Grassroots ecology

ECOLOGICAL IMPACT ASSESSMENT

Grass Roots Planning

Badminton Road, Old Sodbury



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This report has been prepared for the client for the purposes of accompanying this planning application. Any dissemination beyond this purpose is not permitted, without the written consent of Grass Roots Ecology Ltd.

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1. INTRODUCTION

Background

1.1 Grass Roots Ecology has been commissioned by Grass Roots Planning to carry out an ecological impact assessment on land off Badminton Road (the 'survey area') in Old Sodbury, pursuant to detailed proposals for 36 residential dwellings (the 'proposals') and associated works.

Objectives

- 1.2 This ecological impact assessment sets out the findings of a desk study, phase 1 habitat survey and a series of reptile surveys and at the survey area and in doing so:
 - a) evaluates the ecological value of the survey area;
 - b) assesses the ecological impact of the proposals; and
 - c) identifies appropriate enhancement measures and any mitigation which may be required.
- 1.3 It is also serves to present all necessary information pertaining to ecological matters to allow South Gloucestershire Council to determine the planning application.

2. METHODOLOGY

- 2.1 This ecological impact assessment has been prepared with due regard to the recent guidance for ecological report writing produced by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹.
- 2.2 It has been undertaken by a 'suitably qualified ecologist' with more than 12 years experience as a practising ecological consultant and nearly 20 years experience within the environmental assessment and development planning sectors. The author also holds both Bachelor of Science and Master of Science degrees in ecology related subjects, is a full member of CIEEM and possesses relevant European Protected Species licences with Natural England.

Desk Study

- 2.3 Ecological records have been sought from Bristol Regional Environmental Records Centre (BRERC) to provide information on protected/notable species and ecologically designated sites within a 2km search radius of the survey area. Data received has informed this ecological impact assessment where required and (subject to any confidentiality restrictions) is available on request.
- 2.4 Further information on protected species and statutory designated sites relating to a wider search area was also obtained where appropriate from inspecting the online National Biodiversity Network (NBN) Atlas² and Multi-Agency Geographic Information for the Countryside (MAGIC)³ databases respectively.
- 2.5 Regard has also been had where required in relation to priority species and habitats listed within the UK Biodiversity Action Plan (BAP)⁴.

Phase 1 Habitat Survey

2.6 An extended Phase 1 habitat survey of the survey area was initially undertaken in July 2018 with subsequent visits performed as part of the reptile survey checks and again in March 2021. These were performed in line with the methodology set out by the Joint Nature Conservation Committee ('JNCC')⁵, as recommended by Natural England, where all habitats types were mapped (as shown on Plan GRE 1) with flora

¹ Chartered Institute of Ecology and Environmental Management (CIEEM) (2015) *Guidelines for Ecological Report Writing*, CIEEM, Technical Guidance Series, accessed at: http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/Guidelines_for_Ecological_Report_Writing/Guidelines_for_Ecological_Report_Writing_nd_Appendices_May2015.pdf

² https://nbn.org.uk

³ http://magic.defra.gov.uk

⁴ At the UK level the UK BAP has been replaced by the UK Post-2010 Biodiversity Framework (2012) (Joint Nature Conservation Committee and DEFRA) with all UK BAP species and habitats now known as habitats and species of principal importance or 'priority habitats / species'. The UK BAP contains 1,150 priority species which have been identified based on criteria relating to international importance, rapid decline and high risk. Its also contains 65 priority habitats.

⁵ Joint Nature Conservation Committee (JNCC) (2010) Handbook for phase 1 habitat survey – a technique for environmental audit.

quantified in line with the 'DAFOR' scale of abundance⁶. This technique allows any habitat areas of greater potential to be identified for more detailed survey.

Faunal Survey

2.7 Particular attention was given during the survey visits for the presence of protected, notable or priority species, with specific consideration given to the following groups/species.

<u>Bats</u>

- 2.8 Given the full legal protection⁷ afforded to all UK bat species under schedule 5 of The Wildlife and Countryside Act 1981 (as amended) and schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations'), any trees likely to be affected by the proposals were assessed for their potential to support roosting bats.
- 2.9 Regard has been had to the bat survey guidelines produced by the Bat Conservation Trust⁸ in order to assess the value of the survey area for bats and establish whether any further survey work (e.g. activity surveys) would be required to inform the proposals. However, on this occasion, given the size and location of the survey area it was not considered that bat activity surveys were required to inform the proposals.

Badgers

- 2.10 Given the legal protection afforded to Badger under the Protection of Badgers Act 1992, particular attention was given to any evidence indicating activity, such as the presence of a sett, well-worn paths/push-throughs, footprints, latrines and foraging signs. Where possible, this search extended to 30m from the survey area boundary.
- 2.11 It should be noted that it is not always possible to identify signs of Badger where there are areas of dense vegetation as this can conceal features such as setts.

<u>Birds</u>

2.12 Any birds were recorded, either visually or by call, as part of the survey visits. Habitats within the survey area were also appraised for their suitability for foraging and nesting birds.

⁶ DAFOR scale: D – dominant, A – abundant, F – frequent, O – occasional, and R – rare.

⁷ where both the species and its habitat (roosting sites) are protected.

⁸ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conversation Trust, London. ISBN-13 978-1-872745-96-1

<u>Reptiles</u>

2.13 Given that the boundaries of the survey area supported some areas of rank vegetation with other areas of nearby habitat (e.g. allotments to the north and railway line to the south) approximately 50 artificial refugia were deployed. Following a sufficient 'bedding in' period the refugia were checked on seven occasions during suitable weather conditions between August and September 2018.

Other protected or notable species

- 2.14 Habitat considered to offer suitable opportunities for other species afforded legal protection under The Wildlife and Countryside Act 1981 (as amended) and/or Habitats Regulations (for example, Great Crested Newt *Triturus cristatus*) was also identified where appropriate as part of the survey visits.
- 2.15 Regard was also had to any habitat providing opportunities for any other notable/priority species.

Ecological Evaluation and Impact Assessment

2.16 The value of the habitats within the survey area and any nearby designated sites have been assessed as part of this ecological impact assessment with due regard to the latest guidelines for ecological evaluation published by CIEEM⁹. These guidelines also set principles for identifying and determining the magnitude of impacts.

⁹ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester

3. ECOLOGICAL BASELINE AND EVALUATION

Context and surrounding habitats

- 3.1 The survey area is located on the edge of Old Sodbury.
- 3.2 The London-Bristol railway line abuts the southern boundary of the survey area and the River Frome is located in close proximity to the west of the survey area along with Sodbury House Hotel and associated gardens. A small area of allotments abut part of the northern boundary including Badminton Road (A432), with residential properties and associated gardens situated to the immediate east.
- 3.3 Beyond these adjacent features the land is characterised by open countryside, dominated by arable land and pasture.
- 3.4 Planning permission for further residential development (16 dwellings) was sought in October 2020 on land to the immediate east of the survey area (P20/21142/F) although it is understood that this planning application has recently been withdrawn.

Ecologically designated sites

- 3.5 There are no statutory designated wildlife sites within the vicinity of the survey area. These nearest is Wapley Bushes Local Nature Reserve (species-rich grassland and woodland habitats) located approximately 4km to the west of the survey area. Given the distance from the survey area, this statutory designated site is considered to be outside of the zone of influence.
- 3.6 In terms of non-statutory designated sites, the River Frome Site of Nature Conservation Importance (SNCI) is located approximately 155m to the southwest of the survey area at its nearest point. The River Frome SNCI is recognised for its notable flora and fauna, in particular the protected Bullhead *Cottus gobio*. Other SNCIs in the wider area include Sodbury Common (neutral grassland and marshy grassland), Kingrove Common (neutral grassland and scrub) and Little Sodbury Hill Fort (calcareous grassland). Consideration is given in the following section to the potential for impacts on the River Frome, however, all other SNCIs are judged to be outside of the zone of influence on the basis that there is no direct connectivity and their separation from the survey area, all of which present significant barriers to both wildlife dispersal and any interference impacts which may arise from the proposals.

Habitats within the survey area

3.7 Plan GRE 1 (Habitats Plan) shows the habitats within the survey area as mapped following the survey visits.

Semi-improved Grassland

- 3.8 The majority of the survey area represents semi-improved grassland. It is understood that it is cut for haylage.
- 3.9 False Oat-grass Arrhenatherum elatius tends to dominate the sward with Cock's-foot Dactylis glomerata, Yorkshire-fog Holcus lanatus, Common Couch Elymus repens, Meadowgrass Poa sp. and Perennial Ryegrass Lolium perenne also present. Creeping Thistle Cirsium arvense also dominates in places, particularly along the boundaries with Broad-leaved Dock Rumex obtusifolius and Great Willowherb Epilobium hirsutum also present here. Other species within the sward comprise White Clover Trifolium repens, Bristly Oxtongue Helminthotheca echioides, Teasel Dipsacus fullonum, Common Nettle Urtica dioica and Ragwort Jacobaea vulgaris.
- 3.10 Being apparently species-poor, the semi-improved grassland is judged to be of low value in ecological terms.

<u>Scrub</u>

- 3.11 Occasional scrub comprising Bramble *Rubus fruticosus* agg., Blackthorn *Prunus spinosa* and Elm *Ulmus procera* has developed alongside the hedgerows in places and in the far west of the survey area.
- 3.12 Being limited in extent, this habitat is judged to be of negligible/low value.

<u>Hedgerows</u>

3.13 Hedgerows form part of the northern and western boundaries of the survey area with a section also traversing part of the southern section. Blackthorn dominates with Elm, Bramble, Hawthorn *Crataegus monogyna*, Field Maple *Acer campestre*, Dog-rose *Rosa canina* and Elder *Sambucus nigra* also present, along with occasional standard trees comprising a semi-mature Ash *Fraxinus excelsior* and mature Oak *Quercus robur*. None of the hedgerows are judged to be classed as being 'ecologically important' under the Hedgerow Regulations 1997.

3.14 The hedgerows are subject to infrequent management and offer good structure in places. As such, they are judged to be of some ecological value within the context of the survey area, principally for the opportunities they offer faunal species such as bats and birds rather than for any particular species diversity.

Fauna utilising the survey area

<u>Bats</u>

- 3.15 BRERC returned records for Common Pipistrelle *Pipistrellus pipistrellus*, Brown Longeared bat *Plecotus auritus* and Serotine bat *Eptesicus serotinus* within the requested search area along with confirmed roosts for Common Pipistrelle and Brown Longeared bat.
- 3.16 None of the trees presented obvious features for roosting bats, however, screening from adjacent vegetation and the presence of Ivy *Hedera helix* may conceal such features on some of the trees. In any event, all boundary features would be retained as part of the proposals.
- 3.17 Wider habitats within the survey area all provide obvious foraging and navigating opportunities for local bat populations.

<u>Badger</u>

3.18 No evidence was observed during the survey visits to suggest that this notable species is using the survey area on a frequent basis.

Great Crested Newts

3.19 It is widely appreciated that without barriers to dispersal Great Crested Newts can traverse distances of up to 500m from their respective breeding ponds and suitable terrestrial habitat within this distance *could* be utilised, but suitable habitat at much closer distance will be more commonly used. Historically, when Great Crested Newt mitigation schemes were in their infancy, this distance from a development site was taken as the maximum distance at which Great Crested Newts could be relevant to a development scheme. However, more recent guidance has demonstrated that this zone of influence is in reality typically much smaller. For example, a research report¹⁰ undertaken by English Nature (now Natural England) in 2004 concluded that "... *the most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is*

¹⁰ English Nature (2004) Research Report Number 576: An assessment of the efficiency of capture techniques and the value of different habitats for great crested newt Triturus cristatus, English Nature Research Reports

appropriate within 50m of a breeding pond. It will also always be necessary to actively capture newts 50-100m away. However, at distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality. At distances greater than 200-250m, capture operations will hardly ever be appropriate."

- Moreover, studies by Jehle¹¹ and Cresswell & Whitworth¹² have also demonstrated 3.20 that the habitat within 50m of the pond is the most important to Great Crested Newts and supports the majority of the population within its terrestrial phase. Newts generally only disperse beyond this area where there are suitable habitat features linking the breeding pond to the terrestrial habitat.
- 3.21 Great Crested Newts are known in the local area and BRERC returned a record located approximately 145m to the southwest of the survey area. This record is understood to correlate with a Natural England development mitigation licence (2016-21822-EPS-MIT) corresponding to recent land profiling and embankment stabilisation works performed by Network Rail along the adjacent railway line. The permitted works also utilised the survey area as a storage and compound area. From inspecting OS mapping populations are considered to be reliant on a pond located approximately 125m to the south of the survey area, beyond the railway line. In terms of the survey area itself, whilst it presents suitable terrestrial habitat, populations south of the railway are considered highly unlikely to migrate north particularly given the scale of clearance and re-profiling works performed along the length of railway. Whilst railway habitat can provide suitable habitat for amphibians, the habitat adjacent to the survey area is now largely devoid of vegetation and thereby represents cleared/recolonising ground having previously been scrubby woodland habitat and this would further inhibit amphibian dispersal.
- Whilst not marked on OS mapping, a pond is shown on the planning application 3.22 mapping along the western boundary of the survey area. This has been checked during the various survey visits and has been confirmed as a section of damp ditch within the hedgerow with no standing water habitat present. As such, it is not considered to present breeding opportunities for amphibians.
- Indeed, no amphibians were found during the reptile terrestrial survey checks. 3.23 Accordingly, taking into consideration the above, it is judged that the likelihood of encountering populations of this protected species within the survey area is low and no further survey work is deemed to be required.

¹² Jehle R (2000) The terrestrial summer habitat of radio- tracked great crested newts (Triturus cristatus) and marbled newts (T. marmoratus). Herpetological Journal 10:

¹³⁷⁻¹⁴² ³² Cresswell W and Whitworth R (2004) An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus. English Nature Research Report 576. English Nature, Peterborough.

<u>Birds</u>

- 3.24 Blackbird *Turdus merula*, Wood Pigeon *Columba palumbus*, Wren *Troglodytes troglodytes*, Robin *Erithacus rubecula* and Goldfinch *Carduelis carduelis* were seen/heard during the various survey visits.
- 3.25 The hedgerows, scrub and trees all offer apparent nesting and foraging opportunities for local bird populations.

<u>Reptiles</u>

3.26 No reptiles were found during the specific survey checks undertaken between August and September 2018, the results of which are shown below. As such, this faunal group is not considered to be utilising the survey area.

Deployment of refugia:	02-Aug-2018	52x along survey area boundaries
Check surveys:	17-Aug-2018	No reptiles
	28-Aug-2018	No reptiles
	03-Sep-2018	No reptiles
	07-Sep-2018	No reptiles
	11-Sep-2018	No reptiles
	19-Sep-2018	No reptiles
	27-Sep-2018	No reptiles

4. IMPACTS, RECOMMENDATIONS AND MITIGATION

Habitat loss, retention and creation

- 4.1 Overall, the survey area is considered to be of low value in ecological terms. The proposals will retain the majority of the hedgerows and all trees with remaining habitats (scrub and poor semi-improved grassland) to be largely lost to facilitate built form and vehicular access. However, this is not judged to be significant in ecological terms.
- 4.2 An area of informal open space in the southwestern corner of survey area has been incorporated into the proposals to accommodate a drainage attenuation basin and areas for new habitat creation which will continue around the majority of the boundaries of the survey area.

Recommendations for further detailed design

- 4.3 To ensure maximum gains for biodiversity the following enhancements are recommended for consideration at further detailed design:
 - <u>new species-rich grassland</u>: it is recommended that informal open space areas around the drainage attenuation feature and the boundaries of the survey area are seeded with an appropriate species-rich seed mix (e.g. Emorsgate Seeds' EM4 which is suitable for clay soils is recommended);
 - <u>new drainage feature</u>: to be designed with wildlife in mind through creation of new habitats and further seeding using an appropriate species-rich seed mix. The drainage feature has also been designed to be a permanently wet feature in part;
 - <u>hedgerows</u>: along the north and western boundaries will be subject to bolster planting following targeted scrub clearance utilising native species. This should include a range of species to provide berry and fruits and those that can provide a diverse structure and form. In terms of hedgerow loss, this will be replaced at 1:1 with the final detail to be provided as part of the detailed landscape strategy plans to be secured by way of planning condition on any consent; and
 - wider landscape planting: to prescribe native species of local provenance and of known value for wildlife. This should include a range of species to provide berry and fruits and those that provide a diverse structure and form. Again, details would be provided as part of the forthcoming detailed landscape strategy plans.

- 4.4 Other measures to improve opportunities for herpetofauna, bat roosting and bird nesting are also recommended below.
- 4.5 Such enhancements and management of retained and newly created habitats to maximise gains for biodiversity would be detailed within an overall Landscape and Ecological Management Plan (LEMP) (or equivalent) which can be secured by means of a suitably worded planning condition.

Considerations during construction works

- 4.6 To safeguard the nearby River Frome SNCI and prevent any adverse impacts which could arise during construction activities it is recommended that necessary precautions are adopted in order to suppress dust, protect retained habitats (i.e. trees and hedgerows) and control run-off:
 - Best practice control measures to limit dust generation;
 - appropriate protective fencing as required under BS42020: 2013 (Biodiversity: Code of Practice for Planning and Development) and BS 5837: 2012 (Trees in Relation to Design, Demolition and Construction – Recommendations); and
 - Best practice measures to control runoff and prevent pollution incidents.
- 4.7 These measures would be incorporated into a Construction Environmental Management Plan (CEMP) which can be secured through planning condition.
- 4.8 Further precautions are recommended below in relation to the potential presence of herpetofauna and nesting birds.
- 4.9 In relation to the species-rich grassland, some degree of ground preparation will be required prior to seeding in line with the suppliers' recommendations. This will need to target the removal of undesirable species which may out complete the establishing grassland.

Habitat management

4.10 Newly established grassland areas should be managed to ensure its long-term botanical value. This could involve an appropriate 'hay meadow' management, the latter involving cutting no more than twice a year with the first cut no earlier than mid/late July (with arising removed after one week following the summer cut to allow seeds to disperse). Mown paths could be maintained within informal areas.

- 4.11 The retained hedgerows should be brought under favourable management to benefit hedgerow biodiversity through promoting good structural and species diversity.
- 4.12 Such management prescriptions would be set out under the LEMP.

Bats

- 4.13 To provide further roosting opportunities it is recommended that four bats boxes (e.g. Schwegler's 1FF) are erected on suitable retained trees. The bat boxes should be sited as high up as possible on suitable mature trees and positioned in a sheltered location away from strong winds and only exposed to the sun for part of the day.
- 4.14 The applicant is willing to provide further bat roosting features (e.g. inset bat bricks/roosting boxes) on 50% of residential dwellings.
- 4.15 It is also recommended that a sensitive lighting scheme be designed in accordance with Bat Conservation Trust's Guidance Note o8/18 (Bats and artificial lighting in the UK).

Herpetofauna

- 4.16 Whilst the presence of this group is considered unlikely (following the surveys already performed) as a precaution it is recommended that reasonable avoidance measures are employed during the construction phase. Such measures would include:
 - toolbox talk by a suitably qualified ecologist, providing information on identifying what herpetofauna are known in the local area;
 - phased habitat clearance in a sensitive manner should any rank vegetation be identified prior to works commencing. Such works should be performed when this group is active (i.e. February – October) and during favourable weather conditions (i.e. temperature >5 degrees Celsius);
 - hand searching of any encountered refugia;
 - precautions around storage of materials;
 - in the unlikely event that a Great Crested Newt is found then all works would cease and Natural England consulted.
- 4.17 These measures would be overseen by a suitably qualified ecologist and incorporated as a specific method statement to be adopted under the CEMP and can therefore be secured by planning condition.

4.18 Management of the grassland habitat under the aforementioned recommended management regime would retain suitable habitat should this faunal group colonise in the future.

Birds

- 4.19 Given the legal protection afforded to birds whilst nesting under schedule 1 of The Wildlife and Countryside Act 1981 (as amended), it is recommended that removal of dense vegetation is carried out outside of the nesting bird season (March to August inclusive). However, if removal is required within the nesting bird season then a check survey for nesting birds should be undertaken by a suitably qualified ecologist immediately prior to works taking place with a safe method of clearance agreed if required. If any nesting birds are identified then a suitable cordon may be required (depending on the species encountered) and works would cease until young have fledged.
- 4.20 It is recommended that five bird boxes (e.g. Schwegler's 1B) are erected on suitable retained trees along with 50% of dwellings to incorporate further bird nesting features.

5. SUMMARY

- 5.1 A phase 1 habitat survey has been undertaken by Grass Roots Ecology on land off Badminton Road in Old Sodbury, pursuant to detailed proposals for residential development.
- 5.2 Habitat features within the survey area are considered to be of low ecological value overall, being dominated by poor semi-improved grassland. The majority of the hedgerows and trees would be retained. A number of measures have been recommended for further detailed design in order to maximise gains for biodiversity including a range of species-specific enhancements.
- 5.3 Following adoption of the recommendations and precautionary mitigation set out in this ecological impact assessment, there are considered to be no overriding ecological constraints that would preclude implementation of the proposals.



