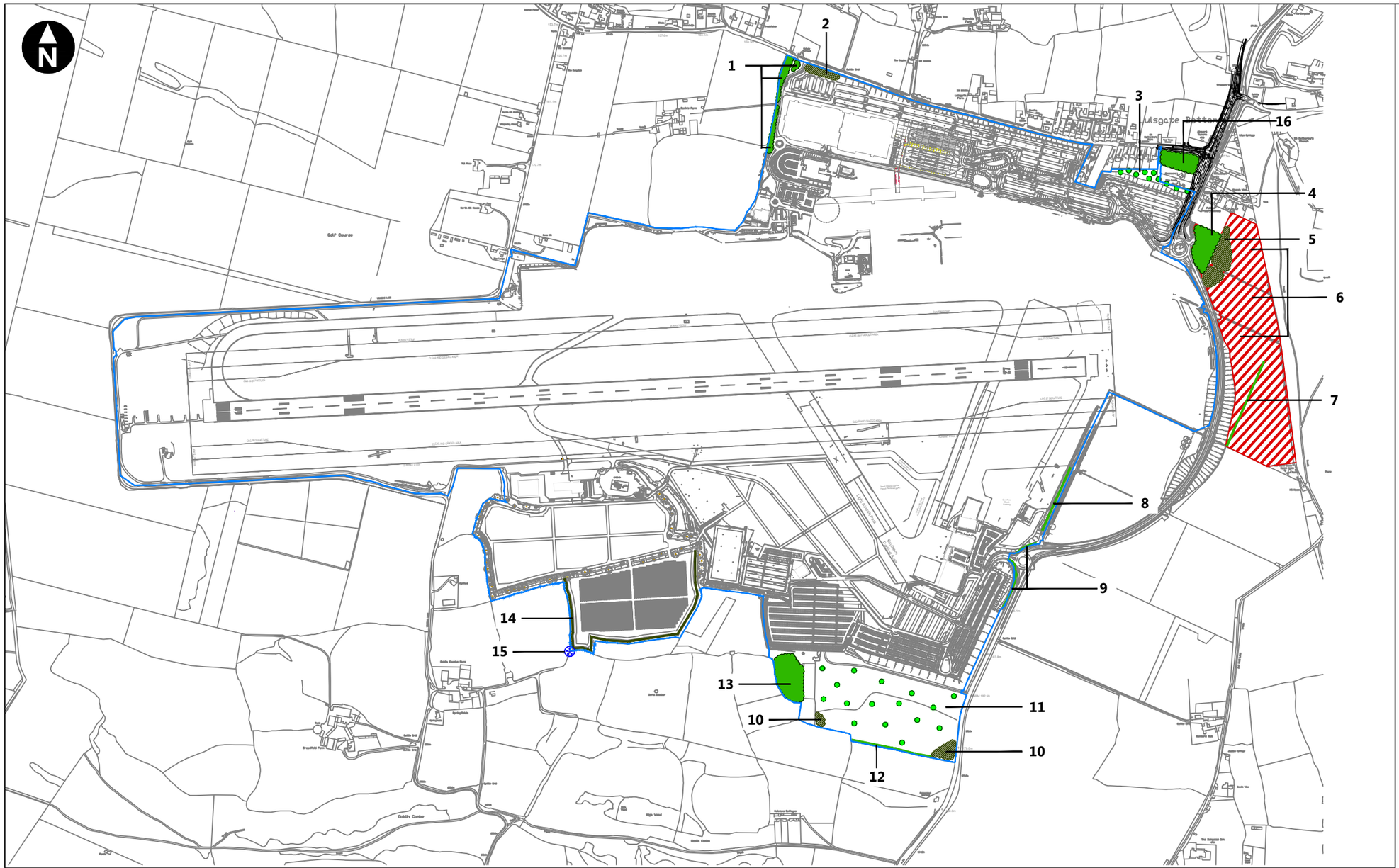


1. Reinforce existing tall native hedgerow. Extend scrub planting at northern (Downside Road) end with provision for rides in scrub. In the island bed surrounded by North Side Road and Downside Road this planting is to include a high proportion of tree planting, some of which will be extra heavy standard trees, to provide increased screening for residents in Melody Cottage. Extend existing bat tower roost. Provides habitat benefits to birds, bats, badger, small mammals and invertebrates. (E, V).
2. Reinforce woodland planting on the top and northern side of bund. Plant native climbers (honeysuckle, ivy and Clematis vitalba) on trellis along northern side of acoustic wall to soften appearance in views. Provides habitat benefits to birds, bats and invertebrates. (E, V)
3. Provision of limited amount of parkland tree planting in the reminder of the grassland to enhance for area for horseshoe bats. Provision of mown paths and information board. Provides habitat benefits to birds, bats, badger, small mammals and invertebrates. (E)
4. Existing woodland copse to have management regime amended to thin internal areas of woodland to enhance habitat for horseshoe bats. Provides benefits to woodland conditions and habitat for birds, bats, badger, small mammals and invertebrates. (E)
5. Extend woodland copse (4) to east. Scallop eastern edge. Increases woodland inventory and habitat provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L)
6. Enhance species diversity in existing grass sward using BRS supplied mix and a CAP722 compliant management regime. Improved grassland conditions and provides benefits to bats, and invertebrates. (E)
7. Reinforce and thicken existing hedgerow and allow to grow to maximum 1.5m height. Provides benefits to birds and bats. (E, L)
8. Reinforce and thicken existing hedgerow and allow to grow to maximum height of 1.5m. Provides benefits to birds and bats. (E, L, V)
9. Introduce extra heavy standard trees into southern section of A38 boundary hedgerow and allow hedgerow section to grow out to maximum height of 1.5m to improve screening effectiveness. Provides benefits to birds and bats. (E, V)
10. Introduce small copses in the south-eastern and south-western corners of Gruffy's Field around bat roosts. Ensure that in combination with (11) the total area of scrub/tree cover within field does not exceed 15% of surface area to maximise its attractiveness to horseshoe bats. Enhance and extend existing horseshoe bat night feeding perches. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L)
11. Introduce parkland trees to Gruffy's Field to enhance existing patches of scrub so that the total area of scrub/tree cover within field does not exceed 15% of surface area to maximise its attractiveness to horseshoe bats. Provides benefits to birds and bats. (E, L)
12. Reinforce and thicken existing hedgerow to maximum height of 1.5m. Provides benefits to birds and bats. (E, L)
13. Existing woodland copse to have management regime enhanced to increase habitat for horseshoe bats. Enhancement and extension of existing building bat roosts. New building bat roost. (E)
14. Cogloop 2 to have perimeter bund with design, planting and seeding to replicate existing bund surrounding Cogloop 1. Lighting regime in Cogloops 1 & 2 to ensure that lux levels at perimeter are less than 0.5lux. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L & V)
15. Restore existing pond. Provides benefits to common amphibians, birds, bats, badger, small mammals and invertebrates. (E, L)
16. Woodland management to improve structure and composition, any necessary tree surgery, remove non-native invasive species and to plant native local species including hazel, yew and holly along the woodland margin to increase ecological functionality and to help reduce light ingress into the woodland. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L & V)

Key

- Bristol Airport Ownership Boundary
- New woodland / scrub planting
- New hedgerow / bund planting
- Reinforcement of existing woodland / scrub / copse planting
- Reinforcement of existing hedgerows
- Parkland tree planting
- New / restored pond
- Enhance species richness of existing grass sward using birdstrike mix

Principal Purpose of Proposed Mitigation Measure

E: Ecology
L: Landscape
V: Visual

0 m 500 m

Scale 1:10,000 @ A3

Development of Bristol Airport to Accommodate 12 Million Passangers Per Annum

Integrated/embedded landscape, visual and ecology mitigation masterplan

November 2018

wood.

H:\Projects\40506 BRI BIA EIA\Drawings\AutoCAD\40506-Bri075b.dwg Originator: STEVE.HOLFORD

APPENDIX D: FELLING LICENCE AND OFF-SITE WOODLAND MASTERPLAN (WOODLAND MANAGEMENT PLAN)

Felling Licence to fell growing trees

Contact - adminhub.bullershill@forestrycommission.gov.uk

Mr Matthew Johns
Green Tree House
11 St Margaret's Street
Bradford on Avon
BA15 2NJ

11/08/2023

Application ref: 018/4177/2022

Management Plan Ref:

Felling Licence (Forestry Act 1967)

Woodland Name: Lulsgate Wood

Please find your approved Felling Licence and associated work area map(s) enclosed. If you are a managing agent receiving this Licence on behalf of the owner / tenant, you must forward a copy of the Licence to the owner / tenant for their attention.

Please note the expiry date for completion of the work.

If this Licence contains conditions for restocking, it is the responsibility of the owner / leaseholder / tenant of the land to ensure that the conditions are met by the required date(s) specified in this Licence. The Forestry Commission may visit the site at any time to inspect compliance of this Licence and its conditions.

Non-compliance with Conditions of the Licence
Failure to comply with the conditions of this Licence may result in an Enforcement Notice being served upon you or any successive owner of the land. Subsequently, failure to comply with an Enforcement Notice may constitute an offence under section 24(4) of the Forestry Act 1967, involving a summary conviction and an unlimited fine. Where an Enforcement Notice is served due to non-compliance with this licence, the Forestry Commission may publish the map attached to this licence (so far as it is replicated within the subsequent Enforcement Notice) upon its publicly facing digital map browser or elsewhere.

Timber Regulations
The Plant Health Regulation (EU) 2016/2031 (PHR) requires the use of Protected Zone plant passports for the movement of all conifers and Castanea species (including sweet chestnut) with bark, and standard plant passports for Juglans, *Platanus and Pterocarya* species (e.g. walnut, plane, wingnut) with or without bark. For these species, a plant passport will be required at each stage of the transport chain where whole or chipped roundwood (including brash) is moved from the harvesting site or site of aggregation, to the processor and the movement of isolated bark whether or not mixed with other materials.

Professional operators must join a register managed by the competent authority, where the professional operator is authorised to issue plant passports. Forest owners will not normally issue passports unless they are responsible for commissioning the movement of timber.

Guidance on how to **Register as a Professional Operator to issue Plant Passports** is available on GOV.UK.

UK legislation governing timber legality prohibits trade of illegally harvested timber and timber products. It requires those responsible for placing UK grown timber onto the market for the first time, the 'Operator', whether they are an owner, contractor or timber merchant, to maintain documentation to prove that the timber is harvested from a legally authorised resource.

A timber regulations Due Diligence checklist is required when placing the timber authorised by this felling licence on the market for the first time. The parties involved will need to complete, and each retain a copy of, the Due Diligence checklist (along with any other documents that demonstrate the timber has been felled in conjunction with all other relevant legislation e.g. Health and Safety). More information on timber regulation is available on GOV.UK by searching 'Regulations: timber and FLEGT licences'.

For those in receipt of Rural Payments

If you claim rural payments, you must follow a set of rules called Cross Compliance, which include Good Agricultural and Environmental Condition of land (GAEC) rules. These rules may impact what times of the year you can cut down trees on land receiving rural payments. Failure to comply with these rules may result in a reduction of payments made by the Rural Payments Agency.

Protected sites - Sites of Special Scientific Interest or Scheduled Monuments

This Licence only gives you permission to fell the trees specified in the Licence. It does not give you the additional consents that you require in order to conduct works (including felling) within Sites of Special Scientific Interest or Scheduled Monuments (protected sites). These consents may be enclosed with this felling licence, but if they are not, you should not fell trees on protected sites without the formal consent from Natural England or Historic England respectively.

Planning permission

If, after felling trees authorised to be cut down in this Licence, you seek planning permission for any form of development on the felled area, you should be aware that the granting of planning permission will not override the conditions of this Licence or any subsequent Enforcement Notice issued under section 24 of the Forestry Act 1967.

Environmental Information Regulations

Felling Licences are disclosed on request and may be published under the Environmental Information Regulations. Disclosure and publication will take into account the requirements of the Data Protection Act 2018 in respect to any personal information included in the licence.

Yours sincerely

For the Forestry Commission

Licence to Fell Growing Trees

To: Mr Andrew Dixon
Bristol Airport
Bristol
BS48 3DW

This Licence gives you permission under section 10 of the Forestry Act 1967 as amended to fell the trees described in Part 1 of this licence and in the areas shown on the appended map(s).

Tree felling under this Licence has been approved by the Forestry Commission as being in accordance with government policy for the sound management of a renewable resource, based on the application made. The Licence issued is intended for use by the person with an interest in the land that enabled them to apply for the licence in the first instance.

The felling permissions in this Licence expire on: 11 Aug 2028

Prior to felling, all parties (agents, contractors, stakeholders) who are involved or affected by the felling must be made aware of this licence and provided with a copy of the Licence and map(s) on request. After enacting any part of this licence, if you sell the land you should also tell the new owner about this Licence.

If a Tree Preservation Order (TPO) is placed on these trees after this Licence was applied for or issued, you must contact the Forestry Commission as you will need a new Licence if you wish to fell the protected trees. Without a new felling Licence, you may potentially be committing an offence under the Town and Country Planning Act 1990 in relation to the TPO. The local planning authority is not empowered to grant you permission to fell protected trees if that felling would ordinarily require a felling Licence.

Tree felling operations must be carried out in a manner that reflects good forestry practice, as set out in the current UK Forestry Standard (UKFS). When preparing tree felling operations, appropriate consideration should always be given for possible impacts on habitats and species, these will include but not limited to:

• Ensuring operations are in compliance with the Conservation of Habitats and Species Regulations 2017 relating to European Protected Species (EPS); and

• Ensuring timing of operations (such as in the bird nesting season) are in compliance with the protection of birds under the Wildlife and Countryside Act 1981.

Any felling operations for ‘thinning’ approved by this Licence must be implemented evenly across the felling site(s) for thinning identified under Part 1 of this licence. The felling operation for thinning will not exceed 30% of the total number of trees or remove more than 30% of the original canopy cover per operation, unless otherwise agreed by the FC and confirmed in this licence. Note: tree felling operations for ‘thinning’ that occur at a greater intensity than 30% of the number of trees or area of canopy (in all or part of an operational area) may constitute a breach of the Licence.

Where conditions of the Licence state that restocking is by natural regeneration or by using coppice regrowth, ground conditions must be maintained to facilitate and secure natural regeneration, and coppiced stumps must be retained in situ and be adequately protected to allow site native natural regeneration to occur.

Tree Health

If you have any reason to suspect the presence of tree pests or disease, e.g. *Phytophthora ramorum*, you are obliged to inform the Forestry Commission at the earliest possible opportunity, as per your obligation under article 14 of The Plant Health Regulation (EU) 2016/2031 (PHR).

If larch or other tree species susceptible to *Phytophthora ramorum* included in this licence display symptoms of this disease you must not fell those trees until the FC have had the opportunity to assess their health. If *Phytophthora ramorum* presence is suspected or confirmed, the area will become subject to a Statutory Plant Health Notice (SPHN), the conditions of which will override those contained within this licence.

Sam Negus Date: 11/08/2023

Signed for and on behalf of the Forestry Commissioners

Part 1 - Description of the trees to be felled

Property: Lulsgate Wood

Name of wood: Lulsgate Wood

Local Authority: North Somerset Council

Approved Felling Details:

Felling site, subcpt or coupe	Type of operation	Marking of trees	Digitised Area ha	Total number of trees	Estimated volume m^3	Species
Site Boundary	Felling to Create Open Space	Yellow spray mark (not yet implemented)	3.63	927	623	European larch / Scots pine

Part 2 - Restocking Conditions

No Conditions

Part 3 - Supplementary points

SSSI NOTE:

Natural England is satisfied that the application, provided it is carried out in strict accordance with the submitted proposals, is not likely to adversely affect the features of special interest for which the SSSI is notified. It has been agreed that no felling will take place within 15 metres of the SSSI to allow a buffer zone to protect the features of the SSSI.

EPS/BIRDS NOTE:

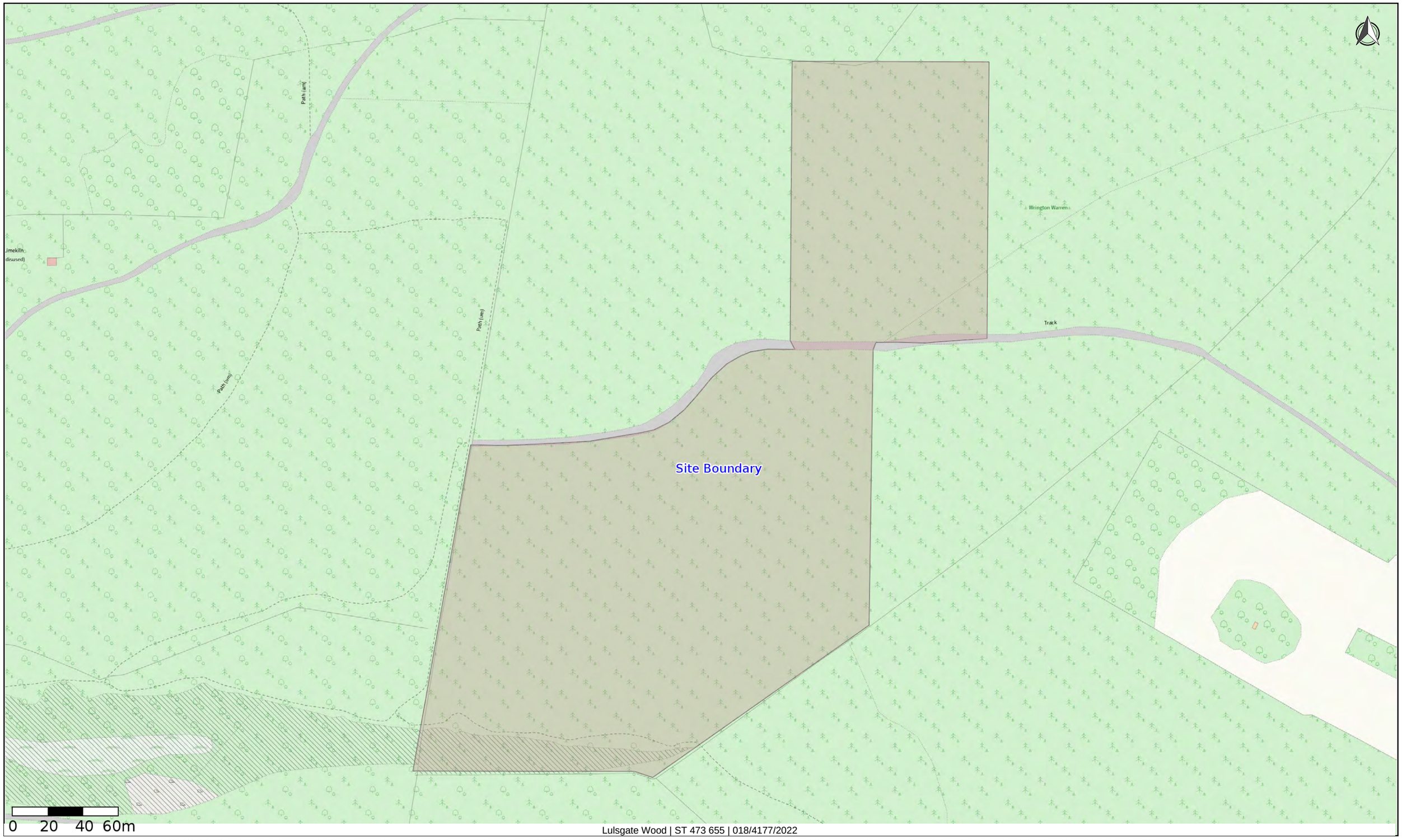
It is expected that operations will be carried out in a manner that reflects good forestry practice with appropriate consideration for possible impacts on habitats and species. You are reminded that prior to undertaking woodland management that all necessary checks are undertaken to ensure compliance with the amended Habitats Regulations relating to European Protected Species (EPS).

If undertaking woodland management within the bird nesting season you must ensure you are meeting your obligations on the protection of birds under the Wildlife and Countryside Act 1981.

Please note that whilst we deal with your application, you must ensure that felling does not start until your licence has been approved/issued.

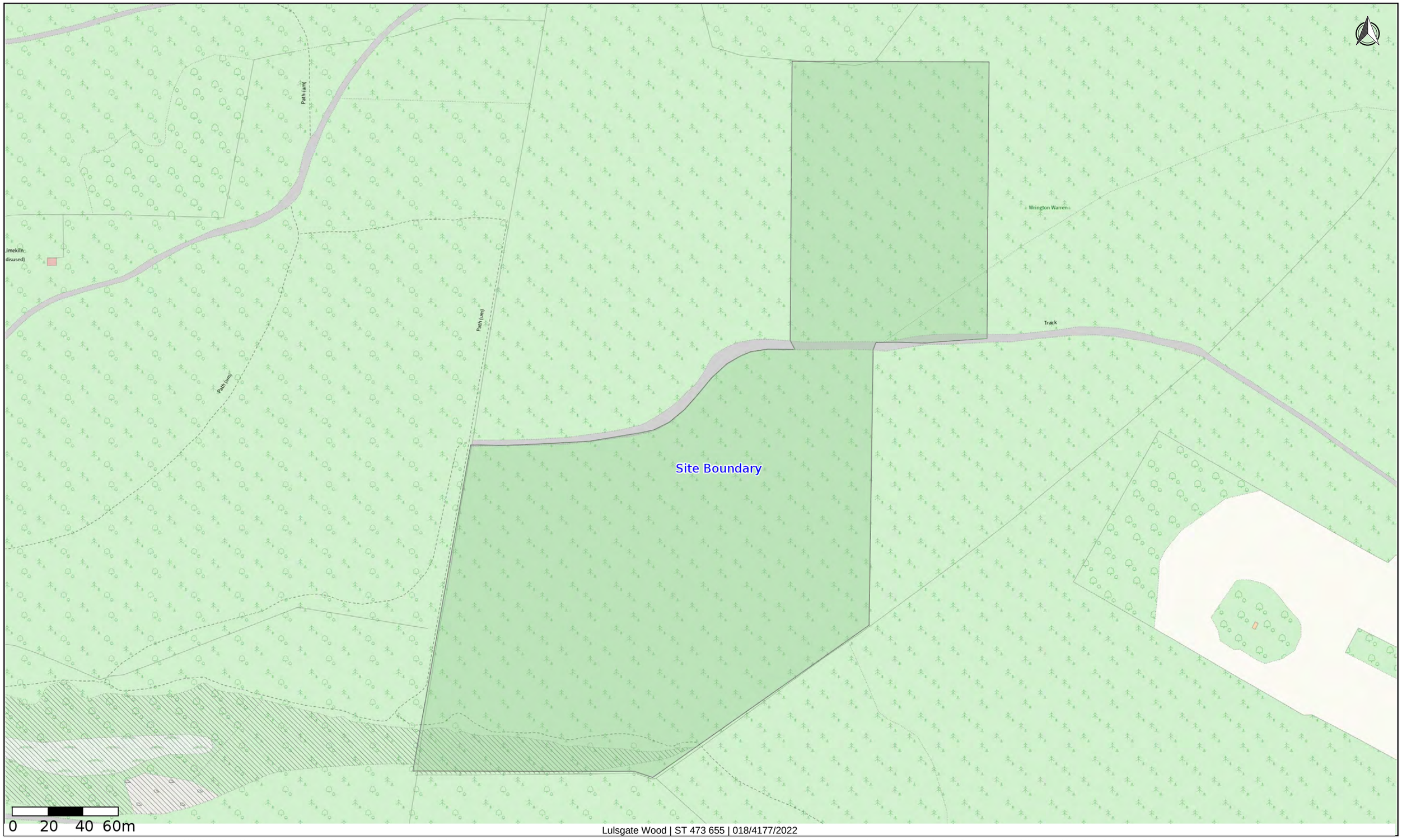
ASNW features, such as veteran trees are to be protected.

Operations Map



Lulsgate Wood | ST 473 655 | 018/4177/2022

Restocking Map



Lulsgate Wood | ST 473 655 | 018/4177/2022

Lulsgate Wood, North Somerset

Woodland Management Plan

J01025/Version 1.4

Client: Bristol Airport Ltd

Date: August 2023

DOCUMENT CONTROL

Report prepared for:

Bristol Airport Ltd

Main contributors

Matthew Johns BSc MSc CEnv MCIEEM - Director
Liz Johns BSc MSc CEnv MCIEEM MRIOB - Director

Reviewed and Contributed to by:

Steve Russell BSc PTI Lantra

DOCUMENT REVISIONS

Version	Details	Date
1.0	Draft management plan provided to the client for review.	January 2023
1.1	Updated Draft taking into account review and feedback	February 2023
1.2	Updated draft embedding outcomes of consultation with Natural England	April 2023
1.3	Final document following receipt of approval from Natural England.	May 2023
1.4	Updated to include updated dormouse data	August 2024

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Appendix D – Proposed Woodland, Canopy and Tree Species
Appendix E – UK Hab Woodland Condition Criteria
Appendix F – Monitoring and Management Schedule
Appendix G – Natural England Affirmation

1 INTRODUCTION

1.1 BACKGROUND

Johns Associates have been commissioned by Bristol Airport Ltd to prepare a bespoke Woodland Management Plan to support its proposals to introduce wide-ranging long-term conservation management of woodland it owns within the much larger area of woodland at Wrington Warren, close to the airport.

Wrington Warren is a large area of woodland located just to the west of Bristol Airport; it consists of a number of small woodland plots that have been created for sale to individuals. Plots typically vary in size between 4 and 6 acres (1.5 to 2.5 hectares). Wrington Warren as its name suggests was originally open rough pasture and was planted primarily with conifer plantations in the late 1950's and 1960's. There are some areas of remnant scrub woodland that pre-dates the plantings. The woodlands have all generally been actively managed and have been thinned.

Originally sold to Bristol Airport as three woodland parcels referred to as Goldstone Wood, Cleeve Wood and Fountain Wood, Bristol Airport is managing all three as a single 6.34 hectare woodland compartment which it has renamed as Lulsgate Wood, in commemoration of all those who served and were associated with the former RAF Lulsgate Bottom, where Bristol Airport is now located. Centered at approximately Ordnance Survey grid reference ST 47324 65577 Lulsgate Wood is located approximately 1.5km west north west of the eastern end of the runway of Bristol Airport.

1.2 AIMS AND SCOPE OF THIS DOCUMENT

This Woodland Management Plan sets out the detailed management and monitoring proposals to ensure Bristol Airport's Vision for the restoration, enhancement and management of Lulsgate Wood is established and sustained in the long term; by identifying appropriate short, medium and long-term management of existing trees, other habitat features and ecosystem functions of Lulsgate Wood; and to maintain and enhance these in perpetuity.

The Woodland Management Plan seeks to:

- meet specific management prescriptions for greater and lesser horseshoe bat (Rhinolophus ferrumequinum and Rhinolophus hipposideros) as set out in the North Somerset and Mendips Bat Special Area of Conservation Supplementary Planning Document (North Somerset Council, 2018[1]) with a range of specific measures also being introduced to support both the existing populations using the woodland and to increase its carrying capacity;
- improve the overall biodiversity and habitat of Lulsgate Wood;
- contribute to the favourable conservation status of Goblin Coombe Site of Special Scientific Interest (SSSI) (a small part of the SSSI is within Lulsgate Wood);
- to enhance the landscape setting of this area of woodland;
- to ensure responsible and high quality management of Lulsgate Wood, as set out in this Woodland Management Plan, in terms of wider objectives and responsibilities.

This management plan has been prepared by Matthew and Liz Johns, both Chartered Environmentalists and long-term full members of the Chartered Institute of Ecology and Environmental Management, and Steve Russell who has over 40 years' experience in Forestry, Arboriculture and Countryside

[1] North Somerset Council. 2018. North Somerset and Mendips Bats Special Area of Conservation (SAC) Guidance document on Development: Supplementary Planning Document.

Management in the local authority sector but also the Forestry Commission and in the private sector. Steve holds numerous NPTC certificates including tree inspection.

1.3 VISION FOR LULSGATE WOOD

Lulsgate Wood will evolve to a thriving and biodiverse mixed woodland, dominated by native broadleaved trees, with an open canopy and revitalized understorey and ground flora, thereby maximizing opportunities for greater and lesser horseshoe bats, and the widest range of local, native flora and fauna in accordance with best practice. It will be monitored and managed in accordance with the Lulsgate Wood Management Plan to provide a diverse ecological structure and function, enhancements to ecosystem services, retaining existing access and acting as an example of responsible woodland management to educate and inspire others.

1.4 THE NORTH SOMERSET AND MENDIPS BATS SPECIAL AREA OF CONSERVATION GUIDANCE ON DEVELOPMENT: SUPPLEMENTARY GUIDANCE DOCUMENT (SPD)

North Somerset Council adopted the North Somerset and Mendip Bats Special Area of Conservation Guidance on Development: Supplementary Planning Document (SPD) in January 2018. This guidance provides a consistent basis for understanding how horseshoe bats use the landscape, to identify key issues that can inform the location and sensitive design of a development and provide clear guidance on survey requirements. It has an emphasis on retaining and enhancing key habitats for bats and providing effective mitigation where required. The guidance also explains how development activities can impact the SAC and sets out the steps required to avoid or mitigate for any impacts. It applies to development proposals that could affect the SAC and trigger the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended).

The guidance brings together best practice and learning from areas with similar approaches, such as Somerset County Council and South Hams, and the best scientific information available at the time of writing. It is intended as a document that will be kept under review and is fully endorsed by Natural England. The planning guidance is part of a wider approach that is being pursued by partner organisations to safeguard and improve habitat for rare bats that includes farm management. The guidance is also consistent with Natural England's Site Improvement Plan for the SAC.

The SPD identifies geographical "zones" around the SAC, in respect of which different requirements apply. This includes Juvenile Sustenance Zones of 1 kilometre (km) around the bat maternity roosts. The guidance also identifies the 'Bat Consultation Zone' where horseshoe bats may be found. The Bat Consultation Zone is divided into bands A, B and C based on the distance from maternity roosts and indicative of the likely density at which the horseshoe species may be found at a distance from a roost site. The three bands reflect the likely importance of the habitat for the bats and proximity to maternity and other roosts. Within bands A or B of the Bat Consultation Zone, proposals with the potential to affect features of interest to bats should be discussed with the local authority and/or Natural England as necessary. Within band C, developers should take advice from their consultant ecologist.

Bristol Airport is located outside of the SAC boundary, but is located within Band B and Band C of the SPD Consultation Zone.

This Plan sets out the management prescriptions in relation to the SPD within Lulsgate Wood, which includes a 4.38ha area identified as being required mitigation for the potential future development of 3.7ha of habitat used by horseshoe bats within band and 0.16ha within band C at Bristol Airport, to ensure delivery of the required mitigation for bats.

1.5 REQUIREMENTS OF PLANNING CONDITION 25, BRISTOL AIRPORT 12MPPA

Bristol Airport Limited (BAL) proposes to increase the capacity of Bristol Airport from 10mppa to 12mppa (planning application reference 18/P/5118/OUT). As part of the proposals additional car parking and highway improvements will be required and is to be sited on land known as Proposed Extension to Silver Zone car park (Phase 2) and A38 Highway Improvement land. The first area is currently used for agricultural purposes, grazed by cattle, the second is a sycamore dominated unmanaged parcel of woodland. Ecological surveys have been undertaken which has revealed the presence of lesser horseshoe bat and greater horseshoe bat.

Specifically, the proposals will result in the loss of circa 3.7ha of horseshoe bat foraging habitat associated with the Proposed Extension to the Silver Zone car park (Phase 2), together with the loss of a small area (0.16ha) of woodland edge habitat at the A38 Highway Improvement land.

Bristol Airport and the land associated with the Silver Zone car park (Phase 2) and the A38 Highway Improvements is situated near to the North Somerset and Mendip Bats Special Area of Conservation, which is a European site for the purposes of the Habitats Directive (Council Directive 92/43/EEC). Lesser horseshoe bats and greater horseshoe bats are cited as Annex II species which are a primary reason for the selection of the site as a Special Area of Conservation (SAC).

The conservation objectives for the SAC state:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated, and subject to natural change, ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and,
- The distribution of qualifying species within the site."

In short, this seeks to ensure that habitats for horseshoe bat are maintained, and this applies equally to habitat used by horseshoe bat outside of the SAC boundary. Due to its proximity to the SAC and the presence of horseshoe bat, the Silver Zone car park (Phase 2) and A38 Highway Improvement land are considered to provide foraging habitat needed to maintain the favourable conservation status of the SAC.

In January 2018, North Somerset Council (NSC) adopted the North Somerset and Mendip Bats Special Area of Conservation Guidance on Development: Supplementary Planning Document (SPD). Compliance with the SPD will be a material consideration in determination of the BAL 12mppa application. Compliance with the SPD enables proposals to demonstrate that adverse impacts on the SAC will be avoided or mitigated. In particular, the SPD states:"…the landscapes around the SAC itself are also important in providing foraging habitat needed to maintain the favourable conservation status of the horseshoe bats. Therefore, the guidance sets out strong requirements for consultation, survey information and appropriate mitigation, to demonstrate that development proposals will not adversely impact on the designated bat populations."

The proposed Extension to the Silver Zone car park (Phase 2) is located within Zone B and the A38 Highway Improvement land within Zone C of the 'Bat Consultation Zone' identified in the SPD, with Bristol Airport itself being partly located in Zone B and partly located in Zone C. The SPD requires that

development proposals within Zones B and C meet certain survey requirements and, where lesser horseshoe bats and/or greater horseshoe bats are likely to be affected, there is a requirement that mitigation is secured to avoid adverse effects on the integrity of the SAC.

Where existing habitats or features of value to bats cannot be retained as part of the development proposals, the SPD requires the provision of replacement habitat. The surveys undertaken in accordance with the SPD are also required to inform the metric for calculating the replacement habitat to be provided. The SPD sets out the precise methodology for calculating an appropriate level of replacement habitat. A suitable management plan for the site must be provided setting out how the site will be managed for SAC bats in perpetuity.

The SPD sets out how the Habitats Regulations will be applied at Section A7. In particular, it notes that any decision must be made on a precautionary basis and, following the Waddenzee case (C-127/02), that there can be no reasonable scientific doubt remaining as to the absence of adverse effects on the integrity of the site. It goes on to state (paragraphs A8 and A9):

"For the Somerset authorities to be able to conclude with enough certainty that a proposed project or development will not have a significant effect on the SAC, the proposal or project must therefore be supported by adequate evidence and bespoke, reasoned mitigation. Where appropriate a long term monitoring plan will be expected to assess whether the bat populations have responded favourably to the mitigation. It is important that consistent monitoring methods are used pre- and post-development, to facilitate the interpretation of monitoring data. Mitigation, an Ecological Management Plan and, (where required) monitoring during and / or post development, will be delivered and secured by Planning Condition 25. Data from monitoring will be used by the Somerset Authorities to determine how the bat populations have responded to mitigation and to increase the evidence base."

The delivery of the replacement habitat requires a detailed Woodland (and Ecological) Management Plan (this Woodland Management Plan) that will comply with the SPD to facilitate coordinated and targeted measures for both lesser and greater horseshoe bats in accordance with the habitat creation prescriptions detailed in Annex 6 of the SPD (and for other species of flora and fauna).

The provision of suitable replacement habitats in Lulsgate Wood can be described as (reproduced from the SPD):

Bristol Airport Woodland: "4.38 ha of existing coniferous plantation (WC0) with canopy cover 75-90% (WF111) currently unmanaged located in SAC Band A managed to become mixed woodland (WB0) with canopy cover <20% (WF114) within 10 years".

The replacement habitat management option (4.38ha is required out of a total of 6.34ha available) would be phased to deliver the required area in advance of any loss of grassland or woodland horseshoe bat foraging habitat associated with the Silver Zone car park (Phase 2), which is 4.26ha in 2023 then the remaining 0.14ha associated with the A38 highway improvements in 2024.

The felling works would be timed to align with best practice advice in relation to dormouse, bats, nesting birds and other flora/fauna. The proposed timings are to mobilise in August 2023, to facilitate access and only in areas where an ecologist has confirmed through monitoring that no nesting birds are present and habitat is unsuitable for dormouse. The majority of the works (all 2023 felling associated with the 4.38ha) would occur from mid-Sept to the end of October 2023 to enable certain works to proceed at Briostol Airport in late autumn/winter 2023, and to meet best practice requirements for dormouse (Forestry Commission, 2019. A protocol for undertaking woodland management in England where dormice are present), but also being implemented under a Natural England dormouse EPS licence. The remainder would occur in mid-Sept to end Oct 2024.

Planning Condition 25 associated with planning application reference 18/P/5118/OUT includes requirements associated with the North Somerset and Mendips Bat SAC and the SPD, and associated provision of replacement habitat in Lulsgate Wood, which have been highlighted in bold below. This

Woodland Management Plan forms part of the overall BMMP being referred to here.

25 - Prior to the commencement of any part of the extension to the 'Silver Zone' car park (Site 'M' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00) or the approved highway works at the A38 / Downside Road / West Lane (Site 'O' on Site Reference Plan – Drawing Number 17090-00-100-402), a Biodiversity Mitigation and Management Plan (BMMP) that accords with the document titled: 'Integrated / embedded Landscape, Visual and Ecology Mitigation Masterplan' Wood Consultants (August 2019) and Chapter 11 of the 'Environmental Statement', shall be submitted to, and approved in writing by, the Local Planning Authority. The BMMP shall include the following:

a) Description and evaluation of on-site features to be managed;
b) Description of the off-site features to be managed including replacement habitat for horseshoe bats as detailed in Outline SAC/SPD Ecological Management Plan for North Somerset and Mendip Bat SAC SPD (Johns Associates, 2018);
c) Details of the extent and location of habitat retention, creation and enhancement measures;
d) Ecological trends and constraints that might influence management;
e) Aims and objectives of management;
f) Appropriate management options for achieving aims and objectives.
g) Prescriptions for management actions;
h) The timescales for implementation of the BMMP, demonstrating that replacement horseshoe bat habitat will be available before suitable on-site habitat is removed, disturbed or otherwise negatively impacted in accordance with the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document (Adopted January 2018);
i) A work schedule (including an annual work plan capable of being rolled forward over a ten-year period and recommendation for
ongoing review);
j) Details of the body or organisation responsible for managing the day-to-day implementation of the plan;
k) Ongoing monitoring and remedial measures including a monitoring schedule for the off-site replacement habitat for horseshoe bats as detailed in Outline SAC/SPD Ecological Management Plan for North Somerset and Mendip Bat SAC SPD (Johns Associates, 2018). This shall include a compliance report submitted to and agreed in writing before suitable on-site habitat for horseshoe bats is removed, disturbed, or otherwise negatively impacted, to demonstrate that suitable off-site compensatory habitat has been provided. The means of reporting the findings to the Local Planning Authority and Natural England shall also be specified. The BMMP shall also include details of the mechanism(s) by which the long-term implementation of the plan will be secured by the developer, detailing responsibility for its delivery. The plan shall also set out contingencies and/or triggers and options for remedial action to ensure that it delivers the fully functioning biodiversity objectives of the approved scheme. The approved BMMP will be implemented in accordance with the approved details.

1.6 AFFIRMATION FROM NATURAL ENGLAND

The preparation of this document has included a series of consultation meetings and advice from Natural England (Amanda Grundy, Leonore Williams, Lauren Baillie, Simon Stonehouse).

Further to the latest round of consultation with Natural England and modification made to this document, it has provided written confirmation that:

"Natural England agrees that the proposals set out in the updated WMP meet the requirements of the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document (Adopted January 2018), are in line with the Appropriate Assessment of the airport expansion proposals, and that we are satisfied they are directly going to support and benefit the bat species associated with the SAC."

1.7 METHOD FOR MAPPING AND MODELLING THE PROPOSED CANOPY REDUCTION

The latest version of ESRI Arc GIS Pro has been used throughout to provide accurate georeferenced mapping/measurements.

The boundary of the woodland owned by Bristol Airport was imported to GIS and tree point and tree canopy layers were created using the latest National Tree Atlas data from Blueskies Technology.

Tree species have been mapped to tree points on site to better than 1m accuracy using a Juniper Systems GEODE GPS/GNSS. This has enables the mapping of species and canopy distribution within the woodland.

Using agreed criteria from the North Somerset and Mendips Bat SAC Supplementary Planning Document, the Woodland Management Plan is seeking to reduce the canopy to 20% to enhance opportunities for lesser and greater horseshoe bats and implement a wide range of conservation management practices to increase the condition, ecological function and biodiversity of this area of woodland. Equally, there is a need to maintain 'woodland' and have sought to ensure that no 0.5ha of the woodland has less than 20% canopy coverage.

The total woodland owned by Bristol Airport is 6.34ha and the target is to achieve no more than 20% high canopy coverage in 4.38ha of the woodland.

Based on the criteria stated a 1.714ha area has been defined where the trees will remain untouched at 100% canopy – this is primarily Yew, with all oak, beech, etc, with the focus on canopy reduction being associated with non-native hybrid, larch, then Scot's pine, Holm oak, ash then sycamore. This approach has been taken to ensure that the area with canopy removal and the 20% retained canopy cover threshold are continuous.

A 0.5ha grid was then created and located this over the woodland to a best fit match.

The current tree canopy cover (excluding the 100% retained areas) per 0.5ha grid square was created and reduced this to 20% by removing canopy polygons based on the priority species list adopted (so, for example, an isolated Whitebeam would always be retained).

GIS plans showing the tree canopy before and after removal have been prepared, split by species and created summary and detailed tables of all trees to be removed/retained by species.

All areas of woodland within each 0.5ha grid owned by Bristol Airport have no less than 20%, with adjacent blocks of woodland (outside of Lulsgate Wood) increasing this area above 20% within each 0.5ha grid.

1.8 THE NEED FOR FORESTRY EIA

Based on discussions with the Forestry Commission's Woodland Officer (Chris Mackenzie-Smith) (November 2022 per. Comm.), it is understood that maintaining woodland cover of 20% per 0.5ha means that proposals typically fall outside of the requirements of the Forestry Environmental Impact Assessment requirements. The forestry EIA process is governed by the Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999.

This has been achieved through the approach set out in Section 1.5. Having a canopy coverage of 20% also accords with the requirements for providing replacement horseshoe bat habitat as defined by the North Somerset and Mendips Bat SAC SPD, that all areas that considered sensitive and important ecological features are being conserved, and the overall plan is around woodland and biodiversity enhancement. The Forestry Commission will confirm whether or not these woodland management proposals will require Environmental Impact Assessment.

1.9 SUMMARY OF WOODLAND MANAGEMENT PROPOSALS

The implementation of the Vision for Lulsgate Wood will involve a range of woodland and conservation management proposals that will both comply with the North Somerset and Mendips Bat SAC SPD (to facilitate coordinated and targeted measures for both lesser and greater horseshoe bats in accordance with the habitat creation prescriptions detailed in Annex 6 of the SPD), for the restoration of a more natural mixed woodland habitat assemblage, and for other species of flora and fauna.

This will involve the following conservation elements as a minimum (please refer to Section 3.5 for full details):

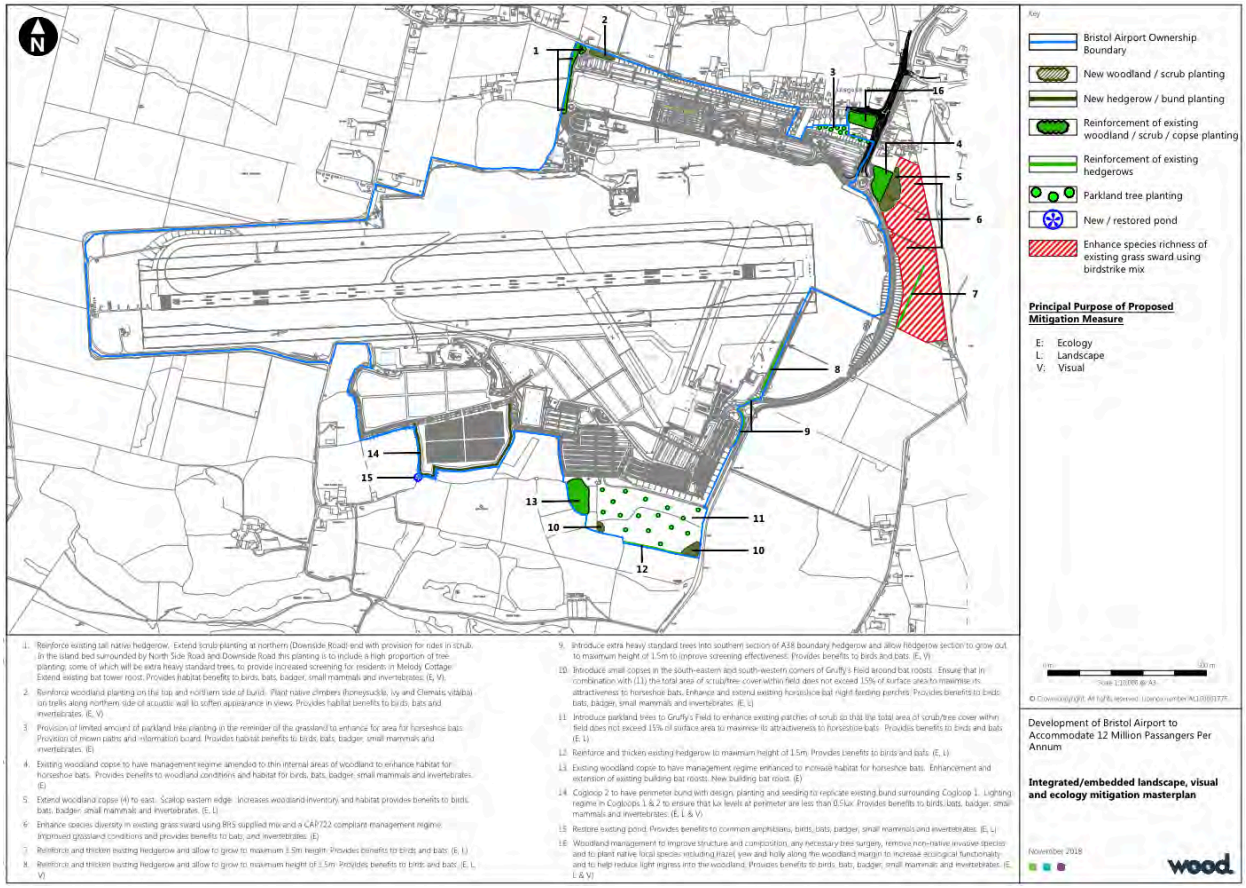
- Provision of a suitably qualified and experienced Ecological Clerk of Works to oversee matters;
- Use of suitably experienced contractors to undertake the woodland management works;
- Some phasing of management over 2 years (represented by the retention of 1.714 existing deciduous and yew woodland, removal of over 4.26ha of mature non-native hybrid larch and Scot's pine in 2023, and then the remaining 0.14ha in 2024) also taking into account that Lulsgate Wood is also surrounded by a significant extensive woodland that also provide support for the SAC greater and lesser horseshoe bat populations. This greater proportion of felling in 2023 would be mitigated by the introduction of cattle grazing in spring 2024.
- Ecological toolbox talk for all individuals involved in delivering the woodland management work, including maintenance of an attendance register;
- To achieve a high canopy cover of no more but no less than 20% across the conifer plantation areas through sensitive tree felling and removal, with reuse of deadwood resource as habitat and dead hedge/management features;
- Implementing works in accordance with all best practice procedures associated with protected species (e.g. Forestry Commission 2018. Protected Species A Reminder, Forestry Commission, European Protected Species and Woodland Operations Checklist V, Forestry Commission Operational Site Assessment, Forestry Commission 2019, A protocol for undertaking woodland management in England where dormice are present, Forestry Commission 2013, Guidance on Managing Woodland with Bats in England);
- Retaining some standing conifer monoliths and the creation of natural bat crevice features suitable for a range of species;
- Adaption of two known shafts as cooler /potential hibernation roost features for horseshoe bats (and other species), whilst making them safe to people;
- Provision of two timber bat cabins for greater and lesser horseshoe bats to use as night roosts located in the lower lying southern area of Lulsgate Wood as per guidance provided by the Vincent Wildlife Trust;
- Creating/enhancing habitat opportunities for abundant suitable prey species for lesser horseshoe bat: Diptera of the crepuscular sub-order Nematocera including Tipulidae (crane-

flies), Ceratopogonidae (biting midges), Chironomidae (non-biting midges), Culicidae (mosquitoes), and Anisopodidae (window midges). Lepidoptera (moths) Trichoptera (caddis flies) and Neuroptera (lacewings); and greater horseshoe bat: cockchafer Melolontha melolontha; dung beetles Aphodius sp. (Coleoptera: Scarabaeidae); and moths (Lepidoptera), crane flies (Diptera: Tipulidae), ichneumonids (Hymenoptera: Ichneumonidae) of the Ophian luteus complex, and caddis flies (Trichoptera).

- Provision of small ponds and scrapes in the lower lying southern area of Lulsgate Wood to support lesser horseshoe bats;
- Creation of a network of rides and glades and maintaining the open space through cattle grazing from spring 2024;
- Introduction of cattle grazing in spring 2024, to manage areas of the woodland and to enhance the prey species availability and increase carrying capacity for an increase in the greater and lesser horseshoe bat population;
- Thinning of retained conifer tree groups and remaining dense growth through gradual felling, allowing natural regeneration and replanting where necessary.
- Appropriate tree surgery to maintain lifespan of retained trees;
- Maintain the open canopy structure of the thinned conifer plantation through the use of rotational cutting
- Management to sustain all species present within the wood and to create diverse habitats for the recolonisation by other species to maximise biodiversity;
- Management of open spaces as glades, encouraging the regeneration of ground flora (exploring the potential to re-establish areas of calcareous grassland, thereby supporting the conservation objectives associated with Goblin Combe SSSI);
- Encouragement of early successional habitats and management through rotational coppicing;
- Creation of mixed habitat opportunities for invertebrates;
- Removal of any non-native and invasive species of tree/understorey;
- Bracken, bramble and other shrub control (as necessary);
- Pest control e.g. squirrel and deer
- Disease control e.g. Phytophtgora ramoram in larch and Hymenoscyphus fraxineus in ash
- Long term aim to achieve a balanced age structure and to maintain a continuous supply of young growth through regular thinning/felling and to protect and enhance mature features, such as large trees and dead wood;
- The management of the habitat will continue in the long term and, as such, a detailed plan is essential to ensure that the provision for horseshoe bats is maintained in the future.
- Additional measures will be introduced within the first 12 months to provide multispecies biodiversity mitigation and enhancement from these proposals. These are:
    - Retention of standing and fallen deadwood (extent to be agreed);
    - 6 x hibernacula and 6 x log pile refugia suitable for a range of species
    - Provision of 20 bird boxes on mature retained trees;
    - Provision of a network of 50 dormouse boxes within the Site, co-located with higher quality arboreally connected understorey and a range of food plants;
    - Design and provision of suitable information boards highlighting the purpose and nature of the management works and key features of interest.
    - Best practice woodland management in relation to health and safety, access, sustainability and other aspects.

At Bristol Airport, the following measures (as defined in the Integrated Biodiversity and Landscape Masterplan for the airport) will be implemented by the end of 2024, to improve foraging/connected and roosting habitats for greater and lesser horseshoe bat, within Zone B and C of the SPD area. These fall outside of, and are in addition to, the agreed SAC SPD measures for horseshoe bats associated with Lulsgate Wood and should be viewed as additional enhancements, which in combination with cattle

grazing within Lusgate Wood by spring 2024, will avoid any effect associated with the rapid phasing of the proposed reduction in woodland canopy.



1. Reinforce existing tall native hedgerow. Extend scrub planting at northern (Downside Road) end with provision for rides in scrub. In the island bed surrounded by North Side Road and Downside Road this planting is to include a high proportion of tree planting, some of which will be extra heavy standard trees, to provide increased screening for residents in Melody Cottage. Extend existing bat tower roost. Provides habitat benefits to birds, bats, badger, small mammals and invertebrates. (E, V).
2. Reinforce woodland planting on the top and northern side of bund. Plant native climbers (honeysuckle, ivy and Clematis vitalba) on trellis along northern side of acoustic wall to soften appearance in views. Provides habitat benefits to birds, bats and invertebrates. (E, V)
3. Provision of limited amount of parkland tree planting in the reminder of the grassland to enhance for area for horseshoe bats. Provision of mown paths and information board. Provides habitat benefits to birds, bats, badger, small mammals and invertebrates. (E)
4. Existing woodland copse to have management regime amended to thin internal areas of woodland to enhance habitat for horseshoe bats. Provides benefits to woodland conditions and habitat for birds, bats, badger, small mammals and invertebrates. (E)
5. Extend woodland copse (4) to east. Scallop eastern edge. Increases woodland inventory and habitat provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L)
6. Enhance species diversity in existing grass sward using BRS supplied mix and a CAP722 compliant management regime. Improved grassland conditions and provides benefits to bats, and invertebrates. (E)
7. Reinforce and thicken existing hedgerow and allow to grow to maximum 1.5m height. Provides benefits to birds and bats. (E, L)
8. Reinforce and thicken existing hedgerow and allow to grow to maximum height of 1.5m. Provides benefits to birds and bats. (E, L, V)
9. Introduce extra heavy standard trees into southern section of A38 boundary hedgerow and allow hedgerow section to grow out to maximum height of 1.5m to improve screening effectiveness. Provides benefits to birds and bats. (E, V)
10. Introduce small copses in the south-eastern and south-western corners of Gruffy's Field around bat roosts. Ensure that in combination with (11) the total area of scrub/tree cover within field does not exceed 15% of surface area to maximise its attractiveness to horseshoe bats. Enhance and extend existing horseshoe bat night feeding perches. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L)
11. Introduce parkland trees to Gruffy's Field to enhance existing patches of scrub so that the total area of scrub/tree cover within field does not exceed 15% of surface area to maximise its attractiveness to horseshoe bats. Provides benefits to birds and bats. (E, L)
12. Reinforce and thicken existing hedgerow to maximum height of 1.5m. Provides benefits to birds and bats. (E, L)
13. Existing woodland copse to have management regime enhanced to increase habitat for horseshoe bats. Enhancement and extension of existing building bat roosts. New building bat roost. (E)
14. Cogloop 2 to have perimeter bund with design, planting and seeding to replicate existing bund surrounding Cogloop 1. Lighting regime in Cogloops 1 & 2 to ensure that lux levels at perimeter are less than 0.5lux. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L & V)
15. Restore existing pond. Provides benefits to common amphibians, birds, bats, badger, small mammals and invertebrates. (E, L)
16. Woodland management to improve structure and composition, any necessary tree surgery, remove non-native invasive species and to plant native local species including hazel, yew and holly along the woodland margin to increase ecological functionality and to help reduce light ingress into the woodland. Provides benefits to birds, bats, badger, small mammals and invertebrates. (E, L & V)

1.10 SCOPE OF PROPOSALS

This Woodland Management Plan should be read in conjunction with the supporting technical material used to inform its preparation (available separately, but submitted as part of the Felling License application). It should be treated as a live document that will be informed by ongoing monitoring that would inform and update the best approach to management as appropriate.

It describes a scheme of initial woodland management and habitat creation/enhancement and its subsequent monitoring and management, which is required to ensure that the ecological and landscape framework is sustained, such that all benefits to ecosystem services, biodiversity and the wider value provided by Lulsgate Wood are delivered successfully throughout the lifetime of the management plan, which is in perpetuity.

Management and monitoring will be ongoing, with reviews being undertaken in the shorter and longer term, relating to the objectives, actions and results and progress (refer to Section 3.5 for full details).

The Woodland Management Plan therefore serves as a handbook for future woodland and ecological management following the initial phase of works and considers the whole of Lulsgate Wood and includes the following:

- Description and evaluation of features to be managed and the overall woodland and ecological vision for the Site;
- Appropriate management Targets and Actions for achieving the Vision and Objectives;
- Preparation of a work schedule (including an annual work plan capable of being amended for future use);
- Body or organisation responsible for implementation of each element of the plan;
- Monitoring and review measures;
- Timeframe for reviewing the plan.

It provides details of the required maintenance, management, and monitoring of all retained and proposed new planting vegetation types/habitats/habitat features on Site, as outlined below and set out in detail in Section 3.5. The management prescriptions shall be implemented in full in accordance with the approved details.

This Woodland Management Plan will be reviewed and updated as necessary (see Section 3.5) throughout the planning and implementation stages of the initial and long-term management activities, in consultation with the Forestry Commission, Natural England and North Somerset Council.

1.11 EXISTING DATA AND REFERENCE DOCUMENTS

Table 1 Existing Landscape and Ecological Data

Source	Description
www.magic.gov.uk	Wide range of supporting environmental data including: • Land based designations (statutory, non-statutory, historic statutory and historic non-statutory) • Habitats and species (including Ancient and Semi-Natural Woodland, Ancient Replanted Woodland and Priority Habitat Inventory Deciduous Woodland) • Forestry and woodland schemes (including English Woodland Grant Schemes, Woodland Trust Sites, Forest Plans, Felling Licences • Landscape (including geology and soils and landscape classifications) • Aerial photography • Ordnance Survey mapping
www.heritagegateway.org.uk	Source of information for a wide range of national and local information on designated heritage sites, features and buildings and finds.
https://flood-map-for-planning.service.gov.uk	Government source of information relating to a range of flood sources and flood risk zones
North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document. Adopted January 2018.	The guidance brings together best practice and learning from areas with similar approaches, such as Somerset County Council and South Hams, and the best scientific information available at the time of writing. It will be kept under review by North Somerset Council and Somerset County Council and their partners and is fully endorsed by Natural England. The planning guidance is part of a wider approach that is being pursued by partner organisations to safeguard and improve habitat for rare bats that includes farm management. The guidance is also consistent with Natural England's Site Improvement Plan for the SAC.
http://map.n-somerset.gov.uk/dande.html	North Somerset Council Planning Constraints Portal: Source of wide-ranging information relating to North Somerset including: • Definitive Public Rights of Way Map • Common Land • Conservation Areas • Green Belt • Regionally Important Geological Sites • Registered Parks and Gardens • Sites of Nature Conservation Interest • Tree Preservation Orders • Wildlife Sites • Woodland Stock • North Somerset and Mendips Bat SAC Consultation Zones

This document is to be read in conjunction with the following current drawings (those in italics are included as Appendices to this plan) and documents (available separately as part of the Felling Licence application) prepared by Johns Associates:

- Bristol Airport Woodland Phase 1 Habitat Survey
- Bristol Airport Woodland NVC Survey
- Bristol Airport Woodland Dormouse Surveys
- Bristol Airport Woodland Badgers
- Bristol Airport Woodland Great Crested Newt Report
- Bristol Airport Woodland Invertebrates
- Bristol Airport Woodland Bat Survey Report Final

- Bristol Airport Woodland Static Bat Analysis Appendix
- Bristol Airport Woodland Transect Bat Analysis Appendix
- J01025-001 Site Location Plan
- J01025-002 Site Location Plan with Infrared
- J01025-003 Tree Canopy Plan
- Bristol Airport Woodland Dormouse Survey Update 2021
- Lulsgate Wood Baseline Update Ecology Walkover Survey 2022
- Appendix 11A Final Desk Study Issued
- J01025-004 Designated Sites Plan
- J01025-005 PHI Plan
- Current Canopy Plan
- Proposed Canopy plan

1.12 SITE OWNERSHIP, ROLES AND OVERSIGHT

Bristol Airport has owned Lulsgate Wood since 2018 and holds the overall responsibility for the woodland and the adoption and implementation of this Woodland Management Plan. Specific responsible persons at Bristol Airport are the Estates Manager and the Sustainability Manager. Bristol Airport has engaged Johns Associates Ltd to provide ecological, tree and woodland management advice. Matthew Johns, a Director at Johns Associates is Bristol Airport's Agent, with respect to the Felling Licence and associated conservation management of Lulsgate Wood. He is supported by a number of highly experienced colleagues with ecological, landscape, woodland/forestry and land management qualifications.

The management and maintenance regimes for Lulsgate Wood, as specified in this document, will be carried out by a suitably experienced forestry contractor appointed by Bristol Airport and overseen by a suitably qualified forestry consultant and ecologist (SQE) from Johns Associates, as required: these are collectively referred to as the client representative (CR). Appointments for the forestry contractor are to be agreed. Management of the woodland would be coordinated by Johns Associates on behalf of Bristol Airport Ltd.

Where the appointed contractor may have concerns regarding maintenance of any areas within the Site, this must be discussed and agreed with the CR prior to carrying out any works. Bristol Airport Ltd have overall responsibility for all health and safety matters required for woodland operations within the Site. Site specific Risk Assessment and Method Statements (RAMS), evidence of suitable training and qualifications, insurance cover and use of appropriate Personal Protective Equipment (PPE) and other required equipment will need to be provided by all organisations/individuals implementing the works set out in this Woodland Management Plan, which will be reviewed and approved by Bristol Airport Ltd in advance of works being undertaken.

Johns Associates will provide the forestry contractor with all relevant and up to date details regarding any protected species identified on Site, and to ensure that all operatives are fully trained and aware of their obligations regarding legally protected species. This will be delivered through a suitable toolbox talk prior to the start of each parcel of works, alongside supervision by a suitably qualified suitable Clerk of Works. Extreme care will therefore be taken to ensure that no maintenance/management works will be carried out on Site that will adversely affect protected species without prior discussions with SQE/CR.

Where the contractor identifies the presence of species thought to be of importance, and previously unidentified on Site, they shall immediately stop work and contact the SQE/CR.

Woodland condition assessments will be conducted and are to be submitted to the Forestry Commission and LPA with supporting photographs and plans of habitat areas to demonstrate compliance with the Woodland Management Plan.

These will be produced firstly following implementation, and then at 3-year intervals. These reports will identify all actions taken and identify where deviations have been made and why.

Where any deviation from the specification/drawings occurs, consultation will first be made with the Forestry Commission, Natural England and the LPA. It is the forestry contractor's responsibility to request all relevant details prior to carrying out any maintenance operations to these areas.

1.13 MAINTENANCE/MANAGEMENT PERIOD

This Woodland Management Plan will extend in perpetuity and will be a rolling plan, subject to an appropriate regime of inspection, monitoring and review of all operations set out within this document at suitable intervals. Management objectives and regimes are to be assessed annually and reviewed fully after an initial 5-year period and thereafter every 5 years by Bristol Airport Ltd (or their successors) and the CR over a 30 year period. The initial 5 year management plan is defined in detail, the 5-10 year plan in outline detail and the following 10-20 years as an example overview. This approach will be renewed on a rolling basis every 5 years in perpetuity.

Following initial management of the Site to achieve the required open canopy structure in the conifer plantation, it is anticipated that the first 12 months post completion management for all areas will be the responsibility of Johns Associates. Following this period, Bristol Airport may appoint a suitably experienced contractor to continue to manage Lulsgate Wood. Bristol Airport will ensure that a woodland management contract is always in place; with Lulsgate Wood managed in accordance with this approved Woodland Management Plan and associated ecological constraints for the Site.

The appointed contractor implementing this plan will have all the necessary certificates of competence to implement woodland management operations on Site. The organisation responsible will ensure that all management operations comply with best practice standards and all relevant health and safety procedures, protection of the environment, avoidance of pollution and protection of protected species and habitats.

In accordance with planning Condition 25 associated with planning application 18/P/5118/OUT, all elements of the Woodland Management Plan must be implemented unless otherwise agreed in writing by the Local Planning Authority (LPA). There are to be no changes to the details contained within this Woodland Management Plan without prior consultation and consent from the LPA.

1.14 DOCUMENT REVIEW

Initially an annual review of the habitats and the site cross referenced with the plans and objectives within this Woodland Management Plan will be conducted for the first 5 years of implementation. Monitoring of the woodland and all associated habitats and features habitats will be undertaken annually, and a report will be prepared by the CR which will summarise the results of the monitoring and submitted to the landowner/operator and LPA.

Following the initial 5 years post implementation of the habitats at the Site a review will be undertaken once every 5 years. To ensure that the plan continues to remain appropriate, applicable, and effective, the review will be undertaken by the CR, in consultation with the Forestry Commission, Natural England and the LPA, to ensure that all information contained within the document remains relevant.

1.15 CONTROLLING AUTHORITY

The controlling authority is the Forestry Commission, who will be consulted (alongside Natural England and North Somerset Council) on any matters relating to the approved proposals for the scheme.

1.16 HEALTH AND SAFETY

Bristol Airport Ltd will ensure that Lulsgate Wood is managed to comply with all relevant health and safety legislation, approved codes of practice (ACOP's) and Health and Safety Executive (HSE) guidance.

2 DESCRIPTION OF LULSGATE WOOD

2.1 ENVIRONMENTAL BASELINE

2.1.1 Topography

Lulsgate Wood is characterized by a northern component that is gently sloping upwards from north to south, from 115m AOD to 120m by the woodland access track. South of the access track, the land rises upwards to between 145m and 150m AOD, with the high point ending at the edge of Goblin Coombe and a permissive path that runs along the edge of the limestone edge. Beyond this point, Lulsgate Wood descends steeply south, into Goblin Coombe as a slope but also exposed limestone bedrock faces and talus. The lowest point in this location is 125m AOD.

2.1 2 Geology

The geology of Lulsgate Wood is dominated by limestone. The Clifton Down Limestone Formation is associated with the lower slopes. It is a sedimentary bedrock formed between 344.5 and 337 million years ago during the Carboniferous period. The higher areas and exposed bedrock is the Goblin Combe Oolite Formation. This bedrock was formed between 344.5 and 343 million years ago during the Carboniferous period. No notable drift deposits are present.

Lulsgate Wood includes a small component of the Goblin Combe Regionally Important Geological Site RIGS ref. 226. This is associated with part of the southern boundary of Lulsgate Wood.

2.1.3 Soil

Soils in Lulsgate Wood are shallow loams to silty loams, formed from a limestone parent material, with additional of organic matter from the establishing woodland over the last 70 years or so.

2.1.4 Hydrology

Lulsgate Wood is situated over limestone with shallow soils. There are no permanent or ephemeral running water features or ponds, springs etc. Some former ruts do partially fill with water on a temporary basis, on the lower lying northern area during periods of prolonged rainfall. Typically rain will be intercepted by the current extensive canopy and then fall to the vegetated surface of the wood. Some water will be returned to the atmosphere via evapotranspiration, whilst some will enter the soil. If sufficient water enters the soil it will percolate to the underlying limestone and enter bedding planes, joints and other sub-surface flow paths. Lulsgate Wood and the surrounding area is located in Flood Zone 1, meaning lowest risk of flooding.

2.2 WOODLAND ASSESSMENT

Lulsgate Wood is located within the much larger area of woodland known as Wrington Warren that consists of a number of small woodland plots that have been created for sale to individuals. Plots vary in size between 4 and 6 acres (1.5 to 2.5 hectares). At the time of purchase Lulsgate Wood was sold as three adjacent plots known as Goldstone Wood, Cleeve Wood and Fountain Wood.

Wrington Warren as its name suggests was originally open rough pasture and was planted primarily with conifer plantations in the late 1950's and 1960's, with the plots for sale likely to be planted in the 1960's. There are some areas of remnant scrub woodland that pre-dates the plantings. The woodlands have all generally been actively managed and have been thinned.

2.2.1 Area formerly known as Goldstone Wood

The part of Lulsgate Wood is the most interesting; it abuts the Cleeve Combe woodland to the west some of which is ASNW and Goblin Coombe SSSI to the south with the steep rocky slope to the south within the plot being a part of the SSSI. There are a series of rough banks and hollows within the plot, these are characterised by Yew and mixed native broadleaves. The published details of the plot indicate that these areas are the possible remains of wartime diversionary defence fire pits, however research indicates that they are open stone quarry workings as they are marked on the 1870 maps of the area, and limestone was extensively quarried and used for building and the making of lime, the workings are likely to be associated with the development of the village around the 19th century turnpike road from Bristol to Congresbury, now the A370. The planting of the conifers within the plot is likely to have been in the mid/late1960's.

This part of Lulsgate Wood consists of Hybrid Larch, a small area of Scots Pine in the south east and the remaining part is the area of quarrying characterised by Yew and mixed native broadleaves (Figure 2.1), this is natural regeneration of the quarry workings and is thought to have developed post WWI, thus making the Yew at least 100 years old some are much older and may be resultant of the demise of quarrying, broadleaves in this area consist primarily of Ash, Sweet Chestnut and Birch. There are scattered broadleaves within the Conifer plantations and also commercial Conifers scattered within the Yew/Broadleaf areas.

Figure 2.1 - Yew/Broadleaf Woodland and Quarry Areas

Figure 2.2 - Hybid Larch

2.2.2 Area formerly known as Cleeve Wood

This part of Lulsgate Wood, located to the south west is less interesting but does have areas of the quarry workings and associated tree cover and vegetation as in the area described above. This part of the wood consists of Scot Pine with a scattering of mature native broadleaves primarily Ash and Oak within the canopy and a Sycamore and Holly under storey (Figure 2.3). The remaining area is as the quarrying area described above i.e. Yew and mixed native Broadleaves. The planting of the conifers within the plot is likely to have been in the mid/late 1960's.

Figure 2.3 - Scots Pine

2.2.3 Area formerly known as Fountain Wood

This part of Lulsgate Wood is located on the north side of the access track. This is the least interesting part in terms of tree cover it is virtually pure Hybrid Larch and there are a few odd Scots Pine and there is an understorey of Holly and Hawthorn. A footpath runs through a small part of the area north west to south east. A sign highlights this as a Public Right of Way.

The general size of the Larch in this area is larger than in Goldstone Wood and would indicate planting in the early/mid 1960's

Figure 2.4 – Hybrid Larch

2.3 ECOLOGICAL BASELINE

SEE SEPARATE JOHNS ASSOCIATES' SURVEY DOCUMENTS FOR DETAIL

2.3.1 Habitats

Lulsgate Wood is dominated by coniferous plantation woodland habitat. The canopy was planted with two different canopy crop species Scots pine Pinus sylvestris and hybrid larch Larix marschlinsii. Hybrid larch is widely used as a forestry crop species due to its quick growth rate and its ability to grow in poorer conditions. The woodland understory and field layer throughout this habitat were fairly homogeneous. The understory was generally very sparse often without any structure between the canopy and the field layer. The lack of understory within the Site maybe due to previous thinning of the plantation crop in the past which might have removed much of the scrub present at the time. There were a few young trees of ash Fraxinus excelsior and oak Quercus robur growing up through the understory. The most frequently occurring scrub species throughout the understory were hawthorn Crataegus monogyna and hazel Corylus avellana.

The field layer was dominated by a mix of bramble Rubus fruticosus agg., bracken Pteridium aquilinum and honeysuckle Lonicera periclymenum other species occurred very infrequently likely due to the heavy shading from the species previously mentioned. Ferns such as broad buckler fern Dryopteris dilatata, grasses, both Yorkshire fog Holcus lanatus and false brome Brachypodium sylvaticum and moss species occurred occasionally throughout the field layer.

In the northern part of the wood there were wetter areas that had been created by old track ways and ruts which had been colonized by a number of species associated with damp and wet habitats. These included a range of

sedges, pendulous sedge Carex pendula, wood sedge Carex sylvatica and remote sedge Carex remota. Soft rush Juncus effusus, bog stitchwort Stellaria alsine, brooklime Veronica beccabunga, common figwort Scrophularia nodosa and tufted hair grass Deschampsia cespitosa were also present within this area.

Areas of semi-natural coniferous woodland occurred within the Site, these areas were dominated by Yew Taxus baccata, only a few other species were noted within the canopy the most frequent species to break through the yew canopy was common whitebeam Sorbus aria and rarely ash Fraxinus excelsior. This woodland type occurred on very rocky calcicolous ground and over a calcicolous scree slope which ran along the southern boundary of the site.

Wayfairing tree Viburnum lantana, hawthorn Crataegus monogyna and wych elm Ulmus glabra occurred as only as a handful of individual plants within the understorey, which was due to the dense yew canopy cover. The field layer was also very sparse, ash Fraxinus excelsior seedlings occurred prolifically in sections of the woodland floor where there was more light ingress.

The calcicolous scree slope located associated with the southern boundary was an area that supported fern communities which were comprised of commonly occurring species included harts tongue fern Asplenium scolopendrium, Broad buckler fern Dryopteris dilatata, male fern, Dryopteris affinis scaly male fern Dryopteris filix-mas, lady fern Athyrium filix-femina and hard fern Blechnum spicant.

A number of non-native tree species were observed along a footpath which ran along the top of the scree slope (southern boundary area). Both turkey oak Quercus cerris and holly oak Quercus ilex were observed in this area, although Quercus ilex is not listed under schedule 9 under the Wildlife and Countryside Act 1981 (as amended) it can become invasive in certain habitats, especially on calcareous rock faces and cliffs, quickly spreading and shading out native species.

There was a small area of broad-leaved semi-natural woodland that occurred towards the south-west of the Site. The canopy here was dominated by ash Fraxinus excelsior with oak Quercus robur occurring occasionally, the canopy was fairly open and it is likely that this area had been previously opened up by either windfall causalities of the plantation crop species, or this area had been felled and not replanted, this has led to the opening up of the area and has allowed for regeneration with increased light ingress to the woodland floor.

The understory and field layer of this area was more diverse than the areas dominated by coniferous species.

The field layer had an abundance of dog's mercury Mercurialis perennis together with bramble Rubus fruticosus and ivy Hedera helix.

Other species occurring frequently throughout the area include, enchanter's nightshade Circaea lutetiana, wood avens Geum urbanum, lords-and-ladies Arum maculatum, wood melick Melica uniflora and common dog-violet Viola rivinana.

An old stone boundary wall ran along the western and southern boundaries (see target note 5), the wall had fallen down in many places and supported a range of moss and fern species including, broad buckler fern Dryopteris dilatata, harts tongue fern Asplenium scolopendrium and common polypody Polypodium vulgare occurring rarely.

There were a couple of informal paths running through the woodland, these were generally dominated by bare ground with leaf litter, being more obscured by bramble and bracken growth during the latter part of the year.

2.3.2 NVC Survey

Overall the majority of the woodland within the site, classified as W10, is of low botanical interest due to its plantation nature and limited diversity due to dominance of bramble, bracken and honeysuckle in the field layer. However, the areas of semi-natural coniferous yew woodland and area of regeneration ash woodland have greater botanical importance and fall into two BAP priority habitats. W13 woodland falls into Lowland Beech and Yew Woodland and W8 falls into lowland mixed deciduous woodland. W13 woodland is a particularly unusual NVC community in the west of the country and should be retained and protected.

2.3.3 Goblin Combe

Goblin Combe SSSI lies adjacent to the south and west (and is included in part) of the Site and comprises a steep-sided dry valley with extensive areas of limestone scree. The Combe supports semi-natural ancient woodland and areas of unimproved calcareous grassland and limestone heath. These woodland and grassland types now have a limited distribution in Great Britain. Both W8 and W13 communities within the Site have a strong association to the woodland habitats listed within the Goblin Combe SSSI citation which is part-reproduced below.

Goblin Combe Citation;

"The woodland canopy is dominated by ash Fraxinus excelsior and pedunculate oak Quercus robur. Other canopy species include beech Fagus sylvatica, field maple Acer campestre, whitebeam Sorbus aria and yew Taxus baccata. At the western end of the Combe a number of box trees Buxus sempervirens have become naturalised.

The shrub layer is variable with hazel Corylus avellana, wych elm Ulmus glabra, spindle Euonymus europaeus, dogwood Cornus sanguinea and privet Ligustrum vulgare abundant in many areas. The ground flora is dominated by dog's mercury Mercurialis perennis but other species attain local dominance, including bluebell Hyacinthoides non-scripta, Enchanter's-nightshade Circaea lutetiana, yellow archangel Lamiastrum galeobdolon. The nationally scarce stinking hellebore Helleborus foetidus is found on areas of limestone scree.

The Combe provides ideal conditions for a number of ferns, these include hart's tongue fern Phyllitis scolopendrium, male fern Dryopteris filix-mas, broad buckler fern Dryopteris dilitata and hard shield-fern Polystichum aculeatum. The nationally scarce limestone fern Gymnocarpium robertianum also occurs within the Combe. The woodland supports a small colony of moonwort Botrychium lunaria."

The majority of the woodland species listed in the citation are found naturally occurring within the Site and with a change in management of the woodland, the range and abundance of these species are likely to increase and improve the diversity of the woodland.

During the NVC survey of the woodland, a careful search was undertaken for rare species listed in the SSSI that could occur with then site, at the time of survey stinking hellebore Helleborus foetidus, moonwort Botrychium lunaria and limestone fern Gymnocarpium robertianum were not found present within the Site's boundary.

2.3.4 Bats

Woodland Edge– STATIC 1 ST1

Generalist Edge Adapted Species

- Both common and soprano pipistrelle were recorded during the transect and static detector surveys however common pipistrelle activity was substantially greater.
- Common pipistrelle bat passes were high during August during the post-maternity period when juveniles are flying independently.
- The Site is considered to be within CSZ for juvenile common and soprano pipistrelle but not for a maternity colony.

Open Air Foraging Species

- Noctule were recorded in low numbers at this location with Serotine completely absent.
- Lesser and greater horseshoe were recorded at good levels at this location but ST2 recorded significantly higher number of recordings.

Woodland/Clutter foraging Species

- Myotis species activity recorded the highest level of activity at this location which is of the statistical analysis identifying a significant difference (P=<0.05) between activity at ST1 and ST2/ ST3.
- These findings are considered to indicate probable commuting activity at the adjacent track.

- No myotis species were caught during the trapping surveys so the species present on Site cannot be confidently confirmed.
- Plecotus species were recorded in low numbers at this location with a total of 4 recordings. However, it was the most frequently caught species during the trapping surveys (three bats were caught, accounting for 50% of all bats caught). It is likely that the results of the static surveys under-represents the use of the Site by this species group, owing to their call being quiet (difficult to detect) and with regard to the foraging technique of this species, which can often be a combination of listening and sight rather than echolocation.
- One barbastelle recording was made at this location.

Woodland Ground Level – STATIC 2 ST2

Generalist Edge Adapted Species

Both common and soprano pipistrelle were recorded during the transect and static detector surveys however common pipistrelle activity was substantially greater.

This was at a lower level of activity than ST1.

Open Air Foraging Species

Noctule and serotine were recorded in low numbers at this location.

Majority of records for greater horseshoe were made at location ST2 (woodland ground); with 2,527 (81.9%) of records made at this location which were found to be a statistically significant difference between activity at ST2 and ST1/ ST3 ($P<0.05$).

Due to the proximity of the Site to the maternity colony at Brockley Hall Stables SSSI, and the high number of recordings made consistently over the survey period, particularly during the natal period, along with the high number of greater horseshoe seen crossing into the site (28 bats in August); the Site is considered highly likely to form part of the maternity colonies CSZ.

The Site is also likely to form part of the CSZ for juvenile greater horseshoe bats which is indicated by the rise in recordings in August in addition to the capture of a juvenile which was flying with an adult.

As such, the Site is considered important for greater horseshoe bats.

The majority of records for lesser horseshoe were made at ST2 (woodland ground), with 665 records made at this location (>75% of all records made for this species); and there was found to be a statistically significant difference between activity at ST2 and ST1/ST3.

There was a peak in activity in May with 603 lesser horseshoe records made during this month, accounting for >68% of all records made for this species).

This is followed by a decrease in activity levels during the summer months (June, July and August), with a slight increase in activity levels again in September and October.

These levels of early activity for lesser horseshoe suggests that the Site provides foraging habitat for this species commuting between winter and summer roosts, most notably for bats associated with the hibernation roost at King's Wood and Urchin Wood SSSI.

The Site may fall within the CSZ for lesser horseshoe bats following hibernation at King's Wood and Urchin Wood.

Woodland/Clutter foraging Species

Plecotus species were recorded in low numbers at this location with a total of 16 recordings. However, it was the most frequently caught species during the trapping surveys (three bats were caught, accounting for 50% of all bats caught). It is likely that the results of the static surveys under-represents the use of the Site by this species

group, owing to their call being quiet (difficult to detect) and with regard to the foraging technique of this species, which can often be a combination of listening and sight rather than echolocation.

One barbastelle recording was made at this location.

Woodland Canopy – STATIC 3 ST3

Both common and soprano pipistrelle were recorded during the transect and static detector surveys however common pipistrelle activity was substantially greater.

The number of recordings at this location were at a very similar level of activity to ST1.

The Site is considered to be within CSZ for juvenile common and soprano pipistrelle but not for a maternity colony.

Open Air Foraging Species

Noctule and serotine were recorded at their highest level at this location (21 and 4 recordings respectively).

Lesser and greater horseshoe were recorded at good levels at this location but at the lowest level across the three locations.

Woodland/Clutter foraging Species

Myotis species was recorded at its lowest level at this location.

Plecotus species were recorded at their highest level at this location.

Four barbastelle recording was made at this location which is the highest number of recordings across the static locations.

Trapping

No adult female horseshoes were captured during the trapping surveys therefore, it was not possible to confirm use of the site by breeding females. However, it is strongly indicated that the Site is used by breeding females from static detector surveys and transect records.

A juvenile female was captured during the trapping surveys which confirms of the Site by juvenile greater horseshoe bats.

50% of all bats caught were brown long-eared bats which were all considered to be in breeding condition.

No myotis species were captured during the course of the trapping surveys.

Barbastelle were confirmed to be using the Site due to capture of an adult male which was considered to be in breeding condition.

Male lesser horseshoe was also captured and considered to be at the start of its breeding condition due to large testis but no presence of epididymis.

2.3.5 Great Crested Newt

The Site does not support any aquatic habitat for great crested newt, with the closest pond being located at least 530m north-west of the Site. Furthermore, the Site comprises free-draining soil over limestone, making the Site particularly dry, with very few wet depressions present even during periods of heavy rain (evident from numerous Site visits); further limiting its' suitability to this species.

The habitats on Site offer good-quality terrestrial habitat for newts, with the woodland offering foraging, refuge and hibernation habitat. Dead-wood, mossy ground, leaf-litter, bracken cover and root cavities offer foraging and

refuge habitats; with tree root crevices, the dry-stone wall, earth banks, rocks, brash and deadwood offering hibernation habitat.

A small breeding metapopulation of great crested newt is located approximately 1.1km east of the Site. Considering the distance of the Site from these water bodies, there is considered to be a negligible likelihood of this population of great crested newt using the Site as terrestrial/ hibernation habitat. Furthermore, extensive hibernation habitat is likely located within woodland habitat (similar to that on Site), which is situated between the Site and the nearby great crested newt population.

The Site is located within a large area of woodland at least 2km in breadth, also making it highly unlikely that great crested newt would use the woodland as a migratory route to ponds, owing to ponds being >1.5 from each other.

2.3.6 Dormouse

Lulsgate Wood supports dormice, with a peak count of four dormice being recorded in October 2019. The Site likely supports natural nesting sites, evident from peak counts ranging from 1-4 dormice in 2019, indicating that they are using the nest boxes intermittently in combination with natural nest sites. Furthermore, formerly occupied nests were found to be unoccupied on subsequent visits, indicating that the dormice on Site regularly move nests. No actively used nest boxes were located in 2022, despite cleaning of the boxes in 2021, however, alternative natural habitat is present, and adjacent woodland is also known to support dormouse.

2.3.7 Badger

Very limited evidence of badger has been recorded in Lulsgate Wood. It is considered that badgers only occasionally use the Site and no active setts are present. Lulsgate Wood offers good quality foraging but limited sett building habitat (due to proximity of bedrock) and adjacent parcels of adjacent woodland offer further extensive suitable habitat.

2.3.8 Invertebrates

Lulsgate Wood supports a limited number of promoting features for invertebrates, predominantly standing and fallen dead wood; a south-facing slope and rock face; and excellent connectivity to adjacent habitats. The lack of habitat diversity, or a mosaic of habitats limits its suitability to invertebrates; with the woodland typically lacking a well-established shrub and scrub understory layer.

Rocks and tracks offer basking opportunities to butterfly species, and also offer day roosting habitat for moths such as chalk carpet; in addition to offering habitat to beetle and orthoptera species.

Floristic diversity and abundance is low, though beneficial nectar and pollen producing plants are present in certain locations such as honeysuckle, traveller's joy, dog violet, dandelion, creeping buttercup, bramble and wild strawberry; offering suitability to pollinators such as lepidoptera and diptera species.

The high proportion of conifers limits the development of leaf-litter, which would likely be a limiting factor with regard to beetle and earthworm species.

While the Site is generally suboptimal for supporting a diversity of invertebrates, a number of notable species have been recorded in proximity to the Site. The presence of the adjacent Goblin Combe SSSI, featuring grassland habitat likely enhances the Site for invertebrates by offering nearby alternative habitat for species which prefer grassland habitats, such as mottled grasshopper and butterfly species wall and grayling. The Site supports beneficial species of flora for notable lepidoptera species, offering larval and adult foodplants for a high number of the species recorded locally, referring to the desk study. Species of particular suitability to the Site include moth species satin beauty, buff ermine and ghost moth; and butterfly species green hairstreak and white admiral.

2.3.9 Birds

Whilst no specific bird surveys were conducted in Lulsgate Wood, local records indicate a wide range of species associated with the adjacent Goblin Combe. These include the following[2]:

- Black-Headed Gull (Chroicocephalus ridibundus)
- Blackbird (Turdus merula)
- Blackcap (Sylvia atricapilla)
- Blue Tit (Cyanistes caeruleus)
- Bullfinch (Pyrrhula pyrrhula)
- Buzzard (Buteo buteo)
- Carrion Crow (Corvus corone subsp. corone)
- Carrion Crow (Corvus corone)
- Carrion/Hooded Crow (Corvus corone agg.)
- Chaffinch (Fringilla coelebs)
- Chiffchaff (Phylloscopus collybita)
- Coal Tit (Periparus ater)
- Collared Dove (Streptopelia decaocto)
- Common Swift (Apus apus)
- Continental Goldcrest (Regulus regulus)
- Continental Robin (Erithacus rubecula)
- Cormorant (Phalacrocorax carbo)
- Crossbill (Loxia curvirostra)
- Cuckoo (Cuculus canorus)
- Dunnock (Prunella modularis)
- Feral Pigeon (Columba livia)
- Fieldfare (Turdus pilaris)
- Garden Warbler (Sylvia borin)
- Goldfinch (Carduelis carduelis)
- Great Spotted Woodpecker (Dendrocopos major)
- Great Tit (Parus major)
- Green Woodpecker (Picus viridis)
- Greenfinch (Chloris chloris)
- Grey Heron (Ardea cinerea)
- Grey Wagtail (Motacilla cinerea)
- Herring Gull (Larus argentatus)
- House Martin (Delichon urbicum)
- House Sparrow (Passer domesticus)
- Jackdaw (Corvus monedula)
- Jay (Garrulus glandarius)
- Kestrel (Falco tinnunculus)
- Lesser Black-Backed Gull (Larus fuscus)
- Lesser Redpoll (Acanthis cabaret)
- Little Owl (Athene noctua)
- Long-Tailed Tit (Aegithalos caudatus)
- Magpie (Pica pica)
- Marsh Tit (Poecile palustris)
- Meadow Pipit (Anthus pratensis)
- Mistle Thrush (Turdus viscivorus)
- Nuthatch (Sitta europaea)
- Pheasant (Phasianus colchicus)
- Pied/White Wagtail (Motacilla alba)
- Raven (Corvus corax)
- Redpoll (Acanthis flammea)
- Redwing (Turdus iliacus)
- Rook (Corvus frugilegus)
- Siskin (Spinus spinus)
- Skylark (Alauda arvensis)
- Song Thrush (Turdus philomelos)
- Sparrowhawk (Accipiter nisus)
- Spotted Flycatcher (Muscicapa striata)
- Starling (Sturnus vulgaris)
- Stock Dove (Columba oenas)
- Swallow (Hirundo rustica)
- Tawny Owl (Strix aluco)
- Tree Sparrow (Passer montanus)
- Treecreeper (Certhia familiaris)
- Turtle Dove (Streptopelia turtur)
- Wheatear (Oenanthe oenanthe)
- Whitethroat (Sylvia communis)
- Willow Warbler (Phylloscopus trochilus)
- Wood Warbler (Phylloscopus sibilatrix)
- Woodcock (Scolopax rusticola)
- Woodpigeon (Columba palumbus)
- Wren (Troglodytes troglodytes)

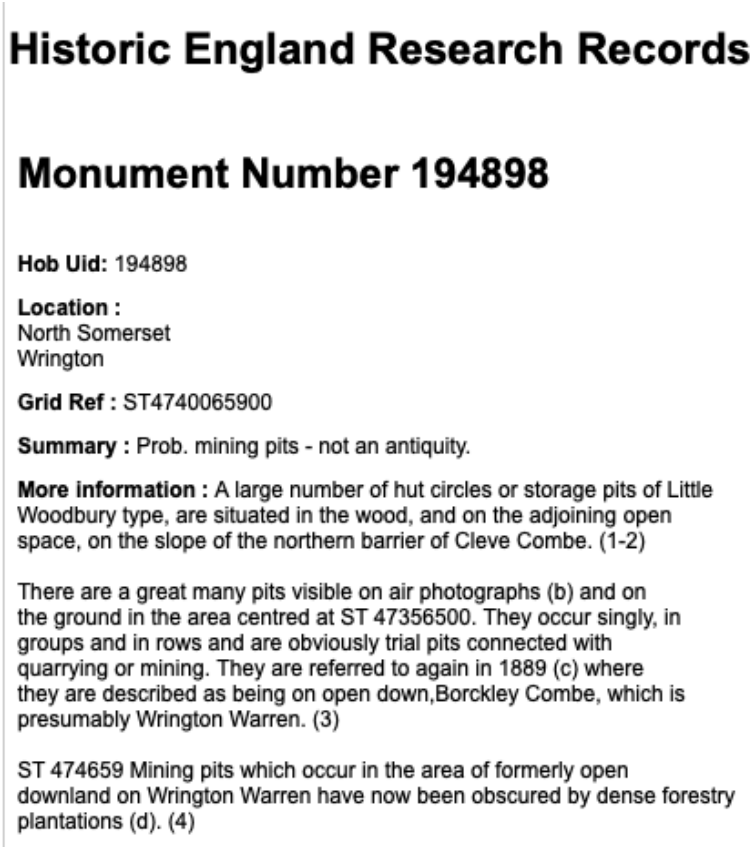
A number of these species are likely to be associated with Lulsgate Wood, although the dominance from the even aged conifer plantation will restrict diversity. All works will be timed to avoid bird nesting seasons and any legal constraints associated with it and are also aimed at enhancing, feeding, roosting and breeding opportunities for the long term.

[2] Sourced from https://www.landscapebritain.co.uk/nature-reserves/somerset/goblin-combe/ accessed 16/01/23

2.4 CULTURAL INFORMATION

There are no statutorily designated archaeological features (Scheduled Monuments, Listed buildings) located on site as defined by www.magic.gov.uk and www.heritagegateway.org.uk/gateway/

Heritage Gateway identifies the shallow 'pits' located within the areas of yew woodland as being mining trial pits as is shown in Figure 2.5. These features are within retained and protected woodland.



Historic England Research Records

Monument Number 194898

Hob Uid: 194898

Location :
North Somerset
Wrington

Grid Ref : ST4740065900

Summary : Prob. mining pits - not an antiquity.

More information : A large number of hut circles or storage pits of Little Woodbury type, are situated in the wood, and on the adjoining open space, on the slope of the northern barrier of Cleve Combe. (1-2)

There are a great many pits visible on air photographs (b) and on the ground in the area centred at ST 47356500. They occur singly, in groups and in rows and are obviously trial pits connected with quarrying or mining. They are referred to again in 1889 (c) where they are described as being on open down,Borckley Combe, which is presumably Wrington Warren. (3)

ST 474659 Mining pits which occur in the area of formerly open downland on Wrington Warren have now been obscured by dense forestry plantations (d). (4)

Figure 2.5 Heritage Gateway information relating to historic mining activity.

Wrington Warren as its name suggests was originally open rough pasture and was planted primarily with conifer plantations in the late 1950's and 1960's. There are some areas of remnant scrub woodland that pre-dates the plantings. The woodlands have all generally been actively managed and have been thinned. Before planting, Wrington Warren as an area of rough pasture with scrub, with rabbit grazing. Remnants of this habitat can be seen in some locations outside of Lulsgate Wood. It is anticipated that post-felling, and through the implementation of this management plan, the natural seedbank will allow for the restoration of a more biodiverse ground flora and shrub layer.

Currently, Lulsgate Wood is not managed under any agreements or grant schemes. This Woodland Management Plan, linked with an associated Felling licence will be the first formal management of the woodland for a number of years.

2.5 PUBLIC /LANDOWNER INTEREST

Lulsgate Wood is situated within a much larger area of privately owned woods with a number of neighbouring owners. An access track is shared by the owners of adjacent woodland plots. There is one statutory Public Rights of Way through a small part of the north eastern part of Lulsgate Wood (as shown on the North Somerset Council definitive map on its Planning constraints Portal). There is a reasonably a clear informal path running along the high point on the southern boundary, linking to other paths into Goblin Combe.

2.6 ACCESS, FACILITIES AND INFRASTRUCTURE

There is a single formal public Right of Way (AX30/46/10) associated with part of the lower and northern part of Lulsgate Wood. A further informal but reasonably well used path is present along the upper (southern boundary). No facilities are present or required. The only infrastructure is the shared stoned access track.

2.7 PRESSURES/THREATS

No evidence of fly tipping, fires/bar-b-que or unauthorized recreation (other than occasional pedestrian use of the paths) has been noted. Key threats are associated with the presence of non-native invasive species growing on site (Turkey oak and Holm oak) and in adjacent woodland plots including Russian vine, Leylandii and Buddleia.

2.8 CONSERVATION CHARACTER OF LULSGATE WOOD

Size: Lulsgate Wood has an area of 6.34ha within the much larger contiguous woodland associated with Wrington Warren including Goblin Combe and Kings Wood and Urchin Wood.

Diversity: Lulsgate Wood is dominated by conifer plantation, of which the majority is non-native hybrid larch. Areas of broadleaved woodland are present, including yew dominated woodland blocks. Habitat structure and diversity is typically poor in the areas dominated by the conifer plantation, but has some greater diversity where the broadleaved species are present, apart from under the yew, which is typically bare ground.

Naturalness: Lulsgate Wood is not ancient woodland, with the area being predominantly grassland with scrub and some trees up until the time of planting from the 1950s-1960s

Rarity: The site is dominated by hybrid larch and Scot's pine plantation, which is not a rare habitat. The areas of broadleaved semi-natural woodland are of more interest, although this has not been mapped by Natural England as Priority Habitat Inventory Woodland.

Fragility: The woodland appears to be robust in form with limited signs of tree damage, disease, structural failure. It is part of the much larger area of woodland and public access is not formally encouraged. As such it is deemed to have relatively good resilience. Pressure from certain invasive non-native species alongside bramble and bracken encroachment is likely in the absence of management.

Typicalness: Whilst the site does not contain any mapped Priority Habitats, the broadleaved woodland areas, including the yew dominated parts are of more interest, although also present elsewhere in adjoining woodland areas including Goblin Combe.

Position: Lulsgate Wood forms part of a much more extensive area of woodland that includes which includes SSSI limestone grassland, ancient semi-natural woodland and populations of priority species including dormice and greater horseshoe bats. It provides connectivity with these habitat areas, important for long term longevity of the local biodiversity, although the current dominance by conifer plantation limits this in the majority of the wood.

Potential for Improvement: There is good opportunity to improve the structure and species composition of the woodland through the implementation of the management proposals set out in this Woodland Management Plan. This includes provisions for the important priority species associated with goblin Combe SSSI (as well as the SSSI component that falls within. The site boundary) and the north Somerset and Mendips Bat SAC.

Public Use: There is a short section of a single formal Public Rights of Way within Lulsgate Wood, and an informal path is present which links to the wider Public Right of Way network.

2.9 SITE CONTEXT

At a local level, Lulsgate Wood lies adjacent to the much larger Goblin Combe Avon Wildlife Trust nature reserve and Site of Nature Conservation Importance (SNCI) and a small part of this designation overlaps with the southern

boundary of Lulsgate Wood. Lulsgate Wood is also situated adjacent (on all sited) to a continuation of woodland of similar quality to that found within the site boundary.

The site is located within the 'Bristol, Avon Valleys and Ridges' National Character Area (NCA) 3. In the profile for each NCA, Natural England sets out Statements of Environmental Opportunity (SEOs), which help to bring together relevant information and offer suggestions where action can be best targeted to conserve and improve the natural environment. SEOs for this NCA which are relevant to this project include:

- SEO 3: Conserve and sustainably manage the gentle clay vales and limestone ridges and downs of the rural agricultural landscape and enhance the network of semi-natural habitats, linking them together to create a coherent and resilient ecological network, enabling ecosystems to adapt both to climate change and for the benefits to landscape, biodiversity, water flow, water quality, soil quality, soil erosion, rural heritage and culture.

The NCA gives examples of strategies by which to achieve this, including:

- Continuing to encourage the conservation and active management of existing woodland, including ancient woodland, mixed woodland blocks and shelterbelts; and promoting new planting where appropriate in accordance with the strategic ambition of the Forest of Avon Community Forest and the Mendip Hills AONB and Cotswolds AONB management plans. This will enhance the contribution of woodland to the landscape, recreation and biodiversity.
- Connecting the woodland network by managing hedgerows appropriately, to link woodland with other wooded habitats – such as traditional orchards and wood pasture and parkland.

It also lies within the North Somerset Council Landscape Character Area: E6 Cleeve Ridges and Combes. The Cleeve Ridges and Combes Character Area is situated towards the east of the North Somerset and forms an 'L' shaped ridge rising from Rolling Valley Farmland up to a plateau. The 50m contour and the roads along the base of the ridge and the break of the slope along the 150m contour and the tree line determine the boundaries.

The landscape strategy for Cleeve Ridges and Combes is to conserve the peaceful and remote character of the area and its rich ecological, archaeological and geological heritage. Overall, the condition of Cleeve Ridges and Combes is considered to be good with important ecological, archaeological and geological sites adding to the richness of the area.

Landscape guidelines are:

- Conserve the peaceful and secluded nature of the wooded landscape.
- Promote sensitive, cyclical/rotational management of hedgerows.
- Encourage public access but retain sense of remoteness and minimise damage through wear and tear by careful design of routes and infrastructure.
- Minimise the impact of the urban edge and the encroachment of visually intrusive land uses such as quarrying through design guidance and appropriate land management, for instance limiting the expansion of settlement up the lower slopes of the ridge and planting hedgerows and woodland for screening.
- Encourage traditional methods of land management of woodland (coppice) and pasture (sheep grazing).
- Encourage traditional methods of woodland management including coppicing.
- There should be presumption against arable in areas of archaeological sites and landscapes defined by earthworks.
- To prevent poaching of earthworks light grazing management is recommended.

[3] National Character Area profiles - GOV.UK (www.gov.uk)

This Woodland Management Plan Objectives, Targets and Actions (set out in Section 3.5) satisfies these opportunities and priorities.

In terms of local measures for habitats and fauna characteristic/important to the local area, Action for Nature is the Biodiversity Action Plan for North Somerset. Relevant Habitat Action Plans are relevant include:

- Woodlands

The current species action plans in Action for Nature which are relevant to this project include:

- Greater horseshoe bat

At a regional level, the South-West Biodiversity Implementation Plan4 has been developed by the South West Regional Biodiversity Partnership to set out a framework of policy, priorities and actions to assist in a more joined up approach to biodiversity delivery. It identifies key programmes of work, both for those directly involved and for those who can enable these, under five specific sectors

The section entitled 'Woodlands and Forestry' is relevant to this project. The Plan lists aims for this habitat type, including:

- To conserve and enhance the biodiversity of all woodland types, particularly ancient semi-natural woodland, ancient (veteran) trees and wood pasture as well as wooded heath.
- To fulfil the potential of forestry as one of the best examples of sustainable land use and to increase woodland's role in enhancing people's quality of life.
- To protect biodiversity-rich woodland from external threats from industry and surrounding land uses, and to ensure its role is fully recognised in development proposals.
- To ensure that forests and woodland are appropriately managed and located to enhance non-woodland habitats and species, therefore contributing to the conservation of biodiversity at a larger functional scale. Woodland may not be appropriate on certain habitats and landscape types, e.g. heathland and rolling open downland.

The objectives for this habitat type include:

- Objective 1 Protect native woodland from unnecessary damage.
- Objective 2 Enhance, extend and restore the existing native woodland resource.
- Objective 3 Manage non-native woodland to improve biodiversity in the wider landscape.

This Woodland Management Plan Objectives, Targets and Actions satisfies these opportunities and priorities (as set out in Section 3.5).

At a national level, Lulsgate Wood includes a component of Goblin Combe SSSI. Further information on the reasons for its designation can be found in the next section.

2.10 SITE DESIGNATION

2.10.1 Goblin Combe SSSI

A small part of Goblin Combe SSSI is located within the southwestern corner of Lulsgate Wood and outside of the area proposed for reduction in canopy cover. Goblin Combe SSSI comprises a steep-sided dry valley with extensive areas of limestone scree. The Combe supports semi-natural ancient woodland and areas of unimproved calcareous grassland and limestone heath. These woodland and grassland types now have a limited distribution in Great Britain.

[4] http://www.biodiversitysouthwest.org.uk/docs/South%20West%20Biodiversity%20Implementation%20Plan.pdf

The woodland canopy is dominated by ash Fraxinus excelsior and pedunculate oak Quercus robur. Other canopy species include beech Fagus sylvatica, field maple Acer campestre, whitebeam Sorbus aria and yew Taxus baccata. At the western end of the Combe a number of box trees Buxus sempervirens have become naturalised. The shrub layer is variable with hazel Corylus avellana, wych elm Ulmus glabra, spindle Euonymus europaeus, dogwood Cornus sanguinea and privet Ligustrum vulgare abundant in many areas. The ground flora is dominated by dog's mercury Mercurialis perennis but other species attain local dominance, including bluebell Hyacinthoides non-scripta, Enchanter's-nightshade Circaea lutetiana, and yellow archangel Lamiastrum galeobdolon. The nationally scarce stinking hellebore Helleborus foetidus is found on areas of limestone scree.

The Combe provides ideal conditions for a number of ferns, these include hart's- tongue fern Phyllitis scolopendrium, male fern Dryopteris filix-mas, broad buckler- fern Dryopteris dilitata and hard shield-fern Polystichum aculeatum. The nationally scarce limestone fern Gymnocarpium robertianum also occurs within the Combe. The woodland supports a small colony of moonwort Botrychium lunaria.

Patches of limestone grassland occur on the slopes of the valley. Grassland species include yellow-wort Blackstonia perfoliata, spring-sedge Carex caryophyllea, common bird's-foot-trefoil Lotus corniculatus, mouse-ear hawkweed Hieracium pilosella and the nationally scarce spring cinquefoil Potentilla tabernaemontani. A small area of limestone heath supports bell heather Erica cinerea and heather Calluna vulgaris. A mosaic of species rich scrub has developed and comprised of whitebeam, yew and wayfaring-tree Viburnum lantana.

In the past Goblin Combe was the location for a long term research project involving the transplanting of a number of nationally rare plant species. These include Somerset hair-grass Koeleria vallesiana, honewort Trinia glauca and the nationally scarce spiked speedwell Veronica spicata subsp. hyrida. These plants are now well naturalised within the transplant plot.

The woodland is known to support a population of dormice Muscardinus avellanarius, while the site provides feeding habitat for the rare and endangered greater horseshoe bats Rhinolophus ferrumequinium.

The habitat diversity found within the site has resulted in a rich invertebrate fauna, and in previous years records have included a number of Red Data book and nationally notable species. Goblin Combe supports a range of butterflies, these include silver-washed fritillary Argynnis paphia, dark green fritillary A. aglaia, purple hairstreak Quercasia quercus, green hairstreak Callophrys rubi and dingy skipper Erynnis tages

Views about management

As a requirement of Schedule 11(6) of the Countryside and Rights of Way Act 2000, Natural England published their "Views About Management" for the management of Goblin Combe SSSI for nature conservation (dated 4th May 2005). This statement sets out, in principle, the views of Natural England on how the site's special conservation interest can be conserved and enhanced.

For Goblin Combe SSSI the VAM includes the following Management Principals, which are considered to be of relevance to this Plan:

Broadleaved semi-natural woodland

A diverse woodland structure, with open space, a dense understory, and a more mature overstory is important. A range of ages and species within and between stands is desirable. Some dead and decaying wood, such as fallen logs, can provide habitats for fungi and invertebrates. However, work may be needed to make safe dangerous trees in areas of high public access. Both temporary and permanent open spaces benefit groups of invertebrates such as butterflies. They may require cutting to keep them open, and should be of sufficient size to ensure that sunny conditions prevail for most of the day.

Felling, thinning or coppicing may be used to create or maintain variations in the structure of the wood, and non-native trees and shrubs should be removed over time. To avoid disturbance to breeding birds the work is normally best done between the beginning of August and the end of February. Work should be avoided when the ground

is soft, to prevent disturbing the soil and ground flora. Normally successive felling, thinning or coppicing operations should be spread through the wood to promote diversity, but where there is open space adjacent plots should be worked to encourage the spread of species that are only weakly mobile. Natural regeneration from seed or stump regrowth is preferred to planting because it helps maintain the local patterns of species and the inherent genetic character of the site.

Deer management and protection from rabbits or livestock are often necessary. Whilst light or intermittent grazing may increase woodland diversity, heavy browsing can damage the ground flora and prevent successful regeneration. Invasive species, such as Rhododendron or Himalayan balsam, should be controlled.

Parts of a wood should be left unmanaged to benefit species that do best under low disturbance or in response to natural processes. Within these areas some trees will eventually die naturally and dead wood accumulate.

All Habitats

The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be controlled.

Feeding Habitat for Greater Horseshoe Bats

Greater Horseshoe Bats breed, hibernate and roost in caves, roofs and other locations in and around Goblin Combe. The maintenance of the woodland, scrub cover and unimproved grassland in the vicinity of these roost sites provides valuable feeding habitat to support the bat population. This is particularly important in the spring following hibernation, when emerging bats will need to build fat reserves prior to the breeding season.

Dormouse

The dormouse is a nocturnal arboreal rodent which lives at lower population densities than other woodland mice and voles. During the summer, dormice feed on a wide range of high-energy foods such as pollen, nectar, hard and soft fruits and insects. They are often associated with hazel and honeysuckle, though they are not completely dependent on these species. During the winter, dormice hibernate in nests on the woodland floor for up to 6 months. Dormice are a good indicator of ancient species- rich woodland and hedges and management practices that benefit dormice will benefit a range of species.

Dormice are often associated with traditional coppice with standards, which provides a good range of foods in a small area, though coup (cleared area) sizes should be small as they are reluctant to cross open ground. Generally, beneficial management for dormice promotes a high species diversity of woody plants, within a well connected woodland structure, allowing arboreal movement between the different trees and shrubs.

2.10.2 Goblin Combe Site of Nature Conservation Interest

Goblin Combe is also a non-statutory SNCI – the boundary coincides with that of the SSSI. It is managed by the Avon Wildlife Trust and forms one of its reserves. The Avon Wildlife Highlights (on its website) that: "The airy grasslands above the Combe make a marked contrast to the dark woodland below. A great spot for butterflies, with a magical view across Mendip. The damp wooded Combe is home to the rare moonwort fern which grows under the old yew trees. The woodland and scrub on the reserve support a thriving population of the hazel dormouse, one of the largest in the area. Goblin Combe is a gorge cut into the limestone by melting snow and ice during the last ice age. Climb steeply to the limestone grassland and patches of heath above. In late summer the grassland is dotted with autumn gentian, autumn lady's tresses and yellow-wort. Over 30 species of butterfly have been recorded here, including grizzled and dingy skippers, brown argus and green hairstreak."

2.10.3 Goblin Combe Regionally Important Geological Site

The geology and geomorphology of Goblin Combe, typically associated with the dry limestone gorge formed by meltwater at the end of the last ice age is of importance as highlighted by this designation.

3 MANAGEMENT OBJECTIVES AND PRESCRIPTIONS

3.1 FACTORS INFLUENCING MANAGEMENT

Natural Trends

- Dominance by mature even-aged population of non-native hybrid large and Scot's pine.
- Regeneration of scrub from on site seedbank and adjacent woodland
- Squirrel and deer population affecting regeneration and establishment of saplings/young trees
- Ash dieback
- Other tree disease spread (e.g. in larch) and pests
- Presence of some non-native invasive species of plants on site (Turkey oak, Holm oak) and in adjacent woodland that could spread (including buddleia, laurel and leylandii)

External Factors

There is no local source of water for potential livestock watering other than surface runoff. Water for this form of management would need to be brought into the site, although enhancing the onsite habitat in terms of standing water features forms part of this management plan. The works will be undertaken in a considerate and careful manner, particularly in terms of Bristol Airport's woodland neighbours and shared users of the access track. Bristol Airport has formed a partnership with The Groundwork Trust, which owns a large area of adjoining woodland and hosts the Goblin Combe Environment Centre.

3.2 MANAGEMENT APPROACH

Felling will be motor-manual, with extraction likely to be associated with using a forwarder. Trees to be removed would be clearly marked with a yellow paint mark. Retained individual trees would be identified with numbered tags and protected by suitable barrier fencing. The blocks of retained broadleaved woodland will be protected with suitable barrier fencing to prevent accidental removal of any of these trees.

Brash would be removed and chipped, being reused as part of local habitat features on site, with the main timber being removed and stacked on hard ground off site. Some non-native larch/Scot's pine would be retained as monoliths with bat features created in the trunk using a range of chainsaw techniques. Standing and fallen timber would also be retained to create a deadwood legacy. Stumps and rootplates would not be removed to minimise damage to ground flora and to maintain potential hibernation sites for dormouse. They would be cut close to ground level and split to aid decomposition.

A proportion of the timber would be processed locally (e.g. by Groundwork Trust) and used in building or outdoor furniture works in the local area, thereby providing a sustainable and circular economic use of some of the timber crop, fulfilling its purpose when planted, whilst maximising the retention of carbon in the re-used timber. The remainder of the less viable woody material will be retained on site as habitat and management features, largely being integrated into suitable dead hedges use to create potential management compartments, restricting deer access and providing the basis for possible future grazing stock management. Some material will be used to create buried, above ground and standing deadwood features. The rate of carbon sequestration and storage in the mature non-native larch and Scot's pine to be removed will have slowed (but still present) as the trees matured, whilst carbon stored in the soil will be retained, protected and regenerated through the conservation management and regeneration of the woodland. The removal of the top canopy trees will result in the increase in natural regeneration of the native broadleaved understorey and lower level shrubs, trees and other flora, thereby restarting the cycle of carbon sequestration and storage whilst also promoting biodiversity.

3.3 LEGAL AND POLICY REQUIREMENTS

The following legislation is relevant to implementing this Plan:

- Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Countryside and Rights of Way Act 2000
- Natural Environment and Rural Communities Act 2006
- Protection of Badgers Act 1992
- Deer Act 1991 (as amended 2007)
- Wild Mammals (Protection Act) 1996
- Health and Safety at Work Act 1974

3.4 MANAGEMENT CONSTRAINTS

- Retention and safeguarding of broadleaved tree groups/individuals and reduction of canopy to 20% by the removal of coniferous trees only (with the priority being hybrid larch)
- Safeguarding and protection of small part of Goblin Combe SSSI, SNCI and RIGS
- Public Right of Way and an informal path cross the site in two locations which are used by members of the public and other woodland owners
- Shared access track used by other woodland owners
- Felling licence must be obtained for felling more than 5m3 per season (quarter)
- Potential for the presence of dormouse in certain areas
- Presence of other faunal species
- Sloping site may limit ease of access for felling machinery/vehicles
- Bramble, bracken and leaf litter presence may limit the establishment of open areas of calcareous grassland
- Prior to grazing started in spring 2024, a suitable method of securing livestock and providing water will be implemented
- Neighbours on north, south, east and west of Lulsgate Wood and potential reduction in privacy once trees have been thinned
- Potential encounters with public during felling / thinning operations
- Deer and squirrel grazing

3.5 MANAGEMENT OBJECTIVES FOR LULSGATE WOOD

A set of objectives have been developed for Lulsgate Wood that clearly demonstrate how sustainable woodland management will be achieved. These objectives are specific, quantifiable statements that represent what needs to happen to achieve the Vision for Lulsgate Wood.

Objective 1: Conservation - General
- To conserve and enhance the biodiversity of Lulsgate Wood through the thinning of the high canopy of the existing plantation woodland to 20% within a 4.38 ha area and no less than this within each 0.5ha component (and retaining/managing the existing broadleaved woodland through cattle grazing from spring 2024) to create a more open canopy within the 4.38ha, whilst retaining the more cluttered woodland habitat associated with the yew groves and woodland edge, encourage native broadleaved tree, scrub and ground flora regeneration and a significant increase in diversity and abundance of invertebrates, in particular those which would support a growing greater and lesser horseshoe bat population - No introduction of lighting
- To protect and enhance the biodiversity of Lulsgate Wood
- To maintain the more open canopy structure through rotational cutting and then by low-intensity conservation grazing in spring 2024
- Conserve and enhance the woodland soil, geology and landscape
- Protect and maintain the ecological integrity of the woodland
- Control/management of pests and diseases
Objective 2: Conservation – Horseshoe Bats
- Improve and maintain habitat opportunities for lesser and greater horseshoe bats through the creation of open mosaic habitat that would be delivered by Objective 1 in accordance with criteria within the North Somerset and Mendips Bat SAC SPD and as defined elsewhere in this document
Objective 3: Sustainability
- Adopt environmental management principals that reduce the impact of management operations on the environment
- Assess, avoid, minimise, mitigate and compensate the environmental impact of all woodland management operations before they are implemented, monitoring before and after to enable positive management
- Reuse all timber/arisings in a manner that minimises carbon loss and accelerates carbon sequestration through natural regeneration
Objective 4: Healthy, Safe and Secure Woodland
- Follow best practice to keep risk to an acceptable level for all users of Lulsgate Wood
- Ensure quality of life and enjoyment of woodland areas around Lulsgate Wood is not adversely affected by management practices
- Maintain public rights of way and shared woodland access track to preserve and enhance accessibility and to encourage an active, healthy lifestyle in this location
Objective 5: Education and Best Practice
- Communicate and explain woodland management proposals with adjacent woodland owners
- Provide interpretation boards at each end of the public right of way associated with Lulsgate Wood to explain the Vision, woodland management activities and conservation interest.
- Strive to demonstrate best practice in conservation woodland management to inspire and inform other people and wider management practices

Objective 6: Heritage
- Protect areas believed to be associated with historic mining and explain these features on the interpretation boards (all of these are associated with retained mature Yew)
- Support the North Somerset Council's Green Infrastructure Strategy through the ongoing management and regeneration of Lulsgate Wood.
Objective 7: Management
- To provide a high-quality level of woodland management in all activities.

Objective 1: Conservation - General

Lulsgate Wood is dominated by non-native larch plantation, together with Scot's pine plantation and areas of broadleaved woodland. By thinning the plantation woodland (by 80%) a more open mosaic will be created, bringing in more light and promoting the restoration of more extensive semi-natural broadleaved dominated woodland. This will, in turn, promote the regeneration of the ground flora and understory from the existing seed bank, with care taken to retain and promote an increase in diversity in species, age class, size and density within the woodland. This will be complemented by the retention of the existing semi-natural broadleaved woodland areas and individual trees. A range of features will be provided to promote conditions for a wide range of fauna and non-native species will be removed. These woodland conservation proposals will result in an overall increase in biodiversity, promotion of woodland regeneration (future veterans), support to the conservation objectives of Goblin Combe SSSI and the North Somerset and Mendips Bat SAC and long term adaptation to disease and climate change. Measures supporting greater horseshoe bat have a GHB and those for lesser horseshoe bat a LHB

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
1	To conserve and enhance the biodiversity of Lulsgate Wood through the thinning of the existing plantation woodland high canopy to 20% within a 4.38 ha area (and retaining/managing the existing broadleaved woodland) to create a more open canopy, encourage native broadleaved tree, scrub and ground flora regeneration	1.1	Complete detailed ecological baseline survey (flora and fauna) and produce reports and review other aspects via desk study (geology, soil, landscape character, heritage, access and recreation etc). Invertebrate survey to be carried out pre-felling in 2023 as this has been identified as useful indicator, recognising that increasing the number and range of invertebrates is key to increasing HS bat capacity and at the heart of the habitat enhancement and management prescriptions. Undertake pre-felling invertebrate surveys focusing on horseshoe bat prey species. Allowing comparison of the effectiveness of the management measures on the ability of the woodland to support current and future horseshoe bat population and to inform future management decisions.	2018 Early summer 2023	2022 Late summer 2023	5 years Every two years until evidence demonstrates invertebrate abundance exceeds the baseline.
		1.2	Conduct tree survey to confirm location, species and numbers of broadleaved and conifer canopy trees	2022	2022	Annual
		1.3	Undertake GIS mapping and modelling exercise to plan and confirm which conifer trees and how many to be removed under Felling Licence, ensuring 20% retention per 0.5ha, and to inform short and long term strategy for woodland restoration and conservation management	2022	2022	
		1.4	Attain Forestry Commission Felling Licence and re-affirm agreement on proposed management from Natural England and North Somerset Council	2023	2023	
		1.5	Appoint suitably experienced felling contractor and secure off-site storage for timber.	Winter 2023	Spring 2023	
		1.6	Mark up conifer trees to be removed using matching paint tag and install suitable re-useable/moveable barrier fencing to demarcate groups of / individual trees and sensitive/important habitat to be retained (including mature	Summer 2023	Summer 2023	

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			broadleaved species of trees, good specimen understorey trees and shrubs, larch with well-established ivy growth, any trees that develop potential bat roost features, trees or habitat supporting actively nesting birds or associated with future badger setts), areas of wetter ground supporting bryophytes and pteridophytes, future veteran trees, areas with less dominance from bramble and bracken).			
		1.7	Confirm scope and timings of work with neighbouring woodland owners and install signage advising of works (no works are associated with the public right of way at the top of the site).	Spring 2023	Spring 2023	
		1.8	Undertake tree removal works under Felling Licence at optimum time of year to avoid impact in relation to sensitive/protected species including dormouse and nesting birds, which may be present on site. Certain trees may be reduced in height and retained as monoliths with 'natural' bat roost features created using chainsaws. GHB and LHB	Sept	Oct 2023	
		1.9	Remove the majority of timber (for processing and re-use as construction timber) and brash from site, retaining some as dead wood and refugia habitat. GHB and LHB	Sept 2023	Dec 2023	
		1.10	Obtain feedback from Forestry Commission, Natural England, North Somerset Council and adjacent woodland owners	Dec 2023	Dec 2023	Annual
		1.11	Update tree mapping to confirm retained trees and reduced canopy percentage within 4.38ha at 20%	Dec 2023	Dec 2023	Annual
2	Protect and enhance the biodiversity of Lulsgate wood	2.1	Felling plan, method statements and woodland management plan to be informed by the outcome of the detailed ecological baseline and update surveys. Aiming to achieve UK Hab Woodland Condition Criteria in the medium term (10 years) for Lowland Mixed Deciduous Woodland (see Appendix E)	2018	Jan 2023	

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
		2.2	Bats: no potential roost features (PRF) have been identified within the trees being proposed to be felled. A further PRF survey will be conducted prior to any felling and if any PRFs are found, those trees along with a suitable buffer will be retained. Two small shafts >0.5m diameter and 4m deep have been identified. These currently do not include any potential bat roost features. These will be made safe and dark through the provision of a blockstone and cement cap with suitably sized openings for use by bats, and placing suitable roosting structures inside to enhance their potential as bat roosts including hibernation roosts for horseshoe bat species. Fencing and signage will be retained around these features. GHB and LHB Two insulated wooden horseshoe bat 'cabins' will be installed on the flatter southern part of the woodland as night roosts. These will include an open access to allow the bats to fly directly into them, with a suitable baffle to maintain interior darkness and deter predators. GHB and LHB Three shallow (0.5m) ponds between 5-10m x 5-10m will be created on the flatter southern woodland floor, in the vicinity of the existing wetter areas (evidenced by water filled ruts) to provide opportunities for increasing lesser horseshoe bat prey in particular. Two further scrapes will be also created where there is evidence of wetter ground. LHB The woodland either side of the main shared access track will be managed to enhance the width of the ride throughout Lulsgate Wood, promoting opportunities for a range of invertebrates. A further ride will be created in the south (linking to the ponds and the bat cabins) and two created in the north linking to the upper part of the woodland. A glade will be created along each of these rides. GHB Introduction of suitable conservation grazing by cattle to support woodland management and increase prey availability/carrying capacity for horseshoe bats. Cattle will be grazed in three fenced compartments. Water will be provided in each compartment through the provision of a 1000lt IBC, caged and mounted on a trailer and	June 2023 June 2023 November 2023 November 2023 September 2023 Spring 2024	Aug 2023 July 2023 January 2023 January 2023 November 2023 In perpetuity unless otherwise agreed in writing by Natural England / NSC In perpetuity	

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			located adjacent to the main access track (low point). Water will feed a suitable trough using gravity. The IBC will be refilled and replaced as necessary during periods where the cattle are grazing. GHB and LHB Restoration/management of species rich understorey, shrub layer and future veterans, management of mixed and well-structured woodland including all retained broadleaved trees that will provide enhanced feeding and commuting habitat. Greater horseshoe bats: The replacement of the coniferous woodland with broad-leaved woodland will benefit Greater Horseshoe bats. Whilst the majority of the works in Lulsgate Wood are proposed to occur in 2023, the remainder of the core planned felling and replacement of any remaining conifers with broad leaved species will occur over a longer period i.e 10-15 years. It is understood that Macromoth abundance is higher at the edge of woodland than in the interior – Lulsgate Wood is surrounded by dense woodland and therefore will provide new woodland edge habitat along all of its boundaries from 2024. Lulsagte Wood will be permeated by grassy rides, and contain grassy glades. They will be managed without insecticide treatments (cattle grazing). Glades will be 10 - 15 metres across before to promote their use by the bats for feeding. Macromoth abundance and species richness are positively affected by tree species richness and by the relative abundance of native trees in a woodland patch. Of dominant ground types, 'grass' and 'litter' have higher abundances and species richness than bare ground, herbs, moss or ferns and grass and litter will be promoted. Woodland size is positively related to macromoth abundance. Lulsgate Wood is associated with the much larger area associated with Wrington Warren. Lesser Horseshoe Bats Micromoth abundance is positively related to the relative abundance of native trees and unlike macromoths the percentage cover of understory in a			

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			woodland patch. Micromoth abundance is found to be higher within a woodland interior than at the edge. The shape of a woodland patch is important particularly for woodland micromoth species, indicating that patches of compact shapes (with proportionally less edge exposed to the surrounding matrix) sustain a larger number and larger populations of woodland species of micromoths. This highlights the importance of designing patches of compact shapes, especially when the patch to be created is small. Brown lacewings can be found amongst conifers. Woodland trees and shrubs will be retained and regrowth/future planting (if required) will occur in naturalistic non-linear patterns. Scalloped edges and bays will be created to provide sheltered areas with higher insect concentrations. The proposed management away from an over-aged and unmanaged conifer plantation will create a variety of types of vegetation from trees to shrubs and rough grass. Overhanging branches and bushy shrubs will be left to provide cover. Woodland edges will be used both by bats that fly in woodland and in the open. When developed these part of the woodland will not be coppiced. Mosquitoes and caddies fly larvae are aquatic, as can be gnat larvae. Gnats and midges also use damp places near water to breed. Therefore the incorporation of the proposed ponds and scrapes in association with the woodland habitat is likely to increase their value to Lesser Horseshoe bats. Ponds with permanent water will be created – intercepting existing groundwater and surface runoff. They will be designed so that water is maintained within them throughout the year. Variation on the banks of ponds favours high insect and structural diversity. A wide variety of natural features will be included, including varied depths, diverse aquatic and bankside vegetation, and overhanging trees. Grassy margins, scrub and overhanging vegetation provide excellent conditions for insects. Habitat diversity will be supported through allowing growth of taller vegetation. Fencing will be used to prevent livestock from causing excessive damage to water margins.			

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
		2.3	Birds: no felling of trees with actively nesting birds, and timing of works to September to December to minimise disturbance to birds. Restoration of species rich understorey, management of mixed and well-structured woodland including all retained broadleaved trees that will provide enhanced feeding and commuting habitat. Provision of 6 standard refugia and 6 x standard hibernacula using wood (inc. brash piles) from the felling and on-site soil. Provision of 20 smaller bird boxes (e.g. Schwegler 1B, 2MR, 2HW, 1MR) on suitable retained trees and one tawny owl (e.g. Schwegler No. 30) and two little owl (e.g. Schwegler No 20a) boxes on suitably retained trees.	Aug 2023 Jan 2024 Nov 2023 Nov 2023	Dec 2023 In perpetuity Nov 2023 Nov 2023	Annual
		2.4	Dormouse: Timing of felling in areas known to support dormouse between mid-September and the end of October to ensure last young are independent and prior to hibernation. Supervised by SQE. Only above ground habitat will be removed (focused on conifer species only). Retained vegetation to be protected during works. Trees to be inspected by ecologist prior to felling and felled at a time when dormouse are not occupying any lower / ground habitat (i.e. arboreal) as per standard method. Work would adopt least number of 'haul routes' aligned away from optimal dormouse food sources to extract timber leaving existing shrub and young tree layer, bramble, honey suckle etc intact beyond these. Arboreal connectivity within and without woodland will be retained through residual broadleaved and conifer	Sept 2023 Jan 2024	Oct 2023	

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			trees and shrub/climbing plant layer. Planting additional food/shrub species is an option and will be determined through the EPS licencing process and from a resurvey of retained younger specimens. Stumps will not be removed thereby preserving potential hibernation habitats. Provision of permanent network of 50 dormouse next boxes on retained trees. All felling to be completed under a Natural England dormouse licence and/or precautionary non-licensable method statement. Restoration of species rich understorey, management of mixed and well-structured woodland including all retained broadleaved trees that will provide enhanced feeding and connectivity opportunities. Appropriate protection of ground level food plants from browsing cattle deer through the use of dead hedging/brash.	Sept 2023 March 2024	Dec 2024 In perpetuity	Annual
		2.5	Other mammals: walkover survey 2 months and immediately prior to felling to reconfirm absence of badger, fox earth, rabbit warren to ensure the requirements of the Protection of Badger Act 1992 and Wild Mammals (Protection) Act 1996 are followed. Provision of 6 standard refugia and 6 x standard hibernacula using wood from the felling and on site soil. Restoration of species rich understorey, management of mixed and well-structured woodland including all retained broadleaved trees that will provide enhanced feeding and connectivity opportunities.	July 2023 Nov 2023 Jan 2024	August 2023 Nov 2023 In perpetuity	Annual
		2.6	Invertebrates: Restoration of species rich understorey, management of mixed and well-structured woodland including all retained broadleaved trees, rides, glades, standing and fallen deadwood, drier and wetter micro-habitats and conservation grazing that will provide enhanced opportunities.	By end of 2024	In perpetuity	Annual
		2.7	Removal of any non-native and invasive species of tree/understorey (only holm and turkey oak at present – which is outside of the felling areas);	Jan 2024	In perpetuity	Annual
		2.8	Prepare and submit a Natural England EPS Dormouse Licence application for the felling works.	May 2023	Until end of felling in Dec 2024	

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			Prepare a Precautionary Non-Licensable Method Statement for the on-going management works, including specific guidance/requirements set out in Forestry Commission 2018. Protected Species A Reminder, Forestry Commission, European Protected Species and Woodland Operations Checklist V, Forestry Commission Operational Site Assessment, Forestry Commission 2019, A protocol for undertaking woodland management in England where dormice are present, Forestry Commission 2013, Guidance on Managing Woodland with Bats in England).	July 2023	In perpetuity	Review and update as required
		2.9	Fully brief main work contractors and future woodland management contractors through a series of Ecological Tool Box Talks, including use of contractors register of attendance.	Aug 2023	In perpetuity	Review and update as required
		2.10	Presence of Ecological Clerk of Works / specialist ecologist on site throughout felling works, and other relevant long-term management works as required, to ensure compliance with method statements and best practice, including daily/task ecological risk assessments and ecological permit to work and reporting.	Aug 2023	In perpetuity	As required
		2.11	Production of monthly progress and compliance reports to be issued to the Forestry Commission, Natural England and North Somerset Council if requested. Preparation and submission of Annual Monitoring Report covering each previous year.	Aug 2023	In perpetuity	Annual
3	To maintain the more open canopy structure (20% high canopy cover) and restoration of ground flora/shrub layer and future veterans through rotational cutting in the first instance and then by cattle grazing in Spring 2024	3.1	Repair and maintain boundary stone walls/ install stock fencing where necessary and/or consider creating secure dead hedges using brash from tree removal works. Install means of providing water to grazing stock.	Nov 2023	In perpetuity	Annual
		3.2	Install deer / squirrel /grazing protection for those establishing understorey trees that have been ear-marked as future veterans and other habitats where grazing is not desired at a particular time.	Nov 2023	In perpetuity	Annual
		3.3	Undertake rotational cutting and removal of bramble and certain shrubs and bracken control to reduce vigour, control spread and encourage the re-establishment of a diverse ground flora. Follow guidance set out in English Nature, 2003, The Scrub Management Handbook	Nov 2023	End of Dec 2024	Annual Oct to Feb inclusive
		3.4	Management of open spaces and other suitable woodland areas as glades, encouraging the regeneration of ground flora by appropriate conservation grazing	By end of 2024	In perpetuity	Annual Oct to Feb inclusive

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
			(exploring the potential to re-establish/expand areas of calcareous grassland, thereby supporting the conservation objectives associated with Goblin Combe SSSI).			
		3.5	Appropriate Tree surgery to maintain lifespan of retained trees if required	Autumn 2024	In perpetuity	Annual as required
		3.6	Introduction of rotational coppicing to encourage early successional habitats and management, and to maintain a continuous supply of young growth (no more than 5m3 per quarter per annum) through regular thinning/felling and to protect and enhance mature features, such as large trees and dead wood.	Autumn 2024	In perpetuity	Annual as required
4	Monitor and Management of the effects of the management plan and cattle grazing (with rotational cutting elsewhere)	4.1	Establish a Lulsgate Wood Steering Group comprising Bristol Airport (and its representatives), and ideally Natural England, North Somerset Council and Forestry Commission, to enable positive exchange of data, learning, progress and to act as a forum to discuss and agree any changes to the management regime that might be required if the proposals set out here do not seem to be optimal. Monitor the effects of the management plan on habitat distribution/NVC communities and structure of Lulsgate Wood. Undertake a review of the management/grazing regime, duration, locations, approach, frequency and determine whether changes to management approach is required and agree these with the Lulsgate Wood Steering Group.	Summer 2023 Summer 2025 Spring 2024	In perpetuity In perpetuity In perpetuity	Annual as required Annual as required Annual for the first 5 years and then every 5 years
5	Ecological Monitoring Post-felling	5.1	Carry out repeat ecological surveys for bats (using SPD method – 3 x statics 5 x nights x 2 per month April to Oct inclusive and 2 x walking transects 2 x month April to Oct inclusive, plus inspection/maintenance of all artificial roosts provided), invertebrates reptiles, dormouse, badger, Phase 1 habitat (or UKHab) and NVC (as per current ecological baseline). Monitoring to be carried out in year 1, 3 and 5 post-felling and every 5 years thereafter. Inspection/maintenance of artificial roosts on an annual basis.	2024	In perpetuity	Years 1, 3 and 5 post felling and every 5 years thereafter

Objective 2: Conservation – Horseshoe Bats

Habitat conditions for greater and lesser horseshoe bat in Lulsgate Wood will be optimised through the reduction in canopy coverage to 20% within 4.38 of conifer plantation, complemented by the retained broadleaved trees including strong connective corridors and a diversity of habitat features promoting feeding and roosting.

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
6	Restoration of Lulsgate Wood to an open mosaic mixed woodland as an optimal habitat for greater and lesser horseshoe bats	6.1	Achieve Targets 1 to 5 through implementing associated Actions set out in this management plan to ensure Lulsgate Wood is optimised for greater and lesser horseshoe bat as required by the North Mendips and Somerset Bat SAC SPD. GHB and LHB This will be achieved through the restoration of 4.38 ha of existing coniferous plantation (WC0) with canopy cover 75-90% (WF111) currently unmanaged located in SAC Band A managed to become mixed woodland (WB0) with canopy cover 20% (WF114) alongside the other measures set out above. Lulsgate Wood will be managed in accordance with this management plan in perpetuity to ensure this is achieved in the short, medium and long term.	Spring 2023	In perpetuity	As defined above
		6.2	Reporting of the ongoing delivery of this management plan will be reported to the Lulsgate Wood Steering Group (NE, NSC, FC) on an annual basis for the first 5 years and thereafter every 5 years, providing an	Spring 2024	In perpetuity	Every year in 2024-2028 and then every 5 years

			opportunity to review and amend specific management actions as required.			
		6.3	Repeat monitoring of greater and lesser horseshoe bats in years 1, 3 and 5 post felling and thereafter every 5 years. Meet with NE/NSC and FSC on an annual basis yrs 1-5 and then 5 years thereafter to provide an expert forum to review the results of monitoring and to infirm and agree the specifics of and changes in management required.	April to October 2024	In perpetuity	In 2024, 2026 and 2028 and then every 5 years

Objective 3: Sustainability

The approach adopted for the restoration and management of Lulsgate Wood has taken a positive stance on sustainable operations.

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
7	Adopt sustainable woodland management principals	7.1	Adopt environmental management principals that reduce the impact of management operations on the environment as set out in this Woodland Management Plan	2023	In perpetuity	Ongoing
		7.2	Assess, avoid, minimise, mitigate and compensate the environmental impact of all woodland management operations before they are implemented, monitoring before and after to enable positive management	2023	In perpetuity	Ongoing
		7.3	Reuse timber/arisings in a manner that minimises carbon loss and accelerates carbon sequestration through natural regeneration	2023	In perpetuity	Ongoing
		7.5	To maintain the geological features of the site associated with Goblin Coombe	2023	In perpetuity	Ongoing
		7.6	Maintain and improve the stability of woodland soil	2023	In perpetuity	Ongoing
		7.7	Protect and enhance the ecological integrity of the woodland	2023	In perpetuity	Ongoing
8	Control/management of Pests and Diseases	8.1	Follow biosecurity protocols during all woodland management works as set out by the Forestry Commission: Biosecurity Good working practices for those working in forestry https://www.forestryengland.uk/sites/default/files/pdf/Biosecurity%20Policy.pdf	2023	In perpetuity	Ongoing
		8.2	Follow guidance set out by Forest Research for specific tree and woodland problems. https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/	2023	In perpetuity	Ongoing
		8.3	Repair boundary walls/fencing and use cut woody material to form management boundaries that may limit access by deer and support cattle grazing	2023	In perpetuity	Annual
		8.4	Monitor damage from pests on an annual basis and consider the use of suitable fencing or guards if appropriate.	2023	In perpetuity	Annual
		8.5	Monitor trees for signs of disease on an annual basis and implement best practice measures for disease control if necessary.	2023	In perpetuity	Annual

Objective 4: Healthy, Safe and Secure

Public access is not formally permitted as there are no Public Rights of Way, although unauthorised access is known to take place at times on informal tracks – including a well established on the upper southern parts of the wood. There is also a shared access to track used by neighbouring woodland owners. This management plan will implement a range of safety monitoring and management measures to meet legal and good practice requirements.

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
8	Maintain a healthy, safe and secure environment at Lulsgate Wood	8.1	Follow best practice to keep risk to an acceptable level for all users of Lulsgate Wood through annual safety surveys and responsive management actions.	2023	In perpetuity	Annual
		8.2	Ensure quality of life and enjoyment of woodland areas around Lulsgate Wood is not adversely affected by management practices	2023	In perpetuity	Ongoing
		8.3	Maintain Public Right of Way and southern boundary informal path and shared woodland access track to preserve and enhance accessibility and to encourage an active, healthy lifestyle in this location	2023	In perpetuity	Ongoing

Objective 5: Education and Best Practice

The restoration of Lulsgate Wood by Bristol Airport provides an opportunity to provide educational resources and positive messages to those using the public rights of way, other woodland owners and a wide audience associated with its employees, contractors and customers

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
9	Seek to deliver educational benefits through the management of Lulsgate Wood	9.1	Communicate and explain woodland management proposals with adjacent woodland owners	2023	In perpetuity	Ongoing
		9.2	Provide interpretation boards at each end of the public right of way associated with Lulsgate Wood to explain the Vision, woodland management activities and conservation interest.	2023	In perpetuity	Ongoing
		9.3	Strive to demonstrate best practice in conservation woodland management to inspire and inform other people and wider management practices	2023	In perpetuity	Ongoing

Objective 6: Heritage

Whilst no formal heritage designations or protected features are present within Lulsgate Wood, the shallow mining features present within the yew woodland is respected and these features will be preserved through the long term retention of the trees and woodland that has since established.

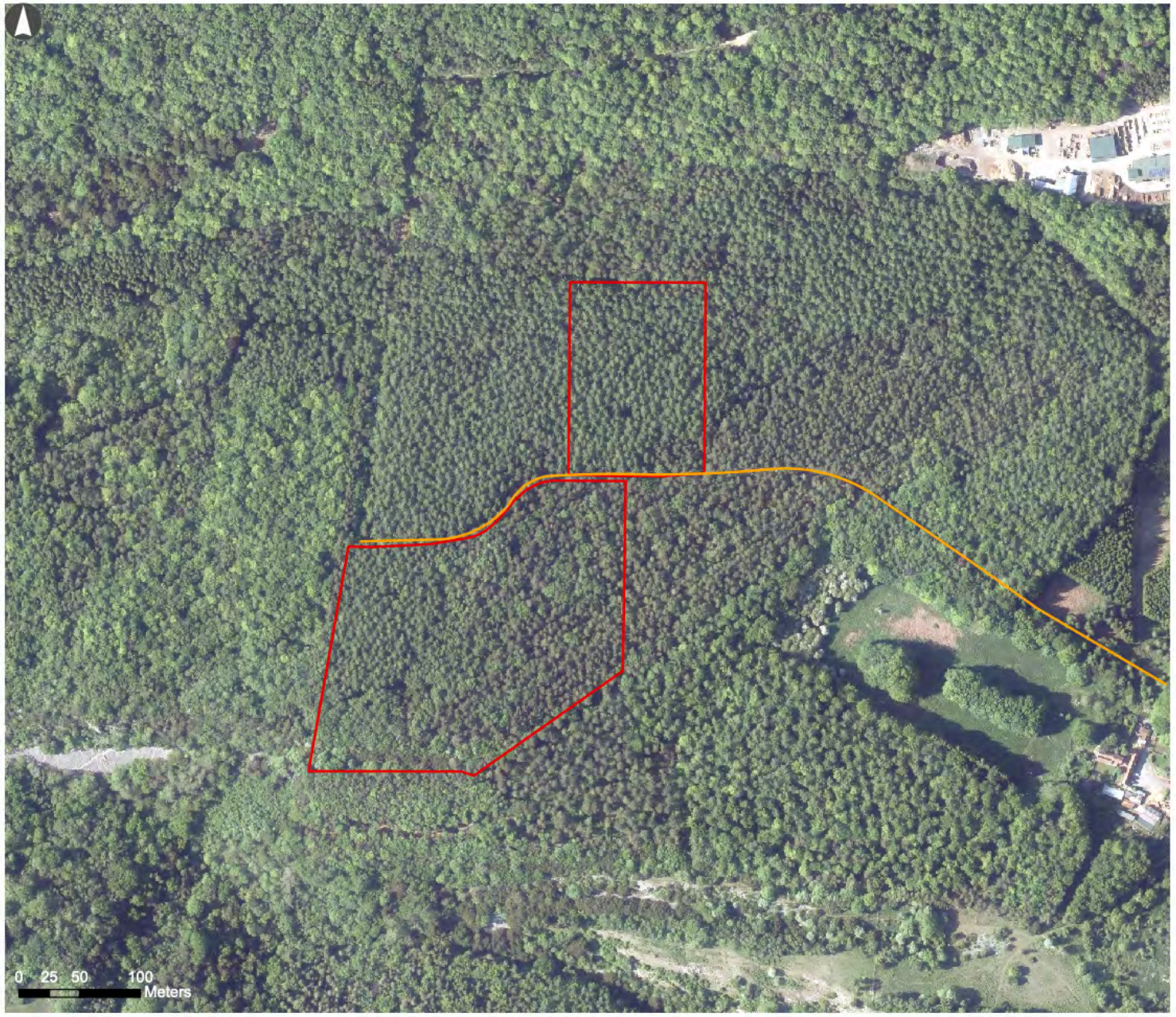
Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
10	Preserve the shallow mining features associated with Lulsgate Wood	10.1	All shallow mining features are associated with Lulsgate Wood are located within the retained areas of woodland, dominated by yew. No cattle grazing in these areas. Information relating to these features will be included on the information boards.	2023	In perpetuity	Ongoing

Objective 7: Management

Lulsgate Wood will be managed in line with the Objectives, Targets and Actions set out in this management plan to ensure the Vision for the woodland is achieved.

Target Ref	Target Description	Action Ref	Action Description	Start	End	Frequency
11	Long-term Management of Lulsgate Wood	11.1	Implementation of all Actions set out in this management plan to ensure short, medium and long term Targets and best practice is achieved.	2023	In perpetuity	Ongoing

APPENDIX A – LOCATION PLAN



JOHNS ASSOCIATES

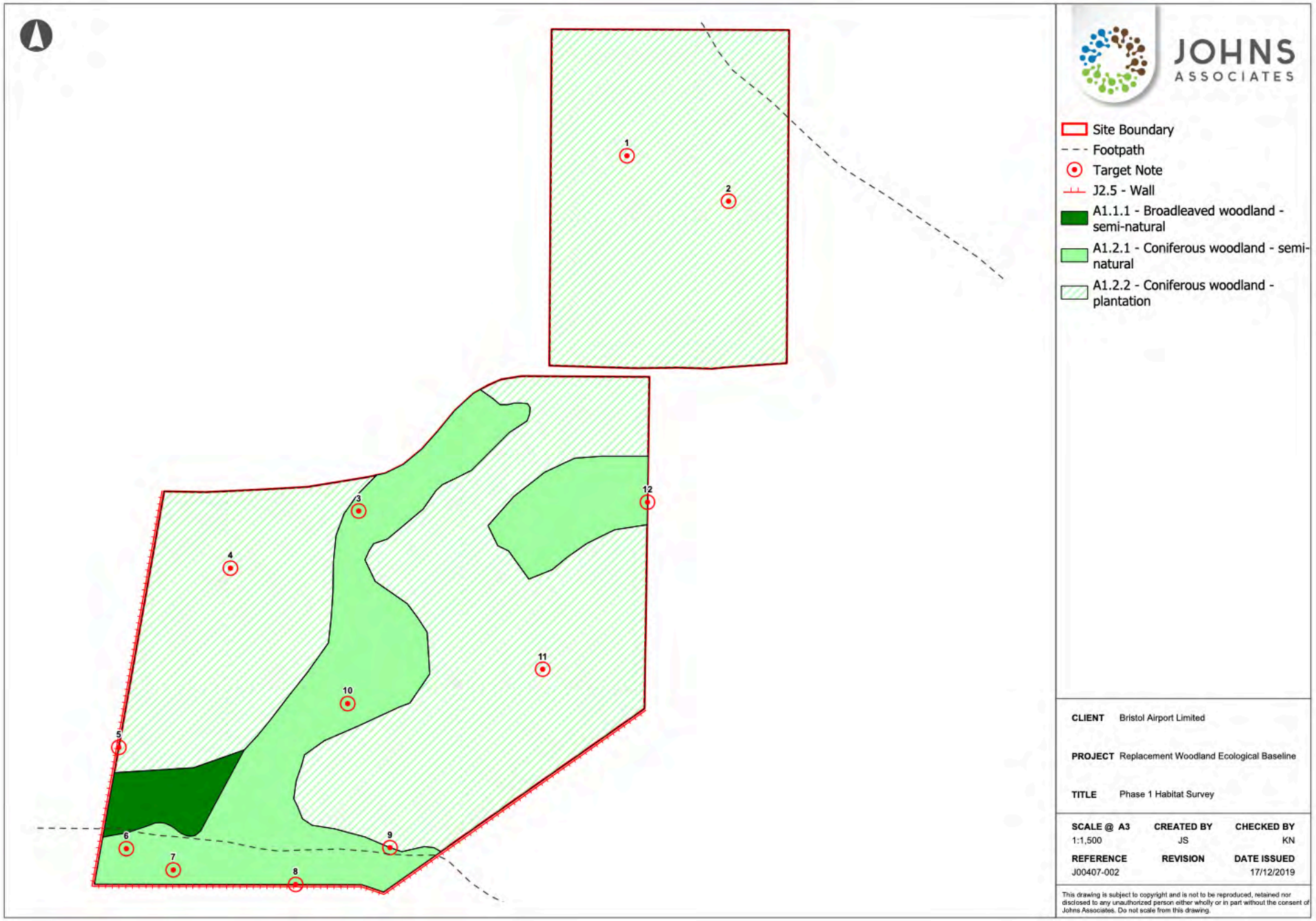
Site Boundary
Trackway

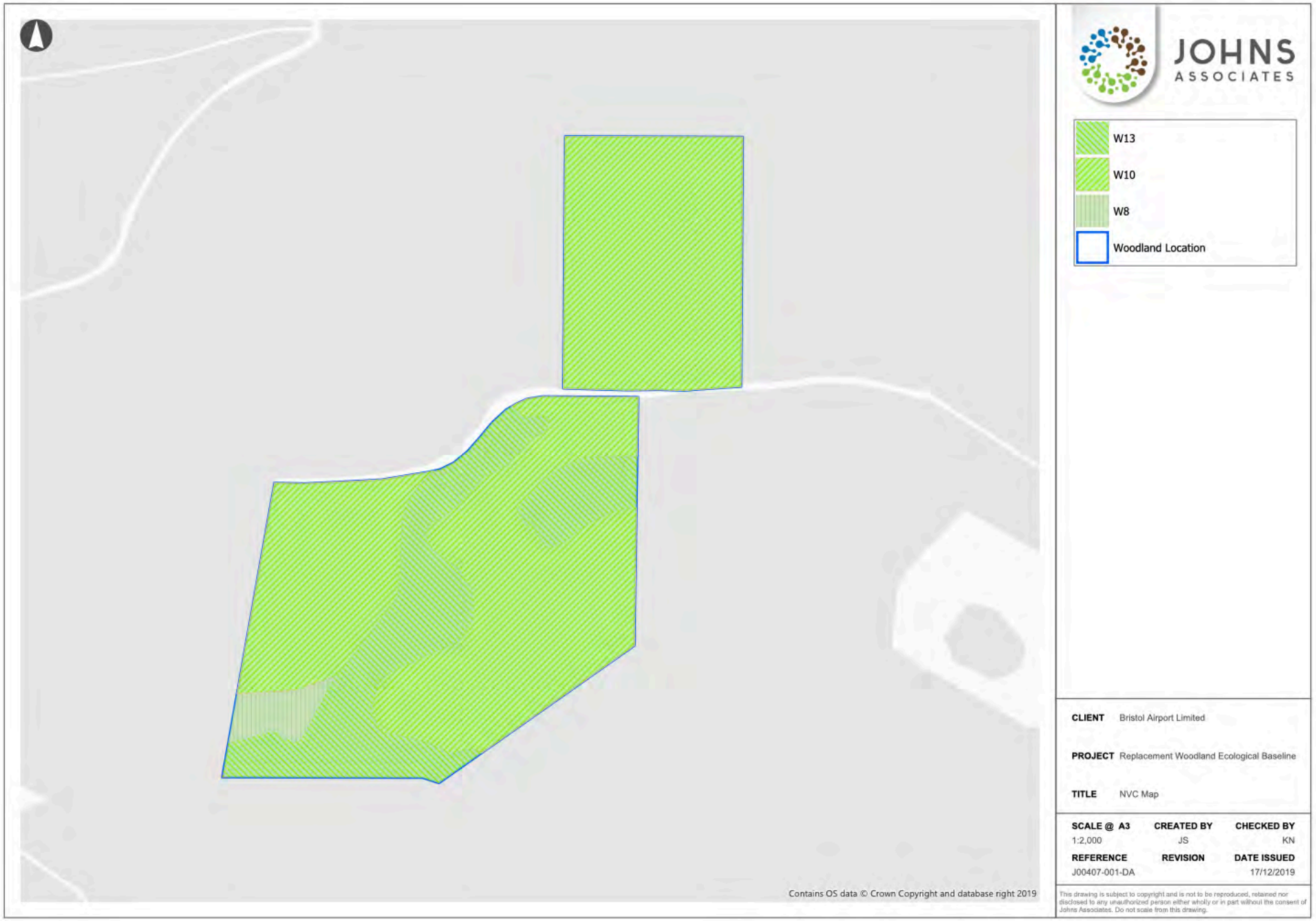
Aerial imagery ©Bluesky International Limited

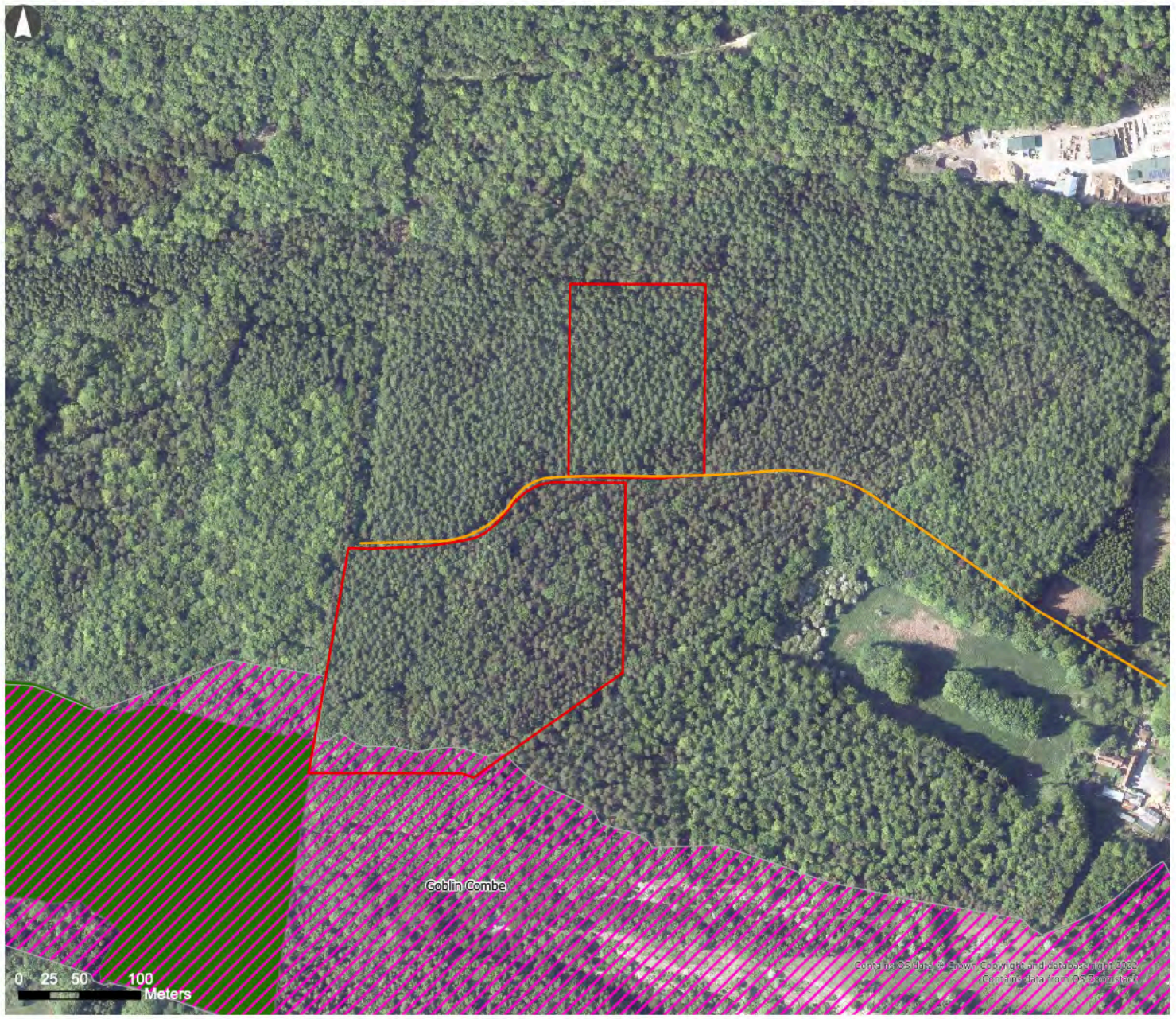
CLIENT	Bristol Airport Ltd
PROJECT	12mppa: Cogloop 2 Pre-Commencement Off-site Woodland
TITLE	Site Boundary Plan

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-001		30/9/2022

APPENDIX B – NATURE CONSERVATION RELATED PLANS







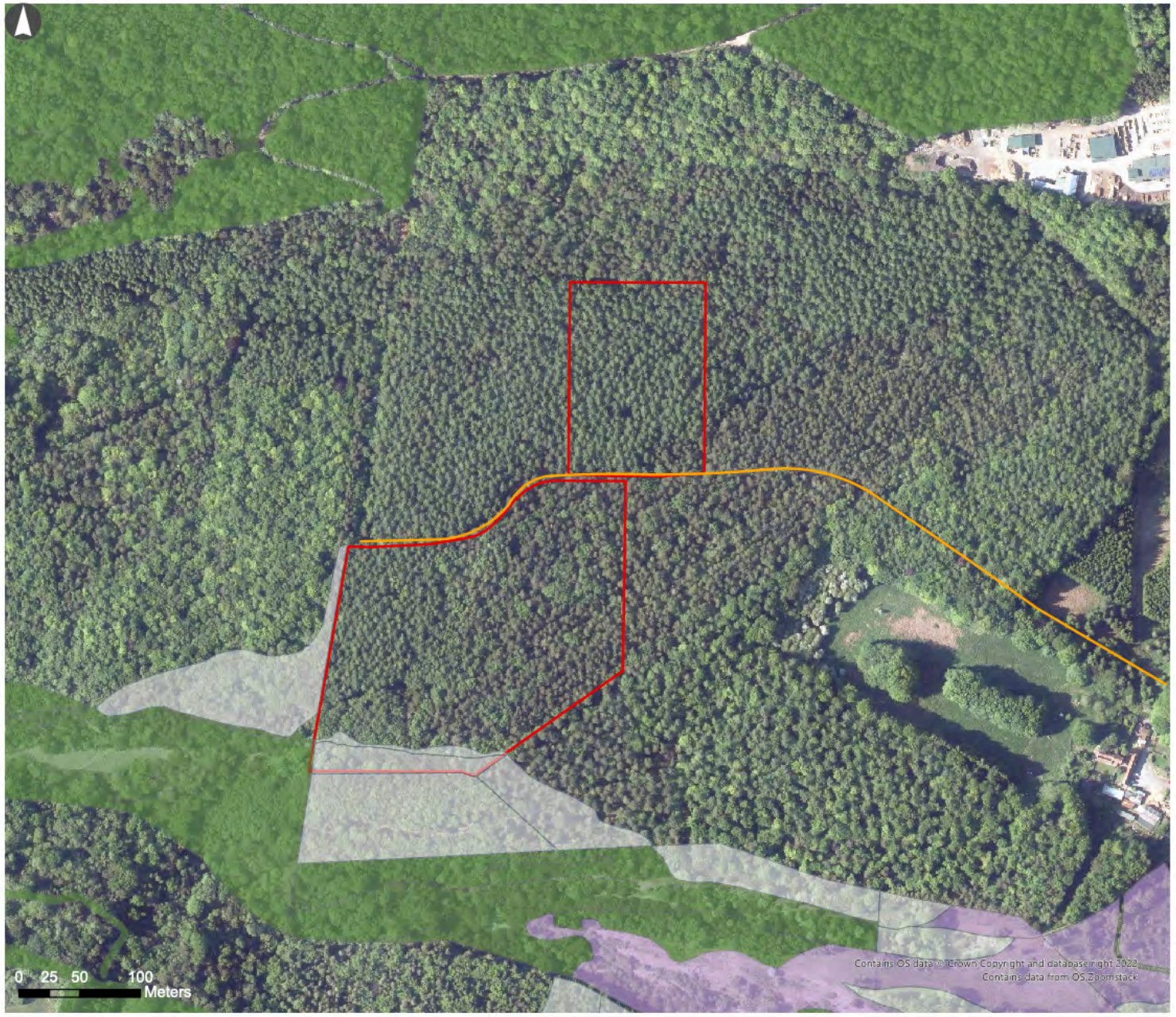
JOHNS ASSOCIATES

- Site Boundary
- Site of Special Scientific Interest
- Special Areas of Conservation
- Ancient Woodland
- Trackway

Aerial imagery ©Bluesky International Limited

CLIENT	Bristol Airport Ltd
PROJECT	12mppa: Cogloop 2 Pre-Commencement Off-site Woodland
TITLE	Designated Sites

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-004		30/9/2022



JOHNS ASSOCIATES

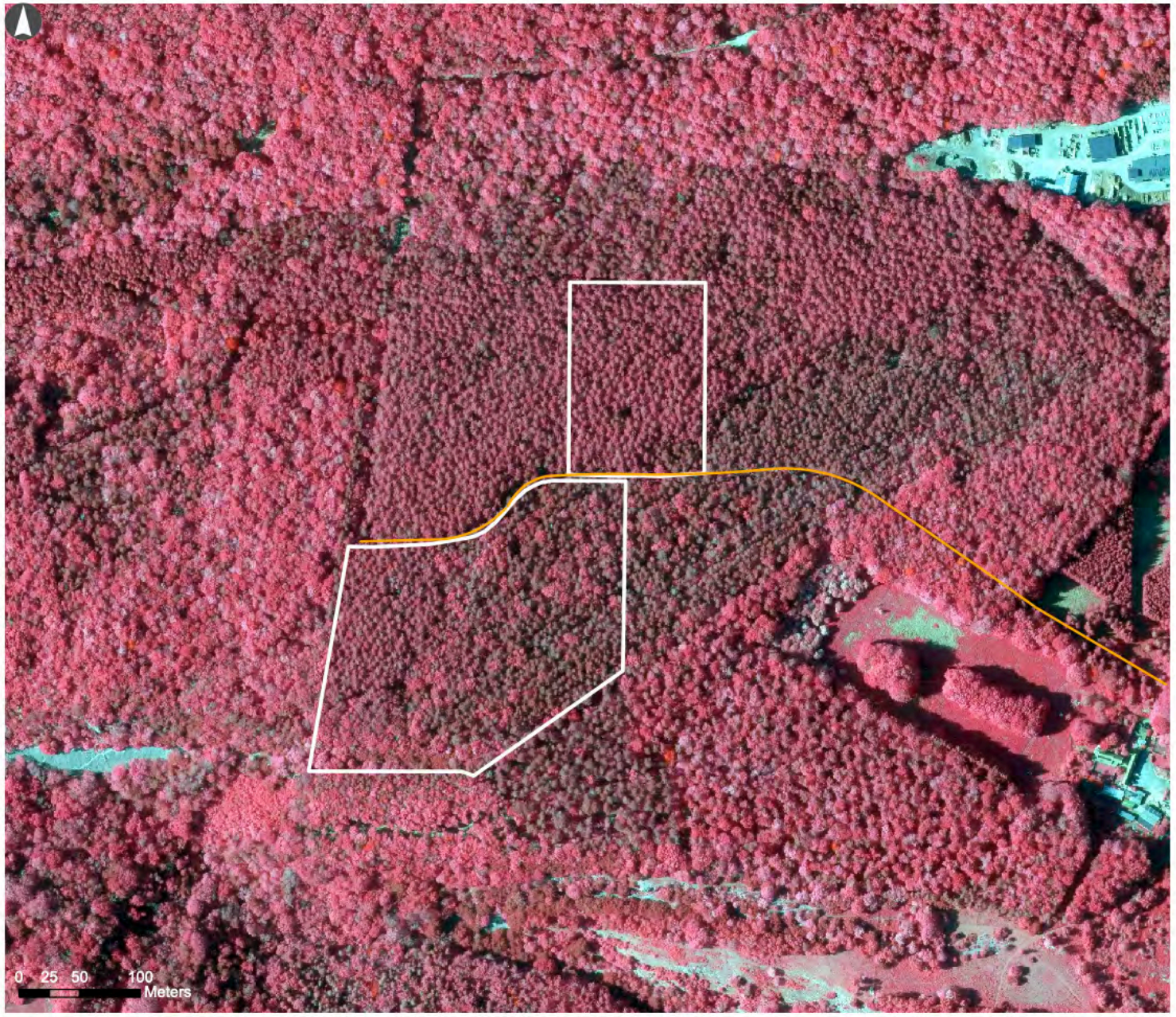
- Site Boundary
- Deciduous woodland
- Lowland heathland
- No main habitat but additional habitats present
- Trackway

Aerial imagery ©Bluesky International Limited

CLIENT	Bristol Airport Ltd
PROJECT	12mppa: Cogloop 2 Pre-Commencement Off-site Woodland
TITLE	Priority Habitat Inventory

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-005		30/9/2022

APPENDIX C – CURRENT WOODLAND, CANOPY AND TREE SPECIES



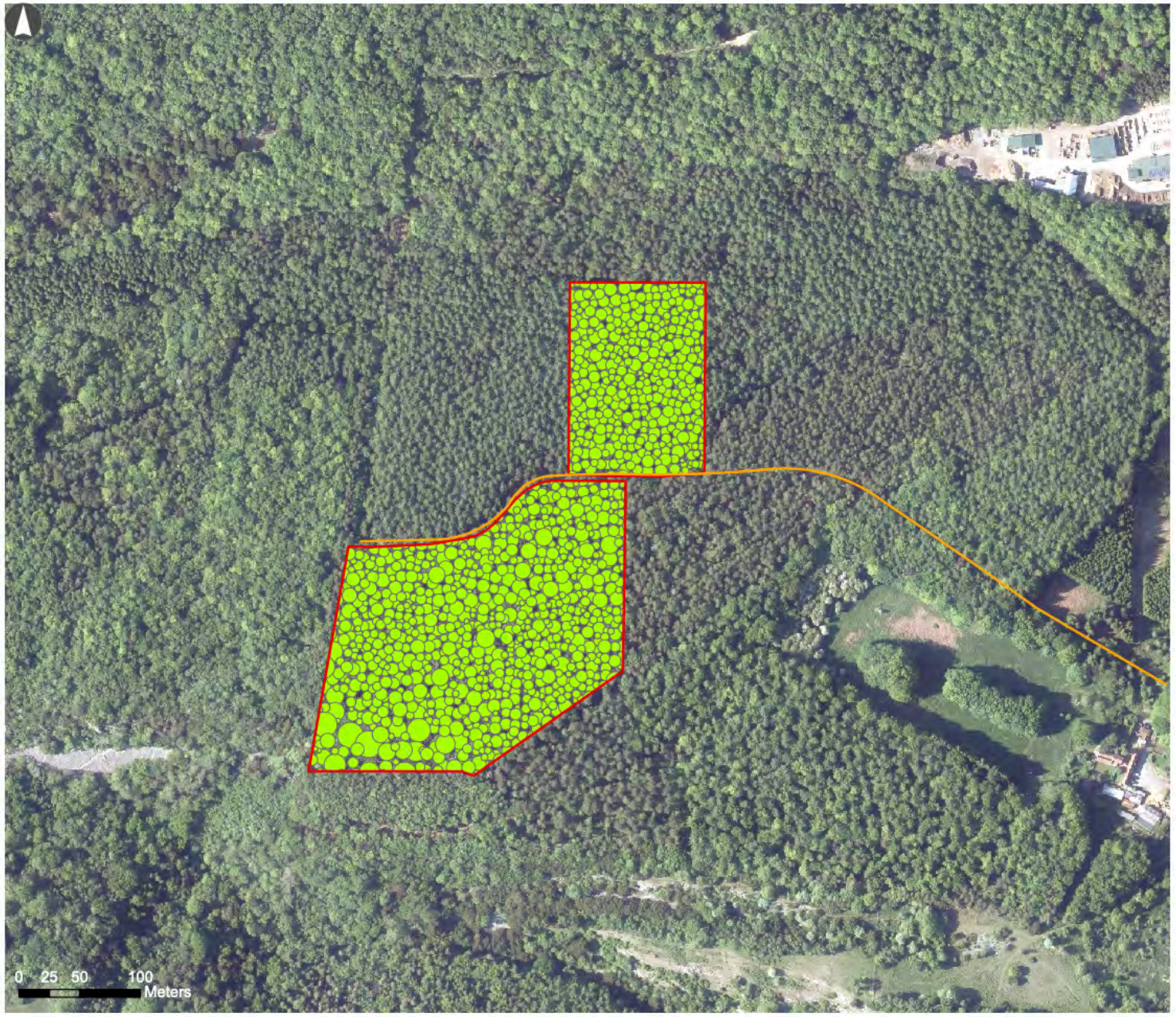
JOHNS ASSOCIATES

Site Boundary
Trackway

Aerial imagery ©Bluesky International Limited

CLIENT	Bristol Airport Ltd
PROJECT	12mppa: Cogloop 2 Pre-Commencement Off-site Woodland
TITLE	Site Location with Bluesky CIR Aerial Photography

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-002		30/9/2022



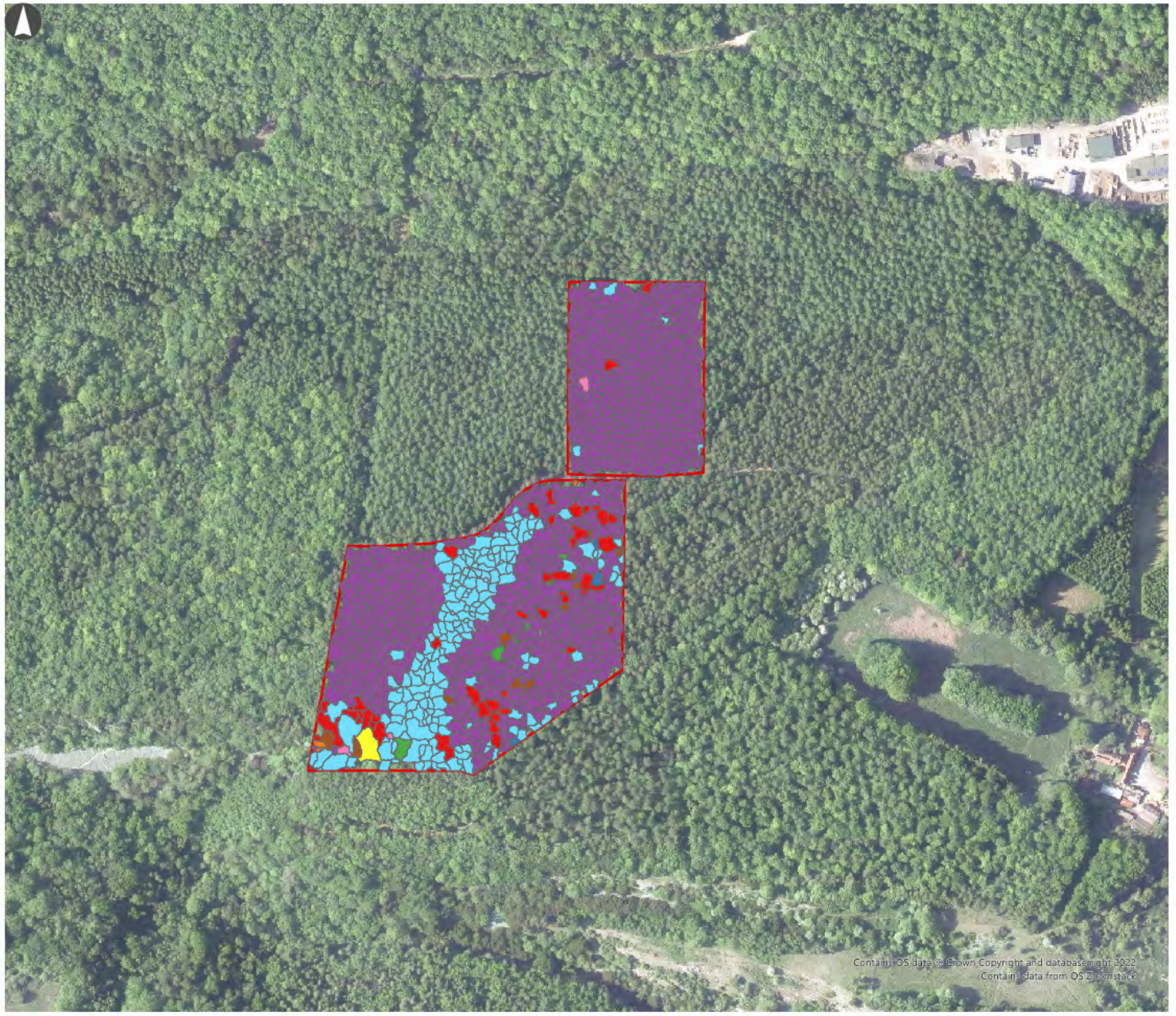
JOHNS ASSOCIATES

Site Boundary
Tree Crowns
Trackway

Aerial imagery ©Bluesky International Limited

CLIENT	Bristol Airport Ltd
PROJECT	12mppa: Cogloop 2 Pre-Commencement Off-site Woodland
TITLE	National Tree Map Canopies within Site

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-003		30/9/2022



JOHNS ASSOCIATES

Site Boundary

Species

- Ash
- Beech
- Birch
- European Larch/Scots Pine
- Holm Oak
- Hornbeam
- Oak
- Whitebeam
- Yew

Row Labels	Sum of Area (ha)	% of Area
Ash	0.358	5.88%
Beech	0.015	0.24%
Birch	0.036	0.60%
European Larch/Scots Pine	4.341	71.23%
Holm Oak	0.008	0.12%
Hornbeam	0.038	0.63%
Oak	0.064	1.05%
Whitebeam	0.017	0.28%
Yew	1.217	19.98%
Grand Total	**6.094**	**100.00%**

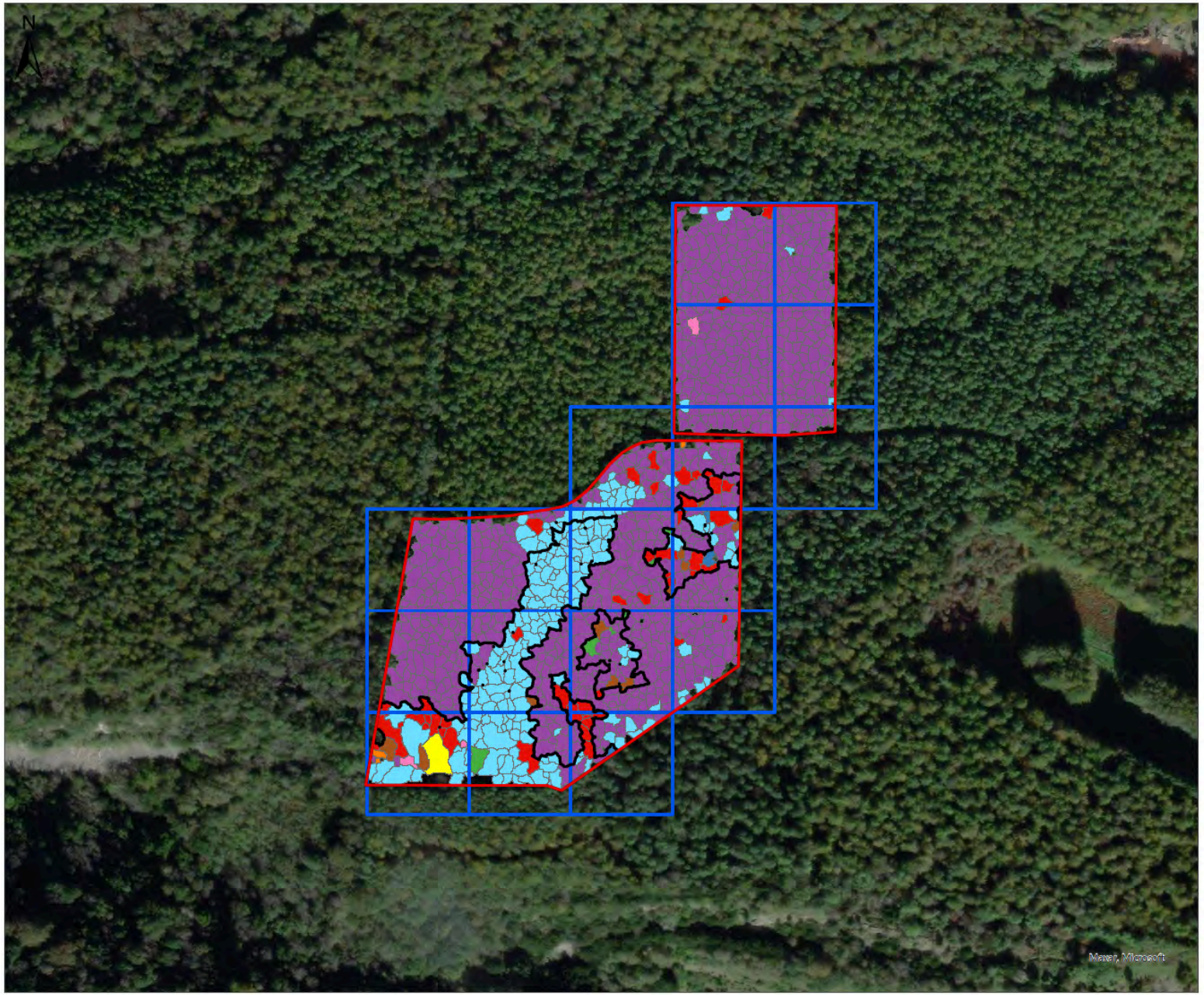
CLIENT Bristol Airport Ltd

PROJECT 12mppa: Cogloop 2 Pre-Commencement Off-site Woodland

TITLE Canopy Area by Tree Species

SCALE @ A3	CREATED BY	CHECKED BY
1:3,000	CA	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J01025-007		30/9/2022

APPENDIX D – PROPOSED WOODLAND: CANOPY AND SPECIES



JOHNS ASSOCIATES

Site Boundary
100% Canopy Retained
Grid 0.5 ha

Species

Ash
Beech
Birch
European Larch/Scots Pine
Holm Oak
Hornbeam
Oak
Whitebeam
Yew

Species	Sum of Area (ha)	% of Area
Ash	0.427	6.90%
Beech	0.015	0.24%
Birch	0.04	0.65%
European Larch/Scots Pine	4.322	70.13%
Holm Oak	0.008	0.12%
Hornbeam	0.038	0.63%
Oak	0.064	1.05%
Whitebeam	0.017	0.28%
Yew	1.224	19.98%
Grand Total	**6.2**	**100.00%**

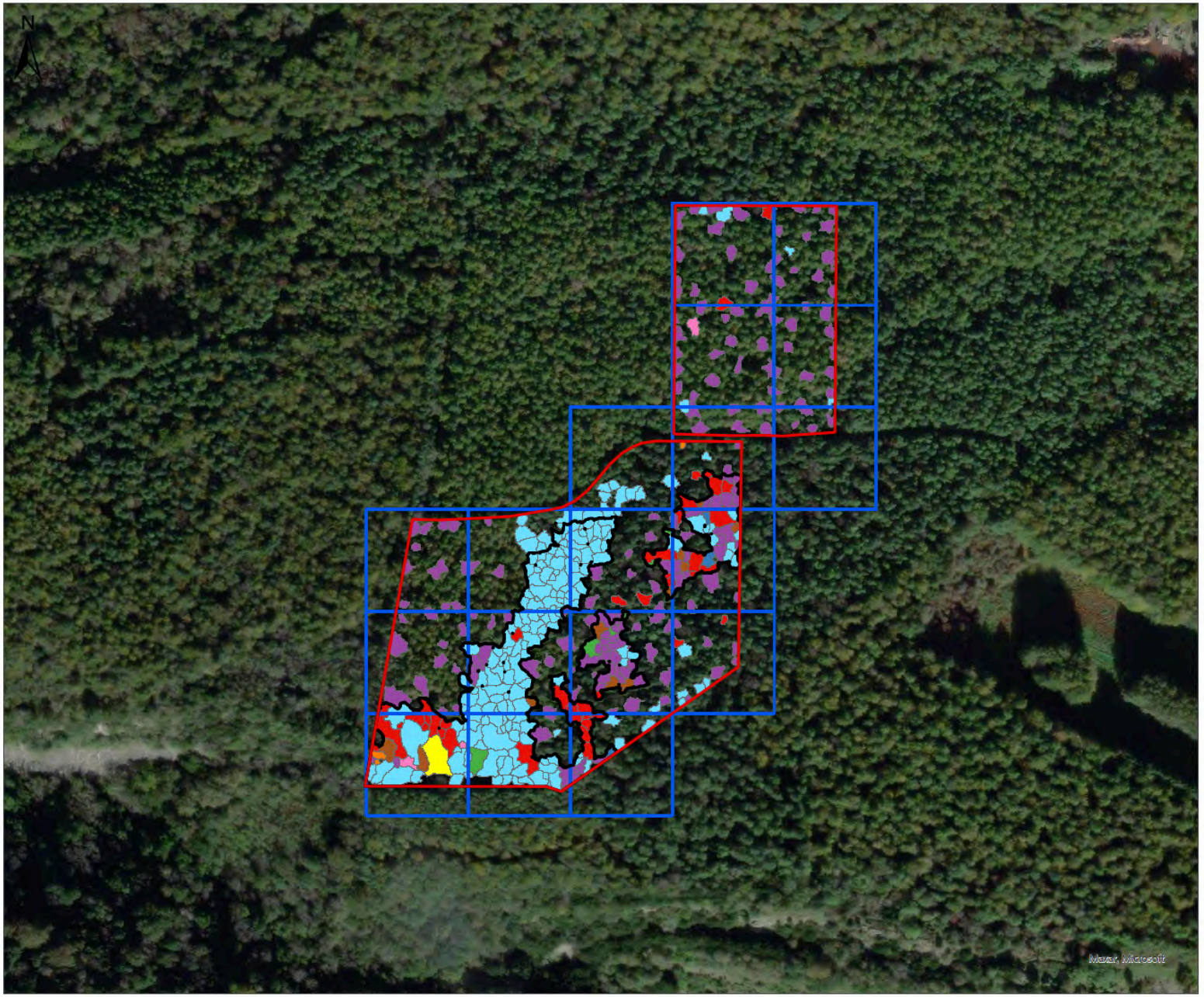
CLIENT Bristol Airport Ltd

PROJECT J01025 Bristol Airport Off-Site Woodland Enhancment

TITLE Current Canopy Area by Tree Species

SCALE @ A3 1:2,500
CREATED BY RK
CHECKED BY MJ

REFERENCE J010025-00'
REVISION
DATE ISSUED 02/12/2022



JOHNS ASSOCIATES

Site Boundary
100% Canopy Retained
Grid 0.5 ha

Species

Ash
Beech
Birch
European Larch/Scots Pine
Holm Oak
Hornbeam
Oak
Whitebeam
Yew

Species	Sum of Area (ha)	% of Area
Ash	0.316	12.28%
Beech	0.015	0.58%
Birch	0.036	1.41%
European Larch/Scots Pine	0.901	35.06%
Holm Oak	0.008	0.3%
Hornbeam	0.038	1.48%
Oak	0.064	2.49%
Whitebeam	0.017	0.65%
Yew	1.172	45.6%
Grand Total	**2.57**	**100.00%**

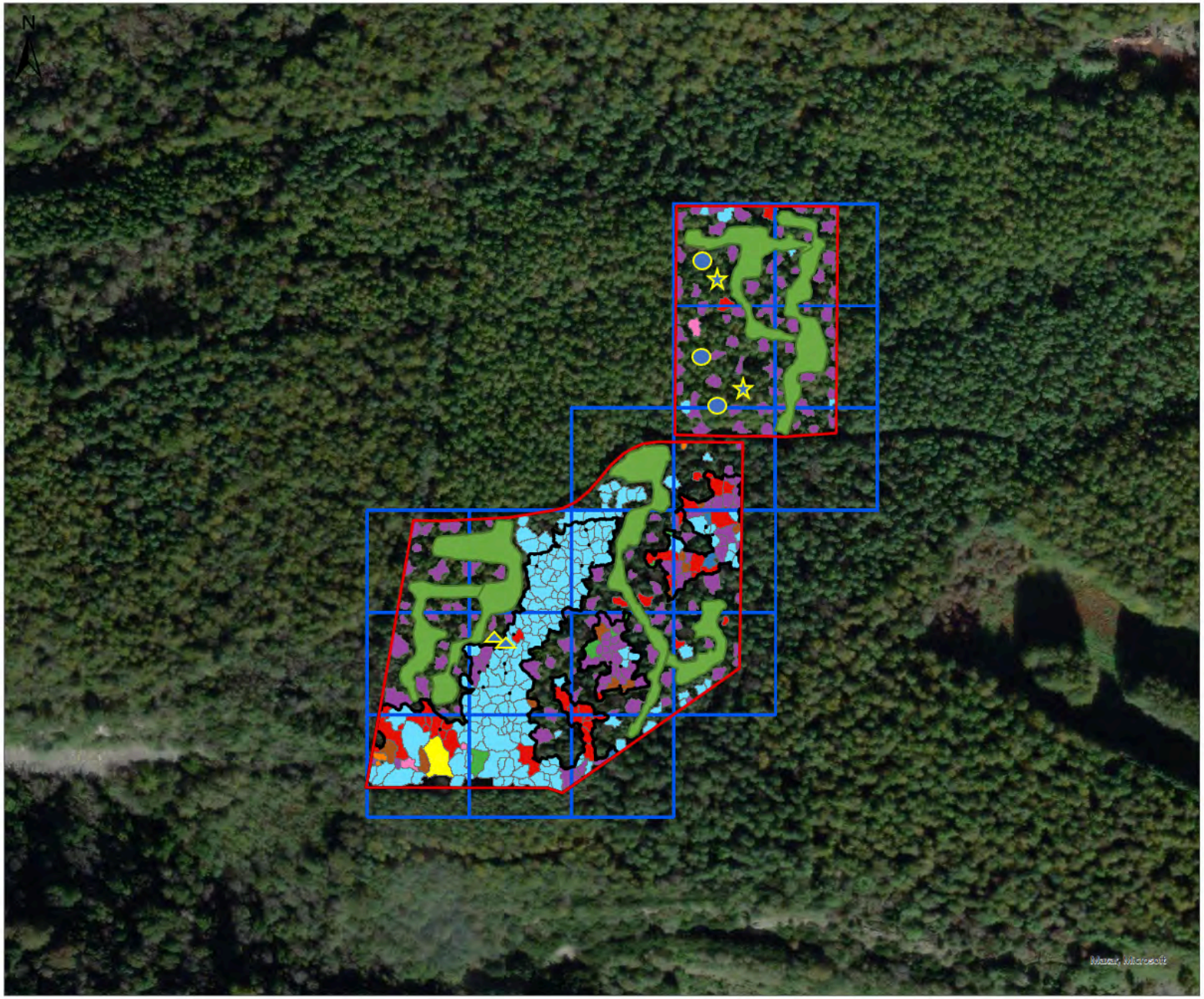
CLIENT Bristol Airport Ltd

PROJECT J01025 Bristol Airport Off-Site Woodland Enhancment

TITLE Proposed Canopy Area by Tree Species

SCALE @ A3 1:2,500
CREATED BY RK
CHECKED BY MJ

REFERENCE J010025-00'
REVISION
DATE ISSUED 02/12/2022



JOHNS ASSOCIATES

Site Boundary
100% Canopy Retained
Grid 0.5 ha

Species
Ash
Beech
Birch
European Larch/Scots Pine
Holm Oak
Hornbeam
Oak
Whitebeam
Yew

Species	Sum of Area (ha)	% of Area
Ash	0.316	12.28%
Beech	0.015	0.58%
Birch	0.036	1.41%
European Larch/Scots Pine	0.901	35.06%
Holm Oak	0.008	0.3%
Hornbeam	0.038	1.48%
Oak	0.064	2.49%
Whitebeam	0.017	0.65%
Yew	1.172	45.6%
Grand Total	**2.57**	**100.00%**

Horseshoe Bat Cabins
Ponds and scrapes
Rides and glades
Horseshoe Hibernation Shafts

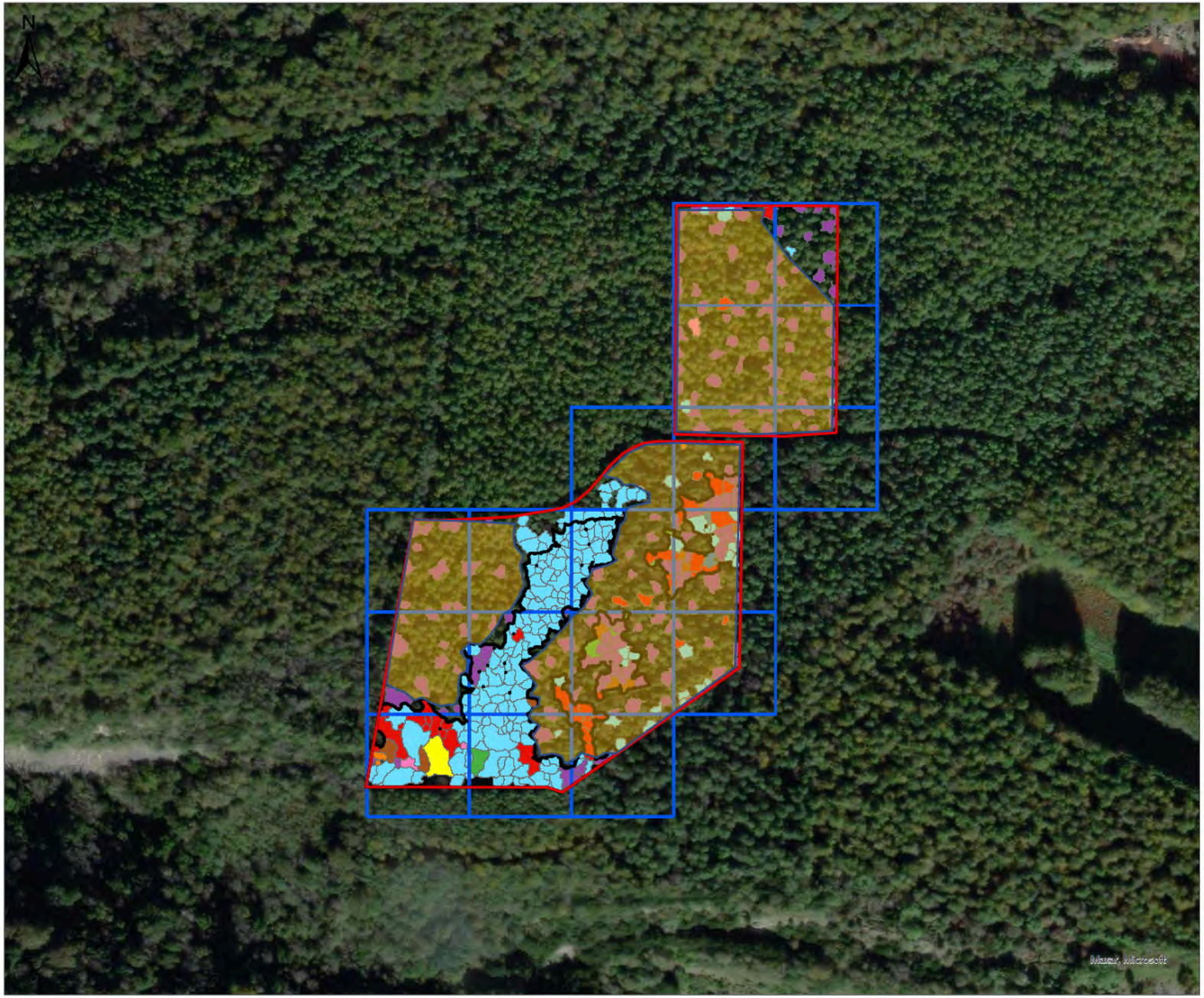
CLIENT Bristol Airport Ltd

PROJECT J01025 Bristol Airport Off-Site Woodland Enhancment

TITLE Key Horseshoe Bat Enhancement Measures

SCALE @ A3 1:2,500
CREATED BY RK
CHECKED BY MJ

REFERENCE J010025-00'
REVISION
DATE ISSUED 02/12/2022



JOHNS ASSOCIATES

Site Boundary
100% Canopy Retained
Grid 0.5 ha

Species

Ash
Beech
Birch
European Larch/Scots Pine
Holm Oak
Hornbeam
Oak
Whitebeam
Yew

Species	Sum of Area (ha)	% of Area
Ash	0.316	12.28%
Beech	0.015	0.58%
Birch	0.036	1.41%
European Larch/Scots Pine	0.901	35.06%
Holm Oak	0.008	0.3%
Hornbeam	0.038	1.48%
Oak	0.064	2.49%
Whitebeam	0.017	0.65%
Yew	1.172	45.6%
Grand Total	**2.57**	**100.00%**

Grazing Management Compartments (avoiding public rights of way and other constraints). Remaining area managed by rotational cutting if required

CLIENT Bristol Airport Ltd

PROJECT J01025 Bristol Airport Off-Site Woodland Enhancment

TITLE Grazing Management Areas

SCALE @ A3 1:2,500
CREATED BY RK
CHECKED BY MJ

REFERENCE J010025-00'
REVISION
DATE ISSUED 02/12/2022

APPENDIX E – UK HAB WOODLAND CONDITION CRITERIA

Condition Sheet: WOODLAND Habitat Type
UKHab Habitat Type(s)
Woodland and forest - Lowland beech and yew woodland Woodland and forest - Lowland mixed deciduous woodland Woodland and forest - Native pine woodlands Woodland and forest - Other coniferous woodland Woodland and forest - Other Scot's pine woodland Woodland and forest - Other woodland; broadleaved Woodland and forest - Other woodland; mixed Woodland and forest - Upland birchwoods Woodland and forest - Upland mixed ashwoods Woodland and forest - Upland oakwood Woodland and forest - Wet woodland
Habitat Description
See UKHab This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: https://woodlandwildlifetoolkit.sylva.org.uk/assess
Condition Assessment Criteria

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	Age distribution of trees[1]	Three age classes present	Two age classes present	One age class present	

2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland[2]	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	
3	Invasive plant species[3]	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	
6	Open space within woodland[4]	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	
7	Woodland regeneration[5]	All three classes present in	One or two classes only	No classes or coppice regrowth	

		woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	present in woodland	present in woodland	
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	
10	Woodland vertical structure[6]	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	
11	Veteran trees[7]	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	

13	Woodland disturbance[8]	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	
Total score (out of a possible 39)					

Condition Assessment Result	Condition Assessment Score
Total score >32 (33 to 39)	Good (3)
Total score 26 to 32	Moderate (2)
Total score <26 (13 to 25)	Poor (1)

Notes

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage Lysichiton americanus; Himalayan balsam Impatiens glandulifera; Japanese knotweed Fallopia japonica; Cherry Laurel Prunus laurocerasus; Shallon Gaultheria shallon; Snowberry Symphoricarpos albus; Variegated yellow archangel Lamiastrum galeobdolon subsp. argentatum; and Rhododendron Rhododendron ponticum.

Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers). Area is at least 10m wide with less than 20% covered by shrubs or trees.

Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 6 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.

Footnote 7- See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot Sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 8 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter.

APPENDIX F – MONITORING & MANAGEMENT SCHEDULE

Activity	Year 1	Year 2	Year 3	Year 4	Year5	Years 6-10	Years 11-20	Post Year 20
Thin to reduce canopy to max 20% across Conifer areas (SP,JL)								
Introduce all other key features to increase the carrying capacity for greater and lesser horseshoe bats (pond and scrapes, 2 x hibernation shafts, 2 x horseshoe cabins, rides and glades)								
Retain conifer monoliths with created bat crevice features								
Promote Natural Regeneration of Broadleaf species								
Protect and maintain Natural Regeneration								
Selectively thin Natural Regeneration								
Plant appropriate Broadleaf species as required								
Protect and maintain Planting								
Selectively Thin Planting								
Thin Conifers (SP,JL)								
Fell remaining Conifers (SP,JL)								
Creation of larger areas of Open Space								
Maintenance of created Open Space by conservation cattle grazing		By spring 2024						
Rotational Coppicing of Hazel (5-7 years)								

Activity	Year 1	Year 2	Year 3	Year 4	Year5	Years 6-10	Years 11-20	Post Year 20
Maintenance/protection of Yew /broadleaf quarry areas								
Removal of Non Native and Invasive species								
Control of Bramble/Bracken								
Monitor/control pests and diseases								
Create additional dead wood habitat standing and fallen								
Provision and maintenance of new artificial bat features								
Provision and maintenance of Bird Boxes								
Provision and maintenance of Dormouse Boxes								
Maintenance of other habitats e.g. dead hedge, deadwood etc								
Provision of Interpretation/Information								
Maintenance of Public Right of Way and Permissive path								
Repair/restore stone walls and fences								
Tree Health and Safety Inspections and action as required.							Every 5 years	Every 5 years
Ecological surveys								
WMP Monitoring and Review								

APPENDIX G - NATURAL ENGLAND AFFIRMATION

FW: Teams call

GA

Grundy, Amanda [redacted]
5/10/2023 1:42 PM
To: Matthew Johns [redacted]
Cc: Williams, Leonore [redacted] Baillie, Lauren [redacted]
Stonehouse, Simon [redacted]

Images are not displayed to protect you from spam. Display images

1 Attachment DOWNLOAD

Lulsgate Wood_Wo... 5.4 MB

Dear Matt

Thank you for sharing the updated WMP – we have reviewed the revised document and are pleased to see that the highlighted changes and additional text have responded positively to our comments and recommendations, set out in my email dated 5/4/23 and contained in the email chain below. The revisions to WMP have clarified several points including in relation to the timing and phasing of the proposed felling, and we particularly welcome Bristol Airport's new commitment to introduce cattle grazing from spring 2024, to create and enhance water bodies within the woodland, and to undertake invertebrate surveys pre and post felling and as part of the ongoing monitoring regime.

While further details of the WMP proposals will be needed in due course, for example cattle stocking levels, we are reassured that Natural England will continue to be involved and kept updated on the woodland creation, management, and monitoring measures. For example, the table beginning on page 40 notes that NE's agreement on proposed management will be re-affirmed once the FC felling licence has been obtained: ***Objective 1: Conservation – General 1.4 Attain Forestry Commission Felling Licence and re-affirm agreement on proposed management from Natural England and North Somerset Council.***

With the above in mind, I can confirm that Natural England agrees that the proposals set out in the updated WMP meet the requirements of the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document (Adopted January 2018), are in line with the Appropriate Assessment of the airport expansion proposals, and that we are satisfied they are directly going to support and benefit the bat species associated with the SAC.

I hope this email is clear and meets the requirements of the Forestry Commission in relation to the felling licence but if you have any questions or would like to discuss further, please do get in touch.

Best wishes

Amanda Grundy
Lead Adviser
Wessex Team
Natural England
Horizon House, Deanery Road, Bristol BS1 5AH

APPENDIX E: EXISTING AND PROPOSED FINISHED GROUND LEVELS

All measures being proposed are associated with existing ground level and no level changes are being proposed with any features associated with the LBMMP, apart from the new landscape bund associated with the Silver Zone Phase 2 (Cogloop2) Extension. This will be constructed on the existing ground surface/levels and the toe of the slope will grade into the current ground surface. The bund will be constructed to a height of 2m above current ground surface.

APPENDIX F: EXISTING TREES, SHRUBS, HEDGES ETC TO BE REMOVED/RETAINED

JOHNS ASSOCIATES

CLIENT
Wood

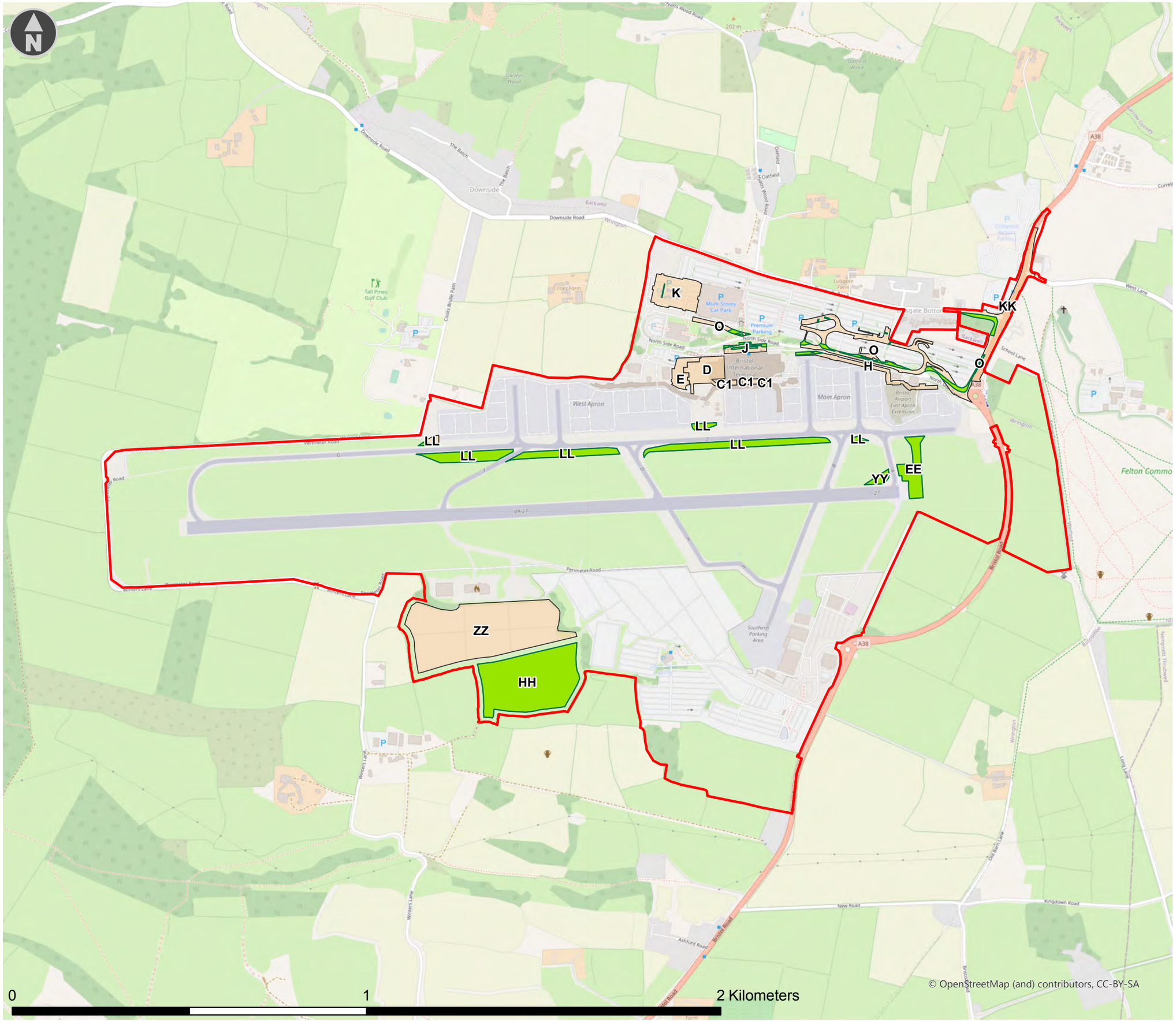
PROJECT
Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum

TITLE
Identified Zones of Influence from TODD Proposed Site Plan (17090-00-100-035)

SCALE @ A3	CREATED BY	CHECKED BY
1:12,500	MM	MJ
REFERENCE	**REVISION**	**DATE ISSUED**
J00254.11B1		13/05/23

Planning Application Boundary
Zones of Influence

Reference	Description
C1	South Terminal Extension
D	West Terminal Extension
E	New Service Yard
G	Walkway to East Pier
H	East Pier with VCCs
J	New Canopy to Front of Existing Terminal
K	Additional Multi-Story Car Park
O	New Gyratory Road with Internal Surface Car Parking
EE	New East Taxiway
HH	Surface Parking on Cogloop 2
KK	Proposed Roadworks on A38
LL	Taxiway Widening and Fillets
ZZ	Proposed Year Round Operation and Installation of Lighting



JOHNS ASSOCIATES

Planning Application Boundary
Vegetation Removal Areas
Zones of Influence

CLIENT	Bristol Airport Ltd
PROJECT	Growth of Bristol Airport to 12mppa
TITLE	Location of Vegetation and Removal

SCALE @ A3	CREATED BY	CHECKED BY
1:10,000	CA	MJ
REFERENCE	**ISSUE/REVISION**	**DATE**
J01111-001		15/5/2023

WOOD

Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum

Technical Note: Arboriculture

1 INTRODUCTION

1.1 BACKGROUND

Johns Associates has been commissioned to undertake a targeted survey and assessment of trees in relation to a planning application for the Development of Bristol Airport to Accommodate 12 Million Passengers Per Annum to meet the requirements of *BS 5837:2012 Trees in relation to design, demolition and construction* and to demonstrate compliance with relevant planning policies.

The planning application boundary is hereafter referred to as "the application site". The confirmed Zone of Influence (ZOI) of the development with respect to trees is associated with the development footprint together with associated root protection areas of trees to be retained.

A programme of landscaping including significant tree planting is also proposed and can be seen on Figure 2.1 of Chapter 2: Development Description of this ES and as part of the Integrated and Embedded Landscape, Visual and Ecological Mitigation and Enhancement Measures as shown in Appendix 11K of Chapter 11: Biodiversity of this ES.

Detailed design has not been completed for certain elements of the planning application, at this stage, and as such, the outcome of this report should be treated as being indicative. Further detailed tree surveys and arboricultural implications assessments will be produced to support future Reserved Matters applications.

The proposals will require the removal of (typically) amenity trees in three discrete locations, notably to facilitate construction of improvements and extensions to surface access, highways and parking facilities. The remainder (the majority) of the trees at Bristol Airport can be retained as the development sits outside of their root protection areas.

1.2 SITE LOCATION AND CONTEXT

The survey and assessment focused on three locations:

- A small area of woodland adjacent to the A38 and Downside Road junction: associated with proposed Highway Improvements to the A38;

- Components of the northside airport car park: associated with a proposed multi-storey car park, canopies to the front of the existing terminal, gyratory road with internal surface car parking; and
- Proposed Extension to the Silver Zone Car Park (Phase 2).

These locations, together with existing trees in these locations and the rest of the development ZOI can be seen on Figure 1.

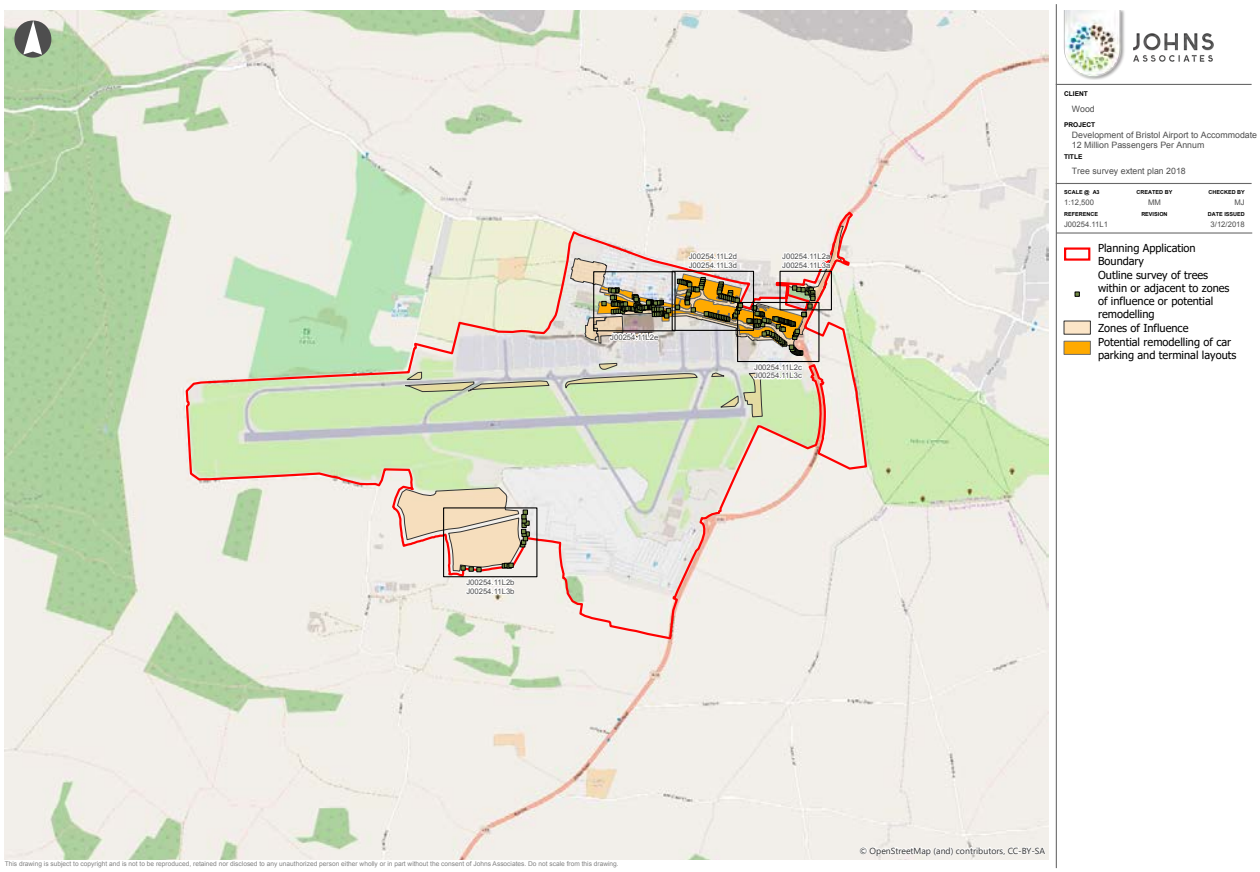


Figure 1 Development Zone of Influence and Associated Trees Forming the Basis of the Tree Survey

1.3 ABOUT THIS DOCUMENT

This report presents the results of the 2018 tree survey and assessment undertaken by suitably experienced personnel, employed by Johns Associates. It includes Root Protection Areas (RPAs) and uses this information to identify trees that will be retained and trees that are likely to require felling as part of the development proposals. The report includes an assessment of the impact of the proposals on the trees and local amenity provided by the trees together with outline guidance on appropriate management and protective measures required.

The remainder of this report is structured as follows:

- Section 2 sets out in detail the methodology followed for the tree survey;
- Section 3 sets out the results of the tree survey;
- Section 4 sets out potential impacts, mitigation and enhancement
- Section 5 provides an outline Arboricultural Method Statement
- Appendix A contains the Tree Schedule
- Appendix B contains the Tree Survey Plan
- Appendix C contains the Tree Removal/Retention Plans
- Appendix D contains the Tree Protection Plan
- Appendix E provides an example of appropriate tree protection fencing taken from BS 5837:2012

2 METHODOLOGY

2.1 COLLECTION OF DATA

Information was collected as recommended in *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.

Trees within and adjacent to the Zone of Influence have been surveyed if their stem diameter at 1.5m height exceeded 75mm. The Tree Schedule can be found in Appendix A.

The location of the ZOI and these trees can be seen on Figure 1 and also in Appendix B. Hedges were also recorded if present. Trees and hedges were analysed in regards to specific parameters, including species, size and quality. Where trees were in the vicinity of each other and of the same species and / or shared similar characteristics, these have been grouped and assessed together. Trees and hedgerows within areas of the existing Bristol Airport Northside Car Park, that will be reconfigured as part of the planning application to develop Bristol Airport to accommodate 12 million passengers per annum, which may result in further tree removal/disturbance, have also been included in the 2018 tree survey. It has been assumed that all other trees will be retained.

A site plan provided by Bristol Airport Limited was used to locate the trees within the Northside Car Park, associated with the proposed gyratory road with surface car parking. However, the majority of trees or hedgerows were not shown on the site survey plans for the woodland adjacent to the Downside Road/A38 junction where highway improvements to the A38 are proposed, or the field boundary associated with the Silver Zone Extension Car Park (Phase 2). Any additional trees have been measured on site as to their approximate locations and are clearly identified as such on the tree survey plans.

Tree survey information was recorded in the tree schedule in Appendix A and is illustrated on the Tree Survey Plan (Appendix B).

2.2 TREE QUALITY CATEGORIES

Trees have been categorised in accordance with *BS 5837:2012* to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the

event of development occurring, noting that in certain circumstances, other factors may be critical in defining a development proposal layout. Hedges (where present) have not been categorised.

In summary, the four categories are:

Trees unsuitable for retention:

Category U: Trees in such a condition that they cannot be realistically retained as living trees in the context of the current land use for more than 10 years;

Trees to be considered for retention:

Category A: Trees of high quality with an estimated life expectancy of at least 40 years;

Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; and

Category C: Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Subcategories are **(1)** for arboricultural value, **(2)** for landscape / visual value and **(3)** for cultural value, including conservation. More than one subcategory can apply.

This Assessment has also categorised trees as being retained, removed and potentially removed (subject to detailed design and Reserved Matters applications).

2.2.1 Root Protection Area & Protective Fencing

The Root Protection Area (RPA) for individual trees surveyed was determined in accordance with the methodology set out in Section 4.6 of BS 5837:2012. The potential influencing factors set out in section 4.6.3 of BS 5837:2012 have been taken into account when calculating the RPA's at the Site.

The RPA indicates where ground disturbance needs to be carefully controlled to avoid impacts on trees. In principle, no significant disturbance should occur within the RPA of any tree to be retained, and high levels of care are needed during any activities authorised within it, if the trees are to be successfully retained.

Where trees are to be retained, tree protection measures are typically employed to prevent accidental disturbance and to maximise the successful survival of the trees. This includes the erection of tree protection fencing, using the RPA's as a minimum of area to be fenced as a default. Please refer to Section 5 of this document for the draft Arboricultural Method Statement.

Development within the RPA of a tree is likely to result in the need for its removal. The use of the category "potentially removed" has been taken in this assessment as a precautionary measure (subject to detailed design and Reserved Matters applications).

Details of the RPA's for likely retained trees **only** are shown on the Tree Schedule (Appendix A).

2.3 DESIGNATIONS

According to online-mapping data made available through North Somerset Council (http://www.n-somerset.gov.uk/my-services/leisure/parks-countryside/trees/protected-trees/), there are no Tree Preservation Orders or Conservation Areas associated with the Site and the Zone of Influence.

A search on www.magic.defra.gov.uk also confirmed that the trees on Site and the Zone of Influence are not classified as ancient woodland.

2.4 LIMITATIONS, CONSTRAINTS AND ASSUMPTIONS

No limitations or constraints were encountered in terms of being able to access the Site, the trees or in terms of weather conditions.

The group of trees and shrubs beyond the proposed development footprint, in the south west of the woodland adjacent to the A38/Downside Road Junction where highway improvements to the A38 are proposed, have not been surveyed in detail as the presence of an excavated former quarry (which is being retained) between any construction work and these trees will prevent any damage occurring. The majority of this woodland is being retained and will be managed and enhanced including new native tree and shrub planting.

Only those trees shown on Figure 1 and in Appendix B have been surveyed in detail. It has been assumed that the remaining trees are being retained or have been taken into account through other existing planning permissions and permitted development activities at Bristol Airport.

Targeted update tree surveys and Arboricultural Implications Assessments / detailed landscaping/ tree planting proposals will be carried out as detailed design work is completed for future Reserved Matters applications.

3 TREE SURVEY

3.1 COMPONENTS OF THE NORTHSIDE AIRPORT CAR PARK: ASSOCIATED WITH PROPOSED MULTISTOREY CAR PARK, CANOPIES TO THE FRONT OF THE EXISTING TERMINAL, GYRATORY ROAD WITH INTERNAL SURFACE CAR PARKING

3.1.1 Overview

The individual trees and groups surveyed are detailed in the Tree Schedule (Appendix A) and shown on the Tree Survey Plans (Appendix B).

The trees located in this part of Bristol Airport comprise very linear features that have been planted for their amenity landscaping value, as screening to break up the large areas of parked cars. Norway maple, Himalayan birch and Lime are the predominant species, typically planted in single species avenues.

There are three areas of amenity planting in front of the main terminal building.

Examples can be seen in Plate 1.

Plate 1. Examples of amenity trees

3.1.2 Individual trees

One hundred and ten specimens have been recorded as individual trees, comprising a mix of Norway maple, Himalayan birch and Lime. Other species less common are ash, Sycamore and one large Sweet chestnut.

The majority of trees were recorded as Category C1-2 low value amenity trees. This is due to the fact that they will all have been planted at a very similar time for the purposes of car park landscaping in single specimen avenues.

Two trees of greater interest are a large Sweet chestnut (3619) and its neighbour, a larger Sycamore (3619a) based on their size and age in comparison to the other tree stock present in this part of Bristol Airport.

3.1.3 Groups

Four groups of trees were surveyed, three of which are made up of an amenity mix and provide some evergreen cover. Group 15 is made up of Hornbeam, Portugal laurel, Birch, Alder, Field maple, Rhododendron, Holm oak. Group 16 comprises Silver birch, Scots pine, Alder, Holly, Field maple, Rhododendron, Holm oak and Group 17 comprises Alder, Field maple, Silver birch, Laurel, Privet, Holly, Hornbeam. Group 3 comprises a single stand of Birch.

3.2 AREA ASSOCIATED WITH A38 HIGHWAY IMPROVEMENT WORKS AT DOWNSIDE ROAD / A38 JUNCTION

3.2.4 Overview

The individual trees and groups surveyed are detailed in the Tree Schedule (Appendix A) and shown on the Tree Survey Plans (Appendix B).

Examples can be seen in Plate 2.

Plate 2. Examples views of unmanaged sycamore dominated wood adjacent to A38/Downside Road junction

This is a small linear parcel of sycamore dominated plantation adjacent to the junction between the A38 and Downside Road. The tree stock consists largely of even aged Sycamore of low value. There is very little understory cover under the tree canopy, with a small number of mature Elder and Hawthorn inside the woodland. Non-native garden escape species of plants and shrubs are present in the woodland, along with evidence of fly tipping. No management is evident. Towards the road junction low bramble dominates the ground layer.

Individual trees

For survey purposes the woodland was treated as a group of trees.

Groups

The dominant species associated with the woodland is Sycamore. Of those trees surveyed, two were larger but most are the same age, height and drawn out form, offering very little value overall. All trees were recorded as falling into the category C1+2; trees of low arboricultural quality.

3.3 AREA ASSOCIATED WITH SILVER ZONE CAR PARK EXTENSION (PHASE 2)

3.3.5 Overview

The individual trees surveyed are detailed in the Tree Schedule and shown on the Tree Survey Plans

The area to the east of the area consists of a line of trees dominated by Ash with some trees behind, on a bank sloping away from the car park extension land.

The hedgerows to the west, south and east are intact and managed regularly by cutting. Dominant species are Elder, Hawthorn, Blackthorn and Hazel, with Field maple, Ash and Oak present in the hedge.

Example views of the perimeter trees can be seen in Plate 3.

Plate 3. Examples of perimeter trees and hedgerows - all to be retained

3.3.6 Individual trees

Altogether 18 specimens have been recorded as individual trees forming part of the boundary to the land. These are mostly common Ash, with the exception of two Oak trees with mature specimens of Hawthorn, Holly and Field maple also present.

Eight of the individual trees recorded on site were recorded to be Category A trees (4001,4002,4003,4004,4005,4007,4013 and 4014).

Tree 4008 is categorized as U as it has extensive decay in the base. It is likely that this tree will need felling at some point in the near future on health and safety grounds.

4 POTENTIAL IMPACTS, MITIGATION AND ENHANCEMENT

4.1 IMPACT OF DEVELOPMENT PROPOSAL ON TREES

4.1.1 Components of the Northside Airport Car Park: Associated with Proposed Multistorey Car Park, Canopies to the Front of the Existing Terminal, Gyratory Road with Internal Surface Car Parking

The proposed layout is shown alongside the likely tree removal/retention proposals in Appendix C. This indicates which trees can be retained and which trees need to be removed in order to accommodate the development.

As the proposed gyratory road and associated parking is located in what is currently an airport road and car parking all trees (typically low value amenity trees) are aligned to linear strips/verges adjacent to existing parking bays and access roads. There will be the need for removal of trees, as outlined below, followed by replacement planting. Tree protection fencing will avoid disturbance to the other trees on site. Planting of new trees and/or tree translocation will be delivered as part of landscaping proposed associated with this area. The detail of this is subject to detailed design and Reserved Matters. There is also significant tree planting elsewhere at Bristol Airport as part of this planning application, as part of the integrated and embedded landscape, visual and biodiversity mitigation and enhancement proposals (see Figure 2.1 of Chapter 2 of this ES and Appendix 11K of this ES).

Retention:

Within the Northside Airport Car Park there will be a total of 10 trees to be retained on site, 9 no. Maples - tree numbers 3413-3421 located south of the entrance to the airport and 1 large Sycamore tree no. 3619a.

These trees will be protected during the proposed works by protective fencing and measures as set out in Appendix E of this document, in accordance with BS5837:2012.

All these Maples are Category C trees, deemed important for arboricultural and landscape/visual value.

Sycamore 3691a is a Category B tree deemed valuable for arboriculture, landscape/visual and cultural/conservation value.

Within Northside Airport Car Park there are 114 trees and 1 group (Group 17) that do not lie directly with the Zone of Influence of the proposed construction works, however they are located immediately adjacent to it, or within car park areas within the proposed construction works, which are yet to be subject to detailed design.

These trees may be retained on site (subject to detailed design of these areas), however as they may be affected by the proposed works they have been identified as Potentially Removed.

These trees consist of amenity/car park tree planting, the majority being Category C trees. There are no Category A trees.

Species including Maple, Ash, Sycamore, Birch, Larch, Beech, Whitebeam, Field maple, Hornbeam, Lime and Pine.

Removal:

The development proposals require the removal of 94 individual trees surveyed, and 3 (or part of) tree groups.

The trees to be removed consist of amenity/car park tree planting. The majority are Category C trees, with 3no. Category B trees (3479, 3619, 3634) and no Category A trees.

Additionally, Groups 3, 15, 16, are to be removed or partially removed during the proposed works.

All trees to be potentially removed as part of these works (either identified as Removed or Potentially Removed within this report) will be subject to detailed design/Reserved Matters and will be replaced through proposed new car park landscape/tree planting.

4.1.2 A38 Highway Improvement Works at Downside Road / A38 Junction

The proposed layout is shown alongside the likely tree removal/retention proposals in Appendix C. This indicates which trees can be retained and which trees need to be removed in order to accommodate the development.

The alignment of the proposed improvements at the A38/Downside Road junction will be partially located beyond the existing road/pavement boundary, including a small area of bare ground, scrub and trees (dominated by Sycamore). There will be the need for removal of a small number of trees, as outlined below. Tree protection fencing will minimise disturbance to the other trees on site. Substantial planting and woodland management will be introduced at this location and elsewhere as part of the integrated and embedded landscape, visual and biodiversity mitigation and enhancement proposals (see Appendix 11K of this ES).

Retention:

One individual tree within the woodland surveyed for the highway improvement works to Downside Road surveyed (1014) is shown as being retained. This is a Category C Sycamore.

This tree will be protected by protective fencing and measures as set out in Appendix E of this report in accordance with BS5837:2012.

Removal:

The development proposals require the removal of 7 individual tree surveyed, 1006, 1007, 1008, 1009, 1012, 1014 and 1016. In addition, the proposals requires the removal of 10 trees/groups

All trees and tree groups are Category C. There are no Category A or B trees to be removed.

4.1.3 Area Associated with Proposed Silver Zone Car Park Extension (Phase 2)

The proposed layout is shown alongside the likely tree removal/retention proposals in Appendix C. This indicates, which trees can be retained and which trees need to be removed in order to accommodate the development.

As the proposed car park itself is located in what is currently a field and all trees are situated on or adjacent to the site boundary, it is possible to position the layout so that it sits beyond the root protection area of the perimeter trees, all of which will be retained. Suitable tree protection fencing will minimise disturbance to the trees on site.

Retention:

In total, 17 of the 18 individual trees surveyed are shown as being retained. This includes all 8 Category A trees, and 8 Category B trees.

These trees will be protected by protective fencing and measures as set out in Appendix E of this report in accordance with BS5837:2012.

Removal:

The development proposals require the removal of one individual tree surveyed, tree 4008, (Category U). This is an Ash tree with a large amount of decay at the base. This will be removed and replaced with an additional Oak.

There are no Category A or B trees to be removed.

4.2 IMPACTS ON AMENITY

Please refer to the Landscape and Visual Chapter of this ES for details of potential impacts on amenity.

4.3 PROPOSALS TO MINIMISE AND MITIGATE IMPACTS

4.3.4 Protection of retained trees

The successful retention of trees depends on the quality of the protection and the administrative procedures to ensure that the protective measures remain in place whilst there is an unacceptable risk of damage. The outline Arboricultural Method Statement in Section 5 describes measures of how individual trees and groups will be protected from damage during construction of the development.

4.3.5 New planting

The planning application will include substantial planting proposals across the airport including within the Northside Car Park, at the A38/Downside Road Junction, in land east of the A38 close to the main entrance to Bristol Airport and on a proposed landscape bund that forms the perimeter of the Silver Zone Car Park Extension (Phase 2). This will include integrated and embedded landscape, visual and ecological mitigation and enhancement planting for any trees and/or hedgerows, which will have to be removed as part of the development. The proposals will take account of locally present native species and local landscape character. With appropriate management in place, the retained and proposed trees will fit well within the landscape of the surrounding area. Please refer to Figure 2.1 of Chapter 2 of this ES, and Appendix 11K: Integrated Mitigation/Enhancement of this ES.

4.3.6 Management recommendations for retained trees

Tree 4008 is categorized as U as it has extensive decay in the base. It is likely that this tree will need felling at some point in the near future on health and safety grounds.

The above is general guidelines only, and a Health and Safety Tree Assessment is to be carried out for that purpose.

5 DRAFT ARBORICULTURAL METHOD STATEMENT

5.1 INTRODUCTION

Section 4 identified the impact the proposals have on existing trees on site. This draft Arboricultural Method Statement sets out key aspects of the management and protection issues that will be implemented to ensure successful tree retention.

It is based on the general standards for development issues as set out in *BS:5837 2012*, which have been applied to the specific conditions associated with this Site and the development proposals.

The location of all protection measures must be clarified prior to final detailed design and construction and clearly marked as such on the ground ready for inspection before any work commences.

5.2 TREE PROTECTION FENCING

The RPA's of the individual trees and groups to be retained have informed the location of tree protection fencing, as shown on the Tree Protection Plan in Appendix D.

Tree protective fencing must accord with guidance set out in *BS:5837 2012*. Appendix E contains a specification for the type of tree protection fencing.

The tree protection fencing will be a clear demarcation of the line beyond which no disturbance is to occur, and minimise the risk of accidental disturbance in the RPAs of the retained trees. Subject to the precautions further set out below being adhered to it is felt that this will provide sufficient protection of the RPA's.

5.3 PRECAUTIONS WHEN WORKING WITHIN THE RPAS

This section is included should working within RPAs of trees be necessary, deemed to be acceptable and not be detrimental to the trees health. Any works required within the RPA must be carried out with care and the following general guidance followed (not all may be relevant).

5.3.1 General excavation

All excavation must be carried out by hand causing the minimum disruption to roots. Temporarily exposed roots are to be covered by appropriate material to protect them from sunlight, drying out and extreme temperatures. Roots greater than 25mm should be retained where possible, roots 25 - 100mm should only be cut in exceptional circumstances. Roots over 100mm should only be cut following guidance from the arboricultural consultant. Exposed roots to be removed should be cut 10-20cm behind the final face of excavation. Any cuts of roots are to be undertaken with secateurs with sharp and clean blades.

5.3.2 Removal of structures

This includes any man-made structures, which can be above or below ground, such as hard surfaces, paths, roads and buildings. Care needs to be taken to minimise disturbance when removing any structures, where tree roots may be present, either adjacent and below. This may necessitate the use of hand tools. No debris or other materials are to be placed within any RPA's. The retention of existing below-ground structures or other features may be considered where feasible to avoid excessive root disturbance.

5.3.3 Installation of new structures

New structures within RPA's are potentially damaging. Such structures should be designed to have the minimum impact on the RPA. New surfaces such as roads, paths and car parks should be constructed to allow water and gas

movement, give load spreading to avoid compaction and be constructed with little or no excavation. Using a cellular confinement system on top of existing ground is a recognised measure to achieve that, and will be employed should any new surface areas be constructed within RPA's.

Provision of new services should only pass through RPA's as a final resort, if this is the case trenchless installation is the preferred method. These are engineering issues that should be guided by tree expertise.

5.3.4 Soft landscaping

Any re-profiling within RPA's should be avoided, keeping ground levels at original levels. Where this is not possible, level changes are not to exceed 15% of the RPA.

Any planting within RPA's is to be carried out with care and by hand only.

5.4 SITE STORAGE, CEMENT MIXING AND WASHING POINTS

No site storage areas, cement mixing and washing points for equipment and vehicles are to be placed within the RPA's. Where there is a risk of polluted water run off precautions must be in place to contain any spillages.

5.5 TREE AND SHRUB PLANTING

Any proposed tree and shrub planting on completion should be carried out using the appropriate planting techniques for the size of plant being planted. Appropriate protection measures should be put in place to protect the plants during establishment; consideration should be given to potential threats from domestic stock, wild mammals and mechanical damage. Maintenance of all stock should be carried to ensure successful establishment, this will require replacement of losses and should continue for up to 5 years or until successful establishment is confirmed by the local authority.

5.6 TREE PROTECTION SUPERVISION

Tree protection cannot be reliably implemented without some supervisory input. This input varies depending on the Site and resources available. It is recommended that specialist input is taken during the preparation period before work starts to ensure that any detail changes in the application are considered in relation to trees and shrubs. A pre-commencement meeting should take place with both the arboricultural consultant and local council representative in attendance prior to commencement of works to ensure all protection measures are in place.

5.7 SITE MANAGEMENT

It is the developer's responsibility to ensure that the details of any agreed Method Statement and any subsequent amendments are fully understood by all Site personnel. It is recommended that a copy of the final Method Statement should be available on Site at all times.

6 CONCLUSIONS

Trees are an interest of acknowledged importance in planning terms and there is a statutory requirement that they be properly considered in determining a planning application. Supporting information submitted for this planning application provides tree information in connection with this element of the Site, in accordance with the recommendations in *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.

This Arboricultural Implications Assessment, taking into account the draft Arboricultural Method Statement and the proposed landscaping/planting scheme, is considered to demonstrate the scheme is fully compliant with relevant National and local planning policy.

All Category A trees associated with the planning application will be retained. A number of even aged Category B and C amenity trees associated with the proposed Gyratory Road and internal car park will need to be removed to facilitate the development with equivalent landscaping and replacement tree planting/translocation being proposed. The actual numbers are subject to detailed design and Reserved Matters. A small number of Category C trees associated with proposed A38 Highway Improvements will need to be removed, with new planting and management being included at this location.

The integrated and embedded landscape, visual and ecological mitigation and enhancement proposals (please refer to Appendix 11K to Chapter 11: Biodiversity of this ES) contain substantial tree planting and management to mitigate for this tree loss as well as providing long term management and monitoring.

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APPENDIX A. TREE SCHEDULE

Bristol Airport: 12 mppa planning application
Northside Area: Gyratory Road with Internal Surface Car Parking, Canopies to Front of Existing terminal
Tree survey - November 2018

Number Individual Tree (T) Group (G)	Species	Height m	Stem (s) Dia. mm	Life stage: Y/SM/EM/M/OM ERC: <10/>10/>20/>40	RPA Radius (m) Only shown where trees are known to be retained	Overall condition Good/Fair/Poor/ Dead	Category & Subcategory	Tree status Retained/ removed / potentially removed	Notes
3413	Maple	6	100	Y >40	1.2	Good	C 1+2	Retain	
3414	Maple	6	140	Y >40	1.68	Good	C 1+2	Retain	
3415	Maple	7	110	Y >40	1.32	Good	C 1+2	Retain	
3416	Maple	5	85	Y >40	1.02	Good	C 1+2	Retain	
3417	Maple	7	90	Y >40	1.08	Good	C 1+2	Retain	
3418	Maple	6	80	Y >40	0.96	Good	C 1+2	Retain	
3419	Maple	7	85	Y >40	1.02	Fair	C 1+2	Retain	
3420	Maple	5	90	Y >40	1.08	Good	C 1+2	Retain	
3421	Maple	7	120	Y >40	1.44	Good	C 1+2	Retain	
3423	Maple	7	110	Y 10-20		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3424	Maple	7	110	Y <10		Poor	U	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3425	Maple	6	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3426	Maple	6	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3427	Maple	6	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3428	Maple	8	110	Y >40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3429	Maple	7	100	Y >40		Good	C 1+2	Potentially removed	Replace through proposed new car park landscaping (subject to reserved Matters)
3430	Maple	8	110	Y >40		Good	C 1+2	Potentially removed	Replace through proposed new car park landscaping (subject to reserved Matters)
3431	Maple	5	100	Y >40		Good	C 1+2	Potentially removed	Replace through proposed new car park landscaping (subject to reserved Matters)

Number Individual Tree (T) Group (G)	Species	Height m	Stem (s) Dia. mm	Life stage: Y/SM/EM/M/OM ERC: <10/>10/>20/>40	RPA Radius (m) Only shown where trees are known to be retained	Overall condition Good/Fair/Poor/ Dead	Category & Subcategory	Tree status Retained/ removed / potentially removed	Notes
3432	Maple	8	120	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3433	Maple	8	100	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3434	Maple	7	140	Y >40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3446	Maple	7	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3447	Maple	7	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3448	Maple	7	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3449	Maple	7	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3450	Ash	6	100	Y 20-40		Fair	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3451	Ash	6	130	Y >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3452	Ash	8	120	Y >40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3457	Sycamore	10	190	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3458	Sycamore	7	180	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3459	Sycamore	10	200	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3460	Birch	12	410	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3461	Ash	12	350	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3462	Sycamore	12	420	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3463	Sycamore	11	360	M 20-40		Poor	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3464	Sycamore	13	370	M 20-40		Fair	B 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3465	Sycamore	13	450	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3466	Sycamore	12	355	M 20-40		Fair	B 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)

Number Individual Tree (T) Group (G)	Species	Height m	Stem (s) Dia. mm	Life stage: Y/SM/EM/M/OM ERC: <10/>10/>20/>40	RPA Radius (m) Only shown where trees are known to be retained	Overall condition Good/Fair/Poor/ Dead	Category & Subcategory	Tree status Retained/ removed / potentially removed	Notes
3467	Sycamore	12	240	M 20-40		Good	B 1	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3468	Sycamore	12	510	M 10-20		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3469	Birch	13	370	M 20-40		Fair	B 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3470	Sycamore	12	385	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3471	Birch	12	290	M 20-40		Fair	B 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3472	Sycamore	12	260	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3473	Sycamore	13	300	M 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3474	Sycamore	12	260	Y 20-40		Fair	C 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3475	Sycamore	10	230	M >40		Fair	B 1+2	Potentially removed	If removed, replace through proposed new car park landscaping (subject to reserved Matters)
3476	Lime	7-8	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3477	Lime	7-8	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3478	Lime	7-8	200-250	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3479	Sycamore	12	350-400	SM >40		Good	B 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3480	Field Maple	3	100	Y >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3481	Sycamore	12m	350-400	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3482	Sycamore	12m	400	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3483	Sycamore	12m	400	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3484	Sycamore	12m	400	SM >40		Good	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3485	L Cypress	12	425	M 20-40		Fair	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)
3486	L Cypress	11	430	M 20-40		Fair	C 1+2	Remove	Replace through proposed new car park landscaping (subject to reserved Matters)