South Oxfordshire Local Plan: Ecological Assessment of Sydling's Copse & College Pond SSSI

South Oxfordshire District Council

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Quality information

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1. Introduction

The South Oxfordshire District Council Local Plan 2034 progressed to 'Publication' stage in January 2019, with submission to the Secretary of State planned for March 2019. The Plan has allocated seven strategic development sites, one of which, Land North of Bayswater Brook (Policy STRAT13[1]), is situated adjacent to a Site of Special Scientific Interest (SSSI). Due to the proximity of the Sydling's Copse and College Pond SSSI (hereafter referred to as 'the Site[2]') an ecological assessment is required to help South Oxfordshire District Council to determine if the sensitivities of the adjacent SSSI have the potential to affect the deliverability of this strategic residential site allocation. This report outlines Stage 1 of the ecological assessment, which constitutes an assessment of potential ecological impacts of the site allocation on Sydling's Copse and College Pond SSSI.

The findings and recommendations outlined within this report will inform any detailed ecological assessment and proposed mitigation strategy required for Stage 2 of the ecological assessment of the potential ecological impacts of the site allocation on Sydling's Copse and College Pond SSSI.

The SSSI is located within the Parish of Barton. According to the Barton Area Action Plan (Proposed Submission Document)[3] Sydling's Copse and College Pond SSSI is sensitive to increased recreational use based on the nature of the habitats present. It is therefore important that the enhanced links to the countryside from the strategic development site do not result in damage to the SSSI.

Policy STRAT13: Land North of Bayswater Brook

Land North of Bayswater Brook, a 112ha area of land situated partially adjacent to Sydling's Copse and College Pond SSSI, has been allocated as a strategic development site within the South Oxfordshire Local Plan 2011-2034[4]. The land within the strategic allocation will be developed to deliver approximately 1,100 new homes, supporting services and facilities up until 2034. The Local Plan policy states the following in relation to development:

"*Protects and enhances existing habitats, particularly those associated with Sidlings Copse and College Pond SSSI…*"

"*Proposals to develop a development within this strategic allocation that ensures there will be no demonstrable negative recreational, hydrological or air quality impacts on the Sidlings Copse and College Pond SSSI*"

The BBOWT Management Plan for the Nature Reserve states that "*Given the lack of general access to much of the SSSI, the fragile nature of some of the habitats (e.g. the calcareous fen and the areas of calcareous grassland) and the small size of some of the populations of important species (e.g. Lizard Orchid), Sydling's Copse is not a suitable site for large number of visitors or regular visits from large school parties".*

The assessment undertaken within this document investigates these impacts based on available information.

[1] South Oxfordshire District Council (2019) South Oxfordshire Local Plan 2011-2034. Final publication version 2nd, January 2019.
[2] It should be noted that some references within this document are to 'Sidlings Copse'. This is the same site as Sydling's Copse.
[3] Oxford City Council (2012) Barton Area Action Plan (Proposed Submission Document)
[4] South Oxfordshire District Council (2019) South Oxfordshire Local Plan 2011-2034. Final publication version 2nd, January 2019.

2. Methodology

Desk study

A desk based study was carried out to identify any potential likely significant effects that could arise through impact pathways linking the potential development allocation site 'Land North of Bayswater Brook' with Sydling's Copse and College Pond SSSI. This involved reviewing existing available information and the results of a site walkover. The following documents and correspondence have been reviewed to help inform this assessment:

- Sydling's Copse and College Pond SSSI Management Plan Draft (Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust, 2019)[5];
- South Oxfordshire Local Plan 2011-2034 (January 2019)[6];
- Barton Area Action Plan (2012)[7];
- Barton Oxford 'Land to the West of Barton' Environmental Statement (May, 2013)[8];
- Land at Barton Outline Ecological Mitigation and Management Strategy (2013)[9]; and,
- Correspondence with Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust regarding management of Sydling's Copse and College Pond SSSI, and high level conclusions of a visitor survey undertaken by Footprint Ecology between 2014 and 2017

Field survey

A walkover survey was undertaken within the SSSI on 5th February 2019 by a suitably qualified AECOM ecologist who recorded and mapped all habitat types present within the survey area and also noted evidence of recreational activity, and of management relating to recreation. The survey area encompassed all safely accessible parts of the Site within publicly accessible areas. The purpose of the survey was to determine the broad habitat types, to note evidence of current pressures relating to recreation, and to inform consideration of the potential future pressures that could arise due to the nearby allocated strategic development site e.g. an increase in visitor footfall.

For the purposes of habitat categorisation, all habitats were mapped in accordance with the standard survey method (Joint Nature Conservation Committee, 2010). Phase 1 Habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area.

Where relevant points of interest relating to ecology, management or site pressures were present, target notes were recorded and the position of these shown on Figure 1. Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area.

Limitations

The aim of a desk study is to help characterise the baseline context of and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest.

Where habitat boundaries coincide with physical boundaries recorded on OS maps the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field.

[5] Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust (2019). Sydling's Copse and College Pond SSSI Management Plan (unpublished).
[6] South Oxfordshire District Council (2019) South Oxfordshire Local Plan 2011-2034. Final publication version 2nd, January 2019.
[7] Oxford City Council (2012) Barton Area Action Plan (Proposed Submission Document)
[8] Barton Oxford LLP (2013) Land to the West of Barton Environmental Statement, Environmental Impact Assessment.
[9] WSP (2013) Land at Barton, Oxford Outline Ecological Mitigation and Management Strategy.

3. Results

Desk study

Sydling's Copse & College Pond SSSI

Sydling's Copse and College Pond SSSI covers a 22.2ha area of land situated on the north-east outskirt of Oxford, approximately 0.6km from the City of Oxford District Authority boundary. The Site consists of a mosaic of habitats including calcareous fen, carr, broadleaved woodland scrub, reed bed, open water and acid and limestone grassland, lying in close proximity in and around a steeply sloping valley. The Site is partially owned and partially leased by Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) who manage the Site for nature conservation.

The SSSI's notified features[10] are:

- CG3 - *Bromus erectus* lowland calcareous grassland;
- M13 - *Schoenus nigricans* – *Juncus subnodulosus* mire;
- Nationally scarce plant – *Epipactis phyllanthes*, green-flowered helleborine;
- Population of Schedule 8 plant[11] – *Himantoglossum hircinum*, lizard orchid;
- S26 – *Phragmites australis* – *Urtica dioica* tall-herb fen;
- U1e – *Festuca ovina* – *Agrostis capillaris* – *Rumex acetosella* lowland acid grassland; and,
- W10 – *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus* woodland.

Based on the authors' professional experience and judgment, the calcareous and acid grasslands (and their associated orchids) are likely to be the habitats most susceptible to recreational pressure in terms of direct trampling damage if footfall in these areas was sufficiently heavy, increased risk of litter and fly-tipping and nutrient enrichment from dogs. The woodland is next most sensitive while the mire and tall herb fen is probably least sensitive (though not entirely insensitive) due to the wet nature of the habitat naturally restricting access.

The Site's woodland is listed on Natural England's Ancient Woodland Inventory as ancient and semi-natural woodland. The following potential impacts pathways have been identified within the South Oxfordshire Local Plan 2011-2034[12] for the SSSI:

- Increased recreational pressure resulting in increased conflict with livestock, nutrient deposition, trampling and littering;
- Hydrological impacts on groundwater dependent habitats including fen; and,
- Air pollution arising from nearby developments and road networks.

Habitats

Semi-natural broadleaved woodland

The broadleaved woodland found on site can broadly be split into wet and dry varieties. Dry woodland was predominantly recorded along the perimeters of the Site, typically at the top of the valley's banks. Characteristically, the drier areas of woodland comprised English oak (*Quercus robur*) and beech (*Fagus sylvatica*) with coppiced hazel (*Corylus avellana*) and silver birch (*Betula pendula*) becoming more abundant in the site's western section. Other species include field maple (*Acer campestre*), wild cherry (*Prunus avium*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), elder (*Sambucus nigra*), sycamore (*Acer*

[10] Natural England (1986) Sidling's Copse and College Pond SSSI – Notified features https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1000378&SiteName=college+&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=
[11] Schedule 8 of the Wildlife & Countryside Act 1981 (as amended).
[12] South Oxfordshire District Council (2019) South Oxfordshire Local Plan 2011-2034. Final publication version 2nd, January 2019.

pseudoplatanus), privet (*Ligustrum vulgare*), box (*Buxus sempervirens*), Scots pine (*Pinus sylvatica*) and hornbeam (*Carpinus betulus*). In addition, false brome (*Brachypodium sylvaticum*), sanicle (*Sanicula europaea*) and dog's mercury (*Mercurialis perennis*) were recorded along the woodland floor.

Areas of carr are predominantly located on the banks of the valley or adjacent to the streams which traverse the woodland where the land flattens to the west (Plate 1). Although much of the woodland type was consistent with surrounding broadleaved woodland, increased presence of willow (*Salix* spp.) was noticed. Tufted hair grass (*Deschampsia cespitosa*), great horsetail (*Equisetum telmateia*), remote sedge (*Carex remota*), wood sedge (*Carex sylvatica*) and pendulous sedge (*Carex pendula*) were all recorded, as were occasional stands of common reed (*Phragmites australis*) and a high proportion of bryophyte coverage on the woodland floor. Areas of wet woodland were typically dense with a low canopy making it difficult to traverse when coupled with the inundated and muddy woodland floor.

Where woodland transitioned from wet to dry, and in some cases into areas of fen or dense reed, sedges (*Carex* sp.), tufted hair grass, common reed and great horsetail were frequently found upon the woodland floor. Furthermore, several fungal species, including Scarlet elf cup (*Sarcocosypha coccinea*), were numerously observed across the woodland.

Plate 1 Dense, wet woodland characteristic of areas adjacent to streams

Plate 2 Broadleaved woodland with sedges and common reed on woodland floor

Plate 3 Dry broadleaved woodland present on the valley's steep slope

Dry heath and acid grassland mosaic

A mosaic of acid grassland and scrub typical of dry heath, situated on sand based soils, was identified north of the valley. The grassland community was species-poor and was evidently highly grazed. Species recorded include salad burnet, red fescue (*Festuca rubra*), common chickweed (*Stellaria media*), cocksfoot (*Dactylis glomerata*), dandelion (*Taraxacum officinale* agg.), foxglove (*Digitalis purpurea*), common sorrel (*Rumex acetosa*), mouse ear hawkweed (*Hieracium pilosella*) and greater plantain (*Plantago major*) (Plate 4). Amongst the acid grassland, dense areas of common gorse (*Ulex europaeus*), bramble (*Rubus fruticosus* agg.) and bracken (*Pteridium aquilinum*) were recorded (Plate 5).

Plate 4 Acid grassland present on the northern valley slope

Plate 5 Bracken, bramble and gorse coverage on the dry heath and acid grassland

Unimproved calcareous grassland

Open calcareous grassland identified on the southern slope of the valley near to the Wildlife Trust Nature Reserve entrance (Plate 6). Evidence of horse grazing was identified during the survey. Species identified include common sorrel, wild carrot (*Daucus carota*), large thyme (*Thymus pulegioides*), oxeye daisy (*Leucanthemum vulgare*), salad burnet (*Sanguisorba minor*), bulbous buttercup (*Rumex bulbosus*) and lizard orchid. In addition, ant mounds were present throughout as were a few scattered stands of bramble, dog rose (*Rosa canina*) and common gorse.

Plate 6 Calcareous grassland situated on the southern valley slope

Broadleaved plantation woodland

Mature broadleaved plantation woodland was identified within the Site's south-eastern corner adjacent to the Nature Reserve's entrance (Plate 7). Species recorded included beech, hazel, dogwood, elder, hawthorn and larch (*Larix decidua*).

Plate 7 Predominant beech plantation woodland

Fen

An area of fen extends transitions from wet woodland near the Site's eastern perimeter into an open clearing, surrounding the central stream situated within the base of the Site's vale (Plate 8). The open clearing comprises inundated fen habitat with an abundance of sedges (*Carex* spp.), bog pimpernel (*Anagallis tenella*), rushes (*Juncus* spp.) and bryophytes.

Plate 8 Fen predominantly comprised of bryophytes, sedges and rushes.

Plate 9 Fenland located at the base of the valley

Swamp

Small patches found within the woodland at its most western extent. In addition, three open patches of reed bed were found adjacent to areas of wet woodland and within the site's north-eastern corner adjacent to the stream (Plate 11; TN7). All areas were characterised by dominant common reed. Greater tussock sedges (*Carex paniculata*) were recorded within the north-eastern patch (Plate 10).

Plate 10 Cut reed bed with greater tussock sedge at the Site's north-eastern boundary

Plate 11 Reed bed situated along the Site's perimeter within the College Pond section (TN7)

Running water

Several sources of water traverse the site and join a central stream that flows the length of the SSSI from east to west. The central stream initially enters the Site at the northeast boundary, acting as a barrier between carr and an extensive reed bed (Plate 12). This stream subsequently flows through the centre of the valley, traversing fen and woodland further west.

Plate 12 Stream acting as a boundary between woodland and swamp habitat

Plate 13 Stream present within woodland

Scattered trees

Several trees, varying in age, line the perimeter of the dry heath and acid grassland (Plate 14). This includes sweet chestnut (*Castanea sativa*), silver birch, Scots pine and hawthorn.

Plate 14 Trees lining the northern site boundary within the acid grassland

Current evidence of public access and visitor use

Sydling's Copse and College Pond SSSI can be publically accessed from two footpaths: one which traverses part of the College Pond end of the SSSI (the western portion of the SSSI) (Public Right of Way 210 10/10) and a second, permissive footpath, that connects a bridleway to the village of Beckley in the east of the SSSI (Figure 2). The entrance to the Nature Reserve is approximately 1.2km up a Public Right of Way (PRoW 123 7/10) from the existing settlement of Headington to the south west of the SSSI, and 1.0km from the strategic allocated development site (STRAT 13: Land North of Bayswater Brook) within the South Oxfordshire Local Plan.

This proposed site allocation is located immediately adjacent to the south-western corner of the SSSI. The footpath that passes through the proposed strategic site allocation enters the western end of the SSSI (College Pond end). This footpath is primarily a thoroughfare that traverses an extremely wet area of woodland which is not surfaced and has no obvious pathway leading to other parts of the SSSI (Plate 15). Between this path and the Wildlife Trust Nature Reserve, dense carr woodland is present making it difficult and, given the wet conditions, treacherous, to navigate. In this location dogs may still be able to run off path and disturb habitats and off path dog fouling could result in increased nutrient inputs. Anecdotally, however, recreational users have been noted using footpath 210 and then following the northern field edge around the northern boundary of the SSSI and accessing the eastern section of the reserve (heathland areas).

The Wildlife Trust Nature Reserve is predominantly situated within the eastern section of the SSSI and can be accessed via the aforementioned bridleway which passes by the SSSI and then onto the permissive footpath. The entrance is situated within the south-east corner of the SSSI (Plate 16), which leads to a circular footpath that enters woodland, acid and calcareous grassland (see Figure 1). The pathway is largely enclosed by natural barriers such as scrub, hedgerows and, when near carr or fen, fencing. No clear or obvious pathways lead away from this circular walkway. There is pedestrian access from the proposed Strategic site to the SSSI from this eastern access point; however, this is a walk of approximately 970m following the existing bridleway and permissive footpath.

A visitor survey undertaken by Footprint Ecology for the Nature Reserve between 2014 and 2017 found that the number of people which visit the Site is low and that not a single person accessed Sydling's Copse from the College Pond end during the survey period.

Plate 15 Permissive path that traverses the College Pond end of the SSSI

Plate 16 Bridleway leading to the BBOWT Nature Reserve from Beckley

During the AECOM site visit, a single dog walker with two dogs was observed leaving the Nature Reserve; both dogs were observed to be off their leads. Two additional dog walkers were observed walking along the Public Right of Way which connects to the Nature Reserve entrance; although these dogs were kept on a lead, it was not clear whether these people had entered the SSSI.

4. Discussion

The walkover survey of the Site confirmed that the SSSI supports a mosaic of potentially fragile and rare habitats that may be vulnerable to increased recreational pressure such as trampling and increased nutrient enrichment from dog fouling. For example, the SSSI centres on a steeply sloped valley that supports a calcareous stream, a variety of fen habitats and carr woodland. In addition, the geology of the valley's north and south slopes differs, giving rise to calcareous based habitats such as calcareous grassland in the south and acidic habitats such as acid grassland, heathland and acid woodland to the north. These findings largely conform to the BBOWT site habitat descriptions, and Natural England's site description report[13] and notified features[14] for the site. The BBOWT Management Plan[15] for the SSSI states that the calcareous fen, heathland-acid grassland mosaic and calcareous grassland are subject to an annual grazing regime, stating that cattle, sheep or ponies may graze these habitats for a set duration each year; evidence of grazing was noted within these habitats during the survey. The management of the site is dependent on the grazing by livestock and disturbance from dogs off lead could reduce the efficiency of the use of grazing to manage the site, thus resulting in suboptimal site management and possible degradation of habitats.

Air quality

In order to avoid any net increase in atmospheric pollution from vehicle exhaust emissions any new roads should be located at least 200m away from the SSSI. It is considered that this would also be a suitable minimum buffer distance to separate any built development from the SSSI.

Recreational Pressure

Visitor access to the SSSI is largely confined to a circular permissive footpath present within the Wildlife Trust Nature Reserve (eastern portion of the SSSI Site). In contrast there is very limited access to the SSSI from the footpath which part traverses the SSSI at the College end of the SSSI (western portion of the SSSI Site) for approximately 170 metres. At present, access from the nearest residential area (Headington) to the SSSI is 690m. The strategic site allocation will, in contrast, abut the south-west corner of the SSSI, thus providing easy access to PRoW 210. On the face of it, therefore, an increase in quantum of residential development within close proximity to the SSSI could result in an increased desire to visit the SSSI, although the risk actually posed depends upon the accessibility of the SSSI from these footpaths taking into account distance, terrain and barriers.

Access from the west

Based on observations made during the site visit, there is unlikely to be a significant increase in damaging public access to the SSSI from PRoW 210 despite the large increase in the local population adjacent to the SSSI at this point. This is because the pathway simply traverses the SSSI and provides no formal access into the wider SSSI. Moreover informal access is likely to be low even with a significantly increased local population due to the steeply sided terrain, wet ground conditions and dense vegetation that restricts informal off path human access into the SSSI at this location. Dogs may still be able to run off path in this location, but this is also likely to be limited by the wet ground conditions and dense vegetation and thus only apply to a narrow zone adjacent to the footpath. Nonetheless, to provide enhanced protection to the SSSI from this location, the feasibility of installing new fencing along the northern boundary of the SSSI should be explored. This would give enhanced confidence to the limited ability of visitors accessing the sensitive parts of the SSSI off this route.

It is also strongly recommended that a buffer zone separating built development from the SSSI is included in masterplanning for the site to maintain the open setting of the SSSI. AECOM recommends that a 200m 'no build' zone would provide appropriate separation; however the precise distance would need to be agreed with Natural

[13] Natural England (1986) Sidling's Copse and College Pond SSSI. Description and Reasons for Notification https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000378.pdf
[14] Natural England (1986) Sidling's Copse and College Pond SSSI – Notified features https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1000378&SiteName=college+&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=
[15] Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust (2019). Sydling's Copse and College Pond SSSI Management Plan (unpublished).

England. The delivery of such a 'no build' zone would also enable a 7.9 ha semi-natural park to be achieved in the area that is not to be subject to built development. If correctly promoted, signed and publicised to residents this could further reduce the desire of most residents to venture into the SSSI by PRoW 210 as they would reach a large recreational area before they reach the SSSI. The number of residential units proposed for the strategic site allocation is likely to be 1,100 dwellings, which at an average occupancy of 2.46 people per dwelling would mean a population of c. 2,706 people.

There would be approximately 90ha left to provide the built development. Moreover, a large portion of the 1,100 dwellings to be delivered are likely to be within easy walking distance (typically defined as 400-500m (i.e. a few minutes' walk) of this park compared to those within easy walking distance of the SSSI. In addition, with the area of Sydling's Copse being approximately 21ha in size and the area of green space provision of 7.9ha that is recommended to be located within the 200m no build zone from the SSSI is the equivalent of approximately 40% of the area of the SSSI and would equate to a considerable area of greenspace.

Clearly the effectiveness of any area of alternative natural greenspace at attracting visitors is not merely a function of size or rate of provision. The following additional factors are also of great relevance and should be designed into the masterplan for this area of parkland:

- The number of roads traversing the park should be minimised. Pedestrian crossings should be designed into the concept plan to make access easy across any roads that are present.
- Experience elsewhere indicates that many people who visit a large countryside site for recreation do so to undertake potentially lengthy walks. The park should be designed with a circular walking route that mimics that within the SSSI (in terms of length) as it is noted that walkers/joggers and dog walkers prefer walks without doubling back on themselves. Footpath design is also important such that they are pleasing to use all-year-round without presenting an excessively 'urban' appearance. Similarly, infrastructure such as litter and dog-waste bins and good signage/way-marking are important;
- The nature of the habitats present is important. Habitats within the park will be designed to be appropriate to the environment and take advantage of existing features but also to consist of attractive semi-natural habitats (e.g. species-rich grasslands) which will provide open environments to allow dogs to be off lead.
- Phasing will be an important consideration. The delivery of the park will need to keep pace with the occupation of the dwellings in order to provide the new residents with open green space immediately. Therefore the habitat designs must ensure attractive habitats can be created in a sufficiently timely manner so that these habitats will be in existence before 50% of the dwellings are occupied.
- Promotion and resident awareness is also essential. Residents can be encouraged and attracted to the park through the creation of attractive habitats, a pleasant natural experience and ease of access, as discussed above; however they can also be attracted through the use of media such as fliers through the doors, community notice boards at the pedestrian crossings and within any local centre, along with signage showing access routes to the park. Such promotion will also help to raise the profile of the park compared to the SSSI, which is currently little used and (we assume) will not be actively promoted to local visitors by the site managers given concerns over the vulnerability of the site.

Access from the east

Access to the SSSI from the **east**, into the Nature Reserve is restricted by fencing. The fencing restricts access to areas of wet woodland, swamp and fenland. Although this restricts visitor access away from potentially treacherous and sensitive habitats, it has the potential to funnel visitors into three habitats, broadleaved plantation woodland, acid grassland-heath mosaic and calcareous grassland. However, at present the nearest urban area to the SSSI along this access route is about 1km distant, or about 800m from the nearest parking on the B4027. This is relevant because various investigations into the habits of recreational visitors to nationally and internationally important wildlife sites have found that the majority of casual walkers are generally disinclined to walk very far in order to regularly visit sites for recreation and to walk the dog. For example, in one of the most thorough studies, dating from 2012, visitor surveys were conducted at the Thames Basin Heaths Special Protection Area. The study found that the average distance between the visitor's home postcode and Thames Basin Heaths SPA when arriving by foot was 0.8 km, with 75% of foot-based visitors living within a 0.9 km straight line distance from the visitor survey point[16]. Other surveys show a similar broad pattern, since there is a natural

[16] https://www.footprint-ecology.co.uk/reports/Fearnley%20and%20Liley%20-%202013%20-%20Visitor%20access%20patterns%20on%20the%20Thames%20Basin%20Heaths.pdf [Accessed 25/07/2017].

limit as to how far most people are prepared to walk to visit a particular countryside site, even when it is large and appealing.

Coupled with the difficulty of going off-track when in this part of the SSSI and the absence of parking close to this eastern most entry point, this is very likely to limit both the number of residents who wish to access this part of the SSSI and the potential for those visitors who do visit the SSSI to cause damage.

Nonetheless, a risk of increased visitor pressure cannot be entirely dismissed without measures built into the strategic site allocation. This would potentially be through:

- Increased trampling and degradation of acid grassland-heath mosaic, calcareous grassland and botanical (grassland orchid) species for which the SSSI is designated;
- Increased disturbance to native wild animals; and,
- Increase conflict between dogs and livestock[17].

Whilst the site is sensitive to an increase in recreational pressure, the distance of the eastern entry point from the strategic site allocation (or the nearest car park), the existing topography, wet nature of some habitats and presence of fencing will not only reduce the likelihood that residents of the new strategic site allocation will wish to visit the SSSI from this direction in anything other than small numbers but also restrict their activities when on site. However, to provide further certainty that a large increase in residential development such as that proposed by the strategic site allocation that is adjacent to the SSSI Site would not significantly increase visitor numbers to the SSSI the aforementioned new park (which will be required to provide adequate separation between the allocation and the SSSI in any event) will serve to draw residents away from the SSSI, particularly since it will be much closer to their homes (and easier to reach) than the eastern access point of the SSSI and will be actively promoted. With this park and adequate promotion in place, it is the author's opinion that increased recreational pressure stemming from the proposed strategic site allocation would not provide deliverability issues for the site allocation.

Hydrology

Habitats present within the SSSI site are dependent on groundwater. These include areas of fen, carr woodland, and flushes associated with the SSSI's habitats located within and outside of the SSSI Site.

Both STRAT 13 and the SSSI are located within the catchment of Bayswater Brook[18], Which runs through the SSSI. STRAT 13 appears to be of higher topography than the SSSI, suggesting that at least a portion of STRAT 13 feeds into Bayswater Brook and thus has the potential to affect the hydrological conditions within the SSSI. Dependant on local ground water flows, potential development within the strategic allocation could alter ground and surface water flows within the locality and thus affects the habitats of the SSSI. Fen and mire habitats are listed as notified features of the SSSI, therefore any changes to local groundwater levels may have the potential to impact on the integrity of the SSSI, however little information is known about how these habitats are effected by local groundwater levels. No local hydrological data was available to inform this assessment; therefore, no judgement can be made as to whether the strategic allocation is likely to result in an adverse impact on the SSSI's habitats in relation to changes in groundwater.

[17] Disturbance of grazing livestock by dogs has the potential to reduce the ability of grazing livestock to graze certain areas, with other locations becoming over grazed.
[18] https://environment.data.gov.uk/catchment-planning/WaterBody/GB106039029780 {accessed 01/02/2019]

5. Conclusion and Recommendations

Recreational Pressure

Even though few people currently visit the Site, the strategic residential allocation has the potential to result in greater quantities of recreational visitors to the SSSI Site which could result in an adverse impact to habitats and botanical species through increased recreational pressure. In particular, this is likely to adversely impact the accessible sensitive habitats located within Sydling's Copse Nature Reserve i.e. calcareous grassland and acid-heathland mosaic through trampling, dog-livestock conflict, disturbance to wild animals and increased dog fouling. In the worst case scenario, these pressures could result in the loss of SSSI's notified features. Given that few people currently visit the Site, and that PRoW 210 that passes directly from the proposed development site through the SSSI offers little potential for off path access into the SSSI, it is possible that visitor numbers would not increase significantly in the absence of mitigation. However, given the sensitivity and national importance of the SSSI further measures are required in order to draw such a conclusion with confidence. Therefore, it is recommended that the feasibility of enhancing and restoring the fencing along the northern boundary of the SSSI is explored. It is also recommended that green infrastructure (similar to SANG provision) is provided within a strategic location between the SSSI and residential development area, to reduce the effect of increased visitor pressure on the Site's sensitive habitats.

For 'Phase 2' of this investigation it is not anticipated that additional evidence with regards to recreational pressure is required. There will be fine details to be worked out for any planning application but with regard to the *principle* of delivery of a new settlement at this site (which is what we are talking about at Local Plan allocation stage), we consider that prior to the examination a site masterplan should be produced which illustrates the scale and location of the park and the aforementioned design features. This will provide sufficient confidence that it would be possible to avoid any significant increase risk in recreational pressure on the SSSI from the residents of the strategic site allocation.

Hydrology

Due to the paucity in local hydrological data, the potential impact of reduced groundwater as a result of developing within the strategic allocation could not be ascertained at this stage. For this reason, hydrological data will be require to inform 'Phase 2' of this investigation and this impact pathway will be assessed further within the detailed ecological assessment given the dependency of several of the SSSI's habitats on the current groundwater level.

Appendix A – Target Notes

TN1 – Deer hunting blinds located within broadleaved woodland plantation.

TN2 – Fenced off grassland pathway that traverses the woodland used for moving cattle or horses through the site.

TN3 – Mature, wild stand of box (*Buxus sempervirens*) located within the broadleaved woodland adjacent to the footpath.

TN4 – Hare (*Lepus europaeus*) observed within the fenland.

TN5 – Broadleaved woodland situated within a small, steep-banked valley, evidently a transitional habitat to the adjacent fen. Large areas of the woodland floor were inundated with water beneath a dense layer leaf litter.

TN6 – Area of wet woodland with a large inundated pool of water. The area of woodland comprised coppiced hazel with a low canopy.

TN7 – Reed bed comprised of common reed (*Phragmites australis*) situated to an area of wet woodland.

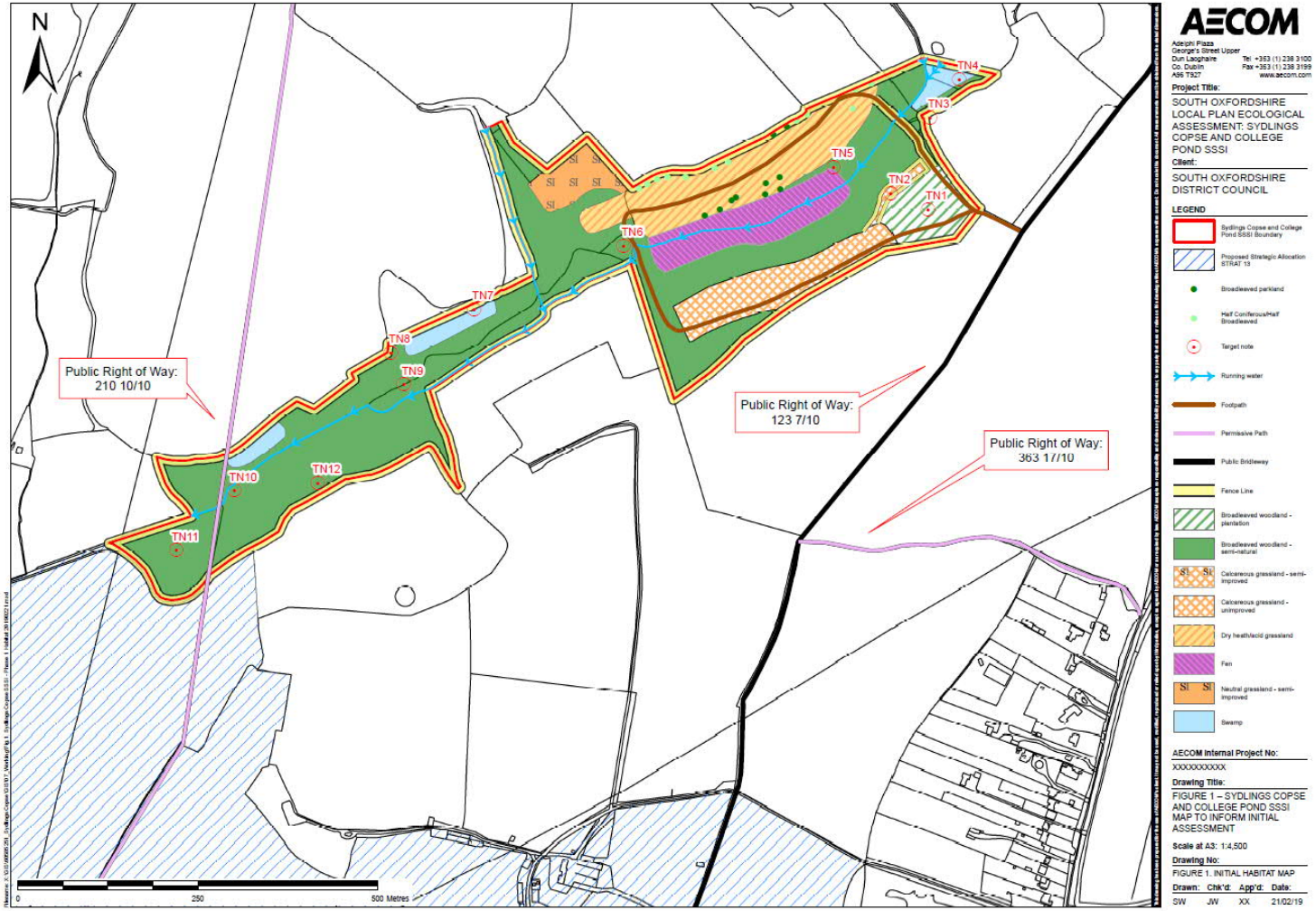
TN8 – A herd of roe deer (*Capreolus capreolus*) were observed migrating through the woodland from an adjacent field.

TN9 – Extremely wet woodland clearing colonised by common reed.

TN10 – Abundance of common reed beneath the woodland canopy.

TN11 – Abundance of common reed and greater horsetail (*Equisetum telmateia*) beneath a canopy of coppiced willow (*Salix* spp.).

Appendix B – Figure 1 Sydling's Copse and College Pond SSSI Map to Inform Initial Assessment



Appendix C – Figure 2 Sydling's Copse and College Pond SSSI Map to Inform Initial Assessment