

**Lunan House Site, Guthrie Road, Friockheim**  
**Proposed Development Site**  
**Preliminary Ecological Assessment Survey Report**

**Wednesday 18<sup>th</sup> January 2023**



**Author Emma O'Shea BSc, PG Dip Env Mgmt.**

**Ecological Consultant, Tay Ecology Ltd**

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU

Tel: 07747 883464 Email: [info@tayecology.co.uk](mailto:info@tayecology.co.uk); Web: [www.tayecology.co.uk](http://www.tayecology.co.uk)

## CONTENTS

<b>Executive Summary</b>	<b>4</b>
<b>1.0 Introduction</b>	<b>5-7</b>
1.1 Brief from Client	5
1.2 Site location	5-6
1.3 Site description	5-6
1.4 Proposed works	5-7
<b>2.0 Survey and Site Assessment</b>	<b>7-9</b>
2.1 Objectives	7
2.2 Methods	7-9
2.2.1 Existing data sources	7-8
2.2.2 Survey methodology	8-9
2.2.3 Survey area	9
2.2.4 Timings of surveys	9
2.2.5 Limitations	9
2.2.6 Personnel	9
<b>3.0 Legislation and Policy Guidance</b>	<b>10-11</b>
3.1 Wildlife and Countryside Act, 1981, as amended (WCA)	10
3.3.1 The Conservation Amendment (Scotland) Regulations 2004/2007	10
3.2 Nature Conservation (Scotland) Act 2004	10
3.3 Wildlife Legislation	10-11
3.3.1 Bat	10
3.3.2 Otter	11
3.3.3 Beaver	11
3.3.4 Red squirrel	11
3.3.5 Pine marten	11
3.3.6 Badger	11
3.3.7 Reptiles	11
3.3.8 Breeding Birds	11
<b>4.0 Results</b>	<b>12-17</b>
4.1 Existing data search	12
4.1.1 Nature designations	12
4.1.2 Protected species	12
4.1.3 Scottish and Tayside Biodiversity List Species	12
4.2 Habitat description	12-15
4.2.1 Site photos	12-13
4.2.2 Habitat Map	14
4.2.3 Description of Habitats of potential value to wildlife	15
4.2.4 Trees and introduced shrub	15
4.2.5 Amenity grassland	15
4.3 Protected species	15-17
4.3.1 Bat surveys	15
4.3.2 Otter surveys	16
4.3.3 Beaver surveys	16
4.3.4 Red squirrel surveys	16
4.3.5 Pine marten surveys	16
4.3.6 Badger surveys	16
4.3.7 Reptiles surveys	16
4.3.8 Other protected and other species surveys	17
4.3.9 Schedule 1 and bird activity surveys	17
4.3.10 Protected flora	17
4.4 Summary	17
<b>5.0 Assessment</b>	<b>18-21</b>
5.1 Constraints on survey information	18

5.2 Habitat	18
5.2.1 Designated sites	18
5.2.2 Habitats and flora	18
5.3 Protected species	19-20
5.3.1 Bats	19
5.3.2 Otters	19
5.3.3 Beavers	19
5.3.4 Red squirrels	19
5.3.5 Pine martens	19
5.3.6 Badgers	19
5.3.7 Reptiles	20
5.3.8 Other protected and other species	20
5.3.9 Birds	20
5.4 Conclusion	20-21
<b>6.0 Recommendations and Mitigation</b>	<b>21-23</b>
6.1 Trees, shrubs and hedges	21
6.2 Grassland	21-22
6.3 Breeding birds	22
6.4 Bats	22
6.5 Red squirrels	22
6.6 Amphibians and reptiles	22
6.7 Bat boxes	22-23
6.8 Bird boxes	23
<b>7.0 References</b>	<b>23-24</b>

## Disclaimer

While every reasonable effort is made to ensure that the information provided in this report is accurate, Tay Ecology Limited makes no warranty as to the accuracy or completeness of material supplied. Tay Ecology Limited shall have no liability for any loss, damage, injury, claim, expense, cost, or other consequence arising as a result of use, or reliance upon any information contained in or omitted from this document.

Copyright © 2023

The material presented in this report is confidential. This report has been prepared for the exclusive use of the landowner. The report shall not be distributed or made available to any other company or person without the knowledge and written consent of the landowner, a representative of the landowner or Tay Ecology Ltd.

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU  
Tel: 07747 883464; Email: [info@tayecology.co.uk](mailto:info@tayecology.co.uk); Web: [www.tayecology.co.uk](http://www.tayecology.co.uk)

## EXECUTIVE SUMMARY

Tay Ecology was commissioned to undertake a preliminary ecological appraisal for the site at Lunan House, Guthrie Street. Field surveys were carried out in January 2023 to assess the habitat and potential for protected species such as badger, bats, otters, pine martens, red squirrels, and reptiles. The likelihood of specially protected, sensitive, or very, rare, species of birds and of any other protected or local biodiversity action plan species of flora and fauna was assessed. The survey area included the proposed development site and up to 250m in the surrounding area. The existing data search shows that a range of protected species have been recorded in the local area. There are no designated statutory nature conservation sites within 5km.

There will be a loss of some of the existing habitat including the loss twenty-two of the thirty-two trees, the majority of which are Category C trees. The trees are favourable for a range of species including invertebrates, common and migratory birds, and small mammals. To reduce the impact, it is recommended that replacement planting is incorporated as part of landscaping. Planting hedgerows at suitable boundary locations would enhance the site for biodiversity. There is opportunity to improve the diversity of the tree species in the area by new planting with a selection of native trees such as field maple, sweet chestnut, dogwood, hazel, hawthorn, beech, holly, Scot's pine, sessile oak, rowan, broad-leaved lime, and domestic fruit trees. A pond created as part of the SUDs basin would create a wetland habitat suitable for a wide range of species. Incorporation of bat and bird nesting boxes for a range of species and enhancing grassland species diversity at the site such as planting a native wildflower seed mix to create wildflower rich verges or banks would be beneficial for local wildlife. Best practice working methods and pollution prevention and control measures will be adhered to during construction to safeguard the retained adjacent habitats.

There is a negligible to low potential that bat tree roosts may be present in the trees and incorporating bat boxes is recommended to create new roost locations. There will be a negligible impact to otters, beavers, pine martens and badgers. Red squirrels have been recorded locally though it is not anticipated that there will be a negative impact to red squirrels a pre-works survey is recommended to check the trees before felling. The habitat has potential to support reptiles, though it is not anticipated that there will be a negative impact to reptiles as there will be adjacent areas with favourable retained vegetation. It is likely that hedgehogs are found in the area, and it is recommended that the site is checked for hedgehogs before any ground vegetation clearance takes place. Provision of hedgehog highways allowing movement between properties is recommended.

Common breeding birds were recorded at the site and the habitat provides good cover, food, and nesting sites for a variety of birds. It is recommended that where any ground vegetation clearance or tree felling is required that this is undertaken out-with the breeding bird season. However, if such work should be undertaken during the breeding season, then the site should be checked for active nests before work commences. There is a low risk that the proposed site is home to Schedule 1 birds, there were no signs of any Schedule 1 bird or other vulnerable bird species using the area. There were three species of amber listed conservation concern recorded, and old nests of migratory birds such as house martin and the planting of native species and the provision of a range nest boxes is recommended. No signs of any other protected species of flora or fauna was recorded during the survey.

# 1.0 INTRODUCTION

## 1.1 Brief from Client

Tay Ecology was commissioned to undertake a preliminary ecological appraisal of the proposed development site at Lunan House, Guthrie Street, Friockheim.

## 1.2 Site location

Lunan House is located at the junctions of Guthrie Street and Guthrie Crescent to the north of the B965 in Friockheim. Friockheim is located to the east of the A933 midway between Brechin to the north and Arbroath to the south. The site grid reference is NO 59667 50056 at an altitude of 40m above sea level. Figure 1 Site Location.

## 1.3 Site Description

Lunan House is an elongated purpose-built L-shaped structure of brick and concrete which is harled with a slate roof on timber sarking. To the west and north of the building are approximately 30 mature mixed broadleaved and coniferous trees of a range of species. The Lunan Water is located within 200m to the north. Figure 2 Aerial View and Figure 3 Existing Site Plan

## 1.4 Proposed works

It is proposed to demolish the existing building and construct residential dwellings at the site. This will include the loss of a number of the trees in the grounds. Figure 4 Proposed Works

Figure 1 Site Location

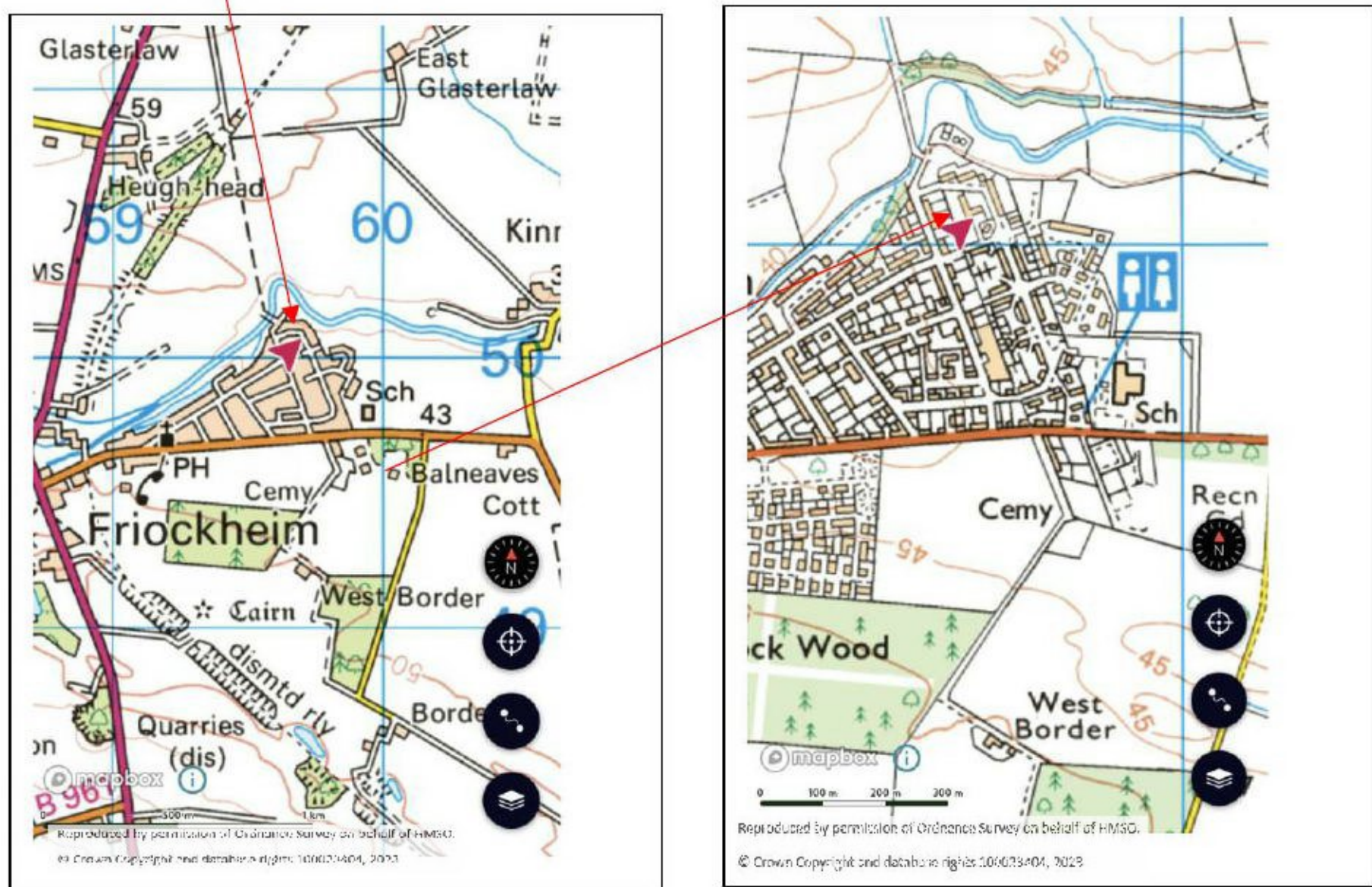


Figure 2 Aerial View

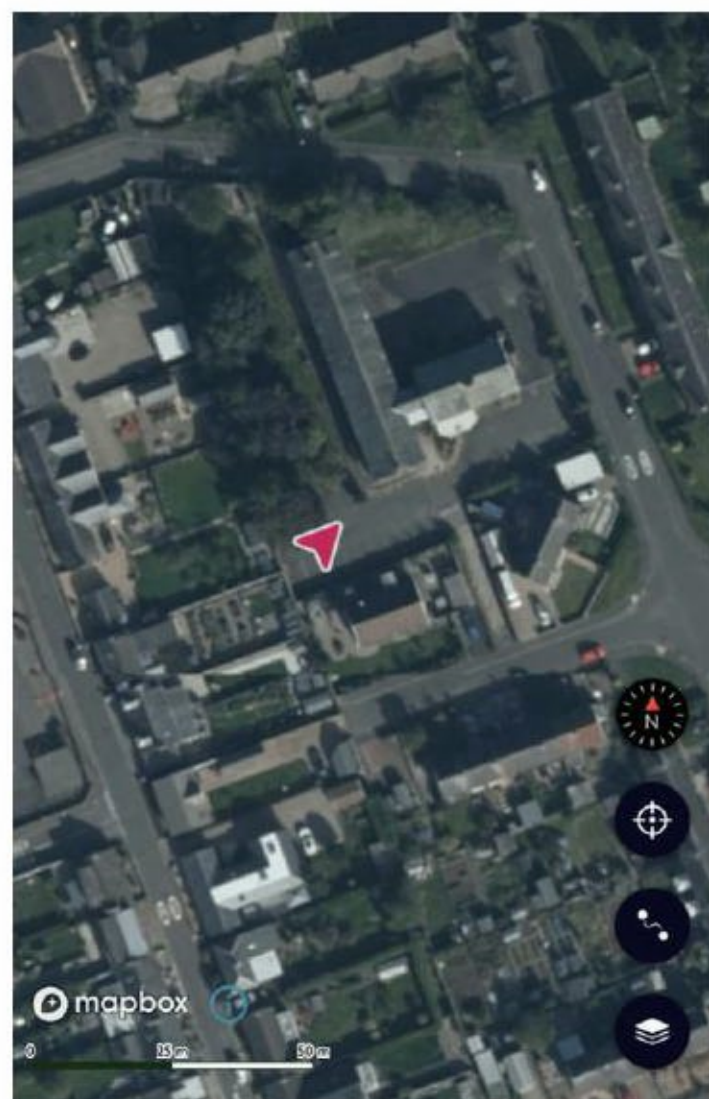
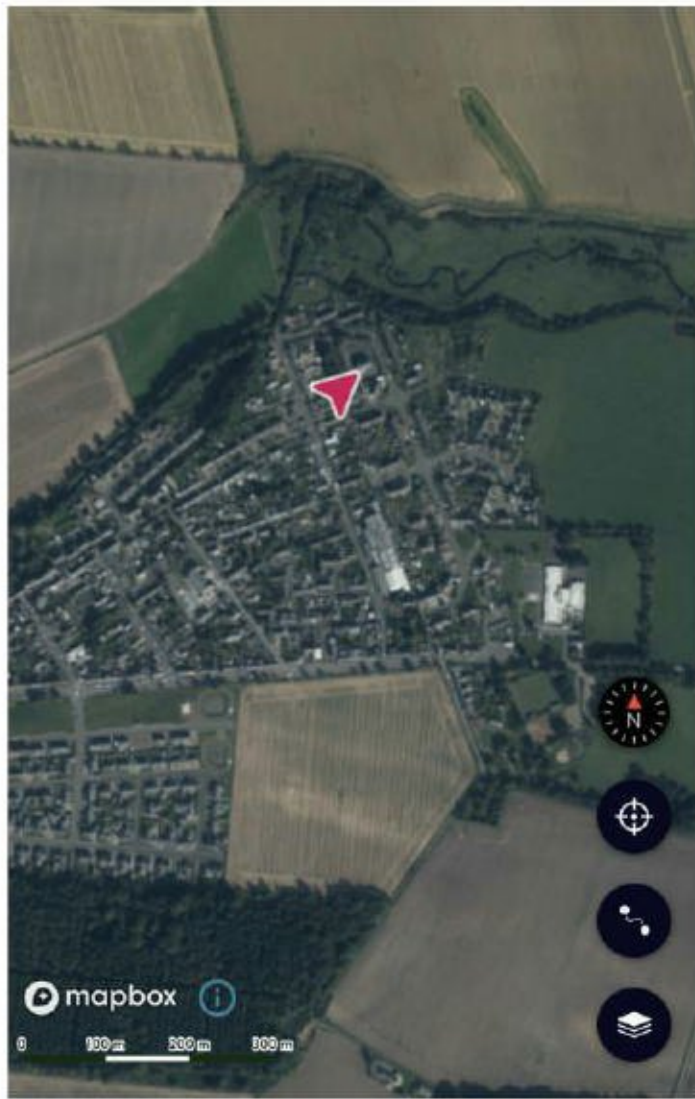


Figure 3 Existing Site Plan

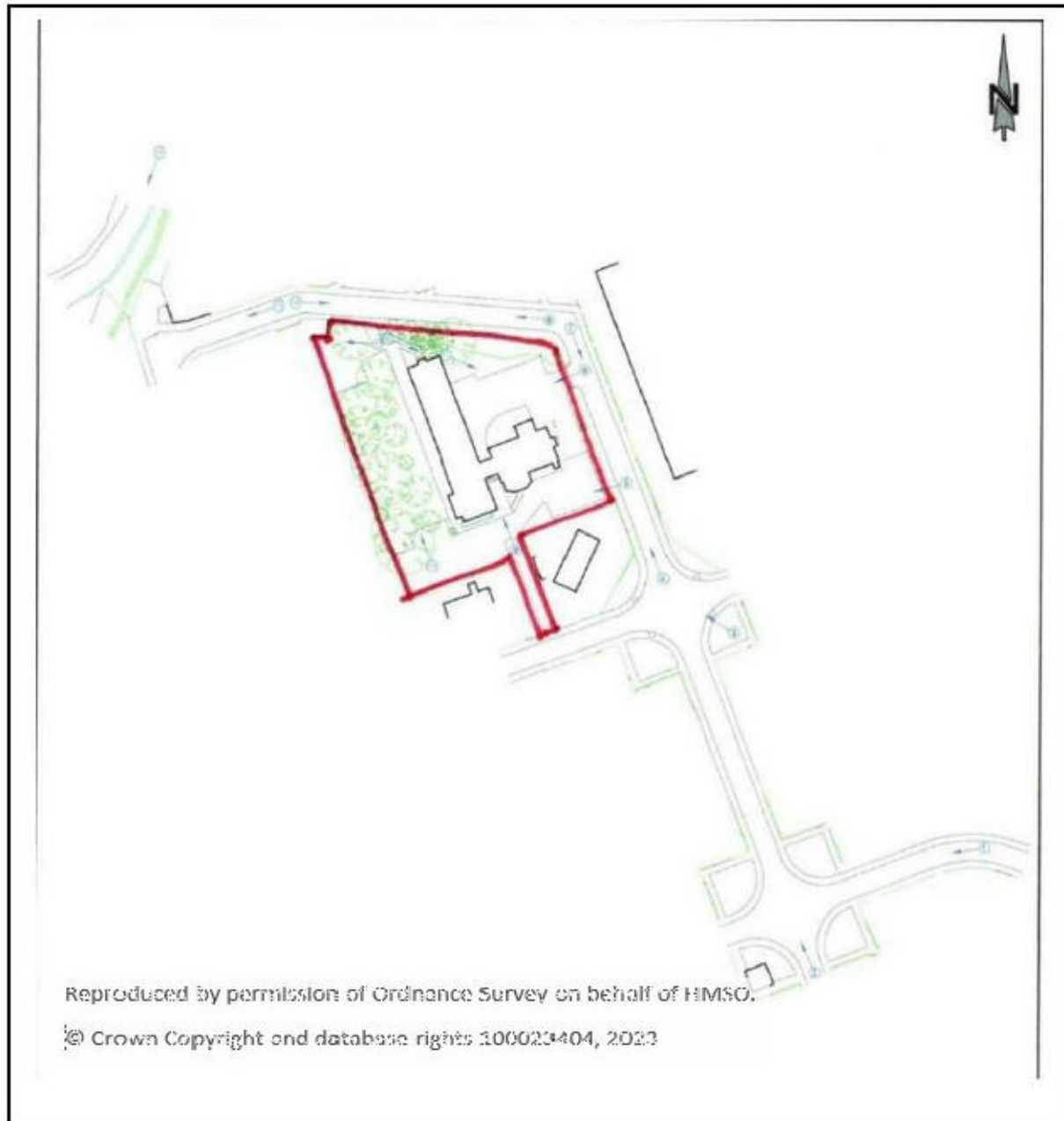
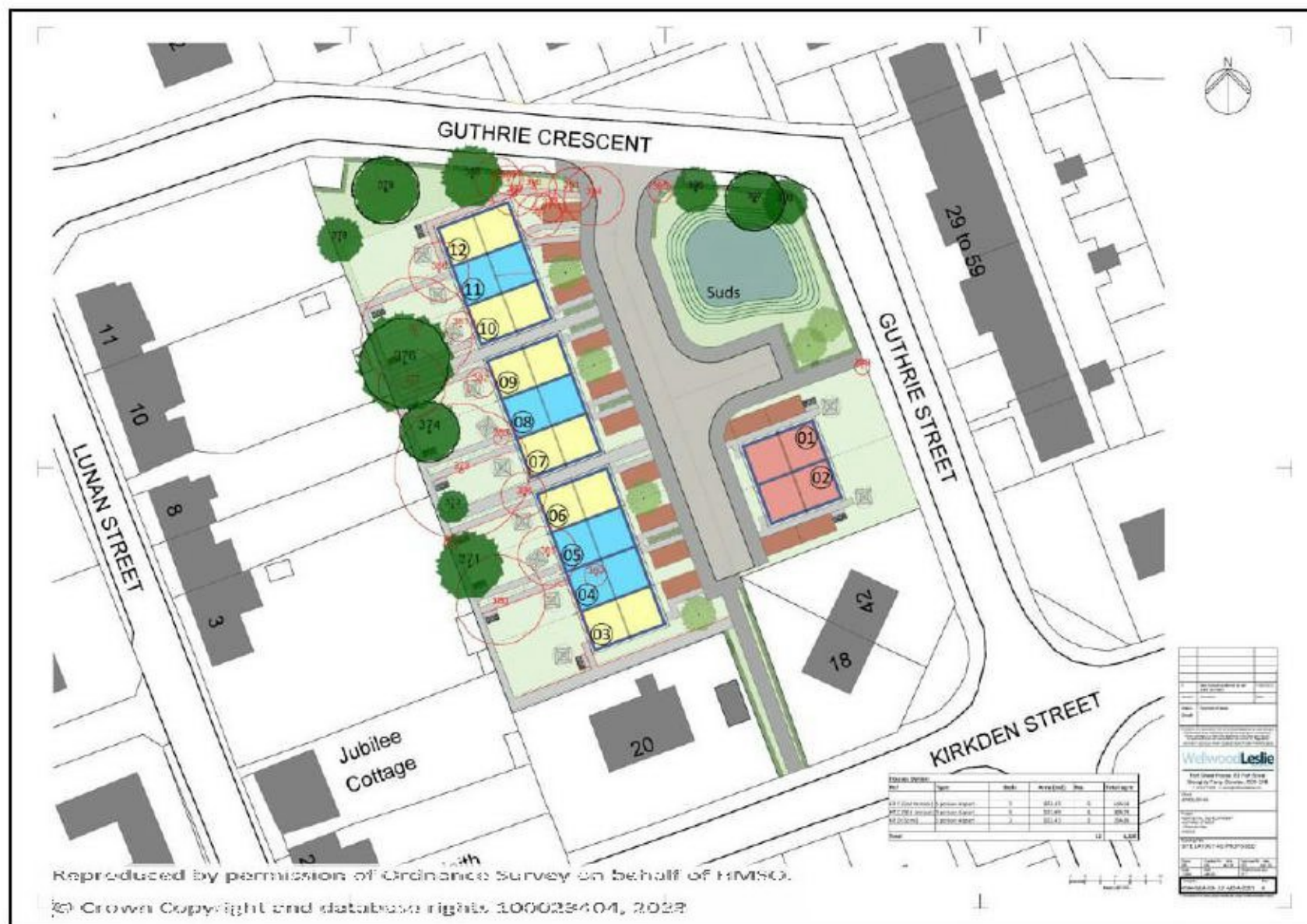


Figure 4 Proposed Site Plan



## 2. SURVEY AND SITE ASSESSMENT

### 2.1 Objectives

The site was surveyed by a visual ground survey and a habitat and protected species surveys undertaken. Field surveys were carried out to assess the existing trees; habitat; potential of tree bat roosts; presence/absence of badgers and their setts; red squirrels and their dreys; pine martens and their dens; assess for the presence of otters, and reptiles. The presence/ absence of specially protected, sensitive, or very, rare, species of birds was assessed. The presence/ absence of any other protected or local biodiversity action plan species of flora and fauna was surveyed. The survey area included the proposed site and up to 250m in the surroundings.

### 2.2 Methods

#### 2.2.1 Existing Data Sources

Web-based sources of information were examined, principally the National Biodiversity Network (NBN) Gateway (<http://data.nbn.org.uk/>) where a radius of 5km from the centre of the proposed development was searched to provide suitable coverage of the area.

Nature designation classifications were obtained from NatureScot Site Link (<https://sitelink.nature.scot/home>). The UK Biodiversity Action Plan (<https://jncc.gov.uk/our-work/uk-bap-priority-species/>); Scottish Biodiversity List (<https://www.nature.scot/scottish-biodiversity-list>); and Tayside Local Biodiversity Action Plan (<https://www.taysidebiodiversity.co.uk/contact/>) were examined.

Other websites searched include Bat Conservation Trust (<http://www.bats.org.uk/>); Scottish Squirrel Survey (<http://www.scottishsquirrelsurvey.co.uk/>); and The British Trust for Ornithology (<http://www.bto.org/>).

Positive records for species present in the survey area can be used to inform the assessment of biodiversity on the site but the lack of records clearly cannot be taken to imply that the species in question is absent.

### **2.2.2 Survey methodology**

A site visit was carried out after receiving project information from Wellwood Leslie Architects. A walk over survey was carried out and an overall habitat assessment was made.

**2.2.2.1** The main habitats present were surveyed according to the methodology of the Joint Nature Conservation Committee's 'Phase 1 Habitat Survey' (JNCC, 2010). Classification was given to each area according to JNCC (2010). Ground vegetation was then surveyed for the presence of any other rare or protected species by a walk-over survey.

**2.2.2.2** Bat roost potential was assessed for trees within the site using methodology to identify the possible presence of bats, and potential for bat roosts from Collins, J (2016) 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' Bat Conservation Trust (3rd edition), Cowan, H (2004) 'Looking out for bats. They could be anywhere!' and NatureScot (2023a) 'Standing Advice for Planning Consultations: Protected Species Bats'.

**2.2.2.3** Evidence of badgers was surveyed for using information from Scottish Badgers (2022), 'Badger surveying' and 'Standing Advice for Planning Consultations: Protected species badgers' (NatureScot, 2023b). The survey was based on the interpretation of field signs (footprints, foraging holes, latrines, and setts or potential setts) and assessment of suitable habitat rather than direct observation of the animals themselves.

**2.2.2.4** The potential presence of red squirrels and red squirrel dreys was surveyed using the Forestry Commission Scotland (FCS, 2006a) 'FCS Guidance Note 33: Forest operations and red squirrels', NatureScot (2023c) 'Standing Advice for Planning Consultations: Protected species red squirrels', and UK BAP Mammals: 'Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation' (The Mammal Society, 2012, pp. 13-16). The survey was based on the interpretation of any field signs (feeding signs and dreys) and assessment of suitable habitat.

**2.2.2.5** Evidence of pine marten presence was surveyed for using UK BAP Mammals: 'Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation' (The Mammal Society 2012, pp.71-76) and 'Standing Planning Advice for Planning Consultations: Protected Species Pine Marten' (NatureScot, 2023d). The survey was based on the interpretation of field signs (scats, footprints, and dens or potential dens) and assessment of suitable habitat rather than direct observation of the animals themselves.

**2.2.2.6** An otter survey was carried out following the standard otter survey methodology as set out in the 'New Rivers and Wildlife Handbook' (Holmes, Ward and Jose, 2001) and NatureScot (2023e) 'Standing Advice for Planning Consultations: Protected species otters'. The survey was based on the interpretation of any field signs (spraints, footprints, tracks,



slides, couches and holts or potential holts) and assessment of suitable habitat rather than direct observation of the animals themselves.

**2.2.2.7** A reptile survey was carried out following guidelines adapted from Froglife (2013) and NatureScot (2023f) ‘Standing Advice for Planning Consultations: reptiles’. The survey focused on searching for basking animals on banks, piles of wood and edges of woodland. An assessment of suitable habitat was made.

**2.2.2.8** The site was surveyed for the presence of any other rare or protected species, guidelines from FCS (2007) FCS Guidance Note 34: Forest operations and European protected species in Scottish forests.

**2.2.2.9** The presence of potential Schedule 1 birds was adapted from BTO (2023), ‘Methodology and survey design for bird surveys’ and NatureScot (2023g) ‘Protected species: birds.’

### **2.2.3 Survey area**

The survey area includes the proposed development site and up to 250m in the surrounding area excluding private property.

### **2.2.4 Timings, types, and weather conditions of field surveys**

The site was surveyed by a walk-over and protected species survey carried out in January 2023 by Tay Ecology. The main habitats present were surveyed according to the methodology of the Joint Nature Conservation Committee’s Phase 1 Habitat Survey (JNCC 1993). Signs of the presence of protected species were sought and habitats were assessed for their potential to host protected species.

12/01/2023 7 degrees Celsius; wind speed 5mph; cloud cover 60-100%; showers

14/01/2023 4 degrees Celsius; wind speed 5mph; cloud cover 50%; no precipitation

### **2.2.5 Limitations**

Survey data is accurate when the survey took place. The curtilage of private property was not entered. Surveys took place out with the breeding bird season, main season for flowering plants and bat activity seasons.

### **2.2.6 Personnel**

Emma O’Shea, Ecological Consultant, Tay Ecology Ltd. Emma has worked in the environmental sector for eighteen years, during which time she has gained a wealth of experience and expertise. During the last eight years she has worked as an ecological consultant for Tay Ecology with lead responsibility for development projects requiring habitat, protected species, bird, tree surveys and species licensing. Emma is a Nature Scot licensed bat and otter surveyor, has thirteen years of experience surveying breeding birds, is a professional tree inspector with a background in tree regeneration monitoring and habitat surveys. She has a Postgraduate Diploma in Environmental Management from the Open University and is a member of the Arboricultural Association and Institute of Environmental Assessment and Management.

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU  
Tel: 07747 883464; Email: info@tayecology.co.uk; Web: www.tayecology.co.uk

### **3.0 LEGISLATION AND POLICY GUIDANCE**

#### **3.1 Wildlife and Countryside Act, 1981, as amended (WCA)**

The WCA sets out the protection offered to various species of plants, birds and animals in England and Wales. Bird species listed in Schedule 1, animal species listed in Schedule 5 and plant species listed in Schedule 8 of the WCA are protected. Under section 14(2) of the WCA it is an offence to “plant or otherwise cause to grow in the wild” any plant listed in Schedule 9, Part II of the Act. Japanese knotweed *Fallopia japonica* is a Schedule 9, Part III species. The WCA has since been strengthened and updated by subsequent UK and Scottish legislation (see below).

##### **3.1.1 The Conservation (Natural Habitats &c.) Regulations 1994, as amended (Habitat Regulations)**

The provisions of the Habitats Directive were transposed into UK law by the Habitat Regulations. Schedule 2 of the Habitat Regulations lists the European protected species of animals whilst Schedule 4 lists the European protected species of plants. Under the Habitat Regulations, it is illegal to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4 without a licence granted by the appropriate authority. Licences can only be granted for certain purposes and if a set of conditions have been met.

#### **3.2 Nature Conservation (Scotland) Act 2004**

Deals with conserving biodiversity by introducing a duty on all public bodies to further the conservation of biodiversity and requires under Section 2(4) publication of a list of habitats and species for conservation action. Amends the 1981 Wildlife & Countryside Act in respect of protecting Sites of Special Scientific Interest, and similarly strengthens protection of certain birds, animals, and plants. Updates the 1992 Protection of Badgers Act.

The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004 Amends 1994 Habitats Regulations to bring provision for protection of European ‘Natura 2000’ sites into line with the protection regime set out in the Nature Conservation (Scotland) Act 2004 and affords protection to European candidate sites. It gives further protection to European protected species, introducing a new offence of ‘reckless disturbance’ in respect of European sites and species.

The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 Significantly strengthened the regulations relating to European Protected Species of animals and enacting the requirement to assess developments plans (structure and local plans) with regard to effects on Natura 2000 (EC Directive) sites.

### **3.3 Wildlife Legislation**

#### **3.3.1 Bats**

Bats are a European Protected Species and given the highest level of protection. Bats and their roosts are legally protected, whether bats are occupying the roost or not. It is illegal to disturb a bat(s) in their roosts; damage or destroy a bat roosting place, even if there are no bats present at the time; and obstruct access to a bat roost. It is illegal to capture, injure or kill a bat or possess, advertise, sell, or exchange a bat dead or alive.

### **3.3.2 Otter**

Otters are a European Protected Species and are legally protected in Scotland by the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) - "the Habitats Regulations". It is illegal to deliberately or recklessly kill, injure or take (capture) an otter; deliberately or recklessly disturb or harass an otter; damage, destroy or obstruct access to a breeding site or resting place of an otter (ie. an otter shelter). Otter shelters are legally protected whether, or not an otter is present.

### **3.3.3 Beaver**

The beaver is a European protected species, fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). This protection also extends to lodges and burrows used for breeding and can apply to dams.

### **3.3.4 Red Squirrel**

The red squirrel is protected under schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Under this legislation it is illegal to intentionally kill, injure or take or damage, destroy, or obstruct access to any structure or place used for shelter or protection, or to disturb any animal while it is in a drey.

### **3.3.5 Pine Marten**

Pine martens are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). It is an offence to intentionally, or recklessly: kill, injure, or take a wild pine marten; damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection (den); and to disturb such an animal when it is occupying a place for that purpose.

### **3.3.6 Badger**

Badgers are protected under the Protection of Badgers Act 1992. Offences under the Act include taking, injuring, or killing badgers; cruelty to badgers; interference with badger setts; selling and possession of live badgers and marking and ringing. Exceptions and licences can apply.

### **3.3.7 Reptiles**

Great crested newts, natterjack toads and all marine turtles are European protected species. They have full protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). All other amphibian and reptile species found naturally in Scotland are given limited protection under the Wildlife and Countryside Act 1981 (as amended). These are the common frog, common toad, palmate newt, smooth newt, adder, common lizard, and slow worm.

### **3.3.8 Breeding birds**

The main legislation Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004 make it an offence to intentionally or recklessly kill, injure or take any wild bird, or take, damage, destroy, obstruct, or interfere with any wild birds' nest, whilst being built or in use, or their eggs or young.

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU  
Tel: 07747 883464; Email: [info@tayecology.co.uk](mailto:info@tayecology.co.uk); Web: [www.tayecology.co.uk](http://www.tayecology.co.uk)

## 4.0 RESULTS

### 4.1 Existing data search

#### 4.1.1 Nature Designations

NatureScot Sitelink indicated that there are no nature designated sites within 5km.

#### 4.1.2 Protected Species

National Biodiversity Network confirmed presence within 5km of Otter *Lutra lutra* (11); Badger *Meles meles* (2); Soprano pipistrelle *Pipistrellus pygmaeus* (1); Brown Long-Eared Bat *Plecotus auritus* (5); Red squirrel *Sciurus vulgaris* (413). Within 2km otter (9) and red squirrel (108) have been recorded. Within 1km otter (3) and red squirrel (61) have been recorded with the most recent otter records from 1991 and red squirrel records from 2021. Within 0.5km red squirrel (4) and within 0.1km red squirrel (1) have been recorded with records from 2015 and 2012 respectively.

National Biodiversity Network confirmed presence within 5km radius of Kingfisher *Alcedo atthis*; Crossbill *Loxia curvirostra*; and Barn Owl *Tyto alba*. Within 2km kingfisher (3) and barn owl (8) have been recorded.

#### 4.1.3 Scottish and Tayside Biodiversity List Species

Additional species which have been recorded within 1km which are listed on the Scottish and Tayside Biodiversity Species list include:

Hedgehog *Erinaceus europaeus* 1km (1); 0.5km (1); Skylark *Alauda arvensis* 1km (3); Swift *Apus apus* 1km (3); 0.5km (3); Linnet *Linaria cannabina* 1km (2); Bullfinch *Pyrrhula pyrrhula* 1km (1); Lapwing *Vanellus vanellus* 1km (1).

## 4.2 Habitat

The proposed development site is located at the site of the former Lunan House which is accessed from Guthrie Street. The site predominantly comprises the existing buildings, the access road and car parking. To the rear of the property to the south-west are a selection of predominantly mature planted broadleaved and non-native coniferous species, these include a collection of fruit trees, mainly apple. To the north-west of the building are a cluster of planted non-native conifer trees with a border of broadleaved trees along the edge of the car park.

### 4.2.1 Site Photos

a. North boundary of site



b. Main building north and east aspects



c. South side of building



d. Trees and amenity grassland to west



e. Mature broadleaves with some conifers



f. Row of fruit trees – apple dominates



g. Mature cherry to north-west



h. Mature conifers north of building



#### Phase 1 Habitat Classification –

A.1.1.2 Planted broad-leaved woodland; A1.2.2 Planted coniferous woodland

J1.2 Amenity grassland; J1.4 Introduced shrub

J2.5 Wall

J3.6 Buildings and J5 Access road/Car park

#### 4.2.2 Habitat Map

# Habitat Map

## Site at Guthrie Street

SCALE: 1:500 @ A4 DATE: 18/01/2023

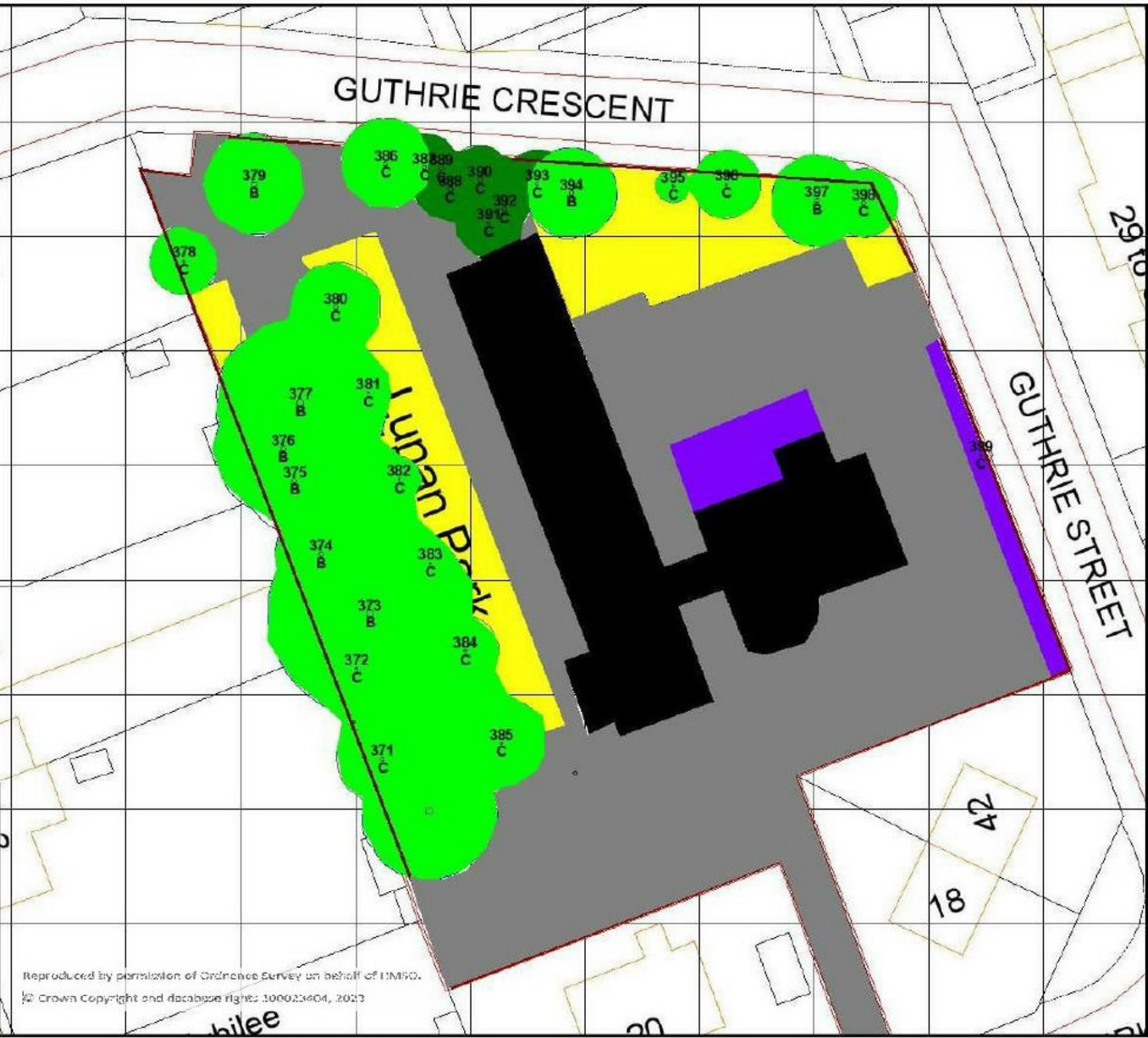
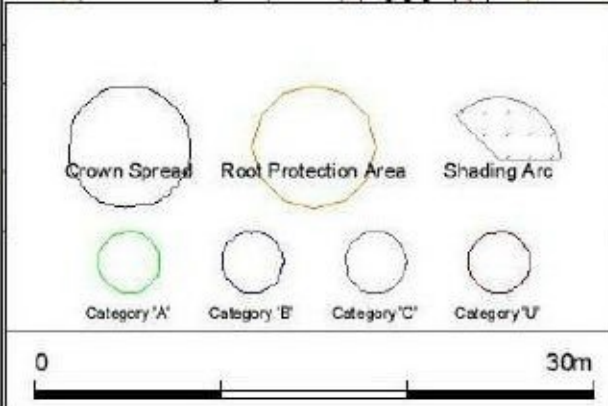
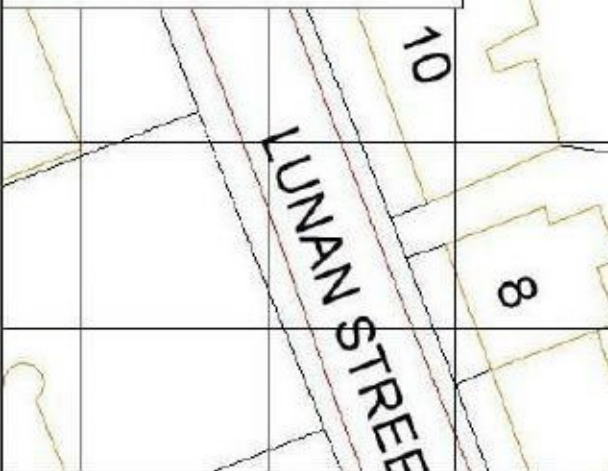


MAP FILENAME: Guthrie Street Habitat Map

Prepared by Tay Ecology Ltd  
Email: info@tayecology.co.uk  
Web: www.tayecology.co.uk

### Habitat Key

- J1.2 Amenity grassland
- A1.1.2 Broadleaved planted woodland
- A1.2.2 Coniferous planted woodland
- J1.4 Introduced shrub
- J3.6 Buildings
- J5 Access road / Car park
- J2.5 Wall



Reproduced by permission of Ordnance Survey on behalf of HMSO.  
© Crown Copyright and database rights: 100023404, 2023

### 4.2.3 Description of habitats of potential value to wildlife

There are approximately thirty mature mixed broadleaved and non-native coniferous trees of a range of species. These trees provide a favourable habitat for nesting birds and potential foraging habitat for bats and red squirrels. The Lunan Water is located within 200m to the north beyond which agricultural farmland dominates.

### 4.2.4 Trees and introduced shrub

To the rear of the building to the south-west are a selection of predominantly mature planted broadleaved trees including sycamore, beech and wild cherry, a row of fruit trees, mainly apple, and non-native coniferous spruce trees. To the north-west of the building are a cluster of planted non-native conifer trees of Lawson cypress and Western hemlock with a border of broadleaved trees predominantly cherry and an apple tree along the edge of the car park. There are a small number of non-native cypress shrubs planted around the building.

Species recorded on the site include:

Common Name	Latin Name	Number
Sycamore	<i>Acer pseudoplatanus</i>	1
Maple sp.	<i>Acer spp.</i>	1
Silver birch	<i>Betula pendula</i>	1
Lawson cypress	<i>Chamaecyparis lawsoniana</i>	6
Beech	<i>Fagus sylvatica</i>	1
Orchard apple	<i>Malus domestica</i>	6
Spruce sp.	<i>Picea spp.</i>	4
Wild cherry	<i>Prunus avium</i>	7
Plum	<i>Prunus domestica</i>	2
Willow sp.	<i>Salix spp.</i>	1
Western hemlock	<i>Tsuga heterophylla</i>	2

### 4.2.5 Amenity grassland

The area where the majority of trees are planted is amenity grassland dominated by perennial rye grass *Lolium perenne* which has been regularly mown.

## 4.3 Protected Species

### 4.3.1 Bat Surveys

A tree bat roost survey of the trees within the red-line boundary of the site confirmed that 100% of the trees have negligible or low bat roost potential. Where negligible is 'negligible habitat features likely to be used by roosting bats' and where low is 'a tree of sufficient size and age to contain potential roosting features (PRFs) but with none seen from the ground or features with only very limited roosting potential' (Collins, 2016, p.35). No further surveys are required for trees with negligible or low bat roost potential (Collins, 2016, p.52). These trees do not display any cracks, crevices, ivy cover, deadwood in canopy or stem or decay cavities or hollows in stem which are suitable for bats (Andrews & Gardner, 2016). Bat activity surveys were not carried out as the time of year was out with the bat activity survey season.

#### **4.3.2 Otter Survey**

The habitat within the site boundary is of negligible suitability for otters. Otter activity and otter signs were surveyed for in the wider area, as the nearby Lunan Water to the north has potential to be utilised by otters. There are historical records for otters along the river, though no signs of otters were recorded at the time of the survey.

**Species recorded** No otters recorded.

**Signs recorded** No otter signs ie. spraints, footprints, tracks, slides, couches and holts or potential holts were recorded within the survey area.

#### **4.3.3 Beaver Survey**

The habitat within the site boundary is of negligible suitability for beavers. Beaver activity and beaver signs were surveyed for in the wider area, as the nearby Lunan Water to the north has potential to be utilised by beavers. No signs of beavers were recorded at the time of the survey.

**Species recorded** No beavers recorded.

**Signs recorded** No beaver signs i.e., Lodges, dams, feeding signs were recorded within the survey area.

#### **4.3.4 Red Squirrel Survey**

Red squirrel activity and red squirrel signs were surveyed for. There is favourable tree cover on site for red squirrels, however, the trees are fragmented, and habitat isolated, and does not connect to other woodlands. There are red and grey squirrel records in the area. Within 1km there are 61 red squirrel records with the most recent records from 2021 and there are 4 records within 0.5km from 2015 and 1 record within 0.1km which is from 2012. There are also 7 grey squirrel records within 1km with the most recent records from 2021.

**Species recorded** No red squirrels recorded within the survey area.

**Signs recorded** No red squirrel dreys or red squirrel feeding signs recorded within the trees on or adjacent to the site.

#### **4.3.5 Pine marten survey**

Pine marten activity and pine marten signs were surveyed for. The site and surrounding area provide habitat of limited suitability for pine marten.

**Species recorded** No pine martens recorded within the survey area.

**Signs recorded** No pine marten dens or scats recorded within the survey area.

#### **4.3.6 Badger survey**

The habitat within the site boundary is of negligible suitability for badgers. Badger activity and badger signs were surveyed for in the wider area. There is limited habitat for badgers.

**Species recorded** No badgers recorded within the survey area.

**Signs recorded** No badger setts, latrines, feeding signs or pathways within the survey area.

#### **4.3.7 Reptile survey**

The garden ground and stone wall provides some suitable habitat on site for reptiles such as slow worm, and common lizard though there is a lack of cover and connecting habitat.

**Species recorded** No adders, slow worms or common lizards were recorded.

**Signs recorded** No other reptile signs were recorded.



#### 4.3.8 Other protected and other species survey

Other protected and other species activity and signs were surveyed for. Species included amphibians, invertebrates, and mammals such as hedgehogs, brown hare, deer and fox. These species are likely to be found in the local area and hedgehogs have potential to utilise the garden ground and trees for foraging and shelter. There is 1 record for hedgehogs within 0.5km from 2020 and hedgehogs are classed as vulnerable to extinction.

**Species recorded** No other protected or other species were recorded.

**Signs recorded** No other protected or other species signs were recorded.

#### 4.3.9 Schedule 1 and Bird Activity Survey

Schedule 1 and bird activity/ breeding bird surveys were carried out. No specially protected, sensitive, or very, rare, species of bird was recorded in the survey area. No other vulnerable breeding bird species (i.e., those where disturbance issues can occur) were recorded. The habitat on the site provides cover, food, and nesting sites for a variety of birds. Birds which were identified either by visual sighting or by bird call include:

Species Common	Latin
Goldfinch	<i>Carduelis carduelis</i>
Greenfinch	<i>Chloris chloris</i>
Jackdaw	<i>Coloeus monedula</i>
Woodpigeon	<i>Columba palumbus</i>
Blue Tit	<i>Cyanistes caeruleu</i>
Robin	<i>Erithacus rubecula</i>
Chaffinch	<i>Fringilla coelebs</i>
Great Tit	<i>Parus major</i>
House sparrow	<i>Passer domesticus</i>
Coal Tit	<i>Periparus ater</i>
Dunnock	<i>Prunella modularis</i>
Wren	<i>Troglodytes troglodytes</i>
Blackbird	<i>Turdus merula</i>

Of these species house sparrow, dunnock, wren are listed as amber conservation status.

Potential for migratory species such as house martins and swallows to use the site. Local swift records within 0.5km.

#### 4.3.10 Protected flora

Rare and protected flora was surveyed for.

**Species recorded** No rare or protected flora species were recorded.

**Signs recorded** No other indications to the presence of rare or protected flora were recorded.

#### 4.4 Summary

No statutory nature designations within 5km. Tree bat roost potential negligible or low. Potential for foraging bats to utilise the trees, no bat activity surveys undertaken due to the time of year. Negligible potential for otters and beavers to utilise the site. Potential for red squirrels to utilise the trees though the habitat is fragmented and isolated from other woodlands. No signs of red squirrels recorded. Low to negligible potential for pine martens and no pine marten activity recorded. Low to negligible potential for badgers and no badger activity recorded. Reptile potential in area of stone wall and garden ground, no signs recorded. Confirmed bird activity, highly likely to use the site for breeding, particularly amongst the trees, likelihood of migratory birds. Potential for hedgehogs.

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU  
Tel: 07747 883464; Email: info@tayecology.co.uk; Web: www.tayecology.co.uk

## **5.0 ASSESSMENT**

### **5.1 Limitations**

Survey data is accurate when the surveys took place. The curtilage of private property was not entered. Surveys took place out with the breeding bird season, main season for flowering plants and bat activity seasons. It is not anticipated that surveys earlier in the year would have a significant impact on the survey results and recommendations for specific species based on field survey data and historic records can be utilised.

### **5.2 Habitat**

#### **5.2.1 Designated sites**

No statutory or other designated sites within 5km. Best practice working methods and pollution prevention and control measures will be adhered to during construction to safeguard retained adjacent habitats. No further survey is recommended with regards statutory or other designated sites.

#### **5.2.2 Habitats and flora**

The site is dominated by the building and car parking areas. To the rear of the building are a selection of predominantly mature planted broadleaved trees including sycamore, beech and wild cherry, a row of fruit trees, mainly apple, and non-native coniferous spruce trees. To the north-west are a cluster of planted non-native conifer trees of Lawson cypress and Western hemlock with a border of broadleaved trees predominantly cherry and an apple tree along the edge of the car park. The area where the majority of trees are planted is amenity grassland. There will be a loss of some of the existing habitat due to the development this includes the loss twenty-two of the thirty-two trees the majority of which are Category C trees. Ten of the trees will be retained. This habitat is favourable for a range of species including invertebrates, common and migratory birds, amphibians, and small mammals.

To reduce the habitat impact and to provide continued use of the site for a range of species it is recommended that replacement planting is planned as part of landscaping to compensate for the loss of the trees. It is recommended for the planting on the site that as a minimum the number of new trees planted matches the number lost and ideally three trees are planted for every tree lost. Planting hedgerows at suitable boundary locations would provide a realistic way to incorporate replacement planting and would also enhance the site for biodiversity. It is recommended that fruit trees are planted to replace the lost fruit trees. There is opportunity to improve the diversity of the tree species in the area by new planting with a selection of native trees. Species such as field maple, sweet chestnut, dogwood, hazel, hawthorn, beech, holly, Scot's pine, sessile oak, rowan, broad-leaved lime, and domestic fruit trees will enhance the habitat.

A pond created as part of the SUDs basin would create a wetland habitat suitable for a wide range of species. Incorporation of bat and bird nesting boxes for a range of species and enhancing grassland species diversity at the site such as planting a native wildflower seed mix to create wildflower rich verges or banks would be beneficial for local wildlife.

## **5.3 Protected species**

### **5.3.1 Bats**

There is a negligible or low potential that trees on and immediately adjacent to the site contain any potential bat roosting features (PRFs) therefore the impact of the proposed development on any bat potentially roosting in the trees is low. It is proposed to fell twenty-two of the existing trees as part of works. Replacement planting and the inclusion of a SUDs pond are recommended, and it is anticipated that this will reduce the impact to any bat which uses the existing trees for foraging. Bat activity surveys were not carried out at this time, though it is expected that Soprano and Common Pipistrelles will forage locally with potential for other species such as Daubenton's and Brown long-eared bats to be found. Favourable foraging habitat will continue to be available in the local area along the Lunan Water. Bat activity surveys are recommended for the building, and these will provide further information on how the existing habitat is used by bats. There is potential to enhance roosting opportunities with the installation of bat boxes as part of works, for example, tree bat boxes, and integrated or external wall bat boxes on new structures or bat slates.

### **5.3.2 Otter**

The habitat within the site boundary is of negligible suitability for otters and there will be a negligible impact to otters from the development.

### **5.3.3 Beaver**

The habitat within the site boundary is of negligible suitability for beavers and there will be a negligible impact to beavers from the development.

### **5.3.4 Red squirrel**

There is favourable tree cover on site for red squirrels, however, the trees are fragmented, and habitat isolated. There are red and grey squirrel records in the area. There was no evidence of red squirrel activity recorded on the site during the surveys. It is not expected that the proposed development will have a long-term detrimental impact on red squirrels. There is potential to increase local food sources by planting trees such as hazel and Scots pine which provide good food sources for red squirrels as part of the proposed works. As a precautionary measure it is recommended that the trees are checked for dreys prior to any tree felling and any work commencing on site as red squirrels can build new drey within a few days. During the breeding season which is from February to September breeding dreys have a 50m protection zone. For work commencing out with the breeding season any drey trees have a 5m protection zone.

### **5.3.5 Pine marten surveys**

There was no evidence of pine marten activity during the surveys and there is limited cover for pine martens at the site. It is not expected that the proposed development would have a negative impact on pine martens should any move into the area at a later date and pine martens are tolerant of most forms of human disturbance (Mammal Society 2012, 76-77), and the construction of the proposed development will not have a long-lasting adverse impact on any pine marten potentially moving within 100m of the site.

### **5.3.6 Badger surveys**

The surrounding area provides favourable habitat for badgers, though the site is of negligible suitability. There was no evidence of badgers and the impact to badgers is negligible.

### **5.3.7 Reptiles**

There is potential for reptiles on the site. However, it is not anticipated that the proposed development will negatively impact reptiles as there will be adjacent areas with favourable retained vegetation.

### **5.3.8 Other protected and other species surveys**

There was no evidence of any other rare or protected species such as amphibians and invertebrates. It is expected that a range of common invertebrates use the site. It is likely that hedgehogs are found in the area and there is potential for hedgehogs to utilise the site. Hedgehogs are classed as a vulnerable species, and it is recommended that the site is checked for hedgehogs before any ground vegetation clearance takes place. Hedgehogs hibernate in winter months, and this should be factored in especially when clearing any shrubs or woody vegetation. Provision of hedgehog highways allowing movement between properties and across the development site is recommended.

### **5.3.9 Schedule 1 and breeding bird surveys**

Common breeding birds were recorded at the site and the local habitat provides cover, food, and nesting sites for a variety of common birds. All birds are protected, and it is an offence to intentionally or recklessly kill, injure or take a wild bird, or to take, damage or destroy its nest or eggs. It is recommended that where ground vegetation clearance and tree felling is required that this is undertaken out-with the breeding bird season. However, if such work should be undertaken during the breeding season (March to August inclusive), then the vegetation, trees and building must be checked for active nests before work commences. If found, work in the vicinity of a nest should cease until young birds have fledged. There is a low risk that the proposed site is home to Schedule 1 birds, there were no signs of any Schedule 1 bird or other vulnerable bird species using the area. Amber species of conservation concern were recorded at the site including house sparrow, dunnock, and wren. There is potential for migratory species such as house martins and swallows to use the site and swifts have been recorded locally. The provision of nest boxes for a range of common bird species including tree nest boxes and planting of native hedges, shrubs and trees is recommended. Integrated nest boxes for house sparrows and swifts and the provision of nesting cups for house martins and swallows are recommended to be included as part of the design of new structures.

## **5.4 Conclusion**

Tay Ecology was commissioned to undertake a preliminary ecological appraisal for the site at Lunan House, Guthrie Street. Field surveys were carried out in January 2023 to assess the habitat and potential for protected species such as badger, bats, otters, pine martens, red squirrels, and reptiles. The likelihood of specially protected, sensitive, or very, rare, species of birds and of any other protected or local biodiversity action plan species of flora and fauna was assessed. The survey area included the proposed development site and up to 250m in the surrounding area. The existing data search shows that a range of protected species have been recorded in the local area. There are no designated statutory nature conservation sites within 5km.

There will be a loss of some of the existing habitat including the loss twenty-two of the thirty-two trees, the majority of which are Category C trees. The trees are favourable for a range of species including invertebrates, common and migratory birds, and small mammals. To reduce the impact, it is recommended that replacement planting is incorporated as part

of landscaping. Planting hedgerows at suitable boundary locations would enhance the site for biodiversity. There is opportunity to improve the diversity of the tree species in the area by new planting with a selection of native trees such as field maple, sweet chestnut, dogwood, hazel, hawthorn, beech, holly, Scot's pine, sessile oak, rowan, broad-leaved lime, and domestic fruit trees. A pond created as part of the SUDs basin would create a wetland habitat suitable for a wide range of species. Incorporation of bat and bird nesting boxes for a range of species and enhancing grassland species diversity at the site such as planting a native wildflower seed mix to create wildflower rich verges or banks would be beneficial for local wildlife. Best practice working methods and pollution prevention and control measures will be adhered to during construction to safeguard the retained adjacent habitats.

There is a negligible to low potential that bat tree roosts may be present in the trees and incorporating bat boxes is recommended to create new roost locations. There will be a negligible impact to otters, beavers, pine martens and badgers. Red squirrels have been recorded locally though it is not anticipated that there will be a negative impact to red squirrels a pre-works survey is recommended to check the trees before felling. The habitat has potential to support reptiles, though it is not anticipated that there will be a negative impact to reptiles as there will be adjacent areas with favourable retained vegetation. It is likely that hedgehogs are found in the area, and it is recommended that the site is checked for hedgehogs before any ground vegetation clearance takes place. Provision of hedgehog highways allowing movement between properties is recommended.

Common breeding birds were recorded at the site and the habitat provides good cover, food, and nesting sites for a variety of birds. It is recommended that where any ground vegetation clearance or tree felling is required that this is undertaken out-with the breeding bird season. However, if such work should be undertaken during the breeding season, then the site should be checked for active nests before work commences. There is a low risk that the proposed site is home to Schedule 1 birds, there were no signs of any Schedule 1 bird or other vulnerable bird species using the area. There were three species of amber listed conservation concern recorded, and old nests of migratory birds such as house martin and the planting of native species and the provision of a range nest boxes is recommended. No signs of any other protected species of flora or fauna was recorded during the survey.

## **6.0 RECOMMENDATIONS and MITIGATION**

To protect and enhance the existing habitat it is recommended that:

### **6.1 Trees, Shrubs and Hedges**

- Protect root areas of all retained trees.
- Incorporate replacement and new planting to increase species diversity with a selection of native trees such as field maple, sweet chestnut, dogwood, hazel, hawthorn, beech, holly, Scot's pine, sessile oak, rowan, broad-leaved lime, and domestic fruit trees.
- Plant boundary hedges of native species such as holly, dogwood, hazel and hawthorn along site and property boundaries.

### **6.2 Grassland**

- Create wildflower rich area(s) such as grass verges and banks using species such as using a Scottish meadow mix (Scotia seeds) including species such as yarrow, agrimony, lady's

mantle, common knapweed, common mouse-ear, lady's bedstraw, meadow vetchling, ox-eye daisy, ribwort plantain, cowslip, selfheal, meadow buttercup, yellow rattle, common sorrel, devils-bit scabious, red clover, germander speedwell, common bent, meadow foxtail, sweet vernal grass, quaking grass, crested dog's tail, sheep's fescue, red fescue.

- Sow a hedgerow seed mix of shade tolerant species along any new hedgerows to increase species diversity.

To minimise disturbance or damage to protected species prior to work starting on site it is recommended that:

### **6.3 Breeding birds**

- It is recommended that where any ground vegetation clearance or tree felling is required that this is undertaken out-with the breeding bird season. However, if such work should be undertaken during the breeding season, then the site should be checked for active nests before work commences.
- There is no NatureScot licence available to clear ground containing active bird nests or ground nesting birds, felling must be delayed until chicks have fledged.
- For any construction taking place during the breeding bird season a breeding bird survey should be undertaken and appropriate buffer zones established around any nesting sites.

### **6.4 Bats**

- Bat activity surveys are recommended for the building, and these will provide further information on how the existing habitat is used by bats.
- Workers to be fully briefed regarding the possibility of bats on site, their legal status and that of their roosts. Discovery of a suspected bat roost should be reported immediately to the Site Manager.

### **6.5 Red Squirrels**

- Pre-construction survey for red squirrel dreys within 50m of site boundary when construction is proposed within red squirrel breeding season, between February to September inclusive. Out with this period a 5m protection zone applies for dreys.
- Workers to be fully briefed regarding the possibility of red squirrels on site, the legal status of the animal and their dreys. Any sightings of red squirrel or discovery of a drey should be reported immediately to the Site Manager.

### **6.6 Amphibians and Reptiles**

- Checks for amphibians and reptiles should be made prior to ground clearance operations.
- Where amphibians or reptiles are found, they should be carefully moved to a similar habitat in a safe location out-with the development footprint.

To improve biodiversity, it is recommended that:

### **6.7 Bat Boxes**

- Provision of bat boxes by installing bat boxes on trees, woodcrete bat boxes are more durable. Group two to three bat boxes on a single large tree with boxes facing different aspects, positioned three or more metres in height.
- Install external wall or integrated bat boxes such as bat tubes or bat bricks on the south, west and east elevations of structures. These boxes to be built into the walls

and facade of a suitable building, with the advantage of offering a permanent space for bats with little maintenance and good thermal properties.

### 6.8 Bird boxes

- Provide nest boxes for woodland birds on trees. Bird boxes to include a range of entrance hole sizes: 25 mm for blue and coal tits; 28 mm for great tits; 32 mm for house sparrows; 45 mm for starlings; a 100 mm high open front for robins; 140 mm high front panel for wrens; and a tawny owl box. Position of bird boxes 3-4m up a tree, utilise nearby trees for shade and tilt box slightly forward.
- Incorporate external wall or integrated bird boxes into new structures such as house sparrow and swift boxes. Boxes must be fitted either on a shady building aspect, or under an overhang to give protection from heat, but not over windows or near to vents, at least 5 metres above ground, with clear airspace for access. Position bird nest cups under eaves to attract migratory house martins / swallows.

## 7.0 REFERENCES

Andrews, H & Gardener, M., 2016, "*Bat Tree Habitat Key Database Report 2016*". AEcol, Bridgwater [Online]. Available at <http://battreehabitatkey.co.uk/> (accessed 18<sup>th</sup> January 2023)

British Bryological Society, 2010, "*Mosses and Liverworts of Britain and Ireland A Field Guide*" Mark Lawley (privately published)

British Trust for Ornithology, (BTO), 2023, "*Methodology and survey design for bird surveys*" [Online]. Available at <https://www.bto.org/volunteer-surveys/bbs/research-conservation/methodology> (accessed 18<sup>th</sup> January 2023)

Collins, J., 2016, "*Bat Conservation Trust, Bat Surveys for Professional Ecologists: Good Practice Guidelines*", 3<sup>rd</sup> Edition Department for Environment Food and Rural Affairs, 2013 "*Chalara Management Plan*" [Online]. Available at <https://assets.publishing.service.gov.uk> (accessed 18<sup>th</sup> January 2023)

Forestry Commission Scotland, (FCS), 2006a, "*FCS Guidance Note 33: Forest operations and red squirrels: November 2006. Forest operations and red squirrels in Scottish forests the law and good practice*" [Online]. Available at <https://scotland.forestry.gov.uk/images/corporate/pdf/Guidancenote33Redsquirrel.pdf> (accessed 18<sup>th</sup> January 2023)

Forestry Commission Scotland, (FCS), 2007, "*FCS Guidance Note 34: Forest operations and European protected species in Scottish forests - - implications of legal changes from February 2007*" [Online]. Available at <https://scotland.forestry.gov.uk/images/corporate/pdf/Guidancenote34protectedspecies2.pdf> (accessed 18<sup>th</sup> January 2023)

Froglife, 2013, "*Surveying for Reptiles*" [Online]. Available at <https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf> (accessed 18<sup>th</sup> January 2023)

Holmes, Ward and Jose, (2001), "*New Rivers and Wildlife Handbook*", NRA/RSPB/RSNC

Joint Nature Conservation Committee, (JNCC) (2010) “*Handbook for Phase 1 habitat survey. A technique for environmental audit*” [Online]. Available at [http://jncc.defra.gov.uk/PDF/pub10\\_handbookforphase1habitatsurvey.pdf](http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf) (accessed 18th January 2023)

Mammal Society, 2012, “*UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation*”, edited by Creswell W.J, Birks J. D.S, Dean M, Pacheco M, Trehwella W.J, Wells D and Wray S

NatureScot, 2023a, “*Standing Advice for Planning Consultations: Bats*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-bats> (accessed 18th January 2023)

NatureScot, 2023b, “*Standing Advice for Planning Consultations: Badgers*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-badgers> (accessed 18th January 2023)

NatureScot, 2023c, “*Standing Advice for Planning Consultations: Red squirrels*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-red-squirrels> (accessed 18th January 2023)

NatureScot, 2023d, “*Standing Advice for Planning Consultations: Pine Martens*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-pine-martens> (accessed 18th January 2023)

NatureScot, 2023e, “*Standing Advice for Planning Consultations: Otter*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-otters> (accessed 18th January 2023)

NatureScot, 2023f “*Standing Advice for Planning Consultations: Reptiles (Adder, Slow Worm and Common Lizard)*” [Online]. Available at <https://www.nature.scot/doc/standing-advice-planning-consultations-reptiles-adder-slow-worm-common-lizard> (accessed 18th January 2023)

NatureScot, 2023g, “*Protected Species: Birds*” [Online]. Available at <https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-species/protected-species-z-guide/protected-species-birds> (accessed 18th January 2023)

Scottish Badgers, 2023, “*Badger Surveying*” [Online]. Available at <https://scottishbadgers.org.uk/badger-surveying.asp> (accessed 18th January 2023)

Scottish Squirrel Survey, 2023, “*Scottish Squirrel Survey*” [Online]. Available at <http://www.scottishsquirrelsurvey.co.uk/> (accessed 18<sup>th</sup> January 2023)

Stace, C, 2019, “*New Flora of the British Isles 4<sup>th</sup> Edition*” C&M Floristics

Tayside Biodiversity Partnership, 2023, “*Tayside Biodiversity Action Plan*” [Online]. Available at <https://www.taysidebiodiversity.co.uk/action-plan/action-plan-new-lbap-2015/> (accessed 18<sup>th</sup> January 2023)

Tay Ecology Ltd, Fairway, Golf Course Road, Pitlochry, PH16 5QU,  
Tel: 07747 883464, Email: [info@tayecology.co.uk](mailto:info@tayecology.co.uk); Web: [www.tayecology.co.uk](http://www.tayecology.co.uk)