Berkshire
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East Wyke Dyke:

Botanical survey and wildlife management recommendations

A report prepared by the Land Advice Service; 16th July 2021

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Contents

Executive Summary

University College, Oxford, own a parcel of land adjacent to Abingdon Road in the centre of Oxford. The land is currently used for a range of purposes. This report focuses on two areas; the Wild Area and the Dyke Fields, with the specific aim of assessing the current wildlife interest of these areas and providing general wildlife management advice, especially in relation to whether the areas are suitable for tree planting.

The Wild Area was once the college orchard and has a number of old fruit trees along with other scrubby species and more mature trees, which have established over time. In between these areas are grassy bays, providing ideal sheltered spots for invertebrates, and a network of short mown paths.

Dyke Fields are lower and wetter and flood more frequently. The western end of the area is dominated by nettles and has low botanical interest. As the site progresses towards the east and the River Thames, the floristic diversity increases, with species such as oxeye daisy and common knapweed present in the sward and, in places, very abundant. Towards the far northern boundary, along the dyke edge itself, the area is dominated by mature trees such as grey willow.

The Wild Area is not considered suitable for tree planting as this would create additional shade and result in the loss of the existing wildlife interest held within the mix of open grassland and scrub.

The western (nettle-dominated areas) of the Dyke Fields would be appropriate for tree planting. Care will need to be taken to choose species which can in the most part, tolerate damper conditions.

Other wildlife enhancement opportunities include:

Wild area

- Cut the grassy scallops in mid-July
- Coppice sections of scrub in the future, when it becomes too ‘leggy’

Edge of rugby pitch

- Consider planting scrubby patches
- Consider establishing wildflower bays

Dyke Fields

- Cut areas of flower rich grassland in mid-July
- Cut back bramble patches if they become to big
- Investigate pond creation
- Improve amenity value by adding some benches or picnic tables

General

- Install bat boxes
- Create a stag beetle ‘stumpery’

BBOWT would be happy to provide further advice to help evaluate these options, and support your land management decisions for East Wyke Dyke.

Introduction

East Wyke Dyke is owned by University College. It is located within the city of Oxford, adjacent to Abingdon Road. The site is comprised of sports grounds, a couple of fields rented out to a local famer for grazing, and two areas managed more sympathetically for wildlife. For the purpose of this report these areas are referred to as 'wild area' and 'dyke fields' and are located at SP 51742 04734 and SP 51767 05005 respectively (see Appendix 1 for site boundary map). Dyke Fields are approximately 2ha in size and Wild Area is roughly 1ha.

University College are interested in improving the wildlife interest of these areas and especially identifying whether they are appropriate for tree-planting. The purpose of this report is to carry out a quick baseline survey, to assess whether tree-planting is an appropriate activity i.e. is there any existing wildlife interest which would be compromised by establishing woodland, and also to provide some general wildlife management advice.

Methodology

Field methods

A walkover survey with Robbie Eason (Head of Grounds Maintenance at University College) was carried out by Debbie Lewis (Head of Ecology, BBOWT) on 23rd June 2021. A botanical species list for each area, was generated during this visit. Possible wildlife enhancements were discussed.
It is likely that the species lists are not exhaustive as a thorough search was not made during the visit (due to management discussions) and early spring species may also have been missed due to the mid-summer timing of the survey.

Survey Results

East Wyke Dyke is set within the urban context of Oxford city. However, Oxford is a relatively green city in terms of its biodiversity interest, and there are 3 SSSIs within 2km of the site, one of which is only c.500m away. Consequently, East Wyke Dyke represents an important stepping stone for wildlife to move between these islands of semi-natural habitat and cross the more hostile areas of the surrounding built environment See Appendix 2 for a map showing the location of the site within the wider context of sites designated for nature conservation.

Habitats

Wild area

The 'Wild area' is located to the north of the sports pavilion. This small patch of land, covering c.1ha and was once an orchard. There is evidence of the original fruit trees, with a number of apple and domesticated plum trees still growing and providing fruit. Over time, other trees have colonised the area including species such as hazel, hawthorn and blackthorn. Towards the northeast corner there is an area of tall mature trees and a tumble-down shed.

Throughout most of the area there is a network of mown paths and adjacent tall-sward margins, many of which form scallops, or bays, within the scrub and trees. The grassy areas are not species-rich in terms of their floristic diversity, being dominated by coarse grasses, such as false oat-grass, with a small range of more 'weedy' wild flowers, such as buttercups and comfrey. However, these species have local importance for invertebrates, and together with the relatively abundant bramble bushes, provide a nectar source for invertebrates such as butterflies, bees and hoverflies. In addition to this the grassy bays provide a sheltered micro-climate, especially important on colder, windier days. In turn these invertebrate-rich areas will provide a food source for the range of bird species which will be using the dense scrub for nesting and foraging.

Grassy 'scallop' or bay within the scrub, providing good conditions for a range of invertebrates

Dyke fields

The ‘Dyke fields’ run adjacent to the East Wyke Dyke itself which forms the northern boundary of the land. This area is lower and wetter and often floods.

To the west end of the strip the area is dominated by nettles and has been cut to try and reduce the dominance. From the middle progressing eastwards, the grassland improves in terms of diversity with species such as oxeye daisy, common knapweed and tufted vetch, as well as coarser grass species such as tufted hairgrass. There are also large patches of bramble providing important nectar sources. The dyke margins are lined by tall mature trees, such as grey willow and aspen while in the lower areas, especially towards to the dyke edge, the sward becomes dominated by great pond sedge.

More species rich area in ‘Dyke fields’ – showing mature trees along dyke edge, abundant oxeye daisy and bramble patch

Of particular wildlife interest across both areas was the presence of blackthorn scrub and comfrey. Blackthorn sucker and young growth is the food plant for the rare brown hairstreak butterflies. This species is restricted to the south and west of the UK and around Oxford is a known hotspot. Brown hairstreaks have been recorded from within Oxford City, with records from Iffley Meadows, which is very close to East Wyke Dyke. Therefore, maintaining and where possible planting blackthorn, is highly like to be of benefit for this butterfly.

Additionally, comfrey is the foodplant of the scarlet tiger moth, which is a distinctive bright red, black and cream day flying moth. The species is locally common in southern and south-west England, south Wales and some areas in North-west England. Unusually, this moth is recorded from within the urban context of Oxford City (and was seen just outside East Wyke Dyke after the site visit). It is highly likely that the comfrey found at East Wyke is supporting the caterpillars of this moth.

Appendix 3 provides a brief species list for the two areas.

Recommendations

Below is a summary of some of the management options which would be possible on the different areas at East Wyke Dyke. This list is designed to provide options from which the landowner can choose the most appropriate, depending on resources and desired outcomes - rather than they are all required in order to achieve any wildlife gains.

BBOWT would be happy to provide further advice to help evaluate these options, and support your land management decisions for East Wyke Dyke.

Wild area

The wildlife area is already providing a great resource for wildlife and it is recommended that tree planting is not appropriate here. The open and sunny grassy bays or scallops are providing a good resource for invertebrates, and this would be lost with the planting of trees.

Grassy scallops

In order to maintain the current mix of open, grassy scallops with scrub and trees, it is recommended that the grassy scallops are cut towards the middle of July and the arising are removed. This helps reduce the dominance of grasses and allows wildflowers to increase in abundance. If grass growth is significant following this cut (e.g. in wet years) a second cut can be taken in September. As before the arisings must be removed. Cutting all the grassy areas in the middle of summer can remove all nectar sources in one go, and if this is a concern, it would be possible to cut half of the bays, leaving the rest of the bays for a late summer cut (August/ September). If this approach is taken it is important to take a note of which areas receive the late cut, so that they are rotated, and in the following year are cut mid-summer. The paths should continue to be cut regularly to provide access and areas of short sward, which is itself a valuable part of the structural diversity of the area as a whole.

Areas dominated nettles can be cut regularly (monthly) throughout the season. This *may* reduce the dominance and allow wildflowers to naturally return. An alternative option is to spray-off the nettles with a general herbicide such as glyphosate, according to the manufacturer's instructions. The ground can then be dug over (to remove roots and prepare a seed bed) and appropriate seed mix added. This is best done at the end of summer (August/September) or early spring (March/April). Further information on seed mixes is provided below. Some discreet nettle patches should be left un-cut, as they will provide egg-laying and caterpillar feeding sites for butterflies like small tortoiseshell and peacock.

Scrub and trees

The current mix of mature trees and scrub is ideal to provide safe, dense places for birds to nest and forage. At some stage the scrub will start to mature and become more 'leggy'. In order to keep the dense structure, small areas of scrub will need to be coppiced (cut back to ground level) from which new growth will develop. These patches should be between 10m x 10m and 20m x 20m (as the size of the wild area is very small). Cutting is likely to be on a slow rotation with one new area being cut every 3 – 5 years depending on rate of regrowth. Regrowth will need to be protected from deer browsing, either by temporally fencing out the cut area or by piling a small amount of brash on the cut coppice stools.

The more mature trees by the hut, will also eventually need some work, but this is unlikely to be in the near future. Since this area is away from the general public, if tree safety surveys allow, the retention of dead wood, especially standing dead wood, is of great benefit to wildlife such as bats and invertebrates, and birds like woodpeckers.

Edge of rugby pitch to woodland

This area was not specifically surveyed but advice was requested on how it could be enhanced for wildlife. Currently there is underplanting of the beech with small saplings. These have not grown well in part due to deer browsing, but also because beech casts dense shade and beech woodlands naturally have extremely limited ground flora and understorey trees.

If it were considered acceptable to ‘‘lose’’ the very edge of the sports pitch, it would be possible to create some linkage between the short grass areas and the tall mature trees to the benefit of wildlife.

Area between trees along edge of Abingdon Road and sports pitches – showing potential to soften the edge for wildlife

Scrubby bays

Additional scrubby areas will help provide this link between the grassland and the mature trees, and provide areas for birds to nest and forage in, as well as potentially increasing the diversity of species found on site.

Small curving areas, approximately 10m to 20m long, coming out from the woodland into the grassland could be planted up with a range of small tree and scrub species. These species should be native and could include: hazel, hawthorn, blackthorn, field maple, alder buckthorn, guelder rose and wayfaring tree. Species such as wayfaring and guelder rose have abundant berries in the autumn, a food source for birds and small mammals; while alder buckthorn is the larval food plant of the brimstone butterfly.

The trees should be of UK native species and sourced from a nursery specialising in local provenance seed, to reduce the risk of spreading disease. The species listed above are often used for hedges, and are readily available as small whips (the cheapest option) or more mature saplings. Whichever size is planted, the new plants will need protecting from deer browsing, either through the use of tree guards or temporary fencing of the bay.

Wildflower bays

New wildflower-rich areas will increase the pollination resource on the edge of a large grassy area with limited wildlife value, as well as increasing the floristic diversity of the site as a whole.

Similar sized bays to the scrubby areas, could also be identified along the woodland edge and an appropriate wildflower seed mix put down. Before any seed can be sown soil preparation is key. It is important to create bare ground so that the seed can establish without the competitive rye grass

currently present. This can be done by using herbicide to remove the existing grass and once the vegetation has died off, digging over the ground (or using machinery to harrow the surface). The bare ground should then be raked level ready for seed broadcasting. Seed should ideally be spread in autumn or early spring, and gently raked or rolled slightly into the soil.

As this area has been intensively managed as grassland, soil fertility is likely to be high and there will be a reasonable amount of shade from the neighbouring mature trees, it is therefore probable that a mix with species tolerant of shade will grow best. For example: 'EH1F – wild flowers for hedgerows', or EM2 – 'standard general-purpose meadow mixture' from Emorsgate Seeds. It is important to remember that the species in this mix are perennials and may not flower until the second season after sowing. Emorsgate wildflower mixes can be found at: https://wildseed.co.uk/mixtures

Aftercare of the wildflower mini-meadow areas is equally important. Like the grassy bays in the Wild area they should be cut after mid-July with the arisings removed, and if necessary a second cut taken again in September, to reduce the sward height to c.5cm by the end of the growing season. Further information on establishing meadows in a range of situations can be found at: http://magnificentmeadows.org.uk/advice-guidance/section/how-can-i-restore-or-recreate-a-meadow

The same principles as above could be used to create wildflower patches along the main drive edges.

Dyke fields

There is much potential to improve the wildlife interest of this strip of grassland.

Tree planting

If tree planting is desired, then it is recommended that this takes place in the nettle dominated western end of the area. There is limited floristic interest in this area and planting of trees will not compromise an existing wildlife -rich habitat. It is better from a wildlife (and carbon storage) point of view to allow natural regeneration to take place. However, this can look 'messy' and take some time to occur. Under these circumstances tree planting is a sensible alternative. Tree planting should always be carried out as naturalistically as possible, so while it is easier to plant in rows, trees should ideally be put in randomly, perhaps in small clumps with occasional open (unplanted) areas. So that when the trees mature, open space and associated sunlit areas area retained. As this area is damp and floods relatively frequently species that tolerate higher water levels will do best, these will include species such as willows, alder and black poplar. On the slightly higher and drier areas species such as oak, field maple, hawthorn, blackthorn, alder buckthorn, guelder rose and wayfaring tree could be planted.

As mentioned previously trees should be sourced from a nursery with local provenance stock. Small whips, or more mature saplings, can be planted depending on budget constraints or the desire to establish a more 'woodland' looking area, sooner.

As before it will be important to ensure the trees are protected from deer browsing. Given this is potentially a large area, tree guards will probably be the most effective option. Tree guards can result in a significant amount of plastic waste and produce a huge amount of micro-plastics into the environment as they breakdown while still in use. It is therefore recommended that a plastic free guard is used. There are several companies now which offer these, such as:

Greentech: https://www.green-tech.co.uk/tree-planting-products/tree-protection-and-shelters/earthboard-biodegradable-plastic-free-tree-shelter-guard

and Growngreen: https://www.growngreen.co.uk/

Aftercare will also be important, in terms of watering the plants and weeding round the bases to ensure the trees' long-term survival.

Towards the eastern end of the area there is potential to plant single trees, to be left to develop as mature open grown standards. These trees are especially important for species such as bats, moths and birds. It is likely the area would support 2 or 3 mature trees. These trees should ideally be planted on areas dominated by grasses rather than wildflowers.

Ponds

The creation of a new pond, or two, would be of great wildlife value to the site. These should be located in low areas dominated by sedges (rather than wildflowers), as these areas are likely to hold water most readily and not come at the expense of loss of existing interest. It is probable that the soil will already have a high level of clay in it, and thus the pond would not need lining, however a test pit would help establish this before committing to pond creation. It will also be essential to contact the Environment Agency to ensure that pond creation would be acceptable. The EA have strict legal constraints on what can be done within 'floodplains' (which East Wyke Dyke appears to be located within); in which case pond creation would still be possible, but all the soil would need to be removed to somewhere outside the floodplain. Given this potential constraint further details on pond creation strategies have not been given in this report. However, should a pond be practically feasible then the Ponds Conservation Trust provide lots of information on how to create a wildlife friendly pond; which is available here:
https://freshwaterhabitats.org.uk/pond-clinic/create-pond/

Bramble

The current large bramble patches are providing a great nectar source for a range of invertebrates such as butterflies and bees. It is probable that in the future that these patches will start to become too large at the expense of the wildflower areas (especially likely if the grassland is not cut).
If this starts to happen the bramble can be cut back using a brush cutter, this will encourage the bramble to regrow from the base, creating a new, smaller dense patch. This should be carried out during the autumn or winter on an ad hoc basis, as and when needed.

Grassland

As with all the other grassland areas, grassland and associated wildflowers are best maintained through cutting (or grazing) in order to prevent the dominance of grass species, or natural successional processes occurring, which ultimately lead to the area becoming covered in scrub and eventually woodland.

Therefore, it is recommended that at the least the areas dominated by wildflowers should be cut annually, after mid-July, and the arisings removed. If this is too time and resource intensive, for example, due to lack of appropriate machinery meaning this has to be done by hand; an alternative strategy would be to divide the flower-rich eastern end into 3 blocks and cut one area each year, so that they are all cut once over a 3 year period.

If cut areas encourage members of the public to wander across the site, a strip of un-managed grass could be left along the cycle path edge, so that the cut areas are essentially hidden from view.

Amenity value
During the site visit, improving the area's amenity value was also discussed. It would be perfectly possible to achieve this without compromising the wildlife interest. For example, in one or two places along the edge of the path, an area of grass could be kept short and a picnic table or benches put in. These should not be located on areas which are already flower-rich. It might work well to have one at the western end where the potential tree planting is and one at the eastern end where it is more flowery. This could also be a good opportunity for some signage explaining what the College is doing to benefit wildlife and carbon storage in the tree planting area.

General wildlife gains

Bat boxes
Although a specific bat survey was not carried out, it is likely that the area will support a range of bat species, as there is a good mix of the habitats that bats thrive in – namely open grassland, scrub margins, and water, for foraging; as well as old trees and buildings for roosting. Bats use roosts in a range of different ways from congregating together in maternity roosts (when they have their babies), to occasional perching places, where they rest during a busy night of hunting. Bat populations continue to decline in the UK. This is partly due to a loss of spaces suitable for bats to hibernate, roost and breed in. Bats naturally use crevices and hollows in trees, buildings and caves. Therefore, a reasonably easy way to benefit some bat species is to install bat boxes around the site.

On mature trees and buildings, these should be situated:

- At least 4m high and as close to the eaves of a building as possible.
- On a variety of aspects, but where they are sheltered from the wind and rain and receive sun for at least some of the day. On trees, it may be worth installing three boxes around the same trunk, facing southwest, south and southeast.
- Near to hedges or blocks of trees that bats my use for hunting or flying routes.

Bat boxes are provided by a range of companies. Greenwood's Ecohabitats provide both types in a variety of sizes made from an environmentally friendly substance:
http://greenwoodsecohabitats.co.uk/bats-boxes/

Alternatively, The Natural History Book Shop provide a wide range of different boxes for different species and uses.
Bat Boxes | NHBS Practical Conservation Equipment

Further details on how and where to install bat boxes can be found on the Bat Conservation Website - https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes

Stag beetle stumps
Stag beetles are a nationally scarce, large and evocative beetle. The species is restricted to the south east corner of the UK, with Oxford on the northern limit of its distribution. It is relatively easy

to help provide the habitat this beetle requires and even if it doesn't attract stag beetles it will support other wood-burrowing invertebrates and fungi.

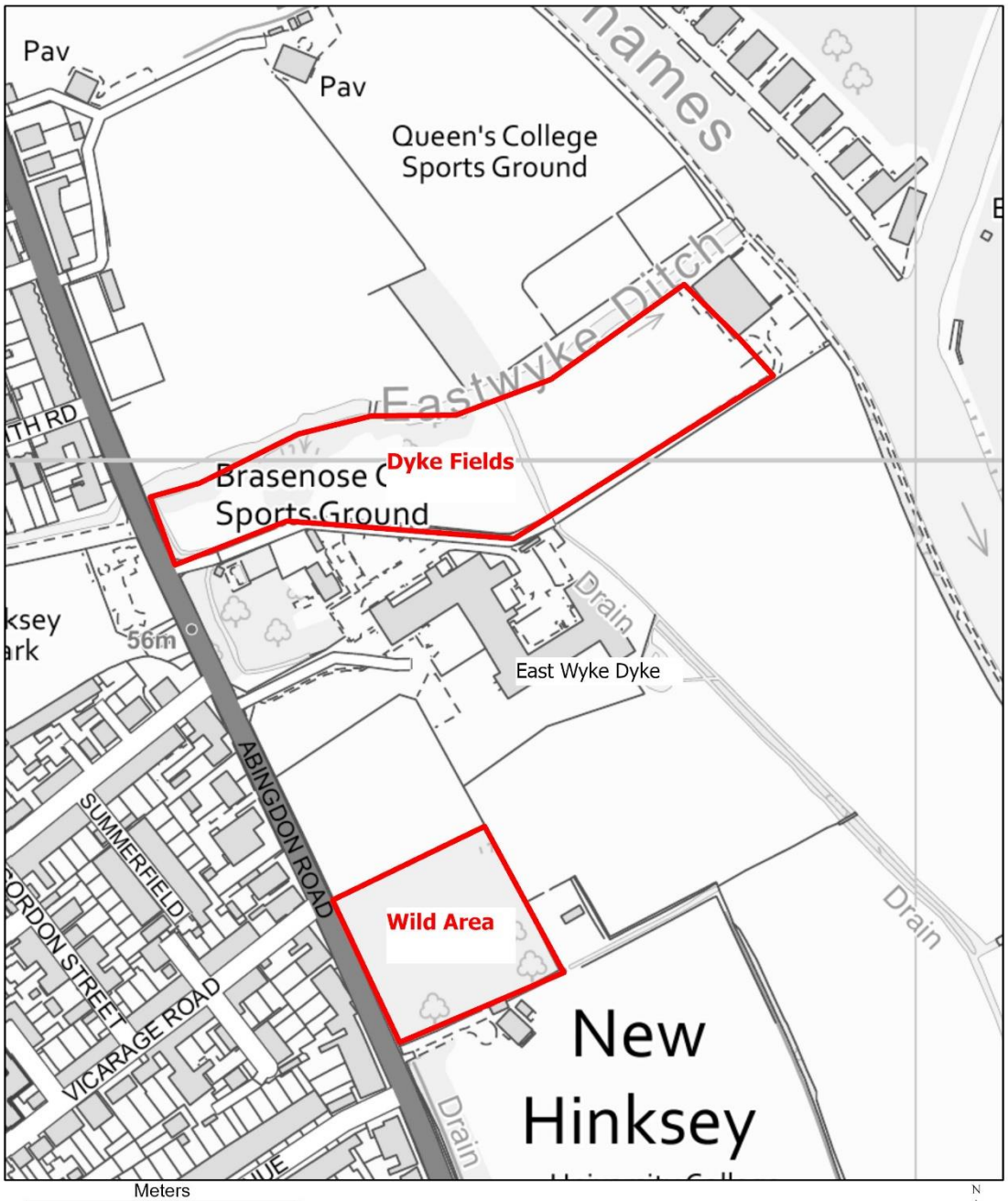
In order to create a 'stumpery' or log pyramid, several logs should be buried approximately 50cm deep within the soil, with the rest of the log sticking out of the surface. The amount exposed to the air can be of varying heights, and thus the logs together look like a pyramid.
Logs should be from broadleaved trees, not conifer, and at least 10cm / 4" in diameter, and preferably larger.
Make sure that there is space (filled with soil) in between the logs so that stag beetles can use all parts of the log. (Female stag beetles lay their eggs in the soil next to rotting wood and the larvae move in and out of them).
The stumpery should be located in dappled shade to prevent the logs drying out. Further information can be found at:
https://stagbeetles.ptes.org/how-to-build-a-log-pile/

Stag beetle pyramid or stumpery. Image sourced from: https://stagbeetles.ptes.org/

Appendix 1 – Site Boundary Map

Berkshire
Buckinghamshire
Oxfordshire

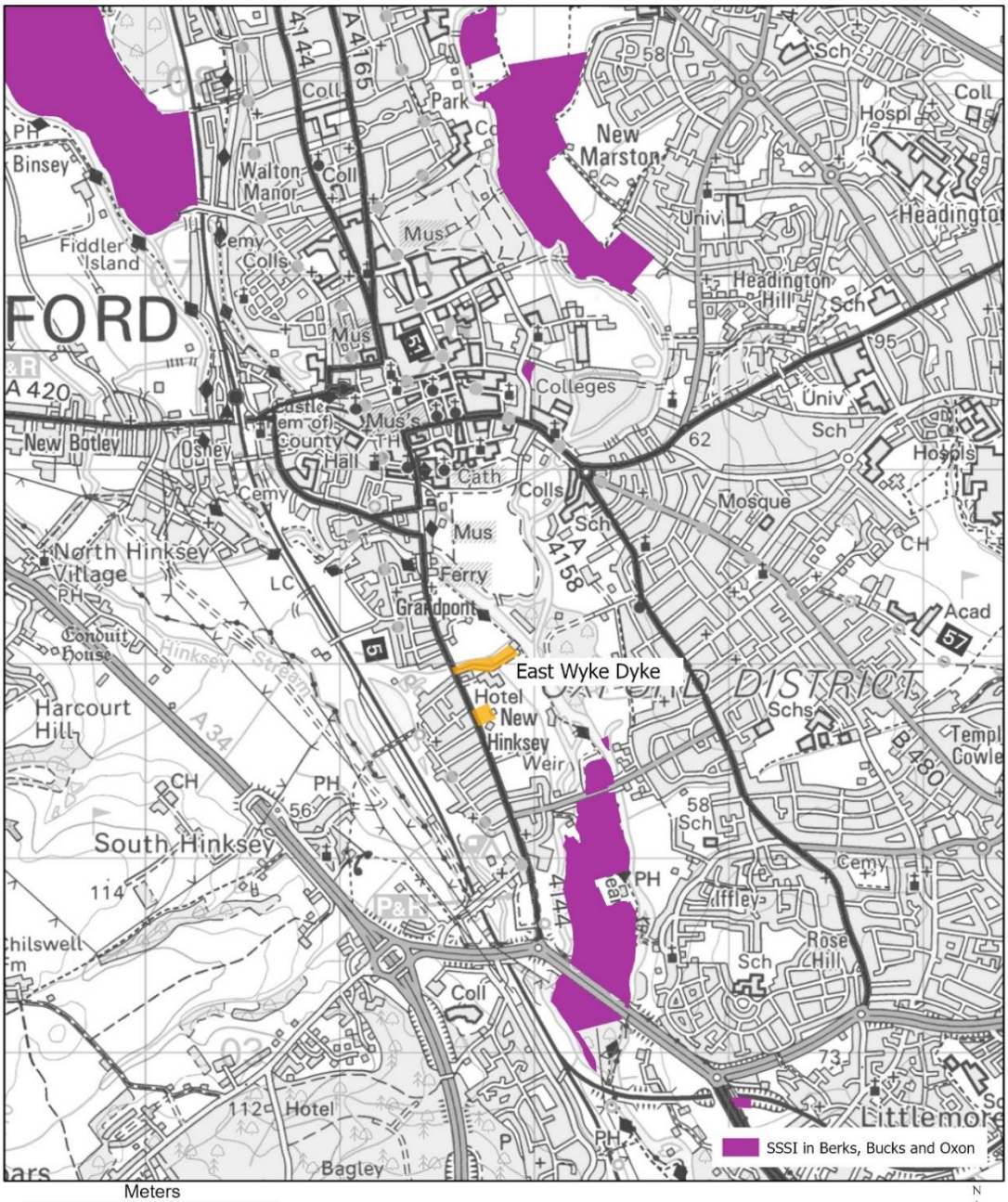
East Wyke Dyke



Appendix 2 – East Wyke Dyke and SSSIs

Location of East Wyke Dyke and neighbouring SSSIs

Berkshire
Buckinghamshire
Oxfordshire



Appendix 3 – Species list for Wild Area and Dyke Fields

Location:	Wild Area, SP5174204734
Date:	23/06/2021
Recorder:	Debbie Lewis

Species_Name	**Common_Name**
Arrhenatherum elatius	False Oat-grass
Crataegus monogyna	Hawthorn
Urtica dioica	Common Nettle
Alliaria petiolata	Garlic Mustard
Quercus robur	Pedunculate Oak
Sambucus nigra	Elder
Poa trivialis	Rough Meadow-grass
Ranunculus repens	Creeping Buttercup
Acer campestre	Field Maple
Dipsacus fullonum	Wild Teasel
Rosa spp.	Rose species
Symphytum spp.	Comfrey species
Rubus fruticosus agg.	Bramble
Prunus spinosa	Blackthorn
Galium aparine	Cleavers
Cirsium vulgare	Spear Thistle
Senecio jacobaea	Ragwort
Brachypodium sylvaticum	Wood False-brome
Hedera helix	Ivy
Corylus avellana	Hazel

Location:	Dyke Fields, SP5176705005
Date:	23/06/2021
Recorder:	Debbie Lewis

Species_Name	**Common_Name**
Urtica dioica	Common Nettle
Holcus lanatus	Yorkshire-Fog
Cirsium arvense	Creeping Thistle
Carex riparia	Great Pond-sedge
Angelica sylvestris	Wild Angelica
Quercus robur	Pedunculate Oak
Rubus fruticosus agg.	Bramble
Senecio jacobaea	Ragwort
Rumex obtusifolius	Broad-leaved Dock
Galium aparine	Cleavers
Dactylis glomerata	Cock's-foot
Heracleum sphondylium	Hogweed
Leucanthemum vulgare	Oxeye Daisy
Ranunculus acris	Meadow Buttercup
Centaurea nigra	Common Knapweed
Geranium dissectum	Cut-leaved Geranium
Betula pendula	Silver Birch
Calystegia sepium	Hedge Bindweed
Deschampsia caespitosa	Tufted Hair-grass
Juncus inflexus	Hard Rush
Vicia cracca	Tufted Vetch
Symphtum spp.	Comfrey species
Carex otrubae	False Fox-sedge
Sonchus asper	Prickly Sow-thistle
Populus tremula	Aspen
Trifolium repens	White Clover
Potentilla reptans	Creeping Cinquefoil
Trifolium pratense	Red Clover
Salix cinerea	Grey Willow