Technical Note TN06
Project: Downlands Farm
Planning Ref: WD/2022/1637/MEA
Date: 25 November 2022

Response to Comments from Non-statutory Ecological Consultees

Executive summary

I) Comments have been received from non-statutory consultees including the Woodland Trust the Sussex Wildlife Trust and third parties, who raise objections to the proposal in its current form. This note provides a response to these comments.

Biodiversity Opportunity Areas

ii) The site is located within the Western Ouse Streams and Ashdown Forest Biodiversity Opportunity Area (BOA). BOAs do not represent a statutory designation or a constraint upon activities but rather indicate where there are substantial opportunities to make positive changes for biodiversity. In this regard, the interest features within the site of relevance to the BOA are the watercourses and woodlands. These are fully retained under the proposals, while the scheme brings a significant opportunity to arrest and reverse the current decline of the woodlands and bring these into favourable conservation management, securing these gains for the life of the development. Accordingly, the proposals will directly further these aims of the BOA.

Ancient woodland and Veteran Trees

iii) Matters in regard to potential effects on ancient woodland, including effects of increased recreational use of the woodlands, fragmentation and buffering are comprehensively addressed in the ES, which informs the application. Further clarification on these points is also presented in Aspect Ecology's response to consultation responses received from Natural England and the Wealden Biodiversity Officer. Where effects are identified, mitigation measures are brought forward to address these, a number of which are positively acknowledged by the Woodland Trust. Non-ancient woodland areas have been separately assessed and it has been confirmed that their exclusion from the inventory is accurate, while other matters such as potential hydrological effects on the lake in Lake Wood and air quality effects on woodlands have been screened out as non-significant in nature. Veteran trees are fully safeguarded under the proposals while a management plan will secure their long term future as a net benefit of the proposals. As such, following mitigation, losses and potential deterioration effects on ancient woodland are fully avoided.

Other habitats

iv) Losses of Priority Habitats have been avoided wherever possible under the proposals. Along the A22 corridor some losses are however unavoidable as these are the only locations where the site accesses can be provided. The accesses have been sited to avoid areas of ancient woodland with losses confined to areas of secondary, replaceable woodland. Nonetheless, mitigation is provided to minimise land take and to avoid significant trees, with all woodland losses fully compensated.

Fauna

v) The risk of predation of bats and Dormice by domestic cats is raised. This is reviewed as part of the ES and it found that this issue is unlikely to be significant, while other notable bird species raised by third parties such as curlew, woodcock, turtle dove have been shown to be absent from the site by survey work undertaken. Similarly, the survey work has demonstrated that the site would not meet the herpetological selection criteria for a SSSI.

Biodiversity Net Gain

vi) A number of technical queries have been raised in respect of the Biodiversity Metric which informs the application. These are addressed and it concluded that no update is required with a positive net gain for biodiversity achieved under the proposals.

Cumulative effect of the above impacts

vii) The ES which accompanies the application identifies a range of effects which could arise. Comments received from consultees have been reviewed and it is concluded that no amendments to the ecological assessments provided are necessary. In order to address effects arising, a range of standard mitigation measures are proposed which will serve to effectively offset the effects identified. In addition, a range of benefits to nature conservation are proposed as part of the scheme which will provide a positive net gain for biodiversity. These include appropriate management to arrest and reverse the current decline of the ancient woodland (irreplaceable habitat) and secure its conservation management for the long term. This represents a very significant further biodiversity benefit over and above the gain captured by the Metric (which assumes only a 30 year management period).

1 Introduction

1.1.1 Comments have been received from statutory consultees (Wealden Borough Council Biodiversity and Arboricultural Officer and Natural England) on the above planning application in relation to ecological matters, which have been addressed individually. In addition, further comments have been received from non-statutory consultees including the Woodland Trust (dated 16/09/2022), the Sussex Wildlife Trust (dated 12/09/2022) and third parties who raise objections to the proposal in its current form. We have also been provided with a copy of the Uckfield Town Council Meeting Minutes (dated 26/09/2022), where the views of other parties have been captured.

1.1.2 This technical note seeks to address those comments from non-statutory consultees. For convenience of reference, and because a number of the comments overlap, the responses have been grouped into relevant topic areas. These are:

i. Biodiversity Opportunity Areas

ii. Ancient woodland
    a. Intensification of human activity and recreational disturbance on ancient woodland, veteran trees and Lake Wood, particularly the inclusion of ancient woodland as designated SANG, including fouling from dogs.
    b. Fragmentation / connectivity of ancient woodland sites from adjacent semi-natural habitats
    c. The Ancient Woodland Inventory is provisional and not definitive – areas of priority habitat woodland within the application site could meet the definition of Ancient
    d. Adverse hydrological impacts across the site and to the lake in Lake Wood
    e. Noise, light, dust pollution and air quality affecting habitats and important flora and fauna
    f. Buffers
iii. Veteran trees – Threats to long-term retention of notable and veteran trees from increased safety concerns, and removal of important habitat features
iv. Other habitats – Access points for development are proposed through areas of lowland deciduous woodland, which is a Priority habitat and as such a material consideration
v. Protected faunal species – bats & dormice and potential of predation from domestic pets
vi. Other fauna – use of the site by rarer and more sensitive species recorded there such as curlew, turtle dove and woodcock would cease. Site may qualify as a SSSI on the basis of herpetological interest
vii. Biodiversity net gain
viii. Cumulative effect of the above impacts resulting in long-term deterioration of the natural landscape.

1.1.3 Many of these comments have already been addressed in Aspect Ecology's responses to the comments raised in the consultation responses from Natural England and the Wealden District Council Biodiversity and Arboricultural Officer[1] and as such are not repeated here. Additional issues raised by non-statutory consultees are discussed below.

2 Biodiversity Opportunity Areas

2.1.1 The Wildlife Trust comments that the site lies within the Western Ouse Streams and Ashdown Forest Biodiversity Opportunity Area (BOA) – see Annex 1. As the name suggests, this is a large zone particularly focussed on the River Ouse and its headwaters, while it also captures other habitats such as ancient woodland.

2.1.2 BOAs do not represent a statutory designation or a constraint upon activities. Rather, BOAs indicate where there are substantial opportunities to make positive changes for biodiversity, forming the basis for an ecological network and should be used to inform conservation strategies and place planning.

2.1.3 The relative importance of the ecological network is set out in the National Habitat Network (see Annex 2). This shows the ancient woodlands and watercourses within the site to lie in Network Enhancement Zone 1 'Land connecting existing patches of primary and associated habitats which is likely to be suitable for creation of the primary habitat' while the areas around the woodlands where the development footprint in located sit in Network

[1] Technical Note TN09 Response to WDC Ecology Consultation November 2022; Correspondence to Natural England dated 25 November 2022

Enhancement Zone 2 'Land connecting existing patches of primary and associated habitats which is less likely to be suitable for creation of the primary habitat' i.e. less sensitive areas.

2.1.4 Reference to the proposals finds that that the watercourses and the hydrological connections to these (in terms of water volumes, flows and quality) will be fully maintained, while the woodlands will be wholly retained. Moreover, the proposals offer the opportunity to arrest and reverse the current decline of the woodlands and restore their conservation value, securing this for the long term through secure conservation funding. As such the proposals will directly further the aim of the BOA and Network Enhancement Zone 1. While Network Enhancement Zone 2 is of low priority for conservation action, the proposals will nonetheless bring forward benefits for parts of this Zone which sits outside of the development footprint. These will be enhanced through the provision of new habitat creation within the areas of the ancient woodland buffers, extensive landscaped areas, orchard provision and extensive wildflower grassland provision.

2.1.5 Accordingly, the proposals are fully compatible with the aims of the BOA and do not serve to undermine its objectives in any way, but rather bring forward valuable benefits to further its aims.

3 Ancient Woodland

3.1 Intensification of human activity and recreational disturbance on ancient woodland, veteran trees and Lake Wood, particularly the inclusion of ancient woodland as designated SANG, including fouling from dogs

3.1.1 These matters are covered in Aspect Ecology's responses to Natural England and the Wealden District Council Biodiversity and Arboricultural Officer and as such are not repeated here. Where effects are identified, mitigation measures are employed, with these positively acknowledged by the Woodland Trust.

3.1.2 Lake Wood is owned by the Woodland Trust and this boundary with the development is of particular interest to them and a request for a 50m buffer is set out. In this regard, reference to the masterplan shows that an enhanced buffer is provided along much of the length of the interface of the development with Lake Wood while visitor access management measures will ensure that access is controlled, with robust fencing along the boundary so as to control the usage at the current informal access points. The presence of buffer zones (meaning most dogs will empty themselves before reaching the wood[2]), installation of dog bins, relevant signage and passive surveillance will avoid significant adverse effects from dog fouling.

3.2 Fragmentation / connectivity of ancient woodland sites from adjacent semi-natural habitats

3.2.1 Reference to the National Habitat Network (see Annex 2) shows that the key semi-natural habitats in the area are represented by the woodlands. The grassland within the site between the woodlands is of a typically species poor nature for the most part and does not materially contribute to woodland ecological function.

[2] Dogs, access and nature conservation. Natural England. 2005

3.2.2 Accordingly, potential fragmentation effects arising from the proposal are at the location of the proposed site access in the south west and to a much lesser extent in respect of the proposed emergency access in the west.

3.2.3 Faunal species are potentially most affected by habitat interruptions and as such it is relevant to consider these in more detail. On this particular site, species particularly sensitive to such interruptions are Dormice and bats. These species are discussed further under the respective headings within the ES e.g. 7.279. Mitigation measures will be employed to ensure connectively is maintained for these species utilised standard techniques such as the provision of hop-overs and sensitive lighting. These measures are of proven effectiveness and frequently licensed by Natural England as industry standard solutions and will ensure that fragmentation effects are avoided. The emergency access is of a very small scale such that woodland connectivity will be fully maintained and no bespoke measures are required.

3.3 The Ancient Woodland Inventory is provisional and not definitive – areas of priority habitat woodland within the application site could meet the definition of Ancient

3.3.1 To verify the ancient woodland inventory maintained by Natural England, the ancientness of all of the woodlands within the site has been subject to a detailed investigation, using a historical landscape assessment approach including catographic regression, together with arboricultural and ecological survey work, to confirm the likely ancientness of the woodland (or otherwise). The work carried out to date, has confirmed that none of the non-ancient Priority woodland areas are likely to be ancient.

3.3.2 Following the Ancientness Assessment work, a clearly misidentified area of ancient woodland within the site (the southern copse, referred to as W6b in the Baseline Ecological Appraisal) which is absent on relatively recent historic mapping, has been the subject of an application to Natural England to remove this from the inventory, with this area subsequently omitted from the Ancient Woodland inventory in 2021.

3.3.3 The ancientness review has also identified that much of the remainder of the woodland is absent from earlier pre 1800 mapping, with a large proportion shown to have been disturbed by historic iron ore extraction and as such the woodland is in fact secondary in nature. However, for simplicity, and in recognition of the ecological value of parts of the woodland on site (regardless of its status), this evidence is not advanced as part of this planning application.

3.4 Adverse hydrological impacts across the site and to the lake in Lake Wood

3.4.1 Comments raised in respect of on site hydrological matters are addressed in Aspect Ecology's response to the Wealden Biodiversity Officer.

3.4.2 In respect of the lake in Lake Wood, Sussex Wildlife Trust has commented that they hold a concern that *"the site contains Ghyll woodland (Longwood Gill) and is a functionally and hydrologically connected to the Woodland Trust's Lake Wood Reserve which contains a sphagnum peat fed lake….the increase in covered/impermeable surfaces coupled with locations of SUDs and diffuse pollution have not been assessed with regards to their impact on ancient woodland within the functioning landscape"*. This is not a concern held by the Woodland Trust (the owners of Lake Wood) while it was also screened out of the EIA. Nonetheless, to confirm the appropriateness of this screening, this has been the subject of a further assessment, the results of which are set out in Technical Briefing Note 08 at Annex 3. It concludes that this work provides confirmatory geophysical evidence that sub-surface or

surface flow pathways are absent between the Downlands site and the Sphagnum bed or lake in Lake Wood. This conclusion has been further checked through field survey work, which confirms an absence of any indications of any material hydrological connection between the two sites.

3.5 Noise, light, dust pollution and air quality affecting habitats and important flora and fauna

3.5.1 Matters of noise and dust are construction related effects which would be managed as part of the site Construction Environment Management Plan (CEMP) and matters of lighting are addressed as part of the response to the Council's Biodiversity Officer. In regard to air quality, effects can on occasion arise on ancient woodland through emissions from traffic flows. Of relevance in this regard is the proximity of the A22 which runs parallel to a number of the ancient woodlands on site. Reference to the APIS[3] database finds that these are already in exceedance of their minimal critical loads for nitrogen deposition. Research[4] has shown that where habitats are in exceedance of their critical loads, further adverse effects are unlikely to occur by the addition of further nutrients to the system, with this only occurring when the additions are at a particularly high level. Of relevance is the Shadow Habitats Regulation Assessment [5] which informs the application. Whilst this addresses potential effects on European designations, its analysis in respect of air quality effects is similarly informative in respect of potential effects which could arise on ancient woodland. The HRA refers to the Ashdown Forest SAC European Site Conservation Objectives Supplementary Advice[6] which states that *"assessment of improvements in vehicular technology and in particular Euro6/VI standards that all vehicles are currently being manufactured to, will outweigh impacts from new development. The improvements will be marginally retarded by additional development but future nitrogen deposition and concentration will continue to decline with the existing trend…Natural England Commissioned Report 210 identifies that expected increase in Nitrogen levels from additional transport would fall below the level that would reduce species richness on the site even if the expected declining trend in Nitrogen failed to materialise."* Accordingly, it follows that similarly, no adverse effects on ancient woodland from air quality would occur and this potential issue has been screened out.

3.6 Buffers

3.6.1 The matter of buffers is discussed as part of Aspect Ecology's response to the Wealden Biodiversity Officer.

4 Veteran trees – Threats to long-term retention of notable and veteran trees from increased safety concerns, and removal of important habitat features

4.1.1 Comment are raised in respect of veteran trees. These are addressed in a technical note from FLAC entitled 'Veteran trees - Technical response to matters raised by the Woodland Trust' at Annex 4. This discusses the matters raised and concludes that, following application of relevant mitigation, all veteran trees will be fully safeguarded. Attention is also drawn to the fact that

[3] Air Pollution Information System

[4] Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Report NECR210. 2016

[5] Land at Downlands Farm, Uckfield. Report to inform Habitats Regulation Assessment. Aspect Ecology. June 2022

[6] Natural England (February 2019) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features – Ashdown Forest Special Area of Conservation (SAC) Site Code UK0030080

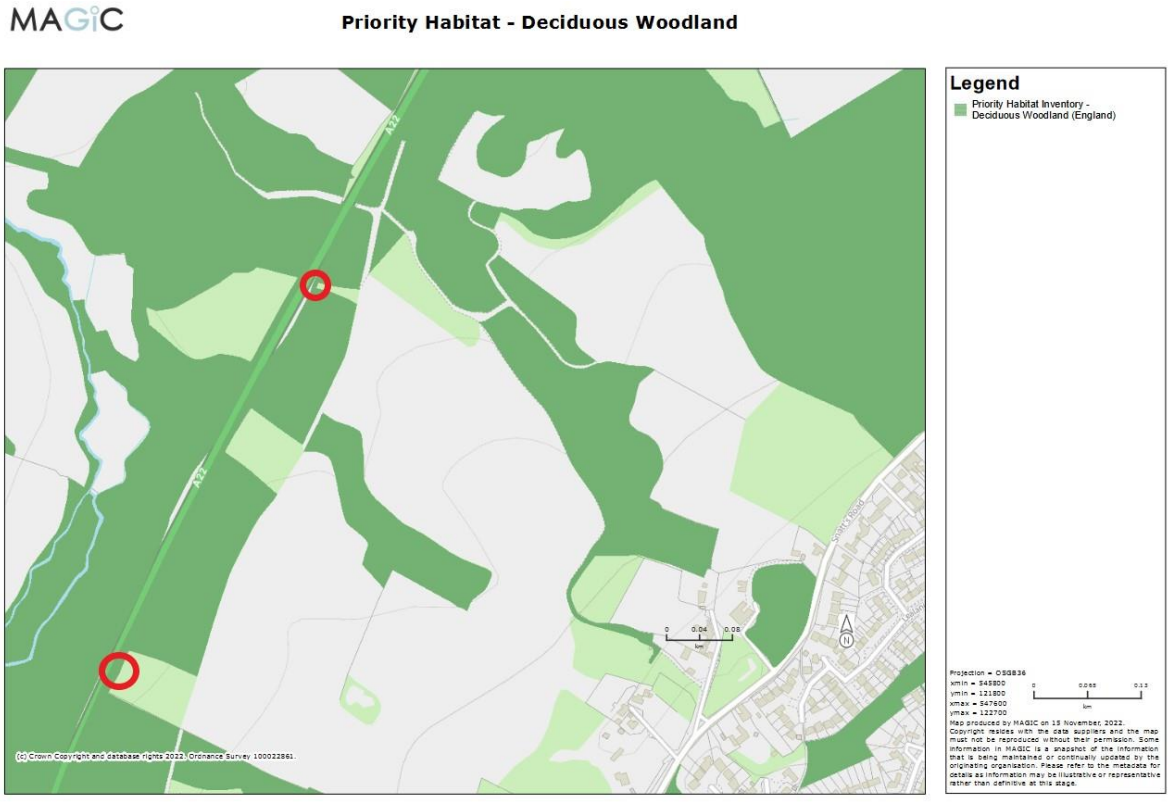
veteran trees will be subject to a long term conservation management plan so as to ensure their longevity and which will lead to a net positive outcome for veteran trees on site.

5 Other habitats – Access points for development are proposed through areas of lowland deciduous woodland, which is a Priority habitat and as such a material consideration

5.1.1 Access points for the development in the west take the form of the main access via a new roundabout along the A22 and an emergency access onto the A22. The locations of these access points have been specifically selected as they lie outside of areas of classified ancient woodland. As such losses to irreplaceable habitat types are avoided. Rather, the woodlands affected by the access are secondary in nature and hence are replaceable in nature.

5.1.2 The losses of the areas are unavoidable as the A22 represents the only location for site access. However, by way of mitigation, the land take associated with the proposals has been minimised and the accesses sited so as to avoid the loss of any notable mature trees[9], while losses of the woodland are fully offset by new planting. The suitability of the replanting proposals are tested within the Biodiversity Metric which informs the application, which confirms that the appropriate level of compensation is provided for the scale and nature of the secondary woodland losses. As such the proposals ensure there is no net loss of woodland habitat.

Figure 5.1: Location of access points overlaid on Priority Habitat Mapping from MAGIC; Priority woodland habitat is shown in dark green; non-priority woodland in light green; locations of proposed access points in red circles



[9] See Arboricultural Planning Submission. FLAC. May 2022

6 Protected faunal species – bats & dormice and potential of predation from domestic pets

6.1.1 Bats and Dormice are nocturnal in nature and hence most susceptible to predation after dark. For cats to successfully predate bats, it is normally necessary for them to locate themselves outside of a roost entrance in order to be able to swipe emerging bats from the air. This seldom occurs and where it does a roost is normally present in an urban location where bats can access roofs. Bats within the woodland at Downlands are very unlikely to be subject to predation by domestic cats, which would be deterred from entering the woodland in any event by the proposed fencing of the woodland edges and dense buffer planting. This would similarly mean that domestic cats are unlikely to encounter Dormice, especially due to the low densities this species typically exists at. As such, Dormice are unlikely to be predated by cats, as discussed at paragraph 7.2.34 of the ES which sets out that reference to the Dormouse Conservation Handbook[10] finds that it states that Dormice *"are rarely caught…. By predators such as cats"* with this finding supported by work undertaken by Woods et al (2003)[11] looking at predation of wildlife by domestic cats which found that Dormice made up only 0.084% of prey items brought back to houses by domestic cats.

7 Other fauna – use of the site by rarer and more sensitive species recorded there such as curlew, turtle dove and woodcock would cease. Site may qualify as a SSSI on the basis of herpetological interest

7.1.1 The requirements of curlew, turtle dove and woodcock, namely large upland or wet lowland meadows, arable with high small seed weed loads and a substantial hedgerow network and large scale forestry respectively, are unlikely to be met by the habitats on site. A full breeding bird survey has been undertaken as part of the application (see Baseline Ecological Appraisal) which has confirmed the absence of these species.

7.1.2 In terms of the potential of the site to qualify as a SSSI on the basis of herpetological interest, this is not a point advanced by the Woodland Trust or Wildlife Trust, but rather a single third party. This point was also advanced at the time of the 2009 public inquiry, but since this time has not been taken forward by any organisation. No rare herptiles are present at the Downlands site. When assessing the 'common' herptile species i.e. those without an elevated conservation status, SSSI selection criteria [12] require the presence of an outstanding assemblage to be present comprising at least four amphibian species or three reptile species. Reference to the Baseline Ecological Appraisal[13] which informed the application finds that, of the 12 on and offsite ponds sampled, only a single pond supports Great Crested Newts, and this is in significant decline and regularly dries. As such this falls considerably short of the characteristics needed to qualify as an 'outstanding assemblage'. The Baseline Ecological Appraisal reports the presence of three common reptiles, but these occur at a low population density which is unsurprising given the relatively unremarkable habitat present. As such these

[10] English Nature (2006) 'The Dormouse Conservation Handbook', 2nd Edition;, English Nature Research Report No. 524
[11] Woods, M., McDonald, R.A. and Harris, S. (2003) Predation of wildlife by domestic cats Felis catus in Great Britain. Mammal Rev. 2003, Volume 33, No. 2, 174–188
[12] Guidelines for the Selection of Biological SSSIs. Part 2: Chapter 18 Reptiles and Amphibians. JNCC. 2022. Revision, v1.0
[13] Baseline Ecological Appraisal. Aspect Ecology. May 2022

are classified as no more than a local interest feature, and fall short of the requirements for an 'outstanding assemblage'.

8 Biodiversity Net Gain

8.1.1 The Biodiversity Metric is a tool to enable the net gain/loss in habitats to be quantified and takes into account the 'value' of habitats by classifying their condition before and after development. The Trust raise a number of specific technical queries with the BNG Assessment which are discussed below.

8.2 Grassland SI4

8.2.1 A query is raised as to whether the habitat meets grassland condition criterion 1 i.e. that the grassland closely resembles a specific grassland type (see UK Hab definition). Detailed botanical surveys have been carried out, and the grassland could not be clearly identified as one of the specific grassland types (see paragraph 4.6.9 of the baseline Ecological Appraisal), and falls into the 'Other Neutral Grassland' category as result, a category which is intended to encompass a broad range of other grassland types, which are non-specific. Hence it has fails on Criterion 1. Criterion 6 is only applies when non acid-grassland types are present, and whilst the habitat does not conform to any specific acid grassland type, the botanical survey did record that the soil type was 'slightly acid'.

8.3 Grassland SI1 and SI3

8.3.1 A query is raised as to the number of species /m2. No specific detailed botanical surveys have been carried out of these areas, since they were identified in the Phase 1 survey as not having an elevated species richness. However, a condition assessment was completed during which the number of species was recorded to be <9/m2. The management measures set out in the SANG and Woodland Management Plan (scarification and overseeding) seek to increase the species richness of these areas post development and together with other suitable management, allow the grassland to meet the 'good' criteria. Dog fouling (and any associated eutrophication) would be avoided via visitor management but in any event even should it occur, while it could affect the type of species that would prevail locally, it would not prevent the grassland reaching the threshold for 'good' condition.

8.4 Ponds

8.4.1 A query is raised as to how the proposed enhancement to ponds will take place. An improvement in the water quality would result from restoration of the ponds, including clearance of silt, and the selective removal of overhanging trees. These restoration measures will allow aquatic plants to flourish, with the consequent positive natural effects on water quality through biological filtration. Section 5.6.6 of the SANG and Woodland Management Plan contains details of these restoration measures, as does the Schedule of Management works which is appended to that report.

8.5 Inclusion of Ancient Woodland in BNG Calculations

8.5.1 A query is raised in regard to the inclusion of the ancient woodland areas in the BNG calculations. The Biodiversity Metric v3.1 User Guide provides for the inclusion of ancient woodland within the BNG Assessment. The implementation of visitor access management measures will ensure that visitors to the woodland do not influence the effectiveness of the woodland management enhancements proposed. It is also flagged, that even without the

inclusion of the ancient woodland in the BNG Assessment, a net gain of 27.12% is obtained, rising to 42.33% when the ancient woodland areas are legitimately included.

9 Cumulative effect of the above impacts resulting in long-term deterioration of the natural landscape

9.1.1 Following the above clarification, it can be seen that the mitigation measures proposed are appropriate and effective and follow best practice guidance. As such adverse effects are avoided. In making their comments it is observed that the consultees overlook the opportunity which the proposals present to deliver benefits for nature conservation such as those set out at paragraphs 7.288 – 7.296 of the ES and in the associated woodland management plan. These benefits are significant in nature and will result in a 42% net gain for biodiversity, and they will also be secured for the life of the development (effectively perpetuity), which is a very significant further benefit over and above the gain captured by the Metric (which assumes only a 30 year management period).

Enclosed:

- Annex 1 – Western Ouse Streams and Ashdown Forest Biodiversity Opportunity Area (BOA)
- Annex 2 - National Habitat Network
- Annex 3 - Technical Briefing Note 08: Potential for hydrological connectivity to Sphagnum bed at Lake Wood (Sylvan)
- Annex 4 – Veteran trees: Technical response to matters raised by the Woodland Trust (FLAC)

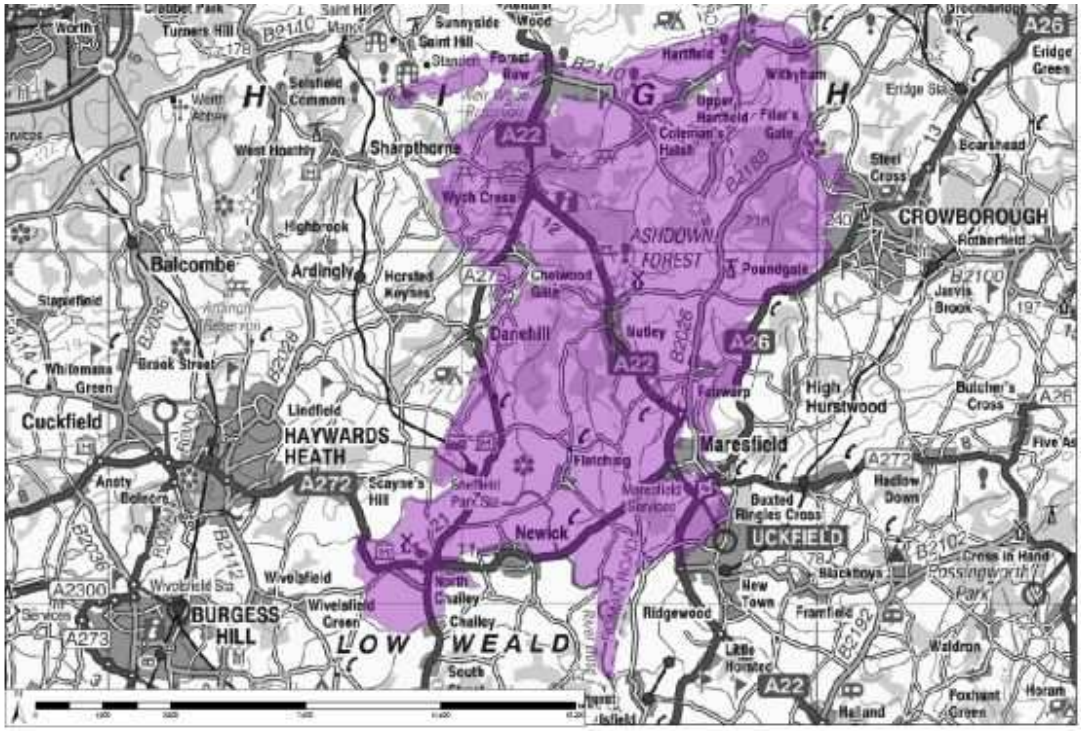
Annex 1:

Western Ouse Streams and Ashdown Forest Biodiversity Opportunity Area (BOA)

Western Ouse streams and Ashdown Forest Biodiversity Opportunity Area

Joint Character Area High Weald and Low Weald

Geology Western Ouse streams and Ashdown Forest Biodiversity Opportunity Area lies on interbedded sandstone and siltstone



The Biodiversity Opportunity Areas (BOAs) are the regional priority areas of opportunity for restoration and creation of Biodiversity Action Plan (BAP) habitats. They are a spatial representation of BAP targets and are areas of opportunity, not constraint. The BOAs are the property of the South East England Biodiversity Forum www.sebiodiversity.org.uk. Contains Ordnance Survey data Crown copyright and database right 2010

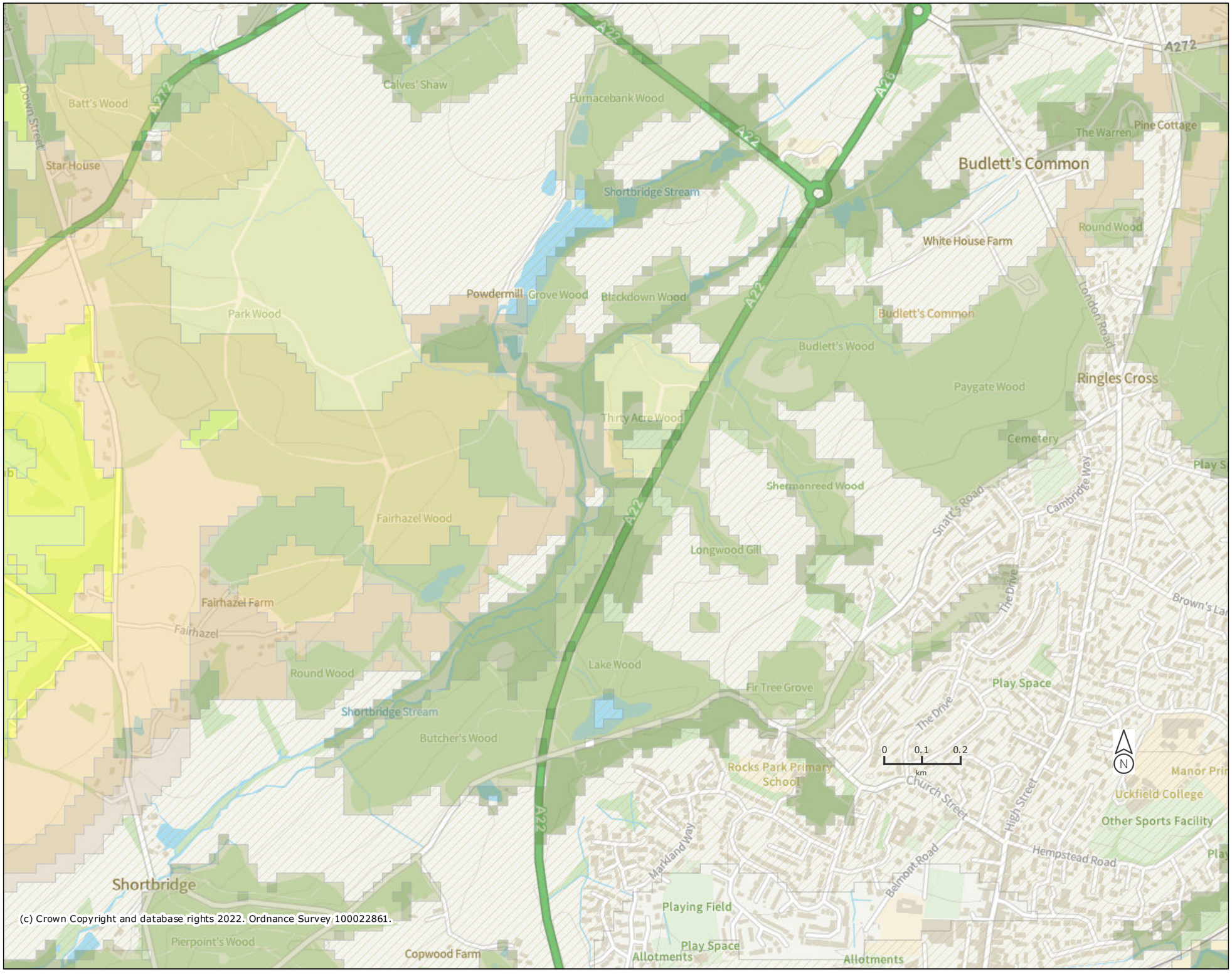
Western Ouse streams and Ashdown Forest has been recognised as a Biodiversity Opportunity Area (BOA) as it represents a priority area for the delivery of Biodiversity Action Plan (BAP) targets. It is one of 75 such areas across Sussex. The BOA covers approximately 13115 hectares.

The north of the area is dominated by the European protected heathland, Ashdown Forest, which consists of a matrix of open heath, ancient woodland, ghyll woodland and wetlands. The southern part of the area captures the eastern River Ouse and its headwaters, south towards the confluence with the River Uck. In the southern area smaller patches of heathland exist alongside many ponds and modern wood-pasture. The area is an important watershed between the Medway and Ouse systems and is likely to be important for the migration of key species between catchments.

Annex 2:

National Habitat Network

Downlands: National Habitat Network



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Legend

National Habitat Network All Habitats Combined (England)

- Ancient woodland
- Blanket bog
- Coastal saltmarsh
- Coastal sand dunes
- Coastal vegetated shingle
- Lakes
- Limestone pavement
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Lowland raised bog
- Maritime cliff & slope
- Purple moor grass & rush pastures
- Reedbeds
- Rivers
- Traditional orchard
- Upland calcareous grassland
- Upland flushes fens & swamps
- Upland hay meadow
- Upland heathland
- Wood pasture and parkland
- PHI_Other
- Additional land within SSSIs
- Habitat Restoration-Creation
- Restorable Habitat
- Fragmentation Action Zone
- Network Enhancement Zone 1
- Network Enhancement Zone 2
- Network Expansion Zone

Projection = OSGB36
xmin = 544200
ymin = 121000
xmax = 548400
ymax = 123600

0 0.15 0.3
km

Map produced by MAGIC on 11 November, 2022.

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National Habitat Network Maps



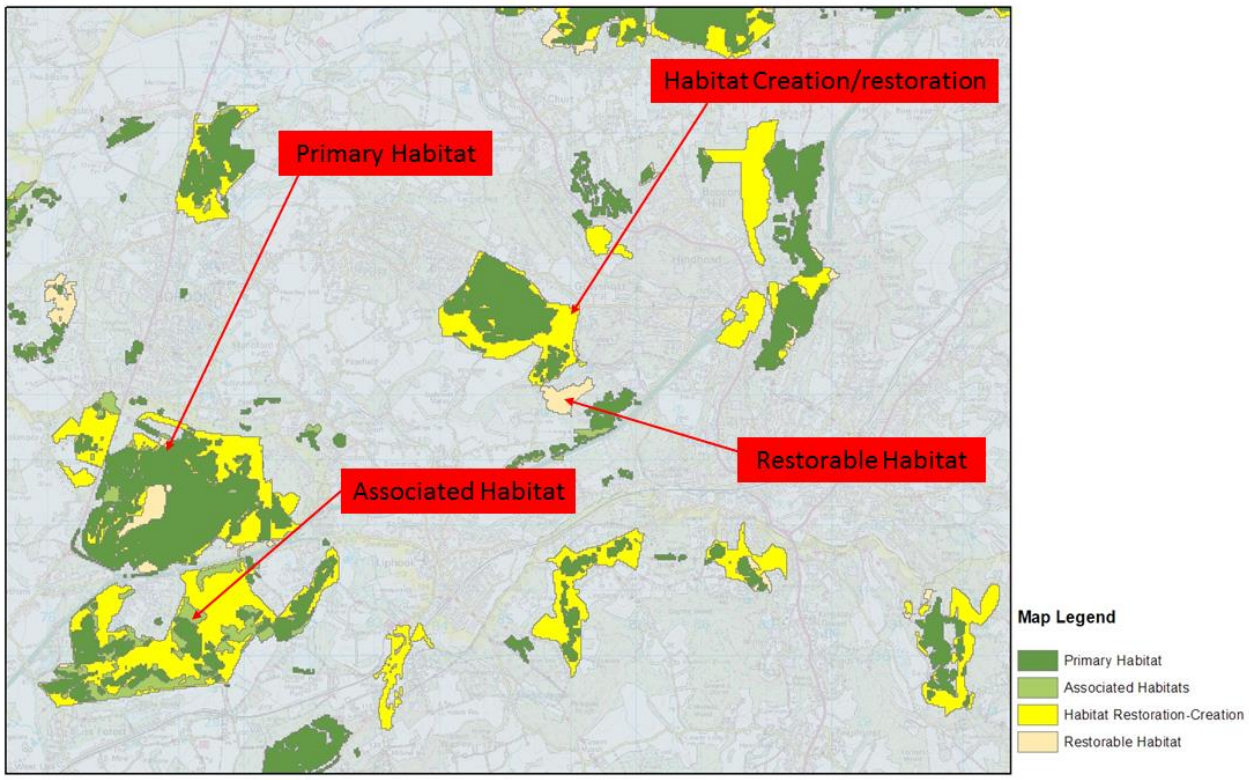
User Guidance v.2

May 2020

Natural England

4. **Restorable Habitat:** Areas of land, predominantly composed of existing semi-natural habitat where the primary habitat is present in a degraded or fragmented form and which are likely to be suitable for restoration.

Figure 1: Components of the Existing Habitat



B) Network Enhancement & Expansion – We have mapped the following 4 network zones around the habitat components described above (see Figure 2):

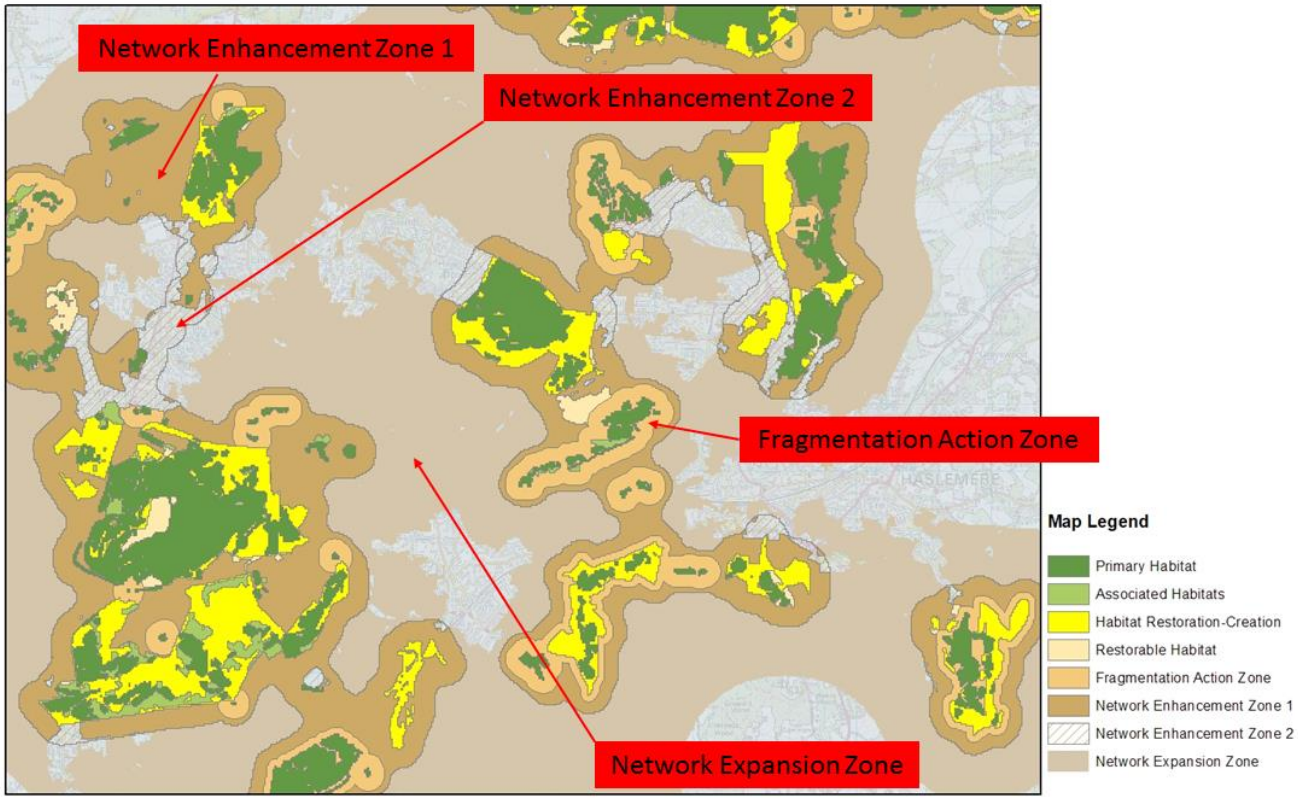
5. **Network Enhancement Zone 1:** Land connecting existing patches of primary and associated habitats which is likely to be suitable for creation of the primary habitat. Factors affecting suitability include: proximity to primary habitat, land use (urban/rural), soil type, slope and proximity to coast. **Action in this zone to expand and join up existing habitat patches and improve the connections between them can be targeted here.**

6. **Network Enhancement Zone 2:** Land connecting existing patches of primary and associated habitats which is less likely to be suitable for creation of the primary habitat. **Action in this zone that improves the biodiversity value through land management changes and/or green infrastructure provision can be targeted here.**

7. **Fragmentation Action Zone:** Land within Enhancement Zone 1 that connects existing patches of primary and associated habitats which are currently highly fragmented and where fragmentation could be reduced by habitat creation. **Action in this zone to address the most fragmented areas of habitat can be targeted here.**

8. **Network Expansion Zone:** Land beyond the Network Enhancement Zones with potential for expanding, linking/joining networks across the landscape i.e. conditions such as soils are potentially suitable for habitat creation for the specific habitat in addition to Enhancement Zone 1. **Action in this zone to improve connections between existing habitat networks can be targeted here.**

Figure 2: Components of the Network Enhancement & Expansion Zones



We have modified our standard process for some habitat network maps and Table 1 below provides a list of which components have been used in each map. More information is given in Sections 5 in relation to the Network Maps for Ancient Woodlands, Wood-pasture & parklands, Lakes and Rivers.

Annex 3:

Technical Briefing Note 08: Potential for hydrological connectivity to Sphagnum bed at Lake Wood

Technical Briefing Note

Project: Downlands Farm, Uckfield

Technical Briefing Note 08: Potential for hydrological connectivity to Sphagnum bed at Lake Wood

Date: 11 October 2022

1. Executive Summary

- Objectors have raised in issue the potential for deterioration to the Irreplaceable Habitat of Lake Wood, which is included within the Ancient Woodland Inventory compiled and maintained by Natural England.
- The deterioration is said to arise from changes to the hydrology of Lake Wood, and specifically to inflows from the Downlands Farm site that currently support a small Sphagnum moss bed, which in turn is said to feed the lake.
- Outflow from the lake, which is alleged will be adversely affected, drains into the Shortbridge Stream, which is known to have specialised ecology; this, too, is said to be subject to adverse effects should the development proceed.
- Sylvan has undertaken a review of relevant technical information, including the *Geo-environmental Site Investigation* (GSI) prepared by BRD Environmental, the *Flood Risk Assessment* (FRA) prepared by Waterman Consulting, the topographic survey, and LiDAR data.
- Sylvan has also undertaken field work to test the validity of the conclusions of the FRA and GSI.
- Based on our combined desk and field study, we conclude that no hydrological connection exists at or above the level of materiality between Downlands Farm and the Sphagnum bed and/ or the lake in Lake Wood.
- Accordingly, the proposed development would neither cause deterioration to Irreplaceable Habitat, nor result in an adverse effect of the ecology of the Shortbridge Stream.

The Sylvan brand is a specialist collaboration between Aspect Ecology Ltd (registered number 5648214 – England and Wales) and Forbes Laird Arboricultural Consultancy Ltd (registered number 05253618 – England and Wales)

2. Introduction and Background

2.1. Sylvan (Aspect Ecology and Forbes-Laird Arboricultural Consultancy (FLAC)) is advising in respect of ancient woodland matters relating to the site Downlands Farm, Uckfield. The site is being considered for residential development, with an application pending decision before Wealden District Council (its ref. WD/2022/1637/MEA).

2.2. Consultation responses have been received on the application from, amongst others, Sussex Wildlife Trust (SWT); the Woodland Trust (owners of Lake Wood); and a local resident, Dr Martyn Stenning.

2.3. Whilst the Woodland Trust does not directly take a position on hydrological change affecting Lake Wood, it does cite with approval the opinion of Dr Stenning. Dr Stenning states:

> *The Sphagnum peat fed lake at Lake Wood, which… supports a huge biodiversity of aquatic plants, invertebrates and vertebrates, including great crested newts, is… fed with water from Downlands Farm and would be jeopardised by the drainage engineering proposed by the developers.*

2.4. However, this assertion is not supported by reference to evidence. Notably Dr Stenning does not refer to the FRA or GIS and their findings.

2.5. In similar vein, SWT state, also without providing evidence, that Downlands Farm is:

> *Hydrologically connected to the Woodland Trust's Lake Wood Reserve which contains a sphagnum peat fed lake.*

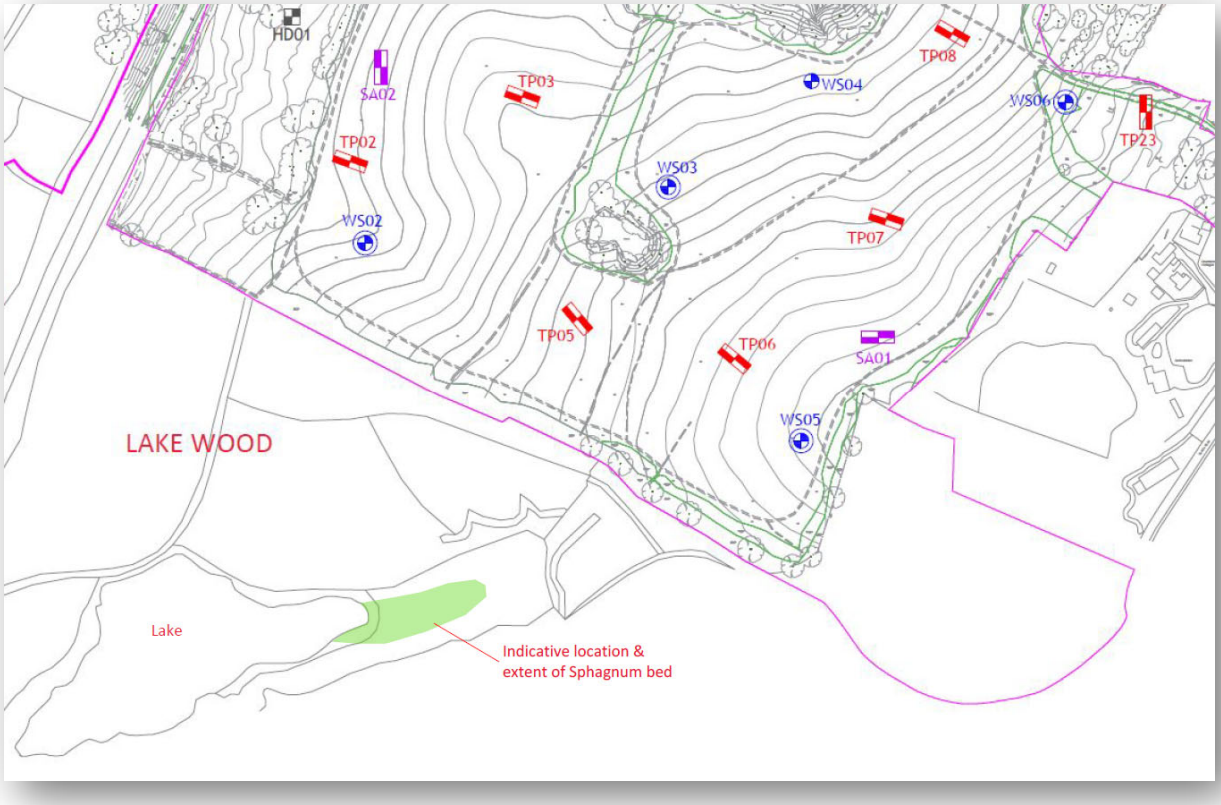
2.6. This Technical Note directly addresses these assertions.

3. Desk study

Geo-environmental Site Investigation

3.1. Appendix 10.2 of the Environmental Statement comprises the GIS referred to already. The GIS includes reports of trial hole and bore-hole surveys that provide empirical evidence of soil conditions. Figure 1 is an extract from the *Exploratory Hole Location Plan* found within Appendix 1 of the GIS.

Figure 1 – Extract from BRD Environmental Exploratory Hole Location Plan, *11.01.2022, marked up by Sylvan to show indicative location and extent of the Sphagnum bed in Lake Wood*



3.2. The GIS summarizes the ground conditions as follows:

The ground conditions encountered at the site were generally as anticipated from the published geology.

3.3. The published geology, derived from the British Geological Survey (BGS) online viewer, shows "Grinstead Clay Member" being present on-site for the length of the common boundary with Lake Wood. An extract from the BGS website depicting the relevant area is included at Figure 2.

Figure 2 – Extract from BGS Geology Viewer showing Grinstead Clay member as green fill



3.4. Referring to the exploratory hole location plan extract at Figure 1, it is apparent that holes WS02, WS05, TP02, TP05 and TP06 are all located in that area of the site which abuts the Lake Wood boundary. The exploratory hole results are included in the GIS at its Appendix 2. Consulting this data confirms that the stratum underlying the topsoil in all five cases is Grinstead Clay Member.

3.5. BGS technical report WD/00/04, titled *The physical properties of minor aquifers in England and Wales*, describes the Grinstead Clay Member as an "aquiclude" (5.3.3.4). An aquiclude is a stratum that takes up water until field capacity is reached, and then retains it, confining soil water in adjoining strata. In other words, the Grinstead Clay Member adjacent to Lake Wood acts as a barrier, preventing lateral flow from soil water on site into Lake Wood. This technical work demonstrates that the assertions of Dr Stenning and SWT are not supported by the GIS which shows the contrary, namely the absence of a material sub-surface hydrological link.

Flood Risk Assessment

3.6. Appendix 8.1 of the Environmental Statement comprises the FRA referred to already. The FRA includes the proposed drainage strategy, which was worked up based on detailed collaboration between Sylvan and Waterman Consulting.

3.7. A key element of the drainage strategy is the extent to which infiltration could be used to drain the proposed development area. To inform their view on this point, Waterman Consulting undertook a review of the infiltration test data contained within the GIS, concluding that:

Soakage testing was undertaken across the Site, which demonstrated soil permeability that was too low to calculate the infiltration rate in most locations. In one location a rate of 1.12 x 10-6 m/s was calculated, which is considered too low to successfully support infiltration. The Geo- Environmental Site Investigation report concludes that the disposal of surface water to soakaways will not be feasible at this Site due to the predominantly cohesive nature and proved low permeability of the underlying soils.

3.8. This finding further demonstrates that a material hydrological link between Downlands Farm and Lake Wood is absent (contrary to the assertion of objectors), instead strongly indicating that on-site water remains on-site, currently draining with the lie of the land.

Topographic survey

3.9. The site topographic survey provides directly relevant information on the extent to which the lie of the land favours drainage from Downlands Farm to Lake Wood. Levels data from the topo confirms a fall along the Lake Wood boundary of ca. 10m from southeast (at Chicory Cottage) to northwest (the A22).

3.10. The levels data also confirms a more complex topography from within the site and towards Lake Wood. Whilst in the southeast Downlands Farm slopes towards Lake Wood, more centrally along the boundary the slope lies the other way, before the land lies broadly even in the northwest. Thus it is the case that only in the southeast, for ca. 120m, would the lie of the land permit potential overland flows into Lake Wood from Downlands Farm in any event.

LiDAR data

3.11. Figure 3 is an extract from the Environment Agency's LiDAR data visualization for the locality. This information allows us to plug the gap between the on-site topo survey covering Downlands Farm, and the off-site terrain within Lake Wood, which has not been topographically surveyed.

Figure 3 – Extract from EA LiDAR survey, 1m resolution DTM



3.12. The location of the lake is readily apparent in Figure 3, as is a valley feature extending from the westerly projection of the lake to head, somewhat north of west, towards the common site boundary. Cross-referencing Figure 3 to Figures 1 and 4, helps in understanding the location of the Sphagnum bed: it occupies the lower reaches of the valley where this terminates at the lake.

Figure 4 – Extract from aerial image dated 2004 selected to show thicketting trees within Sphagnum bed, indicative extent of which is highlighted



3.13. Referring back to Figure 3, the dark shadow along the southern aspect of the valley is a line of sandstone bluffs, which together form a more or less continuous outcrop at this point, frequently rising to a height of 4m or so. The nature of the sandstone outcropping effectively provides the enquirer with a section through the local geology that is plain to see (Figure 5).

3.14. Extending NNE and NE from the northernmost point of the lake are two linear depressions: these are tracks. Extending NNW from the north shore of the lake is a much wider depression: this is the outflow route to the culvert under the A22, through which the lake drains into the Shortbridge Stream.

3.15. With the terrain at lake Wood now revealed by the LiDAR data, it becomes apparent that any hydrological connection between Downlands Farm and the Sphagnum bed involves the valley in which the latter sits. Thus an on-site search for indications that such a connection could be present, despite the strong geophysical evidence to the contrary set out above, must consider the northern valley side, especially the bluffs, and the head of the valley.

Figure 5 – Photograph taken 07.10.22 showing part of sandstone bluff along north side of valley



4. Field work

Methodology

4.1. Sylvan undertook field work in Lake Wood on 06 & 07 October 2022. As well as seeking obvious signs of hydrological connections into the Sphagnum valley, our primary search targets were botanical indicators of elevated soil moisture (phyto-hydrological markers), that would suggest (or confirm) the presence of overland flows, wet flushes, seasonal watercourses, and so on.

4.2. In this regard, it should be understood that plants are symptomatic of soil conditions, with locally higher levels of soil moisture giving rise to specific marker species, which colonise damp locations opportunistically. For example, in Longwood Gill and Shermanreed Wood, the key marker species for hydrological inflows is Hart's-tongue Fern (*Asplenium scolopendrium*).

Findings

4.3. In brief, we found no indications of any material hydrological connection between Downlands Farm and the valley hosting the Sphagnum bed which is said by Dr Stenning and SWT to feed the lake. Both the northern side of the valley and its head appeared to be floristically homogenous with elsewhere in the wood, with no phyto-hydrological marker species being found except the Sphagnum bed itself, which occupies a well-defined area.

4.4. Examination of the sandstone bluffs found no signs of water flowing over, through or under these features. This is significant because at about 34-39AOD the bluffs occupy a key part of the level transition from the site (at ca. 40-42AOD) to the valley floor (at ca. 34AOD): if there were deeper seepage inflows in play, for example if soil water was moving below the Grinstead Clay Member, these should be apparent on examination of the sandstone and related plant colonies. No such indications were found.

5. Discussion

5.1. The Woodland Trust owns and manages Lake Wood, in furtherance of which latter it has prepared a Management Plan covering the period 2016-2021 (no more recent edition appears to be available). Within this document is section 5.1 *Historic Landscape*, which contains the following description:

> *The landscaping of Lake Wood occurred in the late eighteenth and early nineteenth century after the site became part of the Rocks Estate, owned by the Streatfield family, in 1789. An existing spring-fed pond was enlarged by the building of the dam.*

5.2. Notwithstanding that the Woodland Trust cited Dr Stenning's opinion with approval, the text set out above directly contradicts both his and the SWT's assertion that the lake is fed from Downlands Farm via the Sphagnum bed. Having examined all the evidence in print and on site, we conclude that the Woodland Trust's description of the lake as being spring fed is correct.

5.3. In this regard, we do not consider it material whether the spring feeds the Sphagnum bed, which in turn supplies the lake, or the spring feeds the lake, which supplies the Sphagnum bed. Either is equally consistent with the Woodland Trust's understanding of the site, and neither speaks to hydrological supply from Downlands Farm.

6. Conclusion

6.1. Consultees on the planning application have put forward a claim that deterioration of Irreplaceable Habitat at Lake Wood, as well as adverse impact on lake and stream ecology, would occur due to changes to hydrology arising from the proposals. Notably, the objectors put forward no evidence to support their assertions.

6.2. To test these assertions, Sylvan has undertaken a review of the data supplied to the Council as part of the planning process, and has ground-truthed the presence/ absence of possible hydrological connection pathways between the Downlands site and Lake Wood. In this regard, the evidence centres on the Geo-environmental Site Investigation and the Flood Risk Assessment, supported by topographic and lidar survey data.

6.3. This work provides confirmatory geophysical evidence that sub-surface or surface flow pathways are absent between the Downlands site and the Sphagnum bed or lake in Lake Wood. Sylvan has further checked this conclusion through field survey work, which confirms an absence of any indications of a hydrological connection between the two sites.

6.4. It is the case, therefore, that all of the evidence supports the Woodland Trust's position that the lake is spring fed, rather than fed via hydrological supply from the Downlands Farm site.

6.5. Based on the suite of information available, we conclude that there is no material hydrological link between the Downlands site and the lake in Lake Wood. Accordingly, the claim by objectors that hydrological change could occur through such a link is not supported by the evidence.

Annex 4:

Veteran trees - Technical response to matters raised by the Woodland Trust

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DOWNLANDS

Veteran trees - Technical response to matters raised by the Woodland Trust

FLAC is advising Gleeson Land in relation to arboricultural aspects of proposed development on land at Downlands Farm, Uckfield.

Further to the planning submission of June 2022, Wealden District Council application ref. WD/2022/1637/MEA, a consultation response dated 16 September 2022 has been received by WDC from the Woodland Trust. In summary, the Woodland Trust objects to the proposed development.

One ground given for this objection relates to veteran trees. In this regard, FLAC has undertaken a veteran tree search and identification exercise. We report our list of veteran trees, identified using our RAVEN methodology, within the planning submission as Appendix FLAC2.

The Woodland Trust adopts our identification, for which we wish to record our appreciation.

The Woodland Trust confirms that none of the identified veteran trees would be subject to direct impacts from development, and that in consequence there would be no loss of veteran trees.

The Woodland Trust asks:

> *That the council ensures that appropriate buffer zones have been afforded to all of the above trees and that the council is satisfied with proposed management to ensure avoidance of their deterioration*

We are pleased to confirm that all identified veteran trees have been provided with buffer zones compliant to the Natural England and Forestry Commission of 15x stem diameter, or crown spread +5m (whichever is the greater). This detail is confirmed by consideration of the Tree Survey, Retention & Removal Plan (TSRRP), FLAC dwg no. 40-1020.02, found at Appendix FLAC3 of our planning submission bundle.

Turning to less positive comments, the Woodland Trust raise concerns over:

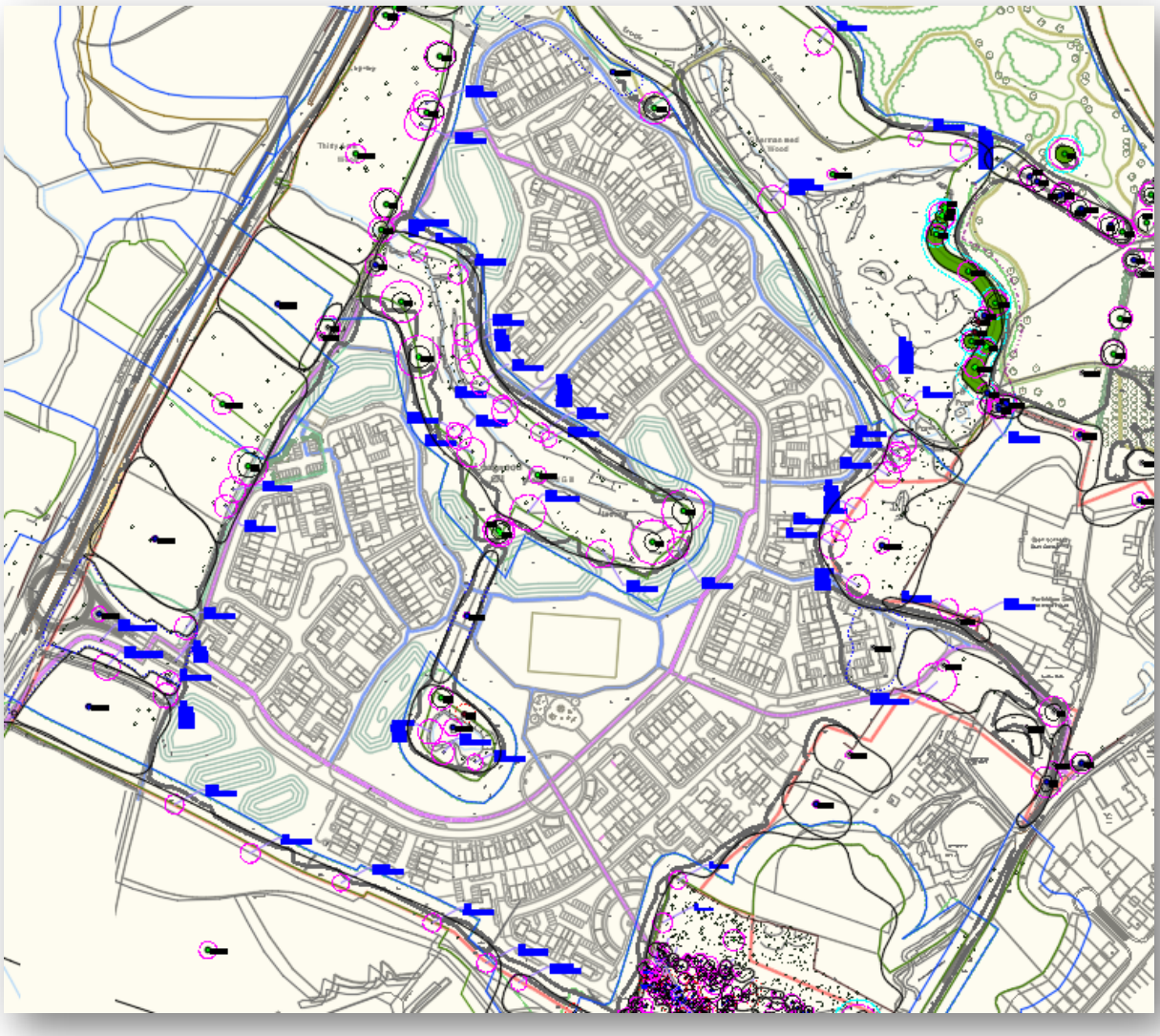
- Pollution effects (noise, dust, light)
- Public access leading to harmful tree surgery

We are pleased to address these concerns as follows:

Pollution

Figure 1 is an extract from our TSRRP showing the area of proposed built development, with the illustrative layout overlaid with our tree survey information. Veteran trees are shown with a solid green crown fill, and by this means can be identified even at this small scale.

Figure 1 – Extract from FLAC dwg no. 40-1020.02



It is apparent from Figure 1 that the identified veteran trees are located outside and to the east of the development area proper. In fact, they are located on the far side of an area of woodland over 75m away. As such, it is apparent that there is no realistic likelihood that they would be subject to adverse pollution impacts, even if these were likely to occur given provision of the recommended buffer zone (which is not accepted).

Public access

In its consultation response the Woodland Trust states:

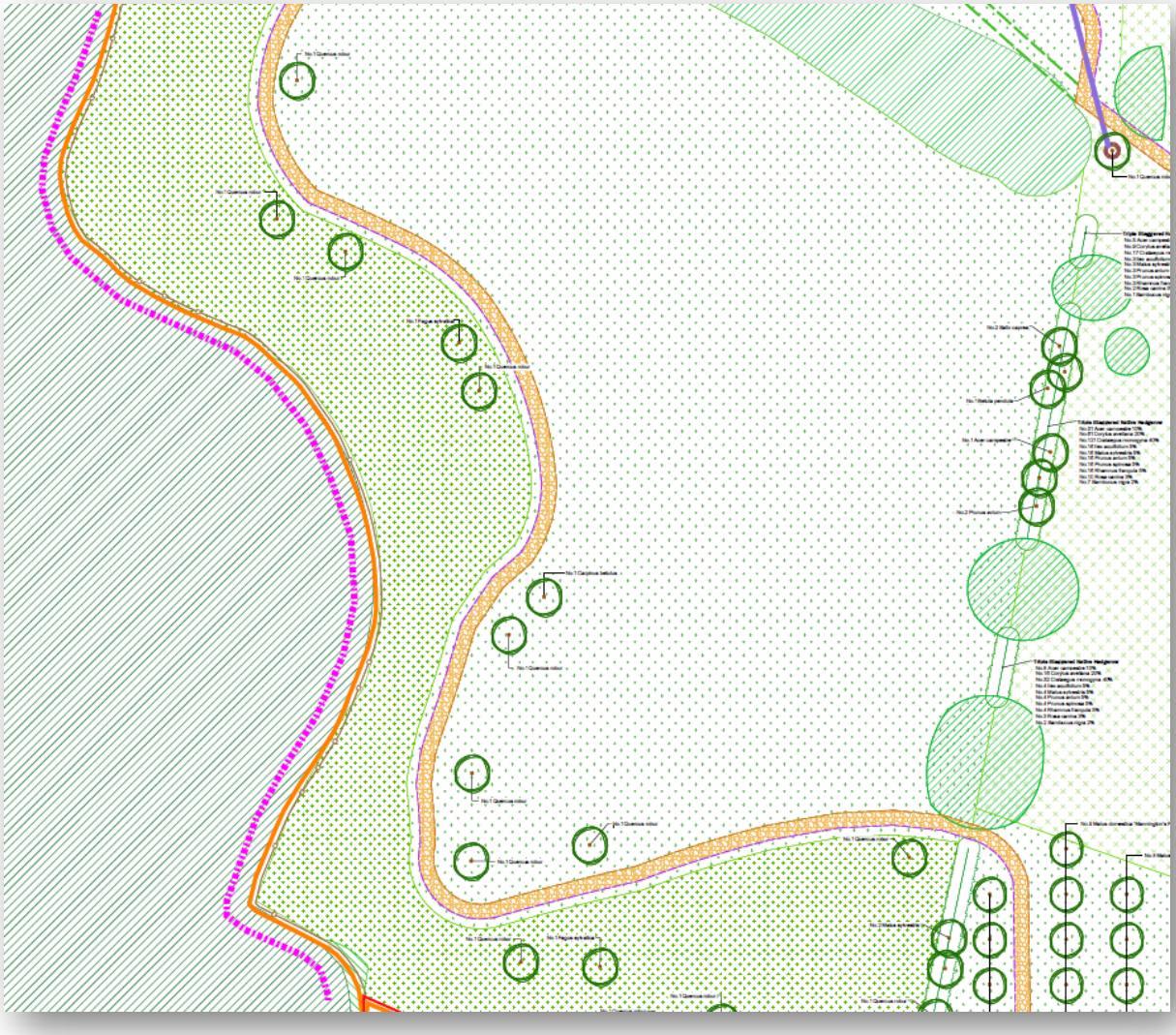
> *Increased human activity in the vicinity of veteran trees will increase the need to manage such trees more intensively so as to reduce associated health and safety risks… Veteran trees typically feature significant deadwood habitat of great value for biodiversity… and the removal of such features in the interests of managing safety risks can result in loss of habitat and/or consequential decline or removal.*

Therefore, where such trees are to be located within public areas, other mitigations should be considered to reduce human activity around these trees, i.e. restricting access within their canopy area and rooting environment.

Attention is drawn to the location of the veteran trees within woodland in all cases save two, trees 7041 and 3026. Tree 3026 is located some way off-site to the northeast (being captured by the FLAC survey before the site disposition was known), and accordingly it does not require further consideration. Tree 7041 is located in a grassed area within the proposed SANG.

In relation to those veteran trees located within woodland, Figure 2 is an extract from the detailed SANG proposals submitted as part of the (hybrid) application. The extracted area includes the southeast boundary of Shermanreed Wood, within the outer margins of which are the veteran trees (other than those listed above). We have highlighted this area with a dashed pink line in Figure 2.

Figure 2 – Extract from detailed SANG proposals; pink FLAC markup indicates veteran tree presence



It is apparent from the detailed SANG application that no public access is proposed within the southern end of Shermanreed Wood. Moreover, careful scrutiny of the SANG proposals finds that its boundary is proposed to be protected by a dog-proof fence.

It follows from these details that public access to those veteran trees located in this area will not be subject to intensification of human activity. Indeed, given that there is *existing* public access to this part of Shermanreed Wood, it is clear that the outcome of the proposed development will be a net reduction in human proximity to the veteran trees concerned.

In relation to tree 7041, public access in proximity to this tree can be prevented by installation of a circumferential post and rail fence, within which can be set access-deterrent planting (such as dog rose and blackthorn).

In conclusion, whilst the Woodland Trust have raised concerns about certain aspects of the proposals in relation to veteran trees, on further examination it is found that these concerns are misplaced. In all but one case, tree 7041, the veteran trees would be either or both of remote from development and not subject to nearby public access.

Whilst tree 7041 *could* be subject to public access, this can be prevented from causing adverse impact, including from otherwise superfluous safety-critical tree work, by means of suitable fencing and access-deterrent planting.

Overall, we welcome common ground on the identification of veteran trees, and on an agreed lack of direct impacts.

Finally, attention is also drawn to the fact that veteran trees would be subject to a long-term conservation management plan so as to maximise their longevity. This would lead to a net positive outcome for veteran trees on the site.