proposed development, a programme of licensed sett closure, badger exclusion, replacement sett construction, and habitat creation will be necessary over a period of at least one year. Sett closure can only take place between 1st July and 30th November, and replacement setts must be demonstrably in use beforehand. Only one clan territory is present, which simplifies the mitigation response in some respects. However, to replace four setts (two main, one subsidiary, and one outlier), it will be necessary to construct at least three replacement setts, including two large main setts. To replace lost hedgerow, grassland, scrub, and woodland, it will be necessary to provide sufficient compensatory habitat. The connectivity of the site must continue to cater for the clan and its movements across a large territory. The area of off-site compensatory habitat proposed north of Welland Avenue, which currently contains one outlier sett, may need to become a more significant part of the territory, possibly housing one of the replacement main setts. Mitigation provisions must be agreed with Natural England and LPA as soon as possible, to enable construction of the replacement setts in 2021, and ensure habitation well in advance of the 2022 sett-closure season.

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1. Introduction

CGO Ecology Ltd was instructed by Mace Ltd, on behalf of the Ministry of Justice, to conduct a badger (*Meles meles*) bait-marking survey to the south of HMP Gartree, Market Harborough, Leicestershire. The Ministry of Justice 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.



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.

Badgers and their setts (tunnel complexes) are protected by the Protection of Badgers Act 1992. Works that may harm or disturb them, or damage their setts, must be impact-assessed by an ecologist, and mitigated/compensated as necessary, under Natural England licence where necessary.

A Preliminary Ecological Appraisal (PEA) conducted by Ramboll (Molesworth, 2021a) identified three badger setts on site. A subsequent badger survey on 24th November 2021 (Molesworth, 2021b) revised this to six setts, comprising active main, annexe, and outlier setts, and three disused subsidiary and outlier setts.

A walkover conducted by CGO Ecology on 1st February 2021 identified two additional setts (one subsidiary, one outlier) and extended the annex sett to become a second main sett (three additional areas in the same soil-storage mound). A recording was made of badger cubs 'whickering' in the outlier, on the southern site boundary. It was concluded that two of the Ramboll setts were in fact simple tunnels under boundary fences, and did not constitute setts *per se* (although one of these is used in the bait-marking survey below).

Following feedback from the CGO Ecology walkover, Ramboll conducted another survey in February 2021 (Moleworth, 2021) in which they accepted most of the CGO Ecology additions, but rejected the outlier, arguing that it was a rabbit (*Oryctolagus cuniculus*) warren. A trailcam survey by CGO Ecology between 2nd to 9th March 2021 proved that the outlier is occupied by badgers. Given the presence of breeding badgers in this small sett, its importance is emphasised.

2. Methodology

An initial walkover was conducted by CGO Ecology on 2nd March 2021, with subconsultants Brindle & Green Ltd, to revisit all the setts, and conduct a comprehensive survey of foraging and latrining evidence. Further survey was conducted by Brindle & Green over the next week, to identify all active latrines, and orient survey staff with the survey routes.

On 8th March 2021, a mixture of peanuts, syrup, and coloured inert plastic pellets (bait) was placed in sett tunnel entrances, with a different pellet colour at each. Over 21 consecutive weekdays between 9th March and 8th April 2021, comprehensive walkover route was followed, and all latrines were visited. On each visit, the pellet colours visible in dung were recorded, and further bait was left at each sett.

The CGO Ecology walkovers and trailcam survey were conducted Dr Chris Gleed-Owen BSc (hons) PhD MCIEEM, Director & Principal Ecologist of CGO Ecology Ltd. He has been an ecological consultant since 2008 (13 years). He is trained in First Aid at Work, Fire Marshal, Asbestos Awareness, CDM Awareness, COSHH, Manual Handling, and Health & Safety Management. 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 sett closure (3). Experienced surveyor of Phase 1 habitats, National Vegetation Classification (NVC), flora (FISC level 4 botanist), vertebrates, and invertebrates.

The Brindle & Green walkovers and bait-marking survey were led by Amy Trewick BSc MSc ACIEEM who has a CL9 great crested newt (*Triturus cristatus*) licence, a CL18 bat survey licence, a CL29 barn owl (*Tyto alba*) licence, and extensive survey and mitigation experience. She has been an ecological consultant for five years.

The Phase 1 habitat maps were drawn by GIS technician Jack Parker of CGO Ecology.

There were no limitations to the survey.

3. Results

The sett classification is as follows:

Sett	Grid reference	Type	Entrances	Status	Notes
1	SP 70565 88865	Main	17+	Active	In open pasture. At least 17 active entrances, plus 2 wet/disused. Many prints, paths, foraging/latrining.
2	SP 70635 88820	Main	18+	Active	Could be viewed as a main sett with three annexes. Much bedding, latrining, numerous prints, snuffle-holes, well-worn paths between all areas.
3	SP 70669 88851	Subsidiary	4	Active	In scrub beside sheep pens.
4	SP 70497 88769	Outlier	2	Active	Former rabbit warren with 2 enlarged entrances.
5	SP 70357 88532	Outlier	3	Active	South boundary hedgerow. Cubs heard whickering on 01/02/2021. Trailcam survey proved in use by badgers.
6	SP 70077 88825	Outlier	2	Active	Hedgerow north of Welland Ave. Identified by Amy Trewick, March 2021.
7	SP 70419 88636	Outlier	2	n/a	Single tunnel under a fence, arguably not a sett. Wet on Nov-Feb visits.

Table 1 – Badger setts identified at Gartree 2. Numbering system proposed by CGO Ecology, replaces that used by Ramboll (2020a, 2021).

There are two main setts (S1 and S2, the latter which is arguable a main sett and three subsidiaries), a subsidiary sett (S3), and three outliers (S4-S6). S7 is just a tunnel under a fence, consistently wet; hence, only S1-S6 are technically habitable setts.

The results showed uptake of bait at all seven setts, and wide movement of badgers in all directions across the site. Four of the six setts will be lost to the development (setts 1-4). Two setts will be unaffected (setts 5 and 6). ‘Sett’ 7 will be lost.

There was no evidence to suggest the presence of more than one territory. This confirms that a single clan territory is present on site. The territory appears to extend into arable fields beyond the south and east site boundaries, but it is largely contained within the 25ha site.

The setts, latrines, and observed badger movements are presented in figures 3-23 below.



Figure 3 – Badger bait-marking survey results day 1.



**Raven
Badger bait-marking survey
Visit 2 - 10/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

-
-
-

Badger movement

-
-
-



Draw Date:
21/04/2021

Scale:
1:2600 (@A3)



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Figure 4 – Badger bait-marking survey results day 2.



**Raven
Badger bait-marking survey
Visit 3 - 11/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

-
-
-
-
-

Badger movement

-
-
-
-
-



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21/04/2021

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Figure 5 – Badger bait-marking survey results day 3.

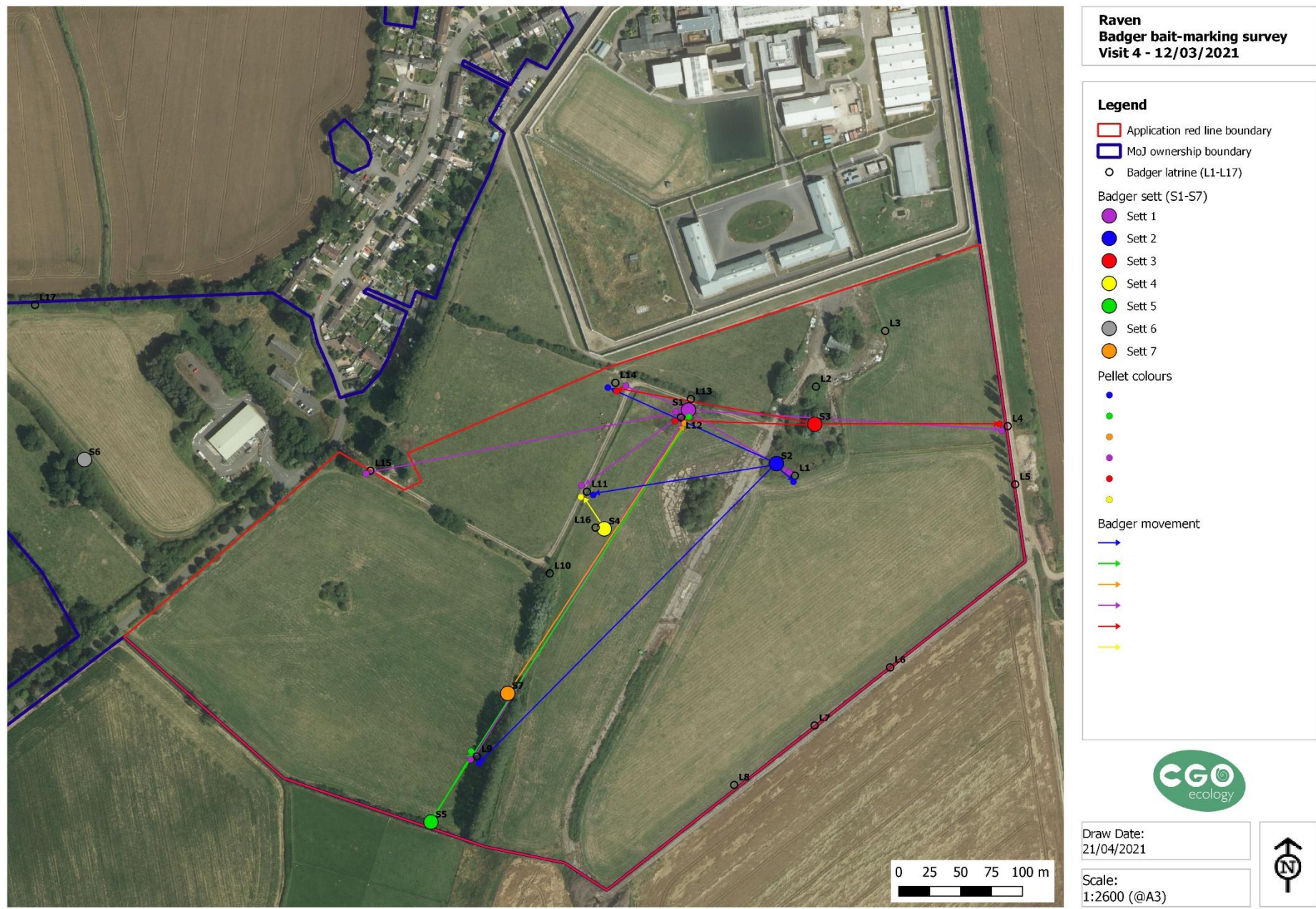


Figure 6 – Badger bait-marking survey results day 4.



**Raven
Badger bait-marking survey
Visit 5 - 15/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

-
-
-
-
-
-

Badger movement

- ➔
- ➔
- ➔
- ➔
- ➔
- ➔



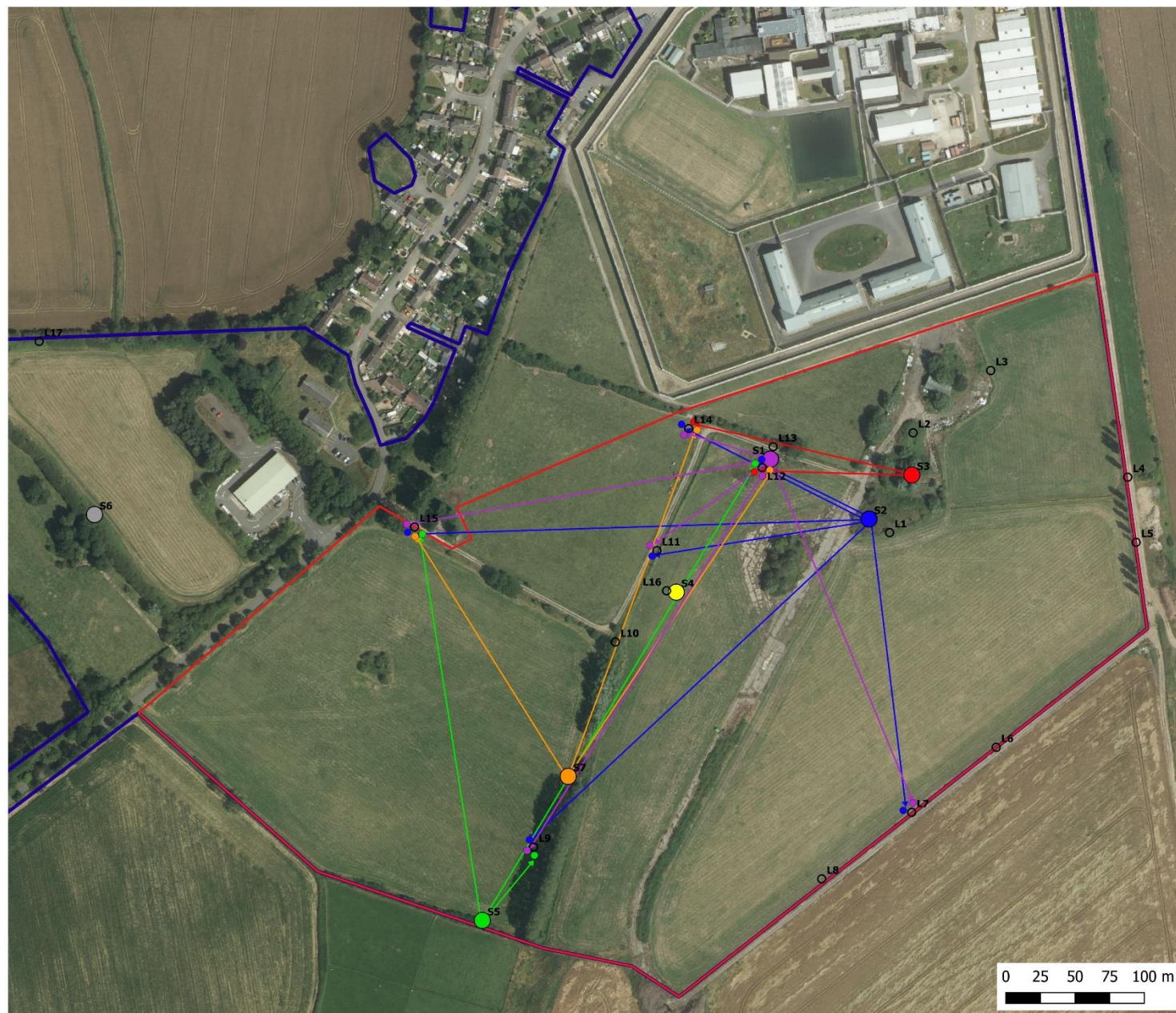
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Figure 7 – Badger bait-marking survey results day 5.



**Raven
Badger bait-marking survey
Visit 6 - 16/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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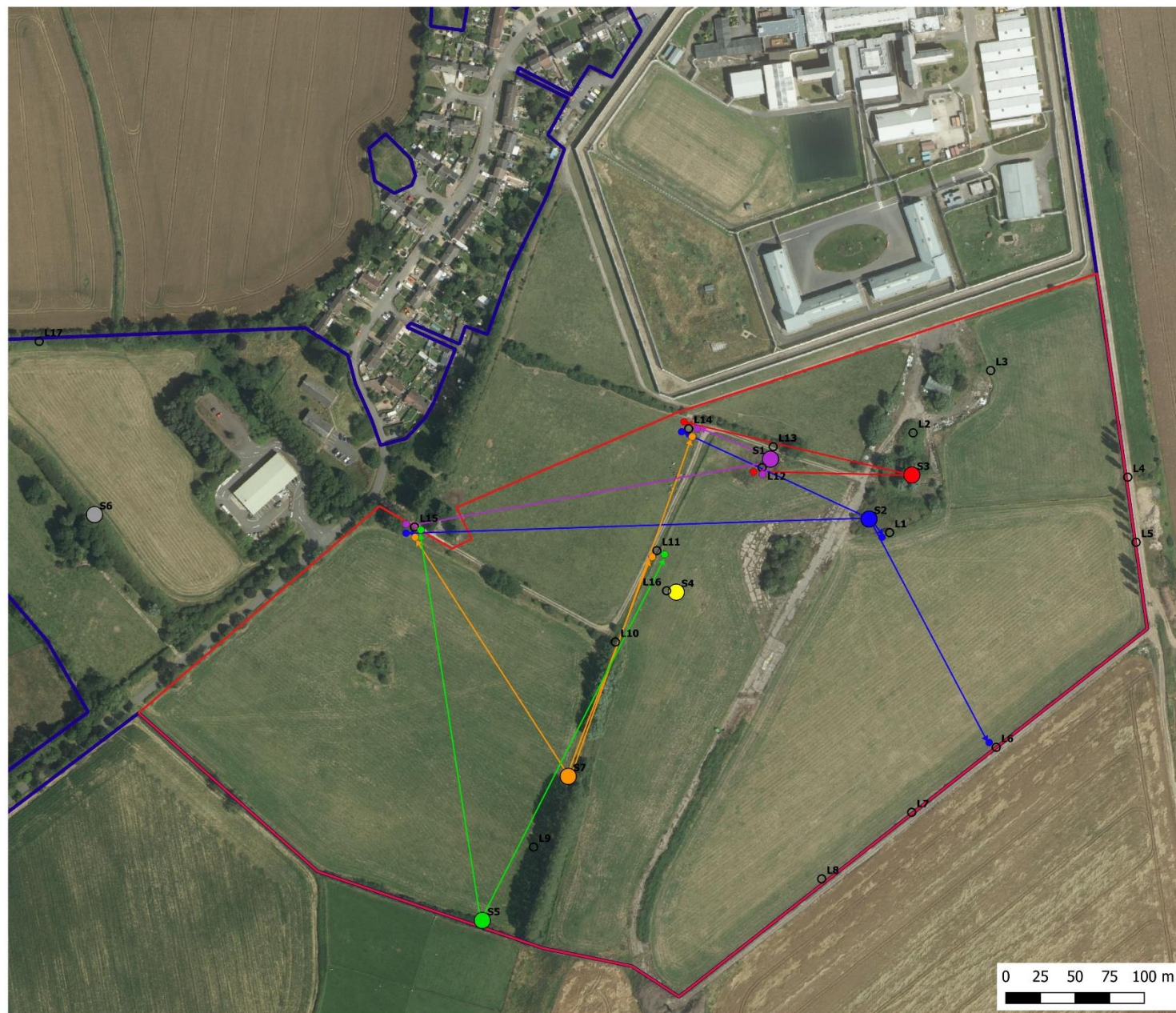
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Figure 8 – Badger bait-marking survey results day 6.



**Raven
Badger bait-marking survey
Visit 7 - 17/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 9 – Badger bait-marking survey results day 7.

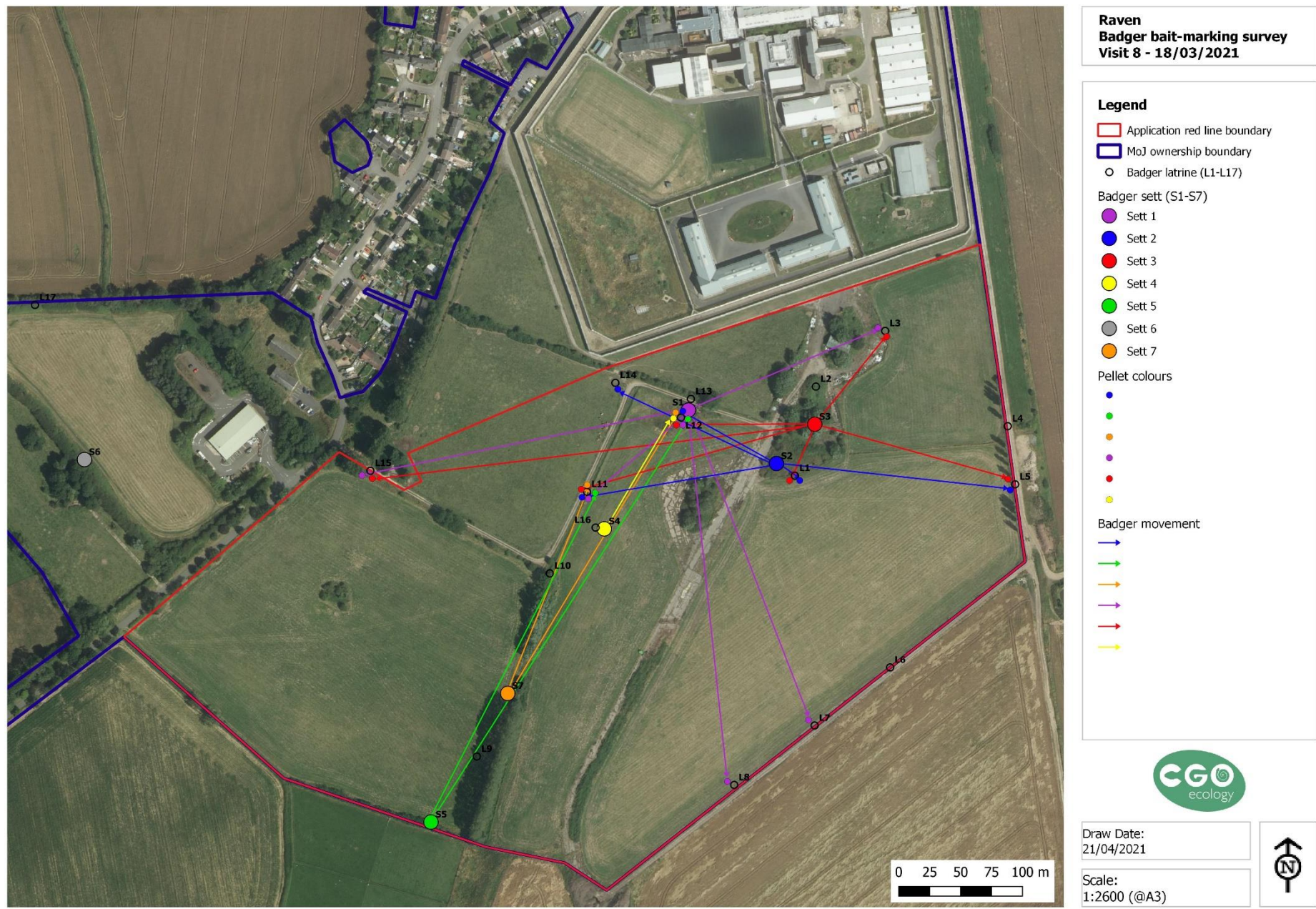


Figure 10 – Badger bait-marking survey results day 8.



**Raven
Badger bait-marking survey
Visit 9 - 19/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 11 - Badger bait-marking survey results day 9.



**Raven
Badger bait-marking survey
Visit 10 - 22/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 12 – Badger bait-marking survey results day 10.



**Raven
Badger bait-marking survey
Visit 11 - 23/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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- ➔
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- ➔
- ➔



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Figure 13 – Badger bait-marking survey results day 11.



**Raven
Badger bait-marking survey
Visit 12 - 24/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 14 – Badger bait-marking survey results day 12.



**Raven
Badger bait-marking survey
Visit 13 - 25/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 15 – Badger bait-marking survey results day 13.



**Raven
Badger bait-marking survey
Visit 14 - 26/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 16 – Badger bait-marking survey results day 14.



**Raven
Badger bait-marking survey
Visit 15 - 29/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 17 – Badger bait-marking survey results day 15.



**Raven
Badger bait-marking survey
Visit 16 - 30/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 18 – Badger bait-marking survey results day 16.



**Raven
Badger bait-marking survey
Visit 17 - 31/03/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 19 – Badger bait-marking survey results day 17.



**Raven
Badger bait-marking survey
Visit 18 - 01/04/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 20 – Badger bait-marking survey results day 18.



**Raven
Badger bait-marking survey
Visit 19 - 06/04/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7



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Figure 21 – Badger bait-marking survey results day 19.



**Raven
Badger bait-marking survey
Visit 20 - 07/04/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 22 – Badger bait-marking survey results day 20.



**Raven
Badger bait-marking survey
Visit 21 - 08/04/2021**

Legend

- Application red line boundary
- MoJ ownership boundary
- Badger latrine (L1-L17)

Badger sett (S1-S7)

- Sett 1
- Sett 2
- Sett 3
- Sett 4
- Sett 5
- Sett 6
- Sett 7

Pellet colours

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Badger movement

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Figure 23 – Badger bait-marking survey results day 21.



Plate 1 – Badger dung in a dung-pit at a monitored latrine, containing blue, green, and purple coloured pellets, indicating badger movement between at least three setts.

4. Mitigation recommendations

To accommodate the proposed development, a programme of licensed sett closure, badger exclusion, replacement sett construction, and habitat creation will be necessary over a period of at least one year. Sett closure can only take place between 1st July and 30th November, and replacement setts must be demonstrably in use beforehand.

Only one clan territory is present, which simplifies the mitigation response in some respects. However, to replace four setts (two main, one subsidiary, and one outlier), it will be necessary to construct at least three replacement setts, including two large main setts. To replace lost hedgerow, grassland, scrub, and woodland, it will be necessary to provide sufficient compensatory habitat.

The connectivity of the site must continue to cater for the clan and its movements across a large territory. All retained and new setts must be well-linked by suitable linear habitats, and augmented by new planting of woodland and scrub, as well as new seeding of grassland, or if deemed more appropriate, allowing some existing grass areas to become rank. Close liaison with the LPA and Natural England will be necessary to agree acceptable mitigation provisions.

The area of off-site compensatory habitat proposed north of Welland Avenue, which currently contains one outlier sett, may need to become a more significant part of the territory, possibly housing one of the replacement main setts. As this area will be undeveloped, and it contains one small sett already, the existing sett could be enlarged by construction of adjacent new tunnels and chambers.

The second main sett should be within the main site (south of HMP Gartree and Welland Avenue). There is limited space for it under the current designs. It could be along the existing south or east boundary, but this would require a wider provision of woodland than the current hedgerows/boundaries allow. The west end of the site, close to Welland Avenue, is an alternative, as this is the only retained green area within the development boundary. The compensatory triangle of off-site land north of the development is the only other option, but this would offer poor connectivity with the rest of the undeveloped land in the area, and involve badgers crossing the new prison access road.

Replacement setts must aim to have at least as many chambers and entrances as the current setts which will be lost. The number of current chambers is difficult to gauge, but given the number of active entrances at the existing main setts (17 and 18 respectively), each new sett should have at least six chambers, and a similar number of entrances as those being lost.

It is recommended that at least one additional outlier sett be provided along the south and/or east boundary hedgerows, to allow continued connectivity and access to the arable fields south and east of the site. This would ensure the continued integrity of the territory as a whole, and reduce the risk of badgers dispersing north or west into another clan territory.

Mitigation provisions must be agreed with Natural England and the LPA as soon as possible, to enable construction of the replacement setts in 2021, and ensure their inhabitation well in advance of the 2022 sett-closure season.

5. References

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

Molesworth, J. (2020b) *Raven. Badger Survey*. Ramboll, Exeter.

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