

**Enchanted Forest, Loch Dunmore,
Faskally Wood, Pitlochry**

**Ecological Survey, Habitat, Protected Species
And Ecological Impact Assessment Report**

Thursday 4th July 2024



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EXECUTIVE SUMMARY

Tay Ecology was commissioned to undertake an ecological appraisal, and ecological impact assessment of the Enchanted Forest Site to update the 2023 surveys. Field surveys were carried out between May to July 2024 to assess habitat, bats, badger, pine martens, red squirrels, otters, beavers, water voles and reptiles. The likelihood of specially protected and rare, species of birds and of any other protected or local biodiversity action plan species of flora and fauna was assessed. There are no national or statutory nature designations on the site. The River Tay SAC is located 200m to the west and this is designated for otter, sea lamprey, brook lamprey, river lamprey and salmon. No further surveys are required regarding designated sites; however, it is essential that best practice working methods and pollution prevention methods are adhered to during the event to safeguard the SAC and adjacent habitats. Around Loch Dunmore is long-established ancient woodland of plantation origin, the combination of woodland and water have potential to be of high value to wildlife, however, the site is already well utilised as an amenity forest. The Enchanted Forest will not negatively impact the existing habitat, all trees will be retained, and the route will use established footpaths, and access roads. There will be an increase in visitor numbers during the event. However, the autumn timing of the event mitigates the risk of disturbance to wildlife as it takes place outside of the breeding season for bats, birds and red squirrels and outside of the season for flowering plants and invertebrates. There is potential to enhance the biodiversity of the site and surrounding woodland by new planting at the understorey layer with native shrubs and woodland meadow wildflower mixes. Although any new planting would be subject to agreement with the landowner Forestry and Land Scotland.

The trees have negligible or low bat roost potential. Common and Soprano pipistrelles were recorded foraging over Loch Dunmore. The Enchanted Forest will have a temporary impact on bat activity as the light and sound show will make the area less favourable for bats, however, the level of bat activity recorded shows that long-term impact is highly unlikely as this event has already been running at the site for a number of years and good numbers of bats were recorded foraging during the surveys showing that bats continue to utilise the area. There is evidence of red squirrels, although no evidence of active dreys was recorded. A pre-event red squirrel survey is recommended to confirm that new dreys have not become occupied, or where any dreys are confirmed exclusion zones are put in place. Otters are highly likely to use the water habitat though no signs were identified during the surveys. It would be unlikely for an otter natal den, holt or resting place to be located at Loch Dunmore due to the existing level of human activity. It is not anticipated that there will be a negative impact to otters from the Enchanted Forest. There were no signs of badgers, pine martens, reptiles, beavers or water voles and there will be negligible impact to these species. There were no Schedule 1 bird species recorded, common breeding birds were recorded, and the trees provide the most likely place to find nesting 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. The Enchanted Forest takes place outside of the breeding season which minimises the impact to breeding birds. However, some birds may not cease activity at nests until into September and it is recommended that the site is checked for active nests before the event set-up commences. The provision of nest boxes for a range of bird species is recommended as part of works. There were no signs of protected or rare species of flora or of invasive non-native species with the exception of rhododendron for which there is a management plan in place by the landowner.

1. INTRODUCTION

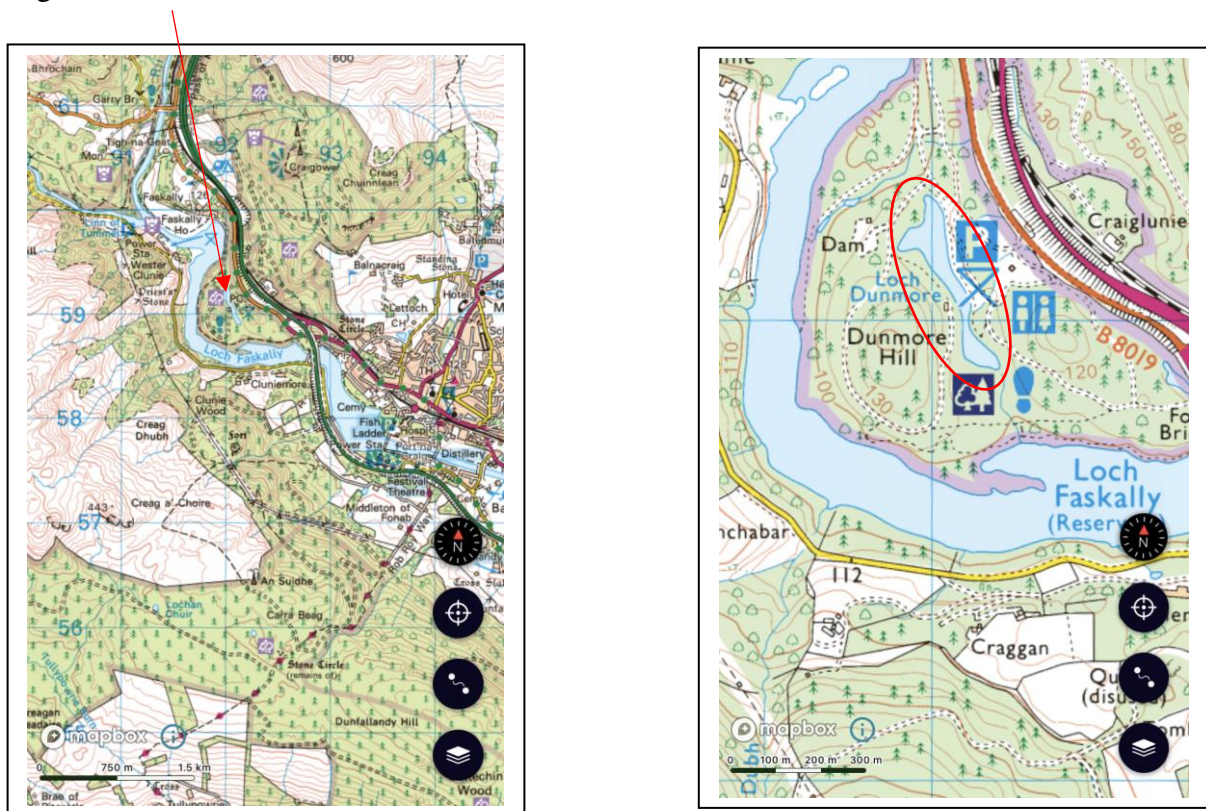
1.1 Brief from Client

Tay Ecology was commissioned to undertake an ecological survey, habitat and protected species assessment of the Enchanted Forest Site at Loch Dunmore, Faskally Wood, Pitlochry to update the 2023 surveys.

1.2 Site location

The Enchanted Forest Site is located at Loch Dunmore in Faskally Wood. The site is accessed from the B8079 1.5km to the north of Pitlochry. The site grid reference is NN 92067 59054 at an altitude of 110m above sea level. Figure 1 Site Location.

Figure 1 Site Location



1.3 Site description

The site includes the existing access road and car park for Loch Dunmore and Loch Faskally; the existing accessible footpath around Loch Dunmore; and the hardstanding storage area to the north-west of Loch Dunmore. The site is wooded with a mix of predominantly coniferous and some broadleaved species. Figure 2 Aerial View

1.4 Proposed works

It is proposed to hold the Enchanted Forest Light and Sound Show at the site in the autumn of 2024. Figure 3 Enchanted Forest Site Area

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Figure 2 Aerial View

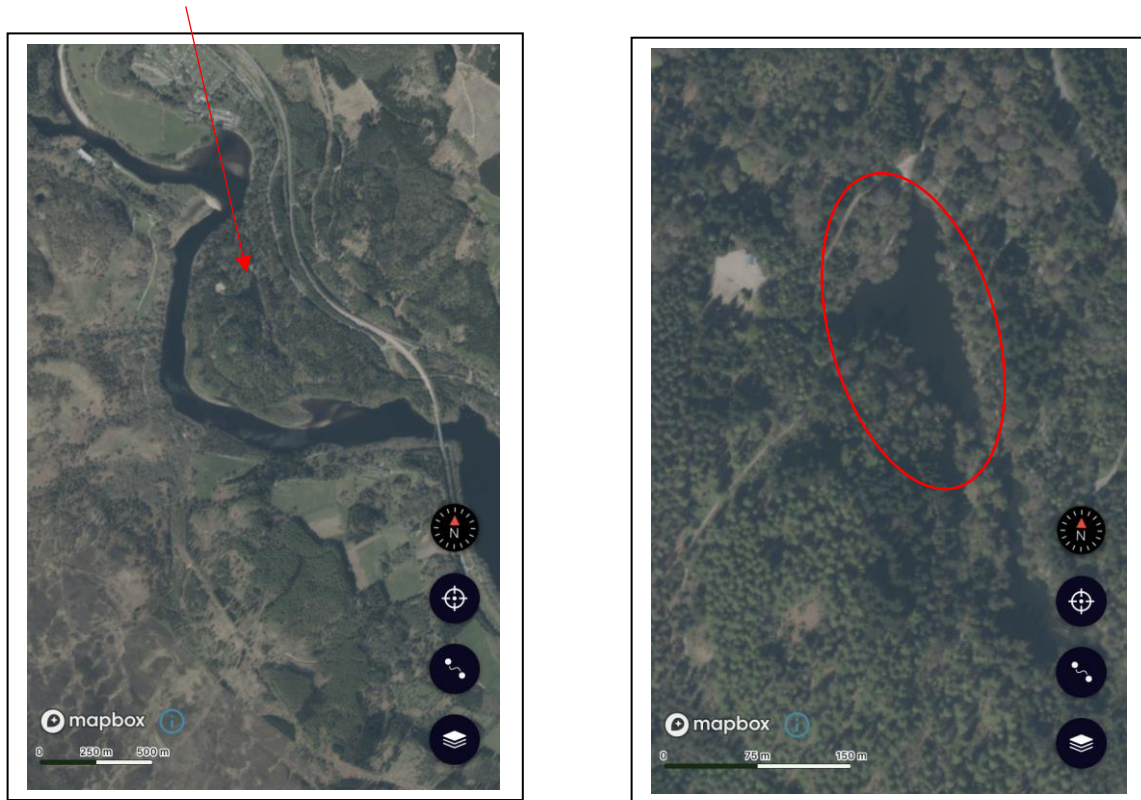
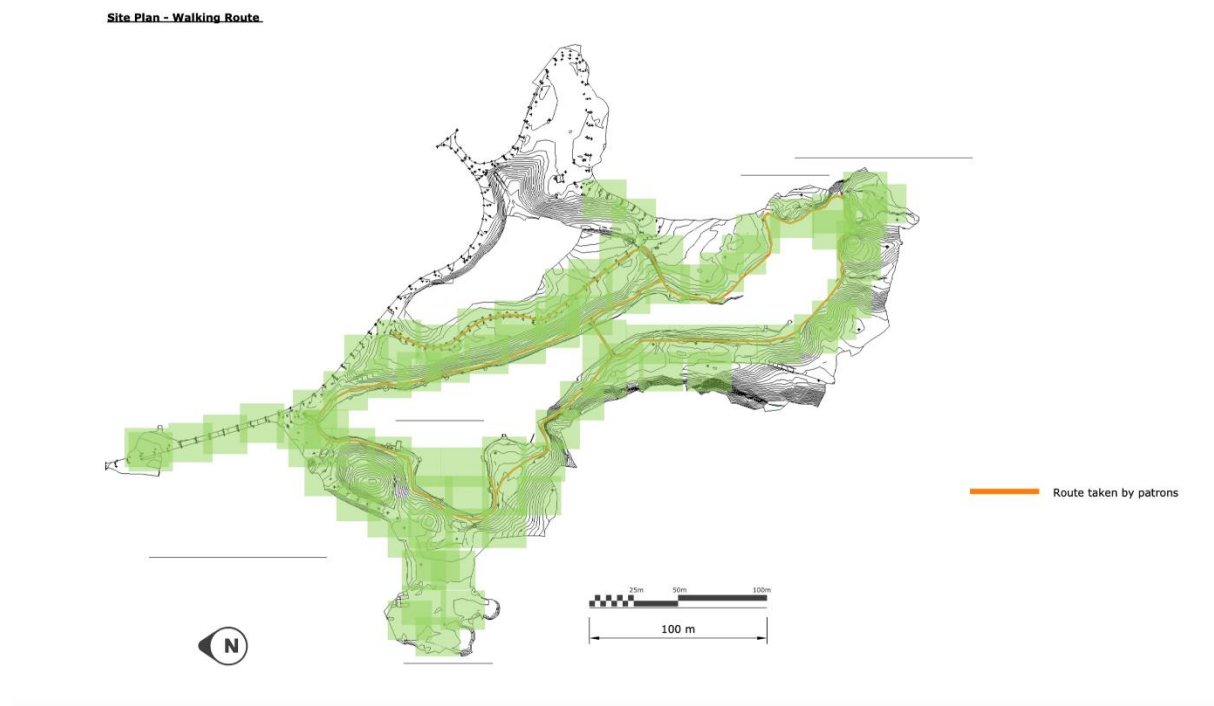


Figure 3 Enchanted Forest Site Area



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2.0 POLICY AND GUIDANCE

2.1 Policy & Guidance

The legislative requirements and guidance below have been considered to ensure that the project is legally compliant and in line with Best Practice.

- ☐ The Conservation (Natural Habitats &c.) Regulations 1994 (as amended in Scotland)
- ☐ Nature Conservation (Scotland) Act 2004 (NCSA)
- ☐ Wildlife and Natural Environment (Scotland) Act 2011 (WANE Act)
- ☐ Wildlife and Countryside Act 1981 (WCA)
- ☐ National Planning Framework 4 (NPF4)
- ☐ Perth and Kinross Local Development Plan (Adopted) September 2019 (PKLDP)
- ☐ The Scottish Biodiversity List (SBL)
- ☐ Tayside Biodiversity Action Plan 2016-2026
- ☐ NatureScot Developing with Nature guidance - Guidance on securing positive effects for biodiversity from local development to support NPF4 policy 3
- ☐ Chartered Institute of Ecology and Environmental Management (CIEEM); Guidelines for Preliminary Ecological Appraisal in the UK and Ireland, 2017
- ☐ Chartered Institute of Ecology and Environmental Management (CIEEM); Guidelines for Ecological Impact Assessment in the UK and Ireland, 2018 Version 1.2 - Updated April 2022
- ☐ A Handbook on Environmental Impact Assessment, Scottish Natural Heritage, 2018.

2.2 National Planning Framework 4

National Planning Framework (NPF4) was adopted in February 2023 and superseded the 2014-issued Scottish Planning Policy. Under Section 25 of the Town and Country Planning (Scotland) Act 1997, the determination of a planning application is to be made in accordance with the development plan unless material considerations indicate otherwise.

Policy 3 Biodiversity - aims to enhance biodiversity including “protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks”.

Policy 4 Natural places – aims to protect, restore, enhance and sustainably manage natural places including “making best use of nature-based solutions.”

Policy 6 Forestry, woodland and trees – aims to protect existing trees and woodlands, expand tree and woodland cover, sustainably manage woodland resources, and improve connectivity.

Policy 20 Blue and Green Infrastructure - aims to co-ordinate multiple functions, including climate mitigation, nature restoration, biodiversity enhancement, flood prevention and water management.

2.3 Perth and Kinross Local Development Plan

Policies to be considered from PKLDP are:

2.3.1 Policy 1 Placemaking

Policy 1A: Development must contribute positively to the quality of the surrounding built and natural environment. Proposals should also incorporate new landscape and planting works appropriate to the local context and the scale and nature of the development.

Policy 1B: Existing buildings, structures and natural features that contribute to the local townscape should be retained and sensitively integrated into proposals.

2.3.2 Policy 38 Environment and Conservation

Policy 38A: International Nature Conservation Sites: Development which could have a significant effect on a site designated or proposed under the Habitats or Birds Directive (Special Areas of Conservation and Special Protection Areas) or Ramsar site, will only be permitted where: an appropriate assessment has demonstrated that it will not adversely affect the integrity of the site; there are no alternative solutions; there are imperative reasons of overriding public interest, including those of social or economic nature; compensatory measures are provided to ensure that the overall coherence of the network is protected.

Policy 38B: National Designations: Development which would affect a National Park, National Scenic Area, Site of Special Scientific Interest or National Nature Reserve, will only be permitted where: the proposed development will not adversely affect the integrity of the area or the qualities for which it has been designated; or any such adverse effects are clearly outweighed by social, environmental or economic benefits of national importance.

Policy 38C: Local Designations: Development which would affect an area of local conservation or geological interest will not normally be permitted, except where: the objectives of designation and the overall integrity of the designated area would not be compromised; or any locally significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social and economic benefits.

2.3.3 Policy 40 Forestry, Woodland and Trees

Policy 40A: Forest and Woodland Strategy: protect existing trees/woodland including orchards; seek to expand woodland cover; encourage the protection and good management of amenity trees, trees in Conservation Areas and trees on development sites in accordance with BS5837 'Trees in Relation to Construction'.

Policy 40B Trees, Woodland and Development: Tree surveys, undertaken by a suitably qualified professional, should accompany all applications for planning permission where there are existing trees on a site. The scope and nature of such surveys will reflect the known or potential amenity, nature conservation and/or recreational value of the trees.

The Council will follow the principles of the Scottish Government Policy on Control of Woodland Removal and developers are expected to fully accord with its requirements. In accordance with that document, there will be a presumption in favour of protecting woodland resources. In exceptional cases where the loss of individual trees or woodland cover is unavoidable, the Council will require mitigation measures to be provided.

2.3.4 Policy 41 Biodiversity

The Council will seek to protect and enhance all wildlife and wildlife habitats, whether formally designated/protected or not, taking into account the ecosystems and natural processes in the area. The Council will apply the principles of the Planning for Nature: Development Management and Wildlife Guide and will take account of the Tayside Local Biodiversity Action Plan (LBAP) and relevant national and European legislation relating to protected species when making decisions about applications for development.

European Protected Species: Planning permission will not be granted for development that would, either individually or cumulatively, be likely to have an adverse effect upon European protected species (listed in Annex IV of the Habitats Directive (Directive 92/43/EEC)) unless: there is no satisfactory alternative; and the development is required for preserving public health or public safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Other Protected Species: Planning permission will not be granted for development that would be likely to have an adverse effect on protected species unless it can be justified in accordance with the relevant protected species legislation (Wildlife and Countryside Act 1981 (as amended) and the Protection of Badgers Act (1992)).

3.0 SURVEY AND SITE ASSESSMENT

3.1 Objectives

The site was surveyed by a visual ground survey and habitat and protected species surveys undertaken. Field surveys were carried out to assess the existing 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, reptiles, and water voles. 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 surrounding area.

3.2 Methods

3.2.1 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 development was searched to provide suitable coverage of the area. The Fife Nature Records Centre was consulted (<https://www.fife.gov.uk/kb/docs/articles/environment2/fife-nature-records-centre>). 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>); Tayside Biodiversity Action Plan (<https://www.taysidebiodiversity.co.uk/>).

Other websites searched include Bat Conservation Trust (<http://www.bats.org.uk/>); Scottish Badgers (<https://www.scottishbadgers.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.

3.2.2 Survey methodology

A site visit was carried out after receiving project information from the Enchanted Forest. A walk over survey and overall habitat assessment was carried out.

3.2.2.1 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 walk-over surveys. Target notes describe the habitats found and any protected or otherwise notable wildlife and any suitable habitats for these species. Nomenclature for higher plants follows Stace (2019) and for mosses and liverworts British Bryological Society (2010). Species abundance is described using DAFOR scale (D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare, where rare refers to local abundance not national scarcity).

3.2.2.2 Bat roost potential was assessed for trees within/adjacent to the proposed site using methodology to identify the possible presence of bats, and potential for bat roosts from Collins, J (2023) 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' Bat Conservation Trust (4th edition), Cowan, H (2004) 'Looking out for bats. They could be anywhere!' and NatureScot (2024a) 'Standing advice for planning consultations: bats'.

3.2.2.3 Evidence of badgers was surveyed for using guidance from Scottish Badgers (2024), 'Surveying for Badgers: Good Practice Guidelines 2018' and 'Standing advice for planning consultations: badgers' (NatureScot, 2024b). 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.

3.2.2.4 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 (2024c) 'Standing advice for planning consultations: 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.

3.2.2.5 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 advice for planning consultations: Pine Marten' (NatureScot, 2024d). 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.

3.2.2.6 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 (2024e) ‘Standing advice for planning consultations: 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.

3.2.2.7 Evidence of beaver was surveyed for following NatureScot (2024g) ‘Standing Advice for Planning Consultations: Beavers’. The survey was based on the interpretation of field signs (beaver dams, beaver lodges, beaver chewed trees) and assessment of suitable habitat rather than direct observation of the animals themselves.

3.2.2.8 Evidence of water vole was surveyed for using information from NatureScot (2024h) ‘Water vole survey methods’, and ‘Standing advice for planning consultations: water vole’. The survey was based on the interpretation of field signs (burrows, runs, tracks, feeding stations, droppings, and latrines) and assessment of suitable habitat rather than direct observation of the animals themselves.

3.2.2.9 An amphibian and reptile survey was carried out following guidelines adapted from Froglife (2013), ARG UK (2024) and NatureScot (2024i) ‘Standing Advice for Planning Consultations: reptiles’ and NatureScot (2024j) ‘Protected Species: Amphibians and Reptile’. The survey focused on searching for animals on banks, piles of wood, at edges of woodland and in / near watercourses. An assessment of suitable habitat was made.

3.2.2.10 Presence of potential Schedule 1 birds was adapted from BTO (2024), ‘Methodology and survey design for bird surveys’ and NatureScot (2024k) ‘Protected species: birds.’

3.2.2.11 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.

3.2.3 Survey area

The survey area includes the proposed area for development and up to 250m in the surrounding area. N.B. The curtilage of private property was not entered.

3.2.4 Timings, types, and weather conditions of field Surveys

The site was surveyed by walk-over and protected species surveys carried out in May-July 2024 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 2010). Signs of the presence of protected species were sought and habitats were assessed for their potential to host protected species.

14/05/2024 14 degrees Celsius; wind speed 2mph; cloud cover 100%; no precipitation.

28/05/2023 12 degrees Celsius; wind speed 2mph; cloud cover 75%; showers.

12/06/2024 13 degrees Celsius; wind speed 2mph; cloud cover 0%; no precipitation.

25/06/2024 15 degrees Celsius; wind speed 2mph; cloud cover 50%; no precipitation.

03/07/2024 10 degrees Celsius; wind speed 5mph; cloud cover 75%; showers.

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3.2.5 Limitations

Survey data is accurate when the surveys took place. The curtilage of private property was not entered. It was a ground survey, with no tree climbing element, the surveyors were able to see to the tops of the trees.

3.2.6 Personnel

Emma O'Shea, Ecological Consultant, Tay Ecology. Emma has worked in the environmental sector for twenty years, during which time she has gained a wealth of experience and expertise. During the last ten 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, Schedule 1 bird and otter surveyor. Emma is a professional tree inspector and has a background in habitat surveys. She has a Postgraduate Diploma in Environmental Management from the Open University and is a full member of the Chartered Institute for Ecology and Environmental Management, and a technician member of the Arboricultural Association and a member of the Institute of Environmental Assessment and Management.

Gary Flynn, Ecologist, Tay Ecology. Gary has been employed in wildlife management and conservation in Aberdeenshire and Tayside for over 20 years. Gary trained with Tay Ecology during 2019 and his specialisms are habitat, bat, tree, and protected species surveys.

4.0 LEGISLATION AND POLICY GUIDANCE

4.1 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).

4.1.1 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.

4.2 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.

4.3 Wildlife Legislation

4.3.1 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.

4.3.2 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.

4.3.3 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.

4.3.4 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.

4.3.5 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.

4.3.6 Freshwater pearl mussel

Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) gives full protection to freshwater pearl mussel. It is an offence to intentionally or recklessly kill, injure or take a wild animal; damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection; disturb such an animal when it is occupying a structure or place for shelter or protection.

4.3.7 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.

4.3.8 Water vole

The water vole receives partial protection 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: damage, destroy or obstruct access to any structure or place that water voles use for shelter or protection; disturb a water vole while it is using any such place of shelter or protection.

4.3.9 Amphibians and Reptiles

Great crested newts, natterjack toads and all marine turtles are European protected species with full protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Other amphibian and reptiles 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. Common lizard, slow worm and adder are protected against intentional or reckless killing and injury and trade.

4.3.10 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.

5.0 RESULTS

5.1 Existing data search

5.1.1 Nature Designations and Protected Trees/Woodland

5.1.1.1 Nature Designations

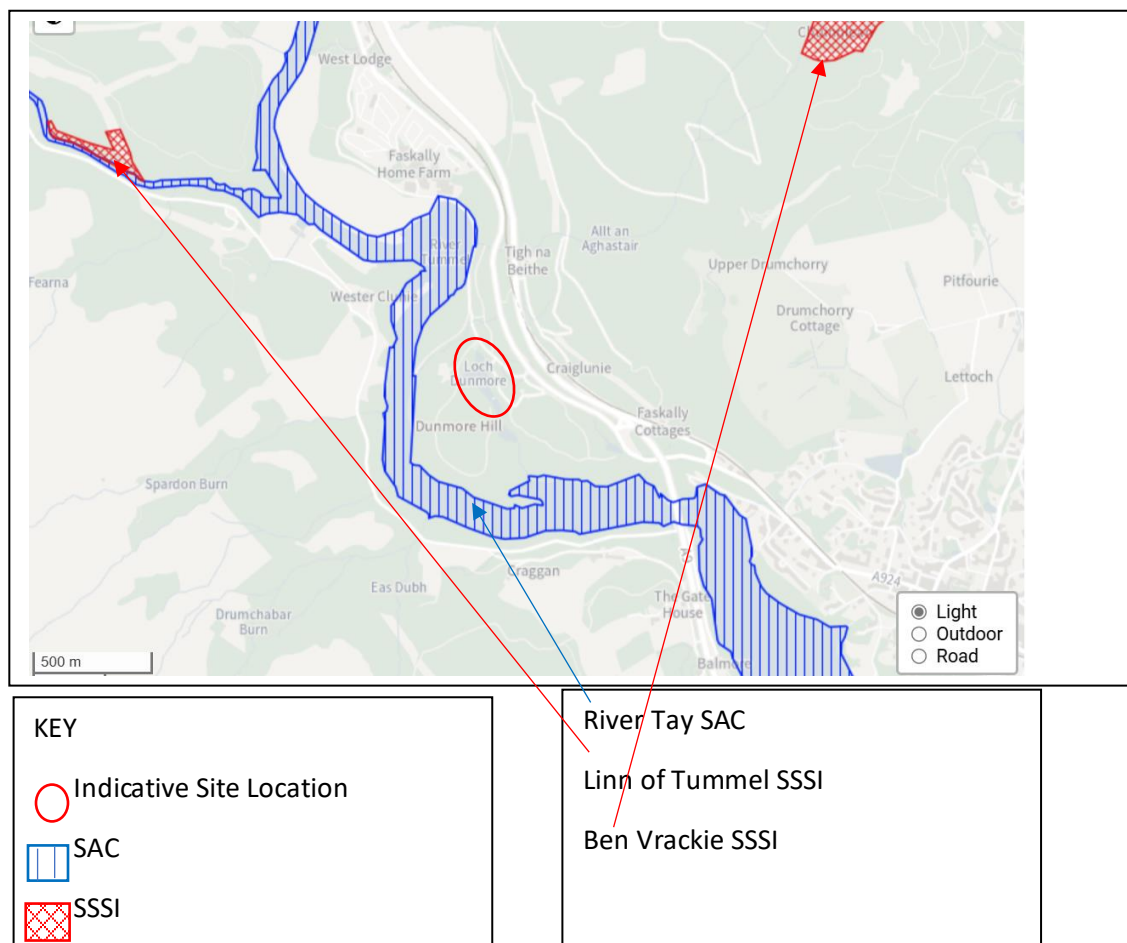
NatureScot Sitelink (2024) indicated that there are no NatureScot local, national or international nature designations on or immediately adjacent to the site. The River Tay Special Area of Conservation SAC is 200m to the east; and the Loch Tummel National Scenic Area NSA is located 200m to the north. There are no other designated sites within 1km of the location.

The River Tay SAC is designated for *Lampetra fluviatilis* River lamprey; *Lampetra planeri* Brook lamprey; *Lutra lutra* Otter; Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*; Clear-water

lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; *Petromyzon marinus* Sea lamprey; *Salmo salar* Atlantic salmon.

The Linn of Tummel Site of Special Scientific Interest SSSI is located 2km to the north-west. This is designated for its species-rich woodland of birch *Betula pendula* and hazel *Corylus avellana* woodland with uncommon higher plant species, including lily of the valley *Convallaria majalis*. Ben Vrackie SSSI is located 2km to the north-east. This is designated for its rich botanical montane upland habitat and breeding bird assemblage.

Figure 4 Nature Designations from Nature Scot Sitelink (2024)



5.1.1.2 Protected Trees/Woodland

Perth and Kinross Council (2023) shows that there are no tree protection orders, and it is not classed as a Conservation Area. The Ancient Woodland Inventory (NatureScot, 2023I) indicates that the trees are classed as long-established woodland of plantation origin. The woodland to the south-east of the loch is also shown as native woodland on the Native Woodland Survey of Scotland and it is Upland Birchwood which is a UK Biodiversity Action Plan Priority Habitat. Nature Scot (2024I) describe ancient semi-natural woodland as “an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, especially veteran trees of high nature conservation and landscape value, should be protected from adverse impacts resulting from development”. The AW extent is shown in Figure 5.

Figure 5 Ancient Woodland from Scotland's Environment Web (2024)



5.1.1.2.1 Policy 6 NPF4 Forestry, woodland and trees

NPF4 Policy 6 specifically states that:

- a) Development proposals that enhance, expand and improve woodland and tree cover will be supported.
- b) Development proposals will not be supported where they will result in:
 - i. Any loss of ancient woodlands, ancient and veteran trees, or adverse impact on their ecological condition;
 - ii. Adverse impacts on native woodlands, hedgerows and individual trees of high biodiversity value, or identified for protection in the Forestry and Woodland Strategy;
 - iii. Fragmenting or severing woodland habitats, unless appropriate mitigation measures are identified and implemented in line with the mitigation hierarchy;
 - iv. Conflict with Restocking Direction, Remedial Notice or Registered Notice to Comply issued by Scottish Forestry.
- c) Development proposals involving woodland removal will only be supported where they will achieve significant and clearly defined additional public benefits in accordance with relevant Scottish Government policy on woodland removal. Where woodland is removed, compensatory planting will most likely be expected to be delivered.
- d) Development proposals on sites which include an area of existing woodland or land identified in the Forestry and Woodland Strategy as being suitable for woodland creation will only be supported where the enhancement and improvement of woodlands and the planting of new trees on the site (in accordance with the Forestry and Woodland Strategy) are integrated into the design.

5.1.2 Protected Species

5.1.2.1 Mammals

13 protected mammal species have been recorded within 5km; 10 within 2km; 7 within 1km and 5 within 0.5km. The NBN (2024) confirmed presence of the following protected mammal species:

Table 5.1 Protected Species Mammals within 5km, 2km, 1km, 0.5km (NBN, 2024)

Species	Latin name	5km	2km	1km	0.5km
Water vole	<i>Arvicola amphibius</i>	2	0	0	0
Beaver	<i>Castor fiber</i>	1028	1	1	0
Hedgehog	<i>Erinaceus europaeus</i>	102	21	6	3
Wildcat	<i>Felis sylvestris</i>	14	0	0	0
Brown hare	<i>Lepus europaeus</i>	28	3	3	0
Otter	<i>Lutra lutra</i>	52	33	11	8
Pine marten	<i>Martes martes</i>	18	2	0	0
Badger	<i>Meles meles</i>	22	5	1	1
Daubenton's bat	<i>Myotis daubentonii</i>	33	1	0	0
Natterer's bat	<i>Myotis nattereri</i>	6	0	0	0
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	4	1	0	0
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	13	7	1	1
Red squirrel	<i>Sciurus vulgaris</i>	1672	683	250	117

5.1.2.2 Schedule 1 Bird Species

15 Schedule 1 bird species have been recorded within 5km; 4 within 2km; 3 within 1km and 0 within 0.5km. The NBN (2024) confirmed presence of the following Schedule 1 birds:

Table 5.2 Schedule 1 Bird Records within 5km, 2km, 1km, 0.5km (NBN, 2024)

Species	Latin name	5km	2km	1km	0.5km
Kingfisher	<i>Alcedo atthis</i>	20	10	4	0
Corncrake	<i>Crex crex</i>	2	0	0	0
Merlin	<i>Falco columbarius</i>	7	1	1	0
Peregrine	<i>Falco peregrinus</i>	21	0	0	0
Hobby	<i>Falco subbeteo</i>	2	0	0	0
Brambling	<i>Fringilla montifringilla</i>	20	0	0	0
Crested tit	<i>Lophophanes cristatus</i>	1	0	0	0
Crossbill	<i>Loxia curvirostra</i>	42	10	0	0
Scottish crossbill	<i>Loxia scotica</i>	6	0	0	0
Snow bunting	<i>Plectrophenax nivalis</i>	2	0	0	0
Spotted crane	<i>Poranza poranza</i>	1	0	0	0
Capercaillie	<i>Tetrao urogallus</i>	9	0	0	0
Redwing	<i>Turdus iliacus</i>	92	0	0	0
Fieldfare	<i>Turdus pilaris</i>	63	0	0	0
Barn owl	<i>Tyto alba</i>	11	1	1	0

5.1.2.3 Red listed bird species

18 red list bird species have been recorded within 2km; 17 within 1km and 0 within 0.5km. The NBN confirmed presence of the following red list species:

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Tel: 07747 883464; Email: info@tayecology.co.uk; Web: www.tayecology.co.uk

Table 5.3 Red List Bird Records within 2km, 1km, 0.5km (NBN, 2024)

Common name	Latin name	2km	1km	0.5km
Tree pipit	<i>Anthus trivialis</i>	4	2	0
Swift	<i>Apus apus</i>	64	39	0
Pochard	<i>Athya ferina</i>	3	3	0
Greenfinch	<i>Chloris chloris</i>	126	77	0
Raven	<i>Corvus corax</i>	10	8	0
Cuckoo	<i>Cuculus canorus</i>	6	4	0
House martin	<i>Delichon urbicum</i>	82	41	0
Yellowhammer	<i>Emberiza citrinella</i>	77	70	0
Reed bunting	<i>Emberiza schoeniclus</i>	1	1	0
Herring gull	<i>Larus argentatus</i>	126	90	0
Linnet	<i>Linaria cannabina</i>	2	1	0
Spotted flycatcher	<i>Muscicapa striata</i>	7	1	0
Curlew	<i>Numenius arquata</i>	3	0	0
House sparrow	<i>Passer domesticus</i>	256	199	0
Wood warbler	<i>Phylloscopus silibatrix</i>	19	13	0
Woodcock	<i>Scolopax rusticola</i>	5	4	0
Starling	<i>Sturnus vulgaris</i>	114	90	0
Mistle thrush	<i>Turdus viscivorus</i>	97	68	0

5.1.2.4 Amber listed bird species

25 amber listed bird species have been recorded within 2km; 23 within 1km and 1 within 0.5km. The NBN confirmed presence of the following amber list species:

Table 5.4 Amber List Bird Records within 2km, 1km, 0.5km (NBN, 2024)

Common name	Latin name	2km	1km	0.5km
Teal	<i>Anas crecca</i>	27	21	0
Mallard	<i>Anas platyrhynchos</i>	581	275	0
Greylag goose	<i>Anser anser</i>	16	11	0
Pink-footed goose	<i>Anser brachyrhynchus</i>	1	1	0
Meadow pipit	<i>Anthus pratensis</i>	57	49	0
Barnacle goose	<i>Branta leucopsis</i>	1	0	0
Black headed gull	<i>Chroicocephalus ridibundus</i>	152	55	0
Dipper	<i>Cinclus cinclus</i>	40	23	0
Stock dove	<i>Columba oenas</i>	5	4	0
Woodpigeon	<i>Columbarius palumbus</i>	482	298	0
Rook	<i>Corvus frugilegus</i>	271	201	0
Whitethroat	<i>Curruca communis</i>	1	0	0
Kestrel	<i>Falco tinnunculus</i>	7	2	0
Moorhen	<i>Gallinula chloropus</i>	317	87	0
Oystercatcher	<i>Haematopus ostralegus</i>	101	68	0
Common gull	<i>Larus canus</i>	70	29	0
Great black-backed gull	<i>Larus marinus</i>	5	5	0
Wigeon	<i>Mareca penelope</i>	8	5	0
Willow warbler	<i>Phylloscopus trochilus</i>	84	56	0
Dunnock	<i>Prunella modularis</i>	164	95	0
Bullfinch	<i>Pyrrhula pyrrhula</i>	83	56	0
Collared dove	<i>Streptopelia decaocto</i>	108	59	0
Tawny owl	<i>Strix aluco</i>	13	4	1

Wren	<i>Troglodytes troglodytes</i>	289	195	0
Song thrush	<i>Turdus philomelos</i>	184	120	0

5.1.2.5 Amphibian and reptiles

6 amphibian and reptile species have been recorded within 5km; 5 within 2km; 4 within 1km; 1 and 0.5km. There are no Great crested newt records within 5km. The NBN confirmed presence of the following species:

Table 5.5 Amphibian and Reptile Records within 5km, 2km, 1km, 0.5km (NBN, 2024)

Common name	Latin name	5km	2km	1km	0.5km
Common Toad	<i>Bufo bufo</i>	33	9	3	1
Palmate Newt	<i>Lissotriton helveticus</i>	10	4	1	0
Common Frog	<i>Rana temporaria</i>	38	16	2	0
Adder	<i>Vipera berus</i>	4	0	0	0
Slow-worm	<i>Anguis fragilis</i>	32	6	2	0
Common lizard	<i>Zootoca vivipara</i>	21	4	0	0

5.1.2.6 Other species

There are no other notable species records such as for plants or other species within 2km, 1km or 0.5km (NBN, 2024).

5.2 Habitat description

Around Loch Dunmore is long-established woodland of plantation origin. Conifers include dominant Scots pine *Pinus sylvestris* and Douglas fir *Pseudotsuga menziesii*. Broadleaved species include dominant Silver birch *Betula pendula* with abundant Beech *Fagus sylvatica*. There are man-made footpaths, a timber bridge, car parking and access roads. The woodland extends in the surrounding area towards Loch Faskally.

5.2.1 Site Photographs

a. Across loch to south



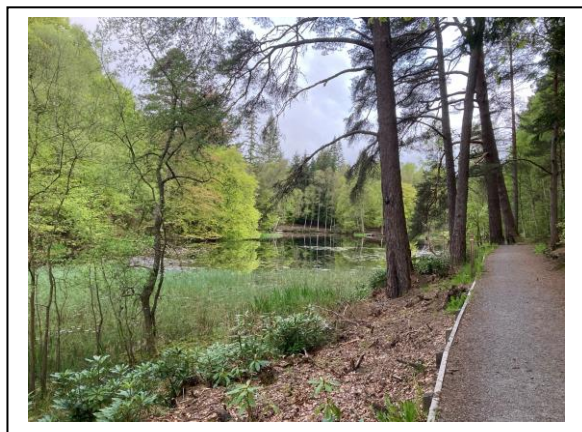
b. Across loch to west



c. Across loch to east



d. Lochside and footpath round loch



e. Bridge across Loch Dunmore



f. Lochside and footpath round loch



g. Mixed woodland to south of loch



h. North across loch



i. Existing footpath towards loch



j. Area of plantation conifers



k. Hardstanding storage area to NW



l. Hardstanding storage area to NW



5.2.2 Phase 1 Habitat Classification

There are a range of habitats across and surrounding the site which are shown in Table 5.6.

Table 5.6 Phase 1 Habitat Classification Codes (JNCC, 2010)

Code	Habitat description	Description
A1.1.1.	Semi-natural broadleaved woodland	Birch woodland to south of Loch Dunmore
A1.2.2	Plantation coniferous woodland	Long-established woodland of plantation origin
G1.3	Standing water oligotrophic	Loch Dunmore
J5	Other – access tracks / parking	Access tracks and parking

5.2.2.2 UK Habitat Classification

The UKHab classification is based on a hierarchical system suitable for use in terrestrial, freshwater and coastal areas of the UK. The system comprises a principal hierarchy (the primary habitats) – which include ecosystems, broad habitats, priority habitats and Annex 1 habitats, as well as non-hierarchical Secondary codes. Habitats were recorded to the appropriate Level of the hierarchy. The habitat divisions at each level of the hierarchy are provided in Table 5.7.

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Tel: 07747 883464; Email: info@tayecology.co.uk; Web: www.tayecology.co.uk

Table 5.7 UK habitat classification hierarchy division

Level 1	Level 2	Level 3	Level 4	Level 5
Major ecosystem, covering terrestrial, freshwater and coastal ecosystems	9 ecosystem types, based upon major habitat types within the EUNIS classification	20 broad habitat types, corresponding with UK Biodiversity Action Plan Broad Habitats and closely to EUNIS	80 habitats, including 47 UK Biodiversity Action Plan Habitats, and further splits of level 3 habitats	104 habitats, including 69 Habitats Directive Annex 1 habitats and further splits of Level 4 habitats

Non-hierarchical secondary codes are also used in addition to the primary codes to provide further contextual information relating to habitat mosaics and complexes within mapped primary habitats. Secondary codes use the mandatory codes for habitat mosaics (10-18), Priority and Annex 1 habitats that occur in multiple primary habitats (19-32) and habitat origins (33-41), the corresponding labels of which are shown in

Table 5.8 UK habitat classification mandatory secondary codes

Secondary code	Label
10	Scattered scrub
11	Scattered trees
12	Scattered bracken
13	Scattered dwarf shrubs
14	Scattered rushes
15	Rushes dominant
16	Tall herb
17	Ruderal / ephemeral
18	Calcareous – acidic mosaic
19	Ponds (Priority Habitat)
20	Wood pasture and parkland
21	Traditional orchards
22	Juniper on heaths or calcareous grassland (H5130)
23	Caves not open to the public (H8310)
24	Depressions on peat substrates (H7150)
25	Coastal and floodplain grazing marsh
26	Machair (H21A0)
27	Heathland on maritime cliffs and slopes
28	Dunes with creeping willow (H2170)
29	Inland saltmarshes (H1340)
30	Estuaries (H1130)
31	Large shallow inlets and bays (H1160)
32	Reefs (H1170)
33	Ancient woodland site
34	Arable reversion grassland
35	Biodiversity offset
36	Plantation
37	Semi-natural woodland
38	Secondary woodland
39	Freshwater - man-made
40	Freshwater - heavily modified
41	Freshwater - natural

5.2.2.2.1 Grassland Ecosystem Primary Hierarchy

The habitat on the site is primarily classified in the Grassland Ecosystem. Table 5.9 shows the UK Hab primary hierarchy of Grassland Ecosystems.

Table 5.9 Grassland Ecosystem Primary Hierarchy (UK Hab, 2023, p.2)

<i>Grassland Ecosystem Primary Hierarchy</i>							
Level 2 Code	Level 2 Name	Level 3 Code	Level 3 Name	Level 4 Code	Level 4 Name (Priority Habitats in Bold)	Level 5 Code	Level 5 Name (Including Annex 1 Habitats)
g	Grassland	g1	Acid grassland	g1a	<u>Lowland dry acid grassland</u>	g1a5	Inland dunes with open grasslands (H2330)
				g1b	<u>Upland acid grassland</u>	g1a6	Other lowland dry acid grassland
				g1c	<u>Bracken</u>	g1b5	Montane acid grasslands (H6150)
				g1d	<u>Other lowland acid grassland</u>	g1b6	Other upland acid grassland
		g2	Calcareous grassland	g2a	<u>Lowland calcareous grassland</u>	g2a5	Dry grasslands and scrub on chalk or limestone; lowland (H6210)
				g2b	<u>Upland calcareous grassland</u>	g2a6	Dry grasslands and scrub on chalk or limestone; important orchid sites (H6210)
				g2c	<u>Other calcareous grassland</u>	g2b5	Alpine and subalpine calcareous grasslands (H6170)
				g3a	<u>Lowland meadows</u>	g2b6	Species-rich grassland with mat-grass in upland areas (H6230)
		g3	Neutral grassland	g3b	<u>Upland hay meadows</u>	g2b7	Dry grasslands and scrub on chalk or limestone; upland (H6210)
				g3c	<u>Other neutral grassland</u>	g3a5	Lowland hay meadows (H6510)
						g3b5	Mountain hay meadows (H6520)
						g3c5	Arrhenatherum neutral grassland
						g3c6	Lolium-Cynosurus neutral grassland
						g3c7	Deschampsia neutral grassland
						g3c8	Holcus-luncus neutral grassland
		g4	Modified grassland				

5.2.2.2.2 Woodland Ecosystem Primary Hierarchy

There are a range of habitats adjacent to the site which include habitats in the Woodland Ecosystem. Table 5.10 shows the UK Hab primary hierarchy of Woodland Ecosystems.

Table 5.10 Woodland Ecosystem Primary Hierarchy (UK Hab, 2023, p.3)

<i>Woodland Ecosystem Primary Hierarchy</i>							
Level 2 Code	Level 2 Name	Level 3 Code	Level 3 Name	Level 4 Code	Level 4 Name	Level 5 Code	Level 5 Name
w	Woodland and forest	w1	Broadleaved and mixed woodland	w1a	<u>Upland oakwood</u>	w1a5	Western acidic oak woodland (H91A0)
				w1b	<u>Upland mixed ashwoods</u>	w1b5	Lime-maple woodlands of rocky slopes (H9180)
						w1b6	Other upland mixed ashwoods
				w1c	<u>Lowland beech and yew woodland</u>	w1c5	Beech forests on acid soils (H9120)
						w1c6	Beech forests on neutral to rich soils (H9130)
				w1d	<u>Wet woodland</u>	w1c7	Yew-dominated woodland (H91J0)
				w1e	<u>Upland birchwoods</u>	w1c8	Natural box scrub (H5110)
						w1d5	Alder woodland on floodplains (H91E0)
		w2	Coniferous woodland	w1f	<u>Lowland mixed deciduous woodland</u>	w1d6	Bog woodland (H91D0)
				w1g	<u>Other broadleaved woodland</u>	w1f5	Dry oak-dominated woodland (H9190)
						w1f6	Oak-hornbeam forests (H9160)
				w1h	<u>Other woodland; mixed</u>	w1f7	Other Lowland mixed deciduous woodland
				w2a	<u>Native pine woodlands</u>		
				w2b	<u>Other Scot's Pine woodland</u>	w1h5	Other woodland; mixed; mainly broadleaved
				w2c	<u>Other coniferous woodland</u>	w1h6	Other woodland; mixed; mainly conifer
						w2a5	Caledonian forest (H91C0)

5.2.2.2.3 Urban Ecosystem Primary Hierarchy

There are a range of habitats adjacent to the site which are classified in the Urban Ecosystem. Table 5.11 shows the UK Hab primary hierarchy of Urban Ecosystems.

Table 5.11 Urban Ecosystem Primary Hierarchy (UK Hab, 2023, p.7)

Urban Ecosystem Primary Hierarchy

Level 2 code	Level 2 Label	Level 3 code	Level 3 Name	Level 4 code	Level 4 Name (Priority Habitats in Bold)	Level 5 code	Level 5 Name (Including Annex 1 Habitats)
u	Urban	u1	Built-up areas and gardens	u1b	Developed land; sealed surface	u1b5	Buildings
				u1c	Artificial unvegetated, unsealed surface	u1b6	Other developed land
				u1d	Suburban mosaic of developed and natural surface		
				u1e	Built linear features		
				u1f	Sparsely vegetated urban land		

5.2.2.2.4 Loch Dunmore UK Hab

Table 5.12 summarises the UK Hab Classification Codes for habitats on the site.

Table 5.12 UK Hab Classification Codes On the Site (UK Hab, 2023)

Code	Habitat description	Description	Additional secondary codes
r1c	Standing open water and canals	Oligotrophic and dystrophic Loch Dunmore	
w1e	Upland birchwoods	Native woodland to south of Loch Dunmore	
w1h6	Other woodland mixed – mainly conifer	Long-established woodland of plantation origin	
u1b	Developed land; sealed surface	u1b6 Other developed land – access tracks, road and parking	800 roads

5.2.3 Trees / Woodland

Around Loch Dunmore is long-established woodland of plantation origin. Conifers include dominant Scots pine *Pinus sylvestris* and Douglas fir *Pseudotsuga menziesii*. Broadleaved species include dominant Silver birch *Betula pendula* with abundant Beech *Fagus sylvatica*. Other species recorded include Sycamore *Acer pseudoplatanus*; Cypress sp. *Cupressaceae spp.*; Ash *Fraxinus excelsior*; Holly *Ilex aquifolium*; Larch *Larix decidua*; Norway spruce *Picea abies*; Pedunculate oak *Quercus rober*; Elder *Sambucus nigra*; Western hemlock *Tsuga heterophylla*. There is limited ground flora with large areas of bare ground underneath the conifers; where light penetrates Broad buckler fern *Dryopteris dilata* and nettles *Urtica dioica* are dominant.

5.3 Protected Species

5.3.1 Badger Survey

Badger activity and badger signs were surveyed for. Badgers are known to be in the wider local area and there are 5 records within 2km. There is suitable habitat on site which is favourable habitat for badgers.

Species recorded No badgers recorded.

Signs recorded No badger latrines, pathways or setts recorded.

5.3.2 Bat Survey

5.3.2.1 Tree Bat Roost Assessment

A preliminary tree bat roost assessment was carried out to assess for the likelihood of the trees within and adjacent to the site boundary to have bat roosts. The assessment indicated that the trees have negligible or low bat roost potential. Negligible bat roost potential is 'negligible habitat features likely to be used by roosting bats' (Collins, 2023, p.44). These trees do not display any cracks, crevices, ivy cover, deadwood in canopy or stem or decay cavities or hollows in stem (Andrews & Gardner, 2016). No further surveys are required for trees with negligible bat roost potential (Collins, 2023, p.70). Low bat roost potential 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, 2023, p.44). No further surveys are required for trees with low bat roost potential (Collins, 2023, p.70).

5.3.2.2 Bat Activity Surveys

Bat activity surveys were carried out in June and July. Common and Soprano pipistrelles were recorded foraging over Loch Dunmore and in the surrounding woodland. On the June dusk survey on 12th June approximately twenty pipistrelles were recorded in total foraging over the loch. The majority of bats were Common pipistrelles, with approximately five Soprano pipistrelles also recorded. The main area of foraging was the northern end of Loch Dunmore with activity also concentrated at the southern end of the loch as well. On the July dusk survey on 3rd July foraging patterns were similar with a lower total of bats, with approximately ten Common pipistrelles and five Soprano pipistrelles recorded.

5.3.3 Red Squirrel Survey

Red squirrel activity and red squirrel signs were surveyed for. The Scots pine and conifer trees are favourable for red squirrels. There are 250 red squirrel records within 1km of the site and 117 records within 0.5km.

Species recorded Six red squirrels recorded during the surveys on the west side of the loch.

Signs recorded No dreys were recorded in the trees on the site or within 5m of the site.

There were chewed pinecones recorded at the bases of the conifer trees around the loch.

5.3.4 Pine marten survey

Pine marten activity and pine marten signs were surveyed for. The trees and woodland provide a favourable habitat for pine marten. There are 2 pine marten records within 2km of the site.

Species recorded No pine martens recorded.

Signs recorded No pine marten dens or scats recorded within 100m.

5.3.5 Otter Survey

Loch Faskally forms part of the The River Tay SAC which provides a highly favourable habitat for otters, and otters are one of its designated species. It is anticipated that otters will be found in Loch Faskally and there is potential for otters to utilise Loch Dunmore at times for feeding. Although it is expected that Loch Dunmore is too frequented by members of the public to make it suitable for an otter holt or couch to be present. There are 11 records for otters within 1km.

Species recorded No otters recorded.

Signs recorded No holts, footprints, tracks, and slides, recorded within 200m.

5.3.6 Beaver Survey

The River Tay SAC is highly favourable for beavers and there are 1028 records within 5km of the site. At this time there are no known beavers recorded upstream of Pitlochry Dam.

Species recorded No beavers recorded.

Signs recorded No lodges, dams, footprints, or tracks recorded. Beaver chewed sticks visible on riverbank where they have washed up.

5.3.7 Water vole survey

Loch Dunmore provides a favourable habitat for water voles, there is 1 record within 5km.

Species recorded No water voles recorded.

Signs recorded No water vole signs i.e., burrows, runs, tracks, feeding stations, droppings, and latrines recorded within 30m.

5.3.8 Amphibian and reptile survey

The woodland and loch have suitability for amphibians and reptiles such as the common frog, toad, newts, adder, slow worm and lizard. Suitable habitat was searched.

Species recorded No toads, frogs, newts, adders, slow worms or lizards were recorded.

Signs recorded No other amphibians or reptile signs were recorded.

5.3.9 Other species survey

Other species activity and signs were surveyed for. Species included invertebrates, and small mammals. The woodland and loch provide favourable habitat. There is potential for invertebrates, and small mammals such as hedgehogs to be found.

Species recorded No other rare or protected species were recorded.

Signs recorded No other rare protected species signs were recorded.

5.3.10 Schedule 1 and Bird Activity Survey

Schedule 1 and bird activity surveys were carried out. No specially protected, sensitive, or very, rare, species of bird was recorded at the site. Common bird species were identified either by visual sighting or by bird call. Species within the site boundary include blackbird, blue tit, chaffinch, great tit, grey heron, robin, woodpigeon, and wren. There is good cover, food, and nesting sites for a variety of birds in the area. There are numerous places for nesting birds, and the trees provide the most likely place to find nesting birds.

Table 5.7 Bird Records

Common Name	Latin Name	Recorded on site	Nesting confirmed	Recorded within 250m of site
Long-tailed tit	<i>Aegithalos caudatus</i>	Yes	Yes	Yes
Mallard	<i>Anas platyrhynchos</i>	Yes	Yes	Yes
Grey heron	<i>Ardea cinerea</i>	Yes	No	Yes
Goldfinch	<i>Carduelis carduelis</i>	Yes	Yes	Yes
Treecreeper	<i>Certhia familiaris</i>	Yes	Yes	Yes
Jackdaw	<i>Coloelus monedula</i>	Yes	No	Yes
Woodpigeon	<i>Columba palumbus</i>	Yes	Yes	Yes
Crow	<i>Corvus corone</i>	Yes	No	Yes
Blue tit	<i>Cyanistes caeruleus</i>	Yes	Yes	Yes
Great spotted woodpecker	<i>Dendrocopos major</i>	Yes	No	Yes
Robin	<i>Erithacus rebecula</i>	Yes	Yes	Yes
Chaffinch	<i>Fringilla coelebs</i>	Yes	Yes	Yes
Moorhen	<i>Gallinula chloropus</i>	Yes	Yes	Yes

Oystercatcher	<i>Haematopus ostralegus</i>	No	No	Yes
Swallow	<i>Hirundo rustica</i>	Yes	No	Yes
Common gull	<i>Larus canus</i>	Yes	No	Yes
Great tit	<i>Parus major</i>	Yes	Yes	Yes
House sparrow	<i>Passer domesticus</i>	No	No	Yes
Coal tit	<i>Periparus ater</i>	Yes	Yes	Yes
Pheasant	<i>Phasianus colchius</i>	Yes	No	Yes
Dunnoek	<i>Prunella modularis</i>	Yes	Yes	Yes
Nuthatch	<i>Sitta europaea</i>	No	No	Yes
Siskin	<i>Spinus spinus</i>	Yes	No	Yes
Tawny owl	<i>Strix aluco</i>	Yes	No	Yes
Wren	<i>Troglodytes troglodytes</i>	Yes	Yes	Yes
Blackbird	<i>Turdus merula</i>	Yes	Yes	Yes
Song thrush	<i>Turdus philomelos</i>	Yes	No	Yes

5.3.11 Protected flora

Rare and protected flora was surveyed for. There are no notable records within proximity to the site.

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.

5.3.12 Invasive non-native species INNS surveys

Invasive non-native species were surveyed for, including Rhododendron *Rhododendron ponticum*, Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera* and Giant hogweed *Heracleum mantegazzianum*.

Species recorded No protected, rare or INNS species were recorded with the exception of Rhododendron *Rhododendron ponticum* for which there is a Forestry and Land Scotland Management Plan and rhododendron removal has taken place.

Signs recorded No other indications to the presence of INNS were recorded.

5.4 Summary

There are no national or statutory nature designations on the proposed site. The River Tay SAC is located 200m to the west of the site and this is designated for otter, sea lamprey, brook lamprey, river lamprey and salmon. The Loch Tummel NSA is located 200m north. There are no other designated sites within 1km. The woodland is listed on the Ancient Woodland Inventory as Long-Established Woodland of Plantation Origin. Around Loch Dunmore is long-established woodland of plantation origin, and to the south of the loch there is native upland birchwood. Conifers are dominant with a selection of broadleaved trees also present. Scots pine and Douglas fir are the main conifer species; with birch and beech the main broadleaved species. There are man-made footpaths, a timber bridge, car parking and access roads. The woodland extends towards Loch Faskally.

The trees have negligible or low bat roost potential. Common and Soprano pipistrelles were recorded foraging over Loch Dunmore and in the surrounding woodland. The main area of foraging was the northern end of Loch Dunmore with activity also concentrated at the southern end of the loch as well with a peak count of approximately twenty individual bats recorded. Red squirrels were recorded on site and there is evidence of red squirrels feeding in the Scots pine trees but there is no evidence of dreys in close proximity to the site. There were no signs of pine martens, badgers or reptiles at the site though the habitat is favourable. Otters are highly likely to use Loch Faskally and the River Tay SAC, although no signs of otter were recorded at Loch Dunmore. It would be unlikely for an otter holt or resting place to be

located at Loch Dunmore due to the existing level of human activity. No signs of beavers were recorded. There is potential for water voles around the loch, although no signs were recorded. There is good cover, food, and nesting sites for a variety of birds. The trees provide the most likely place to find nesting birds, and multiple species were recorded feeding and nesting on the site during the surveys. No evidence of any other protected species or protected or rare species of flora. No signs of the presence of invasive non-native species were identified with the exception of rhododendron for which a separate management plan exists which is in place by the landowner.

6.0 ASSESSMENT

6.1 Limitations

Survey data is accurate when the surveys took place. It was a ground survey, with no tree climbing element, and full access to the site was available. The grounds of private property including was not entered/crossed.

6.2 Discussion

6.2.1 Designated sites

There are no national or statutory nature designations on the proposed site. The River Tay SAC is located 200m to the west of the site and this is designated for otter, sea lamprey, brook lamprey, river lamprey and salmon, clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels. The River Tay SAC is considered to be of International Value and is also important for fresh-water pearl mussels. It is not anticipated that there will be a direct impact to the SAC from the Enchanted Forest. However, unmitigated sedimentation / pollution incidents during the period of works have the potential to result in ecologically significant high negative impacts on the sensitive water habitat. Therefore, it is recommended that during the event works are undertaken according to a Construction Environmental Management Plan (CEMP).

The CEMP should detail the proposed methods of working and measures to ensure protection of all habitats on and adjacent to the site, especially in association to the watercourses. All works with the potential to negatively impact (e.g. windblown dust, run-off, sediment, pollution) should be undertaken with due regard to the relevant SEPA Guidance for Pollution Prevention (GPP). It is considered that provision of the above mitigation measures will ensure that there will be No Likely Significant Effect on the qualifying features of the River Tay SAC as a result of the proposed development. There are no other designated sites within close proximity.

6.2.2 Habitats and flora

Around Loch Dunmore is long-established woodland of plantation origin which is shown on the Ancient Woodland Inventory. Conifers are dominant with a selection of broadleaved trees also present. Scots pine and Douglas fir are the main species with larch and Norway spruce; birch and beech are the main broadleaved species. There are man-made footpaths, a timber bridge, car parking and access roads. The woodland extends in the surrounding area towards Loch Faskally. The combination of woodland and water have potential to be of high value to wildlife, however, the site is already utilised as an amenity forest and is popular with locals and visitors to the area. The Enchanted Forest will not negatively impact the existing

habitat, all trees will be retained, and the route will use established footpaths, access roads, car parking and existing areas of hardstanding. There will be an increase in visitor numbers during the event. However, the autumn timing of the event mitigates the risk of disturbance as it takes place outside of the breeding season for bats, birds and red squirrels and outside of the season for flowering plants and invertebrates. There is potential to enhance the biodiversity of the site and surrounding woodland by new planting at the understorey layer with native shrubs and woodland meadow wildflower mixes. For example, shrub species from a selection of field maple, alder, dogwood, hazel, hawthorn, holly, and rowan; and wildflowers such as devil's bit scabious, herb bennet, herb robert, ragged robin, red campion, primrose and wild garlic. Although any new planting would be subject to agreement with the landowner Forestry and Land Scotland.

6.2.3 Badger surveys

Badgers are known to be in the wider local area, there are local records and there is suitable habitat on site which is favourable habitat for badgers. However, no signs of badgers were recorded within 30m of the site and it is not anticipated that there will be any negative impact to badgers.

6.2.4 Bat surveys

The trees have negligible or low bat roost potential. Common and Soprano pipistrelles were recorded foraging over Loch Dunmore and in the woodland. The main area of foraging was the northern end of Loch Dunmore with activity also concentrated at the southern end of the loch as well with a peak count of approximately twenty individual bats. The Enchanted Forest will have a temporary impact on bat activity as the light and sound show will make the area less favourable for bats during the evenings when the event is setting up and running. The level of bat activity recorded during the summer months shows that long-term impact is unlikely as this event has already been running at the site for a number of years and good numbers of bats were recorded foraging at the site showing that bats continue to utilise the area. Numbers of bats in 2024 are slightly lower than 2023 which is likely due to the unseasonal weather conditions rather than any change at the site, as lower bat numbers have been recorded at other surveys during 2024 in June and July. There is capacity to increase the provision of bat boxes, Enchanted Forest installed thirty bat boxes in the surrounding woodland in 2017, to increase the number of local roosting opportunities. It is recommended that these are installed on different facing aspects to provide a range of temperature environments for bats and at greater than 3m in height, bat boxes should be positioned more than 30m from the boundaries of the event to avoid potential disturbance to roosting bats.

6.2.5 Red squirrel surveys

Red squirrels were recorded on site and there is evidence of red squirrels feeding in the Scots pine trees but there is no evidence of active dreys within close proximity to the site. The Enchanted Forest event takes place outside of the red squirrel breeding season which is classed as being between February to September. During the non-breeding season (October to January) any active dreys are protected by a 5m exclusion zone; during the breeding season active dreys are protected by a 50m exclusion zone. Where exclusion zones of the required distance are not possible a licence is required from Nature Scot. It is not anticipated that the Enchanted Forest will have any long-term negative impact on red squirrels, as it will not impact red squirrel mortality or breeding at a scale which would affect the viability of the population. It will not fragment the red squirrel population and it will not lead to an increased risk of local extinction or increased mortality as a result of

forced dispersal over unsuitable habitat or areas with no or limited cover because the habitat on and around the site will continue to remain favourable for red squirrels (Mammal Society, 2012, pp. 16-19). A dependable long-term food supply from a mixture of deciduous and coniferous trees will remain in the wider area. As red squirrels are able to construct new dreys within a few days, it is recommended that a pre-event red squirrel is undertaken by a suitably experienced ecologist. This will determine if there are any active dreys which have become established between the time of the surveys and the event, and the distance these dreys are from the site. For any active dreys within 5m of the site a licence will be required.

6.2.6 Pine marten surveys

There is suitable habitat for pine martens on the site and in the adjacent woodland. No pine martens, dens or scats were recorded during the surveys, though there are local records for pine martens and pine martens are known to inhabit the local area. Pine martens are tolerant of most forms of human disturbance (Mammal Society 2012, p.76-77), and the Enchanted Forest is unlikely to have an adverse impact on any pine marten potentially moving closer to the site; and the event timing is outside the pine marten breeding season.

6.2.7 Otter surveys

Otters are highly likely to use Loch Faskally and the River Tay SAC, although no signs of otter were recorded at Loch Dunmore. It would be unlikely for an otter natal den, holt or resting place to be located at Loch Dunmore due to the existing level of human activity. It is not anticipated that there will be a negative impact to otters from the Enchanted Forest. However, it is recommended that there is a pre-works contractor brief on otters and that in the event that there are any open pipe systems these will be capped when contractors are off site and any holes or trenches will be covered or ramped overnight to prevent otters becoming trapped.

6.2.8 Beaver surveys

Beavers are known to be in the River Tay catchment, although there was no indication of beavers being present at or close to this locality. The Enchanted Forest will not have any impact on beavers.

6.2.9 Water vole surveys

There is a suitable habitat around Loch Dunmore for water voles although no signs were recorded during the surveys. It is not anticipated that the Enchanted Forest will have any significant negative impact on water voles should they be present in the locality.

6.2.10 Amphibian and reptile surveys

The woodland and loch have potential suitability for amphibians and reptiles, although no evidence of amphibians or reptiles was found. It is recommended that stone and log piles are included as part of works to create a range of habitats for amphibians and reptiles.

6.2.11 Other species surveys

There was no evidence of any other rare or protected species such as amphibians, invertebrates, and small mammals. It is expected that a range of common invertebrates and small mammals use the site and retaining deadwood in the woodland is recommended.

6.2.12 Schedule 1 and bird activity surveys

There were no Schedule 1 bird species recorded at the time of the surveys. Common breeding birds were recorded at the site and there is good cover, food, and nesting sites for a variety of birds. The trees provide the most likely place to find nesting birds, and nesting birds of multiple species was recorded during the surveys. 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.

The Enchanted Forest takes place outside of the breeding season which is classed as being from March to August inclusive which minimises the impact to breeding birds. However, some birds may not cease activity at nests until into September and it is recommended that the site is checked for active nests before the event set-up commences. If found, the active nest should be suitably protected until the young birds have fledged. It is recommended that a range of nest boxes are provided which are suitable for different species of birds including open fronted boxes and smaller and larger boxes with entrance holes.

6.2.13 Flora and INNS surveys

There were no signs of protected or rare species of flora or of any invasive non-native species plant species with the exclusion of rhododendron for which a FLS management plan exists.

6.3 Conclusion

Tay Ecology was commissioned to undertake an ecological appraisal, and ecological impact assessment of the Enchanted Forest Site to update the 2023 surveys. Field surveys were carried out between May to July 2024 to assess habitat, bats, badger, pine martens, red squirrels, otters, beavers, water voles and reptiles. The likelihood of specially protected and rare, species of birds and of any other protected or local biodiversity action plan species of flora and fauna was assessed. There are no national or statutory nature designations on the site. The River Tay SAC is located 200m to the west and this is designated for otter, sea lamprey, brook lamprey, river lamprey and salmon. No further surveys are required regarding designated sites; however, it is essential that best practice working methods and pollution prevention methods are adhered to during the event to safeguard the SAC and adjacent habitats.

Around Loch Dunmore is long-established woodland of plantation origin, the combination of woodland and water have potential to be of high value to wildlife, however, the site is already well utilised as an amenity forest. The Enchanted Forest will not negatively impact the existing habitat, all trees will be retained, and the route will use established footpaths, and access roads. There will be an increase in visitor numbers during the event. However, the autumn timing of the event mitigates the risk of disturbance to wildlife as it takes place outside of the breeding season for bats, birds and red squirrels and outside of the season for flowering plants and invertebrates. There is potential to enhance the biodiversity of the site and surrounding woodland by new planting at the understorey layer with native shrubs and woodland meadow wildflower mixes. Although any new planting would be subject to agreement with the landowner Forestry and Land Scotland.

The trees have negligible or low bat roost potential. Common and Soprano pipistrelles were recorded foraging over Loch Dunmore. The Enchanted Forest will have a temporary impact on bat activity as the light and sound show will make the area less favourable for bats,

however, the level of bat activity recorded shows that long-term impact is highly unlikely as this event has already been running at the site for a number of years and good numbers of bats were recorded foraging during the surveys showing that bats continue to utilise the area. There is evidence of red squirrels, although no evidence of active dreys was recorded. A pre-event red squirrel survey is recommended to confirm that new dreys have not become occupied, or where any dreys are confirmed exclusion zones are put in place. Otters are highly likely to use the water habitat though no signs were identified during the surveys. It would be unlikely for an otter natal den, holt or resting place to be located at Loch Dunmore due to the existing level of human activity. It is not anticipated that there will be a negative impact to otters from the Enchanted Forest. There were no signs of badgers, pine martens, reptiles, beavers or water voles and there will be negligible impact to these species.

There were no Schedule 1 bird species recorded, common breeding birds were recorded, and the trees provide the most likely place to find nesting 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. The Enchanted Forest takes place outside of the breeding season which minimises the impact to breeding birds. However, some birds may not cease activity at nests until into September and it is recommended that the site is checked for active nests before the event set-up commences. The provision of nest boxes for a range of bird species is recommended as part of works. There were no signs of protected or rare species of flora or of invasive non-native species with the exception of rhododendron for which there is a management plan in place by the landowner.

7.0 RECOMMENDATIONS and MITIGATION

To minimize impact and enhance habitat it is recommended that:

7.1 River Tay SAC

- CEMP detailing proposed methods of working and measures to ensure protection of all habitats on and adjacent to the proposed development, especially in association to the waterbodies.

- Follow SEPA Guidance for Pollution Prevention (GPP). Including:

GPP 2: Above ground oil storage tanks

PPG 6: Working at construction and demolition sites

GPP 21: Pollution incident response planning

GPP 22: Dealing with spills

7.2 Trees and Woodland

- Surrounding trees, including tree root systems to be suitably protected during the event.

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

7.3 Bats

- Workers to be fully briefed regarding the possibility of bats on site, the legal status of the animal and their roosts. Any sightings of bats or discovery of a roost should be reported immediately to the Site Manager.

7.4 Red Squirrel

- Pre-event survey of trees within 50m of the proposed development for dreys.
- In the event any active dreys are subsequently identified appropriate steps must be taken to protect the dreys with suitable exclusion zones or a red squirrel licence in place if exclusion zones are smaller than those required by Nature Scot (5m for non-breeding drey, 50m for a breeding drey) or if felling is required.
- 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.

7.5 Otters

- Workers to be fully briefed regarding the possibility of otter on the site, the legal status of the animal, their shelters, and resting places. Any sightings of otter or discovery of a new holt or resting place should be reported immediately to the Site Manager
- During the event there will be no obstruction for otters moving between the bank and open water.
- In the event that there are any open pipe systems these will be capped when the site is not operational. Any holes or trenches will be covered or ramped overnight to prevent otters becoming trapped.

7.6 Amphibians, Reptiles and Small Mammals

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

7.7 Breeding birds

- The Enchanted Forest takes place outside of the breeding season which is classed as being from March to August inclusive which minimises the impact to breeding birds. However, some birds may not cease activity at nests until into September and it is recommended that the site is checked for active nests before the event set-up commences. If found, the active nest should be suitably protected until the young birds have fledged. ground nesting birds, felling must be delayed until chicks have fledged.

To increase biodiversity, it is recommended that:

7.8 Trees and shrubs

- A selection of native species would enhance biodiversity such as field maple, alder, dogwood, hazel, hawthorn, holly, and rowan. Although any new planting would be subject to agreement with the landowner Forestry and Land Scotland.

7.9 Woodland wildflowers

- Potential to enhance woodland floor by sowing wildflower such as a woodland wildflower meadow mix which includes for example wild garlic, giant bellflower, enchanters' nightshade, pignut, foxglove, meadowsweet, wild strawberry, herb Robert, herb bennet, bluebell, primrose, red campion, ragged robin, hedge woundwort, devils-bit scabious, wood sage, upright hedge parsley, bush vetch, common dog violet, common bent, crested dog's tail,

red fescue, wood meadow grass, smooth-stalked meadow grass. Although any new planting would be subject to agreement with the landowner Forestry and Land Scotland.

To increase biodiversity, in addition to native planting described above, it is recommended that:

7.10 Bat Boxes

- Provision of bat boxes by installing bat boxes on surrounding trees. Woodcrete bat boxes are more durable, Schwelger bat boxes are recommended. Group two to three bat boxes on a single large tree or adjacent trees with boxes facing different aspects to provide different microclimates and positioned three or more metres in height.

- Example bat boxes

a. Schwelger 2F Tree Bat Box

Specifications: Height 33 cm; diameter 16 cm; weight 4 kg; Schwegler Woodcrete; black with grey front panel (NHBS, 2024a).

b. Schwelger 1FD Bat Box

Specifications: Height 36 cm; diameter 16 cm; weight 4.8 kg; Schwegler Woodcrete; black with grey front panel (NHBS, 2024b).

c. Schwelger 2FN Bat Box

Specification: Height: 36cm; diameter 16cm; weight 4.4kg; Woodstone (NHBS, 2024c).

7.11 Bird boxes

- Provision of nest boxes on trees. Bird boxes should include a range of entrance hole sizes: 45mm for starlings, 32mm, 26mm and oval for all garden birds. Position open-fronted boxes for robins and wrens

- Provision of tawny owl and barn owl nest boxes on surrounding trees.

- Woodcrete nest boxes are more durable. Bird boxes should be secured 3-4m up trees, utilise nearby trees for shade with boxes tilted slightly forward.

- Example bird boxes

a. Schwelger 1B Nest Box

The 1B will attract a wide range of species and is available with different entrance hole sizes.

- 32mm: great, blue, marsh, coal and crested tit, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrow;
- 26mm: blue, marsh, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole;
- Oval (29 x 55mm): redstarts (because more light enters the brood chamber) and it is suitable for all other species which nest in the 32mm boxes (NHBS, 2024d).

b. Schwelger 1FH Robin Nest Box

Open-fronted woodcrete nest box for robins, black redstart, spotted flycatcher and wren.

Designed to be installed on walls, not trees, to avoid predation. Specification: Dimensions: 20cm x 15cm x 20cm (H x W x D); Interior diameter: 12cm; Weight: 2.5kg (NHBS, 2024e).

c. Schwelger 3S Starling Nest Box

This nest box is suitable for starlings, great spotted woodpeckers, pied flycatchers and nuthatches. The relatively large entrance hole (45mm diameter) and large diameter nesting

chamber (140mm) help to encourage occupation. Specification: external dimensions: 28 x 19 x 20cm; nesting chamber diameter: 14cm; weight: 4.4kg (NHBS, 2024f).

d. Woodstone Tawny Owl Nest Box

Tawny owl nest sites are becoming increasingly rare, providing an artificial nesting site can be hugely beneficial for these species; face the box between north-east to south-east at 3m-5m height. Specifications: dimensions: Height: 520mm; Width: 280mm; Depth: 305mm; Weight: 12kg approx. (Ark Wildlife, 2024).

e. Barn Owl Nest Box

Position on a large, mature tree which is isolated, in a hedgerow or on woodland edge. The nest box should be 3m or more above ground level with a visible access point. Specification: Entrance hole: Optimum size: 130 x 130mm; minimum size: 100 x 100mm; maximum size: 150 x 150mm; Floor area of nest chamber: Good size range: 0.2 to 0.4m²; absolute minimum: 0.16m²; Depth from bottom of entrance hole to nest must be not less than 450mm; For any Barn Owl nestbox less than 700mm deep, an exercise/landing platform below the entrance hole is vital for the safety of young fledglings (Barn Owl Trust, 2024).

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